U.S. Department of the Interior
Bureau of Land Management

Grand Junction Field Office

Approved Resource Management Plan

August 2015

BLM/CO/PL-15/016

BLM

Grand Junction Field Office • COLORADO

BLM Mission

To sustain the health, diversity, and productivity of America's public lands for the use and enjoyment of present and future generations.

BLM/CO/PL-15/016

Cover photo by Bob Wick, Wilderness, Wild and Scenic River, and Visual Resources Program Lead, Washington Office

Approved
Resource Management Plan
and
Approved Travel Management Plan
for the
Bureau of Land Management
Grand Junction Field Office

BLM/CO/PL-15/016

Prepared by

United States Department of the Interior
Bureau of Land Management
Grand Junction Field Office
Grand Junction, Colorado

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LIST OF ACRONYMS AND ABBREVIATIONS

4WD or 4x4	Four-wheel drive vehicle
ACEC	Area of critical environmental concern
AML	Abandoned mine land
APD	Application for permit to drill (oil and gas)
ATV	All-terrain vehicle
ASQ	Allowable sale quantity
AUM	Animal-unit month
BLM	United States Department of the Interior, Bureau of Land Management
BLM lands	Surface acres administered by the Bureau of Land Management
BMP	Best management practice
BOR	United States Department of the Interior, Bureau of Reclamation
CARPP	Comprehensive Air Resources Protection Protocol
CDOT	Colorado Department of Transportation
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
COA	Condition of approval
COGCC	Colorado Oil and Gas Conservation Commission
CPW	Colorado Parks and Wildlife (formerly CDOW -- Colorado Division of Wildlife.)
CSU	Controlled surface use
CTTM	Comprehensive trails and travel management
DOI	United States Department of the Interior
EA	Environmental assessment
EIS	Environmental impact statement
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act of 1973
FEIS	Final environmental impact statement
FLPMA	Federal Land Policy and Management Act of 1976, as amended

GHG	Greenhouse gas
GIS	Geographic information system
GJFO	Grand Junction Field Office
COGA	Colorado Oil and Gas Association
IBLA	Interior Board of Land Appeals
IDT	Interdisciplinary team
IM	Instruction memorandum
LN	Lease notice (oil and gas)
NEPA	National Environmental Policy Act of 1969, as amended
NHPA	National Historic Preservation Act of 1966
NRHP	National Register of Historic Places
NSO	No surface occupancy or surface-disturbing activities
NWSRS	National Wild and Scenic Rivers System
OHV	Off-highway vehicle
ORV	Outstandingly remarkable value
PFC	Properly functioning condition (land health)
PFYC	Potential fossil yield classification
R&VS	Recreation and visitor services
RMA	Recreation management area
RMP	Resource management plan
RMZ	Recreation management zone
ROD	Record of decision
ROW	Right-of-way (lands and realty)
SHPO	State Historic Preservation Office
SRMA	Special recreation management area
SRP	Special recreation permit
T&E	Threatened and endangered

TL	Timing limitation (seasonal restriction)
U.S .	United States
USFWS	United States Department of the Interior, Fish and Wildlife Service
VRM	Visual resource management
WSA	Wilderness study area
WSR	Wild and scenic river
WUI	Wildland urban interface

1.1 RESOURCE MANAGEMENT PLAN DECISIONS

1.1.1 Decisions

The GJFO Approved RMP describes goals, objectives, allowable use and management action decisions, as well as some implementation-level decisions established for BLM lands and Federal mineral estate managed by the BLM's GJFO. The decisions are detailed by program in section 2.1.3 under four category headings: Resources, Resource Uses, Special Designations, and Support (see Table 2.1 below).

Table 1.1. Program Categories and Abbreviations

I. Resources	
Air	AIR
Soils	SOIL
Water	WTR
Vegetation General	VEG
Vegetation – Desired Plant Community	VEG-DPC
Vegetation – Forest/Woodlands	VEG-FOR
Vegetation – Riparian	VEG-RPN
Vegetation – Adaptive Drought Management	VEG-ADM
Vegetation – Weeds	VEG-WDS
Fish and Wildlife	F&W
Fish and Wildlife – Fisheries and Aquatic Wildlife	F&W-FAW
Fish and Wildlife – Terrestrial Wildlife	F&W-TRW
Fish and Wildlife – Big Game Species (Deer, Elk, Moose, and Bighorn Sheep)	F&W-BGS
Fish and Wildlife – Pronghorn Antelope	F&W-PHA
Fish and Wildlife – Wildlife Emphasis Area	F&W-WEA
Special Status Species	SSS
Special Status Species – Fish	SSS-FIS
Special Status Species – Plants and Terrestrial Wildlife	SSS-PTW
Special Status Species – Plants	SSS-PLN
Special Status Species – Migratory Birds	SSS-MIG
Special Status Species – Yellow-billed Cuckoo	SSS-YBC
Special Status Species – Raptors	SSS-RPT
Special Status Species – Bald and Golden Eagles	SSS-EGL
Special Status Species – Waterfowl and Shorebirds	SSS-WSB

Special Status Species – Gunnison and Greater Sage-Grouse	SSS-SGR
Special Status Species – Reptiles and Amphibians	SSS-R&A
Special Status Species – Bats	SSS-BAT
Special Status Species – River Otter	SSS-RVO
Special Status Species – Canada Lynx	SSS-LYN
Special Status Species – Kit Fox	SSS-KIT
Special Status Species – White-Tailed Prairie Dog	SSS-WTP
Cultural Resources	CUL
Paleontological Resources	PAL
Visual Resources	VIS
Wildland Fire Management	WFM
Lands Proposed for the Protection of Wilderness Characteristics	WIL
Wild Horses	WHS
II. Resource Uses	
Forestry	FOR
Livestock Grazing	GRZ
Recreation and Visitor Services	REC
Special Recreation Management Areas	REC-SRMA
Extensive Recreation Management Areas	REC-ERMA
Comprehensive Trails and Travel Management	TRV
Lands and Realty	L&R
Lands and Realty – Renewable Energy	L&R-REN
Coal	COA
Fluid Minerals and Geothermal	MIN
Fluid Minerals and Geothermal – Oil Shale	MIN-OIL
Fluid Minerals and Geothermal – Shale Ridges and Canyon Master Leasing Plan	MIN-MLP
Solid Minerals (Locatable, Salable/Mineral Material, Non-Energy Leasable)	SOL
Solid Minerals – Locatable Minerals	LOC
Solid Minerals – Salable Minerals/Mineral Materials	SAL
Solid Minerals – Non-Energy Solid Leasable Minerals	NEL
III. Special Designations	
Areas of Critical Environmental Concern	ACEC

Wilderness Study Areas	WSA
Wild and Scenic Rivers	WSR
National Trails	NTR
National, State, and BLM Byways	BYW
IV. Support	
Interpretation and Environmental Education	IEE
Transportation Facilities	TRN

For ease of identifying decisions, each decision is numbered. The numbering sequences for the decisions are by program. Each program has an identified abbreviation (Table 2.1) and each decision in that program is numbered in coordination with the program abbreviation, type of decision and decision number. Some examples are as follows:

AIR-GOAL-01: First air program goal
AIR-OBJ-01: First air program objective
AIR-MA-01: Firs air program management action or allowable use decision
AIR-MA-02: Second air program management action or allowable use decision
AIR-IMP-01: First air program implementation decision

Please note that all acreages and maps presented in the Approved RMP are estimations based on current data. Updating these data is considered plan maintenance, which will occur over time as the Approved RMP is implemented, additional surveys are completed, and information is revised.

1.1.2 Maps and Appendices

Table 1.2 lists supporting information for the decisions contained in the Approved RMP. Maps depicting resource information, stipulations applicable to surface-disturbing activities, and travel management route designations in the Approved RMP are provided in Appendix A. Appendices that are not included in the printed copy (as indicated below as "Available Online") of the Approved RMP are available on the GJFO web page. Appendices B through P contain supporting information for decisions outlined in the Approved RMP. This document and appendices are also available on the GJFO website: http://www.blm.gov/co/st/en/fo/gjfo.html

Table 1.2. List of Appendices

Appendix A	This appendix contains all of the maps (figures) for resources, allocations, designations, stipulations, and the Master Leasing Plan.
Appendix B	Stipulations Applicable to Surface-Disturbing Activities, Surface Use and Occupancy. This appendix lists stipulations for fluid minerals leasing referred to in the Approved RMP.

	These stipulations will also apply, where appropriate to achieve their purpose, to all surface-disturbing activities and surface occupancy associated with land use authorizations, permits, and leases issued on BLM lands.
Appendix C (Available Online)	Wild and Scenic River Suitability Report. This report contains detailed information for the suitability assessment for each eligible river segment.
Appendix D (Available Online)	Summary of Areas of Critical Environmental Concern Report on the Application of Relevance and Importance Criteria. This appendix provides summary information about the Areas of Critical Environmental Concern (ACEC) evaluation process.
Appendix E (Available Online)	BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado. Description of the conditions that are needed to sustain public land health related to livestock grazing. Supporting information to livestock grazing decisions in the Approved RMP is provided in this appendix.
Appendix F (Available Online)	Management and Setting Prescriptions for Lands Managed to Protect Wilderness Characteristics. Management and setting prescriptions are intended to protect these values along with wilderness characteristics (e.g., naturalness and outstanding opportunities for solitude or primitive recreation).
Appendix G (Available Online)	Colorado Air Resources Protection Protocol. This appendix describes the process and strategies the BLM will use when authorizing activities that have the potential to adversely impact air quality within the state of Colorado.
Appendix H	Best Management Practices and Conservation Measures. This appendix provides a list of best management practices that are applicable to land use activities authorized by the GJFO.
Appendix I (Available Online)	Cultural Resource Allocation to Use Categories. Allocations to Use Categories for individual properties and classes of properties.
Appendix J	Allotment and Allotment Management Levels. This appendix provides a summary of the closed allotments and the evaluation criteria for future closures. It also provides a summary of the management on all of the allotments in the field office.
Appendix K	Recreation and Visitor Services Management Framework For Special and Extensive Recreation Management Areas. This appendix provides supporting information to recreation and

	visitor services decisions in the Approved RMP.
Appendix L	Special Recreation Permit Program Overview. This appendix provides the evaluation criteria for special recreation permits.
Appendix M	Travel Management Plan: Includes the designated System Roads and Maintenance Levels. This appendix provides supporting information to transportation facilities decisions in the Approved RMP including maintenance intensity levels. Includes the travel management maps.
Appendix N	Coal Screening Criteria for the Grand Junction Field Office. This appendix provides a summary of the coal management decisions and documents the unsuitability criteria applied to potential coal lands for future development.
Appendix O (Available Online)	Air Emission Inventory. This appendix provides a summary of the air emissions inventory for development and production activities within the Grand Junction Field Office.
Appendix P (Available Online)	Bureau of Land Management Biologic Assessment for the Grand Junction Field Office. This appendix includes the Biologic Assessment for the RMP and TMP that was submitted to the Fish and Wildlife Service as part of the consultation process for determining impacts to threatened and endangered species.
Appendix Q (Available Online)	Fish and Wildlife Service Biologic Opinion. This appendix includes the Biologic Opinion that was issued for the Grand Junction Field Office RMP and TMP.

1.1.3 Decisions by Category

See Table 1.1 in section 1.1.1 above for a summary of the categories in this section.

I. RESOURCES

AIR

AIR-GOAL-01:
Minimize impacts on air quality from BLM management actions in accordance with the Clean Air Act and the NEPA.

AIR-OBJ-01:
*Limit air quality degradation from authorized activities on BLM-administered lands by providing appropriate analyses for compliance with applicable Colorado and National Ambient Air Quality Standards, applicable federal, state, and local air quality laws, rules, regulations, and implementation plans, and applicable federal land management guidance documents (e.g., FLAG 2010). Protect air resources from adverse impacts associated with BLM authorized and permitted actions in accordance with the methodology and provisions outlined in the Comprehensive Air Resource Protection Protocol (CARPP) (**Appendix G**).*

AIR-MA-01:
Develop COAs for project-specific surface-disturbing activities to prevent BLM-permitted activities from causing or contributing to exceedances of ambient air quality standards or causing significant adverse impacts on air quality related values.

AIR-AU-01:
LEASE NOTICE LN-8: *Air Quality.* This lease notice is attached to new oil and gas leasing agreements to provide notice to operators of analysis and mitigation requirements that will be determined on a case by case basis at the permitting/development stage.

AIR-MA-02:
Participate in, conduct, or require air modeling analyses as described in the CARPP (see **Appendix G**) as part of a comprehensive strategy to prevent BLM permitted activities from causing or contributing to violations of ambient air quality standards or causing significant adverse impacts on air quality related values.

AIR-MA-03:
Work cooperatively with local, state, and federal agencies and Tribal governments to enhance air monitoring efforts in order to provide a broader measure of spatially distributed air pollutant concentrations for the purposes of evaluating atmospheric conditions with respect to ambient air quality standards and air quality related values.

AIR-MA-04:
Manage prescribed fire in accordance with the State of Colorado Department of Public Health and Environment Smoke Management Program and Regulation Number 9 (5 CCR 1001-11). Prescribed burns will be timed during favorable meteorological conditions so as to minimize smoke impacts.

AIR-GOAL-02:
Manage BLM-administered lands in a manner that protects the quality of air and atmospheric values as directed under the FLPMA.

AIR-OBJ-02:
Manage air resources within the GJFO in accordance with the CARPP (Appendix G).

AIR-MA-05:
Implement the adaptive management strategy for protecting air resources to include the actions above as well as, tracking project specific emissions for comparison against the most recent regional air quality model results to provide cumulative context for any analyzed contemporaneous development period, and providing an annual activity and air quality summary report of BLM activities as described in the CARPP.

AIR-OBJ-03:
Minimize emissions, within the scope of BLM's authority, from activities that cause or contribute to air quality impairment, visibility degradation, atmospheric deposition, or climate variability.

AIR-MA-06:
Require all drilling and completion engines used on public lands or used to access federal minerals to be in conformance with information and guidance provided by the Colorado Air Resources Management Modeling Study (CARMMS) modeling and CARPP protocol for engine type requirements.

AIR-MA-07:
Require that oil and gas operators use reduced emission completion technology (i.e., "green" completion) as defined in COGCC Rule 805 and the New Source Performance Standards for Crude Oil and Natural Gas Production at 40 CFR Part 63 Subpart OOOO at all wells on BLM-administered lands and wells that access federal minerals. An exemption may be granted on a case-by-case basis.

AIR-MA-08:
Require flaring of natural gas during well completions that are exempted from green completion technology. Prohibit venting of natural gas except during emergency situations.

AIR-MA-09:

Minimize emissions of greenhouse gases from BLM-authorized actions in accordance with state and federal regulations, executive and secretarial orders, and BLM policy.

AIR-MA-10:
Require proper road design, construction, and surfacing on BLM authorized roads to reduce particulate matter emissions.

AIR-MA-11:
Open areas and designated routes may be closed during wind events (e.g., during National Weather Service high wind warning) to reduce fugitive dust emissions.

WATER

WTR-GOAL-01:
Protect, preserve, and enhance watershed functions in the capture, retention, and release of water in quantity, quality, and time to meet ecosystem and human needs.

WTR-OBJ-01:
Manage public land activities to maintain or contribute to the long term improvement of surface and ground water quality and minimize or control elevated levels of salt, sediment, and selenium contribution from federal lands to water resources in the planning area.

WTR-MA-01:
Promote the delisting of impaired water bodies (303d listed) by monitoring actions including but not limited to grazing, travel management, and other surface disturbing actions and implementing appropriate management change.

WTR-MA-02:
Remove nonfunctional structures such as sediment basins, ponds, and associated structures and implement additional erosion control/soil stabilization measures as necessary.

WTR-OBJ-02:
Ensure streams on BLM lands are in geomorphic balance (e.g., stream channel size, sinuosity, slope, and substrate are appropriate for its landscape setting and geology) with the water and sediment being supplied by the watershed (e.g., no accelerated erosion, deposition, or head-cutting) and ensure that land use does not impede the natural hydrograph (e.g., allows timing, magnitude and duration of peak, high and low flow events by minimizing surface disturbance, erosion, and sedimentation of streams).

WTR-AU-01:
Close the river corridors of the three major rivers (Colorado, Dolores, and Gunnison) to mineral material disposal and non-energy solid mineral leasing and development.

WTR-AU-02:
Classify the Colorado River corridor as unsuitable for coal leasing.

WTR-MA-03:
While maintaining access, close routes with multiple stream crossings and/or identify mitigation including reroutes and proper design, construction, and maintenance plans in accordance with BLM manual handbook guidance.

WTR-AU-03:
STIPULATION *HYDROLOGY RIVER NSO CO:* No surface occupancy or use is

allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison. Standard exceptions apply; see Appendix B.

WTR-AU-04:
STIPULATION CSU-39: *Roan and Carr Creeks ACEC*. Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within the Roan and Carr Creek ACEC. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

WTR-AU-05:
Identify areas with lentic and lotic riparian characteristics as ROW avoidance area.

WTR-AU-06:
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.* Prohibit surface occupancy and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface-disturbing activities within the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

WTR-AU-07:
STIPULATION CSU-3: *Definable Streams.* Surface disturbing actions within a minimum distance of 30 meters (98 feet) from the edge of the ordinary high-water mark (bank-full stage) should be avoided to the greatest extent practicable and disturbances will be subject to site specific relocation at the discretion of the BLM (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

WTR-AU-08:
STIPULATION NSO-4: *Lentic Riparian Areas (including springs, seeps, and fens)*. Prohibit surface occupancy and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

WTR-MA-04:
Restrict the use of subsurface explosives and vibroseis buggies within 0.25-mile of all spring sources and perennial streams. This restriction does not apply to oil and gas well operations (e.g., well perforating).

WTR-MA-05:
For actions requiring individual permits through the US Army Corps of Engineers, require a licensed Professional Engineer to approve and stamp the project design,

construction, and reclamation plans to mitigate to the fullest extent practicable riparian resource damage associated with the proposed action.

WTR-MA-06:
Manage the Badger Wash ACEC as a hydrologic study area. Refer to the ACEC Section for Badger Wash ACEC management actions.

WTR-OBJ-03:
Provide sufficient water quantity on BLM lands for multiple use management and functioning, healthy riparian, wetland, aquatic, and upland systems.

WTR-MA-07:
Secure adequate water rights for point sources on BLM lands from the State of Colorado on springs/seeps and wells necessary to preserve, protect, and enhance ecological diversity and sustainability within planning area watersheds. Uses for which BLM will apply for water rights include, but are not limited to, livestock, wildlife watering, wildlife habitat, wild horses, recreation, and fire suppression.

WTR-MA-08:
Acquire private stream-side and river-side parcels from willing sellers that are contained within or adjacent to public land (i.e., West, East, Roan, and Carr Creeks, and the Colorado, Gunnison, and Dolores Rivers) and display important riparian values.

Consider acquisition of stream-side and river-side parcels that contain wetland areas as defined in Executive order 1190, dated May 24,1977, and/or located in floodplain areas (100-year) as defined in Executive Order 11988, dated May 24, 1977, from willing sellers that are contained within or adjacent to public land.

WTR-OBJ-04:
Protect municipal watersheds and source water protection areas on public land that provide drinking water to local communities.

WTR-MA-09:
Reduce point and non-point source contributions of water quality contaminants from public lands by reducing disturbance footprints associated with travel infrastructure and other surface disturbing actions while also maintaining access and meeting resource use objectives.

WTR-AU-09:
Manage the high sensitivity zone of the Palisade municipal watershed as ROW exclusion area.

WTR-AU-10:

Close the Palisade and Grand Junction municipal watersheds, and the Mesa/Powderhorn and Collbran source water protection areas to non-energy solid leasing and development.

WTR-AU-11:
No Leasing: *Watersheds.* Close the Palisade and Grand Junction municipal watersheds to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12 in Appendix A.

WTR-AU-12:
Classify the Palisade and Grand Junction municipal watersheds as unacceptable for coal leasing.

Classify the Collbran and Mesa/Powderhorn source water protection areas, Jerry Creek watershed, and Cabin Reservoir as unsuitable for coal leasing.

WTR-AU-13:
STIPULATION NSO-5: *No Surface Occupancy (Palisade and Grand Junction Municipal Watersheds)*. Prohibit surface occupancy and other surface-disturbing activities in the Palisade and Grand Junction municipal watersheds. (Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

WTR-AU-14:
STIPULATION CSU-4: *Collbran and Mesa/Powderhorn Source Water Protection Areas, and Jerry Creek Watershed.* Require that all ground disturbances within source water protection areas and the Jerry Creek Watershed avoid interference with watershed resource values. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

WTR-AU-15:
LEASE NOTICE LN-1: *Source Water Protection Areas.* The lease is within source water protection areas, and the lessee is required to implement special protective measures for water resources and to collaborate with municipalities and comply with applicable municipal watershed plans. (Refer to Appendix B.)

WTR-MA-10:
Within *Water Intake Zone 3*, restrict the storage and use of hazardous chemicals, require green completions and green fracking fluids, and restrict oil and gas pits. Apply additional site specific mitigation measures as appropriate to minimize risk of water quality degradation. See Figure 2-32 in Appendix A.

WTR-MA-11:
Oil and gas operations near domestic water supplies using a groundwater well or spring will be restricted. Siting of oil and gas operations may be permitted following NEPA analysis conducted for a specific location, and the application of

protections that may include conditions of approval, mitigation and design features developed in the NEPA analysis, and the regulations at 43 CFR 3101.1-2.

WTR-MA-12:
Conduct gain/loss studies of local streams to characterize natural flow regimes and identify locally important recharge/discharge zones. Characterize groundwater movement (locally and regionally), and groundwater interaction with surface water especially for springs and fen areas. Prioritize study locations based on potential use/alteration of surface and groundwater resources given reasonably foreseeable resource use potential. Coordinate studies with private entities as well as other government agencies to ensure land/resource management actions outside BLM jurisdiction are incorporated in studies. Utilize information gained through studies to modify, develop, and effectively implement appropriate BMPs necessary to protect water resources while allowing development of other natural resources (e.g., coal, uranium, natural gas, gravel, and related infrastructure).

WTR-OBJ-05:
Characterize, monitor, maintain, and/or restore surface/groundwater quality and quantity to sustain designated beneficial uses in cooperation with other federal, local, and state agencies and private entities.

WTR-MA-13:
Monitor morphology and channel stability of streams with concerns identified through land health or PFC assessments or inventories, or streams that could be impacted, to determine appropriate management action. Improve dysfunctional streams caused by unnatural factors. Modify management practices (e.g., grazing systems, recreational uses) and/or stream restoration techniques (e.g., native planting, fencing, energy dissipation structures, bank protection, and drainage structures) as appropriate to address causal factors.

WTR-GOAL-02:
Maintain and protect the quantity and quality of groundwater, as well as aquifer properties.

WTR-OBJ-06:
Manage public lands to maintain functioning condition of all parameters within the hydrologic cycle including groundwater quantity and quality. Ensure the consumption of water resources on public lands resulting from federal actions do not jeopardize the sustainability of water resources or associated riparian/wetland habitats.

WTR-MA-14:
Identify, monitor, and evaluate the condition of important aquifers and recharge/discharge areas within the planning area. Assess aquifer properties and groundwater quality on BLM lands and work with stakeholders to prioritize and develop management plans and site-specific actions to maintain groundwater quality within the identified aquifers.

SOILS

SOIL-GOAL-01:
Ensure that upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, minimizes surface runoff (Land Health Standard 1), and minimizes soil erosion.

SOIL-OBJ-01:

1. *Minimize or control elevated levels of salt, sediment, and selenium contribution from federal lands to river systems in the planning area.*
2. *Maintain or improve soil productivity, including retention of topsoil quality and reestablishing soil capability, potential, and functionality when disturbed.*
3. *Preserve proper function and condition of upland soils.*
4. *Ensure surface disturbances do not cause accelerated erosion (e.g., rills, soil pedestals, actively eroding gullies) on a watershed scale (e.g., 6th hydrologic unit code scale).*

SOIL-MA-01:
Implement appropriate management techniques, guidelines or practices, outlined in Appendix H, to limit soil loss to an amount that does not affect its long term quality, productivity or hydrological function.

SOIL-MA-02:
In areas designated as *open* to OHVs, monitor and identify thresholds for evaluating vulnerability to erosional processes and utilize best available science to limit erosion and sedimentation/salt loading to the Colorado River.

SOIL-MA-03:
Identify those biologic soil crusts in the planning area which are key to sustaining proper function and condition of upland soil health as determined by BLM Land Health Assessments and/or onsite evaluation. Avoid and mitigate disturbance to biologic soil crusts which are determined to be key in sustaining proper function and condition of upland soil health.

SOIL-AU-01:
Manage fragile soils, mapped Mancos shale areas, and saline soils areas as ROW avoidance areas.

SOIL-MA-04:
Protect watershed health and water quality by limiting motorized travel over fragile soils during seasonally wet periods. Allow management officials the authority to modify closure dates based on seasonal climate variability.

SOIL-MA-05:
In high disturbance areas, utilize best available science to model sediment loss relative to natural rates. Based on model results, modify land uses including travel infrastructure to minimize resource damage while maintaining resource and resource use sustainability on public lands.

SOIL-MA-06:
While maintaining access, eliminate duplicative or redundant routes in areas of fragile soils, Mancos Shale areas, slump areas, and on slopes exceeding 40 percent (Public Land Health Standard 1).

SOIL-AU-02:
STIPULATION *GEOLOGY SOIL NSO CO:* No surface occupancy or use is allowed on lands with soils, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, with the following special characteristics: Baxter/Douglas Pass Slump Area and the Plateau Creek Slump Area. Standard exceptions apply; see Appendix B.

SOIL-AU-03:
STIPULATION *GEOLOGY SOIL CSU CO:* Surface occupancy or use may be restricted on lands within mapped soils with the following special characteristics: Fragile Soils and Mapped Mancos Shale and Saline Soils. Standard exceptions apply; see Appendix B.

SOIL-AU-04:
STIPULATION *GEOLOGY SLOPE NSO CO:* Prohibit surface occupancy and use (for fluid minerals only) on lands with steep slopes greater than 40 percent. Standard exceptions apply; see Appendix B.

SOIL-MA-04:
Restrict surface-disturbing actions when soil is saturated. On a case-by-case basis, allow construction actions to occur when soils are frozen and such actions will result in reduced environmental impacts. See **STIPULATION** *GEOLOGY SOIL NSO CO*. See Figure 2-13 in Appendix A.

VEGETATION

Vegetation – *General (VEG)*

VEG-GOAL-01:
Restore and maintain healthy, productive plant communities of native and other desirable species at self-sustaining population levels commensurate with the species' and habitats' potentials. Ensure plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations and ecological processes (based on Land Health Standard 3).

VEG-OBJ-01:
Manage for a healthy diversity of successional-stage plant communities.

VEG-MA-01:
Restore natural disturbance regimes such as fire, and use vegetative treatments to accomplish biodiversity objectives in resilient plant communities. Avoid prescribed fire and fires managed for resource benefit in black brush and salt desert shrub communities.

VEG-MA-02:
Use new fire starts and prescribed fire where suitable to meet resource objectives as deemed appropriate by Land Health Assessments, Ecological Site Inventories, Emergency Stabilization & Rehabilitation monitoring, and prescribed fire monitoring.

VEG-OBJ-02:
Provide the public with native plant materials through the sale of wilding permits (e.g., live plants and plant material products exceeding personal use amounts), commercial seed-collecting permits, and free use permits (consistent with 43 CFR 8365.1-5, IM No. 2013-176 Seed Collection Permitting and Pricing Policy within the Bureau of Land Management, and BLM Manual 5500 [Nonsale Disposals]), while protecting other resources.

VEG-MA-03:
Make 830,500 acres available for wilding permits. Issue commercial seed permits on a case-by-case basis. Close the following areas to wilding permits:

- WSAs;
- ACECs;
- SRMAs:
  - Bangs and
  - North Fruita Desert;
- Lands managed for wilderness characteristics;
- Occupied threatened and endangered plant habitat; and

- Occupied special status plant species habitat.

Note: Occupied threatened and endangered plant habitat, and special status plant species is not included in total acreage. Plants that are identified by a Tribe as important for traditional, religious or ceremonial purposes and are not widely available will not be offered as wilding plants for the general public.

Vegetation – *Desired Plant Communities (VEG-DPC)*

VEG-DPC-GOAL-01:
Manage pinyon-juniper, upper and lower elevation sagebrush, salt desert shrub, forests and woodlands, and riparian areas (the dominant plant communities of the GJFO planning area) as desired plant communities or to emphasize native vegetation, wildlife habitat, watershed health, and biodiversity.

VEG-DPC-OBJ-01:
Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (Appendix E) while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives.

VEG-DPC-MA-01:
Use native plant material and restoration techniques to establish desired plant communities focusing on native communities and intact ecosystems. Allow non-native species on a case-by-case basis, only if:

- Suitable native species are not available;
- The natural biological diversity of the proposed management area will not be diminished;
- Exotic and naturalized species can be confined within the proposed management area;
- Analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was part of the natural environment; and,
- Resource management objectives cannot be met with native species.
- (see BLM's Integrated Vegetation Management Handbook, Chapter 8, H-1740-2)

VEG-DPC-MA-02:
Reduce redundancies in routes to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails on relic vegetation communities. Identify mitigation where open routes are negatively effecting significant plant communities or relic vegetation.

VEG-DPC-OBJ-02:
Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (Appendix E) while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site-specific management objectives.

VEG-DPC-MA-03:
Defer or exclude livestock grazing, where necessary, for a minimum of two growing seasons (longer than 18 months) on disturbed areas (e.g., a fire event, reclamation of disturbed lands, seedings, surface-disturbing vegetation treatments) or until site-specific analysis and/or monitoring data indicates that vegetative cover, species composition, and litter accumulation are adequate to support and protect watershed values, meet vegetation objectives, and sustain grazing use.

VEG-DPC-MA-04:
Maintain or restore vegetative communities to provide soil stability and resistance to erosion. Use vegetative treatments to improve diversity, reduce noxious and invasive species, and restore native plant communities to support wildlife and livestock. Ensure that managed activities (grazing, recreation, energy development, etc.) are not leading to degraded conditions.

VEG-DPC-MA-05:
Reduce redundancies in routes to minimize fragmentation, and minimize direct impacts on sensitive vegetation species from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively affecting habitat.

VEG-DPC-OBJ-03:
In lower-elevation vegetation, occupied by the potential natural community, manage for a late- or mid-seral stage as the desired plant community.

VEG-DPC-MA-06:
Maintain present composition of late- to mid-seral plant communities providing suitable habitat for wildlife. Minimize activities that will result in a persistent early-seral stage in the lower elevations.

SALT DESERT SHRUB COMMUNITIES

VEG-DPC-GOAL-02:
Manage the salt desert shrub communities to maintain viable populations of kit fox (Vulpes macrotis), burrowing owl (Athene cunicularia), white-tailed prairie dog (Cynomys leucurus), and other obligate species. Preserve undisturbed patches of salt desert shrub communities with little to no cheatgrass (Bromus tectorum), halogeton

(Halogeton glomeratus), or other exotic species. Identify and initiate restoration and rehabilitation of unhealthy areas.

VEG-DPC-OBJ-04:
Manage the salt desert shrub community to improve vigor, composition, diversity, and cover of native understory species and biological soil crusts.

VEG-DPC-MA-07:
Suppress all fires in Salt Desert Shrub communities to protect these communities that are not adapted to fire and to minimize potential cheatgrass invasion and conversion.

VEG-DPC-MA-08:
In the lower desert setting, manage grazing to allow the recovery of native perennials. Ensure utilization levels are sustainable, provide periods of rest as needed, and adjust season of use to ensure adequate soil moisture levels post grazing (for plant growth).

VEG-DPC-MA-09:
In greasewood *(Sarcobatus vermiculatus)* communities where head-cutting is just beginning, consider management actions to arrest continued erosion (e.g., armoring, wattles). Stop erosion with armoring and wattles before extensive head-cutting occurs.

VEG-DPC-MA-10:
As advances in cheatgrass-control methods are made, prioritize vegetation treatments to treat cheatgrass and to restore native perennials in the North Desert, Grand Mesa Slopes, and other degraded areas in the lower desert (excluding OHV open areas).

VEG-DPC-MA-11:
To reduce the spread of cheatgrass and noxious weeds, reduce duplicative and redundant routes in areas with susceptibility to cheatgrass or invasive and noxious weed infestations.

Lower-elevation Sagebrush (< 7,500 feet) Desired Plant Community

VEG-DPC-GOAL-03:
Manage the sagebrush (Artemisia spp.) biome to maintain viable populations of sagebrush-obligate species. Identify and initiate restoration and rehabilitation of sagebrush habitat, while maintaining a mosaic of canopy cover and successional stages. Maintain or improve Sage-Grouse winter habitat.

VEG-DPC-OBJ-05:

Maintain or improve high-quality sagebrush habitats consistent with the natural range of variability for sagebrush communities. Restore the species composition and diversity of seral stages of sagebrush communities.

VEG-DPC-MA-12:
Implement treatments designed to replenish the native seed bank and control noxious and invasive species.

VEG-DPC-OBJ-06:
Sustain, restore, and rehabilitate the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of sagebrush-obligate species.

VEG-DPC-MA-13:
Inventory lower-elevation sagebrush to identify non-functioning habitat and develop restoration plans within priority management units to increase patch size and connectivity through vegetation treatments and consolidation of disturbance to support sagebrush obligate species.

Prioritize management of lower-elevation sagebrush in the following order:

1. Greater Sage-Grouse *(Centrocercus urophasianus)* and Gunnison Sage-Grouse *(Centrocercus minimus)* important winter habitat.
2. Critical and severe big-game winter range.
3. Areas not meeting land health.

VEG-DPC-MA-14:
Avoid natural and prescribed fire in low-elevation sagebrush communities infested with or susceptible to cheatgrass. Ground disturbing mechanical treatments completed in low-elevation sagebrush may require seeding.

VEG-DPC-MA-15:
Inventory low-elevation sagebrush to identify non-functioning habitat. Develop restoration plans that prioritize efforts to achieve specific species and habitat goals. Habitat goals include but are not limited to increased patch size and connectivity through vegetation treatments and consolidation of disturbance to support sagebrush obligate species.

VEG-DPC-MA-16:
Prioritize the following Greater Sage-Grouse and Gunnison Sage-Grouse winter areas for treatment and restoration:

- Winter habitat areas in need of enhancement;
- Areas that pose a fire risk to key winter habitats; and
- Areas to meet habitat condition objectives (e.g., Sunny Side and Wagon Track Ridge).

Upper-elevation Sagebrush (≥7,500 feet) Desired Plant Community

VEG-DPC-GOAL-04:
Manage the sagebrush biome to maintain viable populations of Greater and Gunnison Sage-Grouse and other sagebrush-obligate species. Identify and initiate restoration and rehabilitation of sagebrush habitat while maintaining a mosaic of canopy cover and successional stages.

VEG-DPC-OBJ-07:
Maintain or improve high-quality sagebrush habitats consistent with the natural range of variability for sagebrush communities. Restore the species composition and diversity of successional stages of sagebrush communities.

VEG-DPC-MA-17:
Implement treatments designed to reduce pinyon-juniper and conifer encroachment, replenish diminished native seed banks, control noxious and invasive species, and provide periods of grazing rest or reduced usage during drought.

VEG-DPC-OBJ-08:
Prioritize the following areas for Land Health Assessments, vegetation restoration efforts, and protection of existing intact environments: 1-4. Restoration plans will emphasize increasing patch size and connectivity through vegetation treatments. Disturbances should also be consolidated through BMPs to reduce disturbance and maintain sagebrush-obligate species.

VEG-DPC-MA-18:
Inventory upper-elevation sagebrush to identify non-functioning habitat and develop restoration plans within priority management units to increase patch size and connectivity through vegetation treatments and consolidation of disturbance to support sagebrush obligate species.
Prioritize management of upper-elevation sagebrush in the following order:

1. Greater and Gunnison Sage-Grouse important habitat, including but not limited to designated critical habitat, Brush Mountain, and 4A Mountain.
2. Critical and severe big-game winter range.
3. Areas not meeting land health.
4. Areas that pose a fire risk to key habitats.

VEG-DPC-MA-19:
Reduce the encroachment of juniper (*Juniperus* spp.) and other woody tree species in sagebrush habitat. Sites should have evidence of past sagebrush plant communities as evidenced by residual native plants or soils that support a rangeland not a woodland ecological site.

VEG-DPC-MA-20:

Maintain and/or create connections between key sagebrush habitats by encouraging placement of new utility developments (power lines, pipelines, etc.) and transportation routes (roads, trails etc.) in existing utility or transportation corridors to minimize fragmentation of sagebrush vegetation.

VEG-DPC-MA-21:
Remove sagebrush to create small openings in continuous or dense sagebrush to create a mosaic of multiple age classes and associated understory diversity across the landscape to benefit many sagebrush-dependent species. Factors that help determine the mosaic are soil types, topography, aspect, climate and local weather patterns, and current and potential plant communities.

Mountain Shrub

VEG-DPC-GOAL-05:
Manage mountain shrub communities to maintain vigorous stands of deciduous shrubs.

VEG-DPC-OBJ-09:
Emphasize perpetuating late- to mid-seral plant communities that provide suitable habitat for wildlife.

VEG-DPC-MA-22:
Implement treatments designed to reduce pinyon-juniper and conifer encroachment, replenish diminished native seed banks, control noxious and invasive species, and provide periods of grazing rest or reduced usage during drought.

VEG-DPC-MA-23:
Use prescribed fire, natural ignitions, and mechanical treatments to create openings within dense stands.

Vegetation – *Forest/Woodlands (VEG-FOR)*

VEG-FOR-GOAL-01:
Maintain and restore pinyon-juniper woodlands to meet requirements for land health and to supply wildlife habitat, livestock forage, and consumer products (e.g., posts, poles, firewood, biomass).

VEG-FOR-OBJ-01:
Manage for pinyon (Pinus edulis) and juniper with a balance of seral stages.

VEG-FOR-MA-01:
Maintain current acreage of old growth pinyon and juniper except in area of high wildfire hazard in the wildland urban interface.

VEG-FOR-MA-02:
Manage past and future treatment areas in pinyon and juniper with an emphasis on creating a mosaic of pinyon and juniper age classes and forage producing sites.
Allow additional forage/habitat producing treatments on pinyon and juniper woodland sites.

VEG-FOR-AU-01:
STIPULATION *PLANT COMMUNITY CSU CO:* Surface occupancy or use may be restricted within occupied habitat that meets BLM's criteria, as established in the Resource Management Plan, for significant and/or relict plant communities. Standard exceptions apply; see Appendix B. See Figure 2-14.

VEG-FOR-GOAL-02:
Maintain forests and woodlands for a healthy mix of successional stages within the natural range of variation that incorporates diverse structure and composition.

VEG-FOR-OBJ-02:
Manage ponderosa pine (Pinus ponderosa), Douglas-fir (Pseudotsuga menziesii), aspen (Populus tremuloides), and spruce/fir to mimic natural stand conditions and natural regeneration.

VEG-FOR -MA-03:
Use prescribed fire and mechanical, chemical, and biological treatments as necessary to reduce the risk of disease vectors and to increase the resilience to beetles and disease.

VEG-FOR -MA-04:
Use silvicultural methods, including mechanized and non-mechanized thinning, prescribed burns, and commercial harvesters to maintain and develop natural patch sizes, shapes, connectivity, and species composition and age-class diversity.

VEG-FOR -MA-05:
Conserve mature riparian forests (e.g., cottonwood *[Populus deltoides wislizeni]* galleries) in suitable habitat to maintain their integrity for use as bald eagle *(Haliaeetus leucocephalus)* nesting, roosting, or perching substrate.

Vegetation – *Riparian Vegetation (VEG-RPN)*

VEG-RPN-GOAL-01:
Manage riparian habitat in compliance with the Land Health Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbances such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment and provides forage habitat and biodiversity; water quality is improved or maintained; and stable soils store and release water.

VEG-RPN-OBJ-01:
Protect and restore riparian areas/wetlands through sound management practices.

VEG-RPN-MA-01:
Mitigate to reduce impacts to riparian areas:

- Monitor cattle and wildlife grazing impacts in riparian zones and adjust grazing allocations, season of use, and rest rotations as necessary to ensure PFC is achieved and maintained;
- Where feasible, consistent with user safety, locate/relocate developed travel routes away from riparian wetland areas;
- Monitor recreational use on riparian areas. Where adverse impacts are determined to not meet land health standards for riparian habitats, modify recreation management to improve camping opportunities outside of riparian areas; require the use of designated camping sites; install fencing, energy dissipation structures, and bank protection features as appropriate.

VEG-RPN-MA-02:
Mitigate to reduce impacts to riparian areas:

- Where necessary, control recreational use by changing location or kind of activity, season, intensity, distribution and/or duration;
- Prohibit firewood harvest, except where appropriate to allow for removal of undesirable invasive species; and
- Close the river corridors of the three major rivers (Colorado, Dolores, and Gunnison) to mineral material disposal and non-energy solid mineral leasing and development.

VEG-RPN-AU-01:
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.* Prohibit surface occupancy and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface-disturbing activities within the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

VEG-RPN-AU-02:
STIPULATION NSO-4: *Lentic Riparian Areas (including springs, seeps, and fens)*. Prohibit surface occupancy and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

VEG-RPN-AU-03:
Identify areas with lentic and lotic riparian characteristics as ROW avoidance areas.

VEG-RPN-MA-03:
Give priority for riparian management to areas identified as special status species habitat and those riparian areas not meeting Proper Functioning Condition (e.g., Roan, Carr, Hawxhurst, Coon Creek, and Plateau Creeks; the Gunnison, Colorado, and Dolores Rivers; and Unaweep Seep).

VEG-RPN-MA-04:
In priority management areas and in areas not meeting Proper Functioning Condition, use the Multiple Indicator Method for monitoring to the extent feasible. Tailor the monitoring method to the objectives determined for each stream.

VEG-RPN-MA-05:
Consider the following management actions for improvement or protection of riparian values: riparian grazing pastures, exclosures, land acquisition, adjustments to grazing management, stream structures, and plantings.

VEG-RPN-MA-06:
Where conditions are appropriate, allow removal of tamarisk *(Tamarix* spp.*)*, non-native elms *(Ulmus* spp.*)*, and Russian olive *(Elaeagnus angustifolia)* material for biomass or personal use.

VEG-RPN-MA-07:
Reduce duplicative and redundant routes in riparian areas, especially those identified as not functioning or functioning at risk. Identify mitigation where open routes are contributing to problems with riparian function.

VEG-RPN-MA-08:
Reduce duplicative and redundant routes in riparian areas or that run parallel to riparian areas, especially in areas identified as not functioning or functioning at risk. Identify mitigation where open routes are contributing to problems with riparian function.

Vegetation – *Adaptive Drought Management (VEG-ADM)*

VEG-ADM-GOAL-01:
Develop management prescriptions for all surface-disturbing resource uses during times of extended drought.

VEG-ADM-OBJ-01:
Establish criteria for restricting activities during drought.

VEG-ADM-MA-01:

Implement the following measures/parameters for restricting activities during drought (Refer to Table 2-3, Drought Severity Classification):

Severe (D2):

- Send drought letters to grazing permittees and other permitted land users requesting coordination with BLM.
- Coordinate with CPW for big game herd management.
- Prepare local seasonal precipitation graphs.
- Suspend or limit seed-collecting activities.

Extreme (D3):

- Prohibit new surface-disturbing activities in areas with sensitive soils, subject to valid existing rights or actions associated with other valid permitted activities.
- Base changes in livestock use on site-specific data on those allotments that are affected by drought.
- Temporarily close OHV open areas and designated routes as needed during periods of drought and wind events to reduce particulate matter.
- Require additional erosion-control techniques/BMPs for surface-disturbing activities (e.g., hydromulching).
- Limit prescribed burns and vegetation treatments (exceptions: pile burning and hand thinning).

Exceptional (D4):

- Base changes in livestock use on site-specific data on those allotments that are affected by drought.
- Prohibit new surface-disturbing activities, subject to valid existing rights or actions associated with other valid permitted activities.
- Consider closing areas to public entry.

Vegetation – *Weeds (VEG-WDS)*

VEG-WDS-GOAL-01:
Reduce the occurrence of noxious and invasive species through the use of an Integrated Pest Management Program across the planning area.

VEG-WDS-OBJ-01:
Apply integrated control methods (physical, cultural, biological, chemical, fire) to noxious and invasive pest populations.

VEG-WDS-MA-01:
Prioritize treatment areas for priority noxious and invasive species based on the following criteria:

- Current state, county, and BLM priority weed lists;
- Appropriate time of year for the most effective treatment; and
- River restoration projects.

VEG-WDS-MA-02:
Continue early detection of new infestations, and a rapid treatment response (National Early Detection and Rapid Response Strategy).

VEG-WDS-OBJ-02:
Require weed prevention on appropriate actions authorized within the planning area.

VEG-WDS-MA-03:
Implement preventative measures for activities associated with oil and gas operations; ROWs; range developments; special recreation permits (SRP); and construction and mechanical vegetation treatment activities as authorized in contracts and permits.

SPECIAL STATUS SPECIES

SSS-GOAL-1:
Manage special status species habitats to provide for their conservation and restoration as part of an ecologically healthy system.

SSS-OBJ-01:
Maintain or improve the quality of listed (i.e., threatened or endangered) and sensitive species habitat by managing public land activities to support species recovery and the benefit of those species.

SSS-AU-01:
STIPULATION CSU-9: *BLM Sensitive Plant Species Occupied Habitat*. For plant species listed as sensitive by BLM, special design, construction, and implementation measures within a 100-meter (328 feet) buffer from the edge of occupied habitat may be required. In addition, relocation of operations by more than 200 meters (656 feet) may be required. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

SSS-AU-02:
STIPULATION CSU-10: *Wildlife Habitat.* Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures will be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs (Appendix H). (Refer to Appendix B.) See Figures 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

SSS-AU-03:
LEASE NOTICE LN-3: *Biological Inventories.* The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, Sage-Grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy on that area is prohibited. (Refer to Appendix B.)

Special Status Species - *Fish*

SSS-FSH-OBJ-01:

Maintain or improve the quality of listed (threatened or endangered) fish and sensitive fish habitat by managing public land activities to support species recovery and the benefit of those species.

SSS-FSH-MA-01:
Identify limiting habitat factors based on site characteristics and habitat capabilities using channel type and geology classifications (e.g., Rosgen). Upon identification of limiting factors, prioritize and implement proven river, stream, lake, and riparian practices (e.g., in-channel habitat structures to create pools, riparian plantings) or by changing management of other program activities (e.g., changing livestock grazing season use) to achieve desired future condition.

SSS-FSH-MA-02:
Designate the following ACECs to protect habitat for unique, sensitive, and listed fish (see ACECs section for management prescriptions):

- Dolores River Riparian ACEC: flannelmouth *(Catostomus latipinnis)* and bluehead sucker *(Catostomus discobolus)*; and
- Roan and Carr Creeks: cutthroat trout *(Oncorhynchus clarkii)*.

SSS-FSH-MA-03:
While maintaining desired levels of access, identify and reroute or close and rehabilitate redundant, duplicative, or poorly constructed routes to reduce point sources of erosion and resulting sedimentation and turbidity impacts within watersheds containing known pure populations of cutthroat trout. Focus on routes within closest proximity to occupied streams.

SSS-FSH-AU-01:
STIPULATION TL-1: *Salmonid and Native, Non-Salmonid Fishes.* Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures; however the following intervals generally apply in Colorado:

- Cutthroat trout (various subspecies): May 1-September 1
- Rainbow trout: March 1-June 15
- Brown trout: October 1-May 1
- Brook trout: August 15-May 1
- Sculpin: May 1-July 31
- Bluehead sucker: May 1-July 15
- Flannelmouth sucker: April 1-July 1
- Roundtail chub: May 15-July 15
- Speckled dace: May 1-August 31
- Mountain whitefish: October 1-November 30

Exception Criteria: This stipulation only applies to construction and drilling and does not apply to operations and maintenance. If competing species are involved, the BLM may select to implement species-specific dates for native fish versus nonnative species.

Specific exceptions apply; see Appendix B. See Figures 2-15in Appendix A.

SSS-FSH-AU-02:
STIPULATION *HYDROLOGY RIVER NSO CO:* No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison. See Figure 2-13. Standard exceptions apply; see Appendix B.

SSS-FSH-AU-03:
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.* Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-FSH-AU-04:
Manage the Roan and Carr Creeks ACEC as a ROW avoidance area to protect special status fish species' habitat.

Special Status Species – *Plants and Terrestrial Wildlife*

SSS-PTW-GOAL-01:
Manage special status species habitats to provide for their conservation and restoration as part of an ecologically healthy system.

SSS-PTW-OBJ-01:
To conserve plants and animals (and their habitats) listed by federal and Colorado governments as threatened, endangered, sensitive or species of concern, and to conserve plants and animals that are candidates for these lists with the overall objective of improving their populations so that they can be removed from these lists.

SSS-PTW-MA-01:
Manage threatened and endangered species' habitat as ROW avoidance areas. Relocate ROWs if a determination is made that the relocation action will benefit and promote recovery and will not further impact a threatened and endangered species.

SSS-PTW-MA-02:
Avoid authorizing 2920 permits (such as site facilities and commercial filming) within known threatened and endangered species' habitat. Allow permits only when there are shown to be no effects on threatened and endangered species habitat.

SSS-PTW-AU-01:
Manage the following ACECs as ROW exclusion areas to protect threatened and endangered species' habitat:

- Atwell Gulch (except for ROWs to existing oil and gas leases issues under the 1987 RMP without NSO lease stipulations);
- Pyramid Rock; and
- South Shale Ridge (except for ROWs to existing oil and gas leases issues under the 1987 RMP without NSO lease stipulations).

SSS-PTW-AU-02:
Manage the following ACECs as ROW exclusion areas to protect special status species' habitat:

- A portion (1,800 acres) of Badger Wash;
- Juanita Arch;
- Rough Canyon; and
- Unaweep Seep.

SSS-PTW-MA-03:
Protect and maintain unique ecological values for the following habitat locations to improve the habitat for unique, sensitive, threatened, and endangered plants and animals (See ACECs section for specific management of ACECs).

- Atwell Gulch ACEC: Colorado hookless cactus, DeBeque milkvetch, and Naturita milkvetch *(Astragalus naturitensis)*;
- Badger Wash ACEC: grand buckwheat, Ferron's milkvetch, cliffdweller's cryptantha, and Gardner's saltbrush/salina wildrye;
- Dolores River Riparian ACEC: peregrine falcon *(Falco peregrinus),* bald eagle, Kachina daisy *(Erigeron kachinensis)*, Eastwood's monkeyflower, *(Mimulus eastwoodiae)*, San Rafael milkvetch, Dolores River skeleton plant, horseshoe milkvetch, Grand Junction milkvetch, and Gypsum catseye *(Oreocarya revealii);*
- Juanita Arch ACEC: Grand Junction milkvetch;
- The Palisade ACEC: peregrine falcon, bald eagle, Dolores River skeleton plant, San Rafael milkvetch, horseshoe milkvetch, Fisher Tower's milkvetch, tufted green gentian, and Osterhout's catseye;
- Pyramid Rock ACEC: Colorado hookless cactus, DeBeque phacelia, DeBeque milkvetch, Naturita milkvetch, adobe thistle, and aromatic Indian breadroot;

- Rough Canyon ACEC: canyon treefrog, Gunnison Sage-Grouse, Grand Junction milkvetch, and Eastwood's desert parsley;
- Sinbad Valley ACEC: Gypsum catseye;
- South Shale Ridge ACEC: Colorado hookless cactus, DeBeque phacelia, Naturita milkvetch, and adobe thistle; and
- Unaweep Seep ACEC: Great Basin silverspot butterfly and giant helleborine.

SSS-PTW-MA-04:
Pursue land tenure adjustments to facilitate the conservation or recovery of special status species. Avoid the disposal of occupied special status species' habitat.

SSS-PTW-AU-03:
LEASE NOTICE LN-4 *Threatened and Endangered Species.* This lease contains habitat for threatened and endangered species. Prior to undertaking any activity on the lease, including surveying and staking of well locations, the lessee may be required to perform botanical inventories on the lease. Special design and construction measures may also be required in order to minimize impacts on threatened and endangered species habitat from drilling and producing operations. (Refer to Appendix B.)

Special Status Species – *Plants*

SSS-PLT-OBJ-01:
Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by CNHP.

SSS-PNT-MA-01:
Identify the following areas as core conservation populations for special status plant species:

- Atwell Gulch;
- Logan Wash Mine;
- Pyramid Rock ACEC;
- South Shale Ridge;
- Sunnyside; and
- Reeder Mesa.

Manage identified habitat to maintain the population. Management tools include but are not limited to weed treatments, inter-seeding, route closures, fencing, and managing timing and intensity of grazing.

Identify additional areas as populations are identified and species of concern are modified.

Limit new road construction in Reeder Mesa, Sunnyside, Logan Wash Mine, and South Shale Ridge, and designate new roads associated with authorized uses as administrative (e.g., oil and gas and ROWs). Rehab and close roads associated with authorized uses when no longer needed.

SSS-PLT-MA-02:
Monitor special status plant populations to determine trends, impacts, and guide future management, with an emphasis on areas near surface-disturbing activities. Utilize monitoring data to determine and modify NSO stipulations applicable to current and historically occupied habitat of threatened, endangered, proposed, and candidate plants.

SSS-PLT-MA-03:
Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts to listed plant species habitat, and occupied habitat from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively effecting designated critical habitat.

SSS-PLT-MA-04:
Reduce as much as practicable route density (miles/square mile) within 200 meters of known Threatened and Endangered plant occurrences throughout the field office. If occurrences are identified in the future that conflict with route designations, implement reroutes.

SSS-PLT-AU-01:
STIPULATION NSO-12: *ACECs.* Prohibit surface occupancy and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive plants. (Refer to Appendix B.)

See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.
Alternative B:

- Atwell Gulch (threatened and sensitive plants);
- Badger Wash (sensitive plants);
- Pyramid Rock (threatened and sensitive plants);
- South Shale Ridge (threatened and sensitive plants); and
- Unaweep Seep (sensitive plants).

Alternative C:

- Atwell Gulch (threatened and sensitive plants);
- Badger Wash (sensitive plants);
- Plateau Creek (fish);

- Pyramid Rock (threatened and sensitive plants);
- South Shale Ridge (threatened and sensitive plants); and
- Unaweep Seep (sensitive plants).

Alternative D:

- Badger Wash (sensitive plants);
- Pyramid Rock (threatened and sensitive plants); and
- Unaweep Seep (sensitive plants).

SSS-PLT-AU-02:
STIPULATION NSO-13: *Current and Historically Occupied and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species.* Prohibit certain surface uses, as specified in Appendix B, to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-PLT-AU-03:
STIPULATION *PLANT COMMUNITY CSU CO:* Surface occupancy or use may be restricted within occupied habitat that meets BLM's criteria, as established in the Resource Management Plan, for significant and/or relict plant communities. Standard exceptions apply; see Appendix B. See Figure 2-14.

Special Status Species – *Migratory Birds*

SSS-MIG-OBJ-01:
Protect breeding habitats of migratory birds with emphasis on avoiding impacts to nesting birds to comply with the Migratory Bird Treaty Act.

SSS-MIG-MA-01:
Use adaptive management strategies to conserve and avoid impacts to populations of Birds of Conservation Concern, Partners In Flight priority species, and other species of concern.

SSS-MIG-AU-01:

STIPULATION TL-3: *Migratory Bird Habitat*. Prohibit surface occupancy and surface-disturbing activities, including vegetation-removal projects, in migratory bird habitat during nesting season (May 15 to July 15 or as site-specific analysis dictates) when nesting birds are present. (Refer to Appendix B.) See Figure 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

Special Status Species - *Yellow-billed Cuckoo*

SSS-YBC-OBJ-01:
Maintain and improve BLM lands for yellow-billed cuckoo habitat as outlined in the species recovery plan (expected to be published by the USFWS in 2015).

SSS-YBC-MA-01:
Where large stands of cottonwoods occur, manage for restoration or improvement of cuckoo habitat and increase canopy cover and mid-story tree and shrub cover. According to the species recovery plan (not yet released).

SSS-YBC-AU-01:
STIPULATION *HYDROLOGY RIVER NSO CO:* No surface occupancy or use is allowed within 400 meters (1,312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison. See Figure 2-43. Standard exceptions apply; see Appendix B.
According to the species recovery plan (not yet release).

SSS-YBC-AU-02:
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.* Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

Special Status Species – *Raptors*

SSS-RPT-OBJ-01:
Maintain and improve BLM lands for raptor nesting and fledging habitat.

SSS-RPT-MA-01:
Provide healthy and productive habitat for a variety of raptor species by protecting nest sites, and maintaining important raptor nesting habitat including old-growth pinyon-juniper woodlands.

SSS-RPT-AU-01:
STIPULATION *WILDLIFE RAPTOR NESTS TL CO:* No surface use is allowed within a 402 meter (.25 mile) radius of active raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young:

- Osprey nests: April 1 to August 31.
- Red-tailed hawk nests, including any alternate nests: February 15 to July 15.
- Swainson's hawk nests and associated alternate nests: April 1 to July 15.
- Burrows or burrowing owl nest sites: March 1 to August 15.
- Great horned owl nests: February 1 to August 15.
- Other owls and raptors: March 1 to August 15.
- Cooper's hawk, sharp shinned hawk, and northern harrier nests: April 1 to August 15.

Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-02:
STIPULATION *WILDLIFE SENSITIVE RAPTOR NESTS TL CO:* No surface use is allowed within an 805 meter (0.5 mile) radius of active or inactive raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young:

- Ferruginous hawk nests, including any alternate nests: February 1 to July 15.
- Goshawk nest sites: March 1 to September 30.
- Peregrine and prairie falcon nest cliff(s): March 15 to July 31.

Standard and special exceptions apply; see Appendix B.

The following stipulations are taken from the most recent CPW raptor recommendations; stipulations should be updated as species knowledge and raptor recommendations are updated.

SSS-RPT-AU-03:
STIPULATION CSU-13: *Osprey Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.25-mile of active osprey *(Pandion haliaetus)* nest sites. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-04:

STIPULATION CSU-14: *Ferruginous Hawk Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.5-mile of active ferruginous hawk *(Buteo regalis)* nest sites and associated alternate nests. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-05:
STIPULATION CSU-15: *Red-tailed Hawk Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.33-mile of active red-tailed hawk *(Buteo jamaicensis)* nest sites and associated alternate nests. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-06:
STIPULATION CSU-16: *Swainson's Hawk Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.25-mile of active Swainson's hawk *(Buteo swainsoni)* nest sites and associated alternate nests. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-MA-02:
Due to propensity of peregrine falcons to relocate nest sites, sometimes up to 0.5-mile along cliff faces, it is more appropriate to designate a cliff nesting complex that encompass the cliff system and a 0.5-mile buffer around the cliff nesting complex. Nesting areas have not been designated at this time but may be in the future where high densities of nesting peregrines occur.

SSS-RPT-AU-07:
STIPULATION CSU-17: *Peregrine Falcon Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.5-mile of active peregrine falcon nest sites. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-08:
STIPULATION CSU-18: *Prairie Falcon Nest Sites.* Apply CSU (site-specific relocation) restrictions within 0.5-mile of active prairie falcon nest sites. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-RPT-AU-09:
STIPULATION CSU-19: *Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls).* Apply CSU (site-specific relocation) restrictions within 0.125-mile of an active nest site of all accipiters, falcons (except kestrel), buteos, and owls not listed in other CSU stipulations. Raptors that are listed and protected by the Endangered Species Act of 1973 (ESA) and the Bald and Golden Eagle Protection Act are addressed separately. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

Special Status Species – *Bald and Golden Eagles*

SSS-EGL-OBJ-01:
Maintain and improve BLM lands for eagle nesting, fledging, foraging and roosting habitat. Protect the bald and golden eagle concentration, nesting, and nest buffer areas by prohibiting activities during certain times of the year consistent with CPW's most recent raptor recommendations.

SSS-EGL-AU-01:
STIPULATION NSO-23: *Golden Eagle Nest Sites.* Prohibit surface occupancy and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 0.25-mile of active golden eagle nest sites and associated alternate nests. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-EGL-AU-02:
STIPULATION TL-13: *Golden Eagle Nest Sites.* Prohibit human encroachment within 0.5-mile of active golden eagle nests and associated alternate nests from December 15 to July 15. (Refer to Appendix B.) See Figure 2-15 (Alternative B) in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-EGL-AU-03:
STIPULATION NSO-24: *Bald Eagle Nest Sites.* Prohibit surface occupancy and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 0.25-mile of active bald eagle nests. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-EGL-AU-04:
STIPULATION TL-14: *Bald Eagle Nest Sites.* Prohibit human encroachment within 0.5-mile of active bald eagle nests from November 15 to July 31. (Refer to Appendix B.) See Figures 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-EGL-AU-05:
STIPULATION TL-15: *Bald Eagle Winter Roost.* Prohibit activity within 0.25-mile of bald eagle winter roosts from November 15 to March 15. Additional restrictions may be necessary within 0.5-mile of active bald eagle winter roosts if there is a direct line of sight from the roost to the activities. (Refer to Appendix B.) See Figures 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

Special Status Species – *Waterfowl and Shorebirds*

SSS-WSB-OBJ-01:
Provide healthy and productive habitat for waterfowl and shorebirds.

SSS-WSB-MA-01:
Protect migratory pathways of waterfowl and shorebirds (see major river corridor stipulation).

SSS-WSB-MA-02:
Protect known breeding sites of upland nesting shorebirds, such as the long billed curlew.

Special Status Species – *Gunnison and Greater Sage-Grouse*

SSS-SGR-OBJ-01:
Advance the conservation of Gunnison and Greater Sage-Grouse and their habitat in accordance with current national, state, and local working group recommendations and policy as well as the most current scientific literature and research.

SSS-SGR-MA-01:
Consistent with current guidance for sagebrush-dependent species, improve areas of poor quality nesting habitat by implementing the following actions, including but not limited to:

- In areas where species diversity is low seed area with grasses and forbs, with an emphasis on forbs if brood-rearing occurs in the area, accompanied by light disking and interseeding, or drill seeding.
- Where sage is decadent and does not meet habitat objectives, conduct thinning by roller-chopping, light disking, Dixie Harrow, Lawson Aerator or other methods.
- Conduct vegetation treatments to retain residual cover through fall and winter into nesting season.

SSS-SGR-MA-02:
When reseeding roads, primitive roads and trails, use appropriate seed mixes (appropriate for Sage-Grouse ecological conditions) and consider the use of transplanted sagebrush.

SSS-SGR-MA-03:
Reduce routes through currently suitable or potentially suitable Gunnison and Greater Sage-Grouse habitat by reducing routes through sagebrush parks, with an emphasis on routes that bisect sage brush parks.

SSS-SGR-MA-04:
Improve brood-rearing habitats by implementing the following action:

- Restore old ponds or construct new ponds in areas lacking water, while minimizing potential for promoting mosquito breeding habitat at elevations below 8,000 feet.

SSS-SGR-MA-05:
Improve lek areas by mechanically treating historic lek areas where sagebrush density has increased.

SSS-SGR-MA-06:
To reduce disturbance to Gunnison or Greater Sage-Grouse, close duplicative or redundant routes within Sage-Grouse habitat and/or within 4 miles of a lek.

SSS-SGR-MA-07:
Remove/modify raptor perches, in Gunnison and Greater Sage-Grouse habitat (trees, fences, dry-hole markers, and power poles).

SSS-SGR-MA-08:
Monitor measureable objectives and evaluate grazing management to assure that management actions are achieving Sage-Grouse habitat objectives.

SSS-SGR-MA-09:
Design any new structural range improvements to conserve, enhance, or restore Sage-Grouse habitat through an improved grazing management system relative to Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, enclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments.

SSS-SGR-MA-10:
To reduce Sage-Grouse strikes and mortality, remove, modify, or mark fences in high risk areas. When fences are necessary, require a Sage-Grouse-safe design.

SSS-SGR-MA-11:
Locate supplements (salt or protein blocks) in a manner designed to conserve, enhance, or restore Sage-Grouse habitat.

SSS-SGR-MA-12:
Offer temporary use on a case-by-case basis in allotments where grazing preference has been relinquished, or non-use warrants to rest other allotments that include important Sage-Grouse habitat.

SSS-SGR-MA-13:
Apply TL-16 (Occupied Sage-Grouse Winter Habitat) or TL-17 (Sage-Grouse Leks) to vegetation management treatments according to the type of seasonal habitats present in a priority area.

SSS-SGR-MA-14:
Monitor after vegetation treatments for success in meeting objectives and monitor and control invasive vegetation after vegetation treatments in Sage-Grouse habitat.

SSS-SGR-MA-15:
Apply post-vegetation treatment management and monitoring to ensure long term persistence of seeded native plants. Outline temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain vegetation management objectives to benefit Sage-Grouse and their habitats.

SSS-SGR-MA-16:
Design vegetation treatments in Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant seral stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design.

SSS-SGR-MA-17:
Include Sage-Grouse habitat parameters such as those defined by Connelly et al. (2000), Hagen et al. (2007) or if available, state and federal Sage-Grouse conservation and recovery plans and appropriate local information in habitat restoration objectives. Make maintaining these objectives within priority Sage-Grouse habitat areas a high restoration priority.

SSS-SGR-MA-18:
Choose native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success, and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and Sage-Grouse habitat objectives.

SSS-SGR-MA-19:
Manage the following areas to benefit Sage-Grouse habitat:

- Wildlife Emphasis Areas:
  - Glade Park
  - Sunnyside and
  - Timber Ridge.
- ACECs:
  - Roan and Carr Creek

SSS-SGR-AU-01:
Identify the following as ROW exclusion areas:

- Within a 0.6-mile radius of Sage-Grouse leks.

SSS-SGR-AU-02:
Allowable use (SSS-SG-AU2):
Identify the following as ROW avoidance areas:

- Sage-Grouse occupied habitat and
- Within a 4-mile radius of Sage-Grouse leks.

SSS-SGR-AU-03:
No Leasing: *Sage-Grouse.* Close all occupied Gunnison Sage-Grouse critical habitat (currently 65,000 acres) and Greater Sage-Grouse habitat within one mile of an active lek to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12 in Appendix A.

SSS-SGR-AU-04:
No Leasing: *Split-estate.* Manage 16,500 acres of Private and State surface/federal fluid mineral estate in Greater Sage-Grouse habitat within one mile of an active lek and Gunnison Sage-Grouse critical habitat as closed to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12 in Appendix A.

SSS-SGR-AU-05:
STIPULATION TL-16: *Occupied Sage-Grouse Winter Habitat.* Prohibit surface occupancy and surface-disturbing activities in occupied Sage-Grouse winter habitat from December 16 to March 15. (Refer to Appendix B.) See Figures 2-15 in Appendix A. Standard exceptions apply; see Appendix B.

SSS-SGR-AU-06:
STIPULATION NSO-25: *Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat.* Prohibit surface occupancy and surface-disturbing activities within 4 miles of an active lek or within Sage-Grouse nesting and early brood-rearing habitat. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

SSS-SGR-AU-07:
STIPULATION TL-17: Sage-Grouse Leks. Prohibit surface occupancy and surface-disturbing activities within 4 miles of Sage-Grouse leks from March 1 to June 30. (Refer to Appendix B.) See Figure 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

Special Status Species – *Reptiles and Amphibians*

SSS-R&A-OBJ-01:
Maintain and improve BLM lands for priority reptile and amphibian habitat.

SSS-R&A-MA-01:
Identify important areas for key species such as canyon tree frog, great basin spadefoot *(Spea intermontana)*, northern leopard frog *(Rana pipiens)*, boreal toad *(Anaxyrus boreas boreas)*, long-nosed leopard lizard (*Gambelia wislizenii*), and midget faded rattlesnake *(Crotalus oreganus concolor)*. Protect habitat by avoiding impacts during critical seasons and maintain integrity and species accessibility of these areas.

SSS-R&A-AU-01:
STIPULATION NSO-26: *Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad.* Prohibit surface occupancy and surface-disturbing activities within all identified canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, long-nosed leopard lizard, and boreal toad breeding and denning sites. (Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

Special Status Species - *Bats*

SSS-BAT-OBJ-01:
Maintain and improve BLM lands for bat roosting, maternity sites and winter hibernacula.

SSS-BAT-MA-01:
Identify and protect important areas for bat roosting (including maternity roosts) and hibernacula, such as the Pup Tent Mine, and take appropriate action to protect resources as identified, such as recreational closures, mineral withdrawals, and mine closures with bat gates.

SSS-BAT-AU-01:
STIPULATION *WILDLIFE BAT NSO CO:* No surface occupancy or use is allowed within a 402 meter (0.25 mile) radius of the entrance of maternity roosts or hibernacula of BLM sensitive bat species, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM. Standard exceptions apply; see Appendix B.

SSS-BAT-MA-02:
Where bat roosting, maternity sites and winter hibernacula occur, bat gates will be required for closing abandon mine lands.

SSS-BAT-MA-03:
To reduce potential for vandalism of bat gates and associated disturbance to bats, minimize motorized access to gated sites.

Special Status Species – *River Otters*

SSS-RVO-OBJ-01:
Maintain and improve BLM lands for river otter (Lontra canadensis) habitat.

SSS-RVO-MA-01:
Within occupied river otter habitat, protect potential den sites such as hollow trunks of large trees, beaver dens, hollow logs, log jams, or drift piles.

Special Status Species – *Canada Lynx*

SSS-LNX-OBJ-01:
Maintain and improve BLM-managed portions of Lynx Analysis Units for Lynx habitat.

SSS-LNX-MA-01:
Within lynx *(Lynx canadensis)* habitat in Lynx Analysis Units:

- Manage timber harvest consistent with the August 2013 Lynx Conservation Assessment and Strategy and
- Limit the expansion of consistent snow compaction unless it serves to consolidate use and improve lynx habitat.

Special Status Species – *Kit Fox*

SSS-KIT-OBJ-01:
Maintain and improve BLM lands for kit fox habitat.

SSS-KIT-AU-01:
STIPULATION CSU-22: *Kit Fox Dens.* Apply CSU (site-specific relocation) restrictions to, and require mitigation and minimization measures (as determined by the BLM biologist) of, surface occupancy and surface-disturbing activities within 200 meters (656 feet) of active kit fox dens. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

Special Status Species – *White-tailed Prairie Dog*

SSS-WTP-OBJ-01:
Maintain or improve white-tailed prairie dog habitat and distribution (Figure 2-73, Appendix A).

SSS-WTP-AU-01:

STIPULATION CSU-23: *Occupied Prairie Dog Towns.* Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within white-tailed prairie dog towns. Locate permanent above ground structures outside of prairie dog towns. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard and special exceptions apply; see Appendix B.

Except for Prairie Canyon Wildlife Emphasis Area, apply NSO-30 (*Occupied Prairie Dog Towns (no buffer).*

SSS-WTP-MA-01:
Allow prairie dog relocation activities in existing, occupied, or historic prairie dog complexes where consistent with other management and ecosystem objectives, in areas where plague is not a concern, and in coordination with CPW and Mesa County.

FISH AND WILDLIFE

F&W-GOAL-01:
Minimize the spread of invasive fish and wildlife species and fish and wildlife diseases where management for these species does not conflict with management of special status fish as discussed above.

F&W-OBJ-01:
Reduce or eliminate invasive species and focus on maintaining healthy and productive habitat or improving habitat for native species.

F&W-MA-01:
To prevent the spread of whirling disease, New Zealand mud snails *(Potamopyrgus antipodarum)*, zebra mussels *(Dreissena polymorpha)*, quagga mussels *(Dreissena bugensis)*, and other nuisance aquatic organisms, treat all equipment associated with actions permitted by the BLM, included but not limited to SRPs, to be conducted within or near perennial water sources equipment previously used in water bodies with known invasive species, with accepted disinfection practices prior to construction/launch. Firefighting and other emergency equipment will follow appropriate policy as noted in relevant chapters of the current Interagency Standards for Fire and Fire Aviation Operations (Red Book) (US DOI and US Forest Service).

F&W-MA-02:
Caves and other structures utilized by bats may be closed to public access in the event of a White Nose Syndrome outbreak or other transmittable diseases that threaten bats, as needed to avoid the risk of humans transmitting the disease.

F&W-MA-03:
Remove aquatic competitors (such as bullfrogs) from active native aquatic breeding grounds.

F&W-MA-04:
Support USFWS and CPW efforts to remove predatory nonnative fishes (such as smallmouth bass, Largemouth bass, and northern pike) from critical habitat for listed and non-listed native fishes of the Colorado/Gunnison Rivers.

Fisheries and Aquatic Wildlife

F&W-FAW-GOAL-01:
Provide for aquatic, riparian, and wetland habitats for abundance and diversity of fish and wildlife with self-sustaining populations.

F&W-FAW-OBJ-01:

Maintain and improve BLM lands for priority habitat requirements for highly valued species such as, but not limited to, coldwater sport fishes, including rainbow, brown, and brook trout where management for these species does not conflict with management of special status fish as discussed above.

F&W-FAW-MA-01:
Identify and manage the following as priority habitats: perennial water sources, riparian areas, intermittent streams and ponds, and ephemeral/seasonal waters.

F&W-FAW-AU-01:
STIPULATION TL-1: *Salmonid and Native, Non-Salmonid Fishes.* Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures; however the following intervals generally apply in Colorado:

- Cutthroat trout (various subspecies): May 1-September 1
- Rainbow trout: March 1-June 15
- Brown trout: October 1-May 1
- Brook trout: August 15-May 1
- Sculpin: May 1-July 31
- Bluehead sucker: May 1-July 15
- Flannelmouth sucker: April 1-July 1
- Roundtail chub: May 15-July 15
- Speckled dace: May 1-August 31
- Mountain whitefish: October 1-November 30

Exception Criteria: This stipulation only applies to construction and drilling and does not apply to operations and maintenance. If competing species are involved, the BLM may select to implement species-specific dates for native fish versus nonnative species.

Specific exceptions apply; see Appendix B. See Figures 2-15in Appendix A.

F&W-FAW-AU-02:
STIPULATION *HYDROLOGY RIVER NSO CO:* No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison. Standard exceptions apply; see Appendix B. See Figure 2-13.

F&W-FAW-AU-03:
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.* Prohibit surface occupancy and surface disturbing activities with a

minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

Terrestrial Wildlife

F&W-TRW-GOAL-01:
Provide for aquatic, riparian, and wetland habitats for abundance and diversity of fish and wildlife with self-sustaining populations.

F&W-TRW-OBJ-01:
Maintain and improve BLM lands for priority habitat requirements for the following high-value species:

- *Critical and severe winter range, winter concentration areas, intact security areas, production areas, and big game migrations corridors for big games species (e.g., mule deer (Odocoileus hemionus), elk (Cervus canadensis), antelope (Antilocapra americana), bighorn sheep (Ovis canadensis), moose (Alces alces); and*
- *Proper functioning condition riparian and wetland habitat for all species (see Vegetation—Riparian section).*

Habitat standards and desired wildlife populations levels are determined by CPW and USFWS species-specific plans and strategies in order to meet BLM Colorado's Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 1997a).

F&W-TRW-MA-01:
Actively manage the following areas, placing management emphasis on conserving, restoring, maintaining or enhancing intact and unfragmented habitats that provide security and escape habitat for the key species shown:

- Atwell Gulch ACEC: mule deer and rocky mountain bighorn sheep;
- Dolores River Riparian ACEC: riparian obligate bird species;
- Indian Creek ACEC: deer and elk;
- The Palisade ACEC: riparian obligate birds and mule deer;
- Roan and Carr Creeks ACEC: cutthroat trout and Greater Sage-Grouse;
- Rough Canyon ACEC: Gunnison Sage-Grouse;
- Sinbad Valley ACEC: mule deer and elk;
- Beehive Wildlife Emphasis Area: mule deer and elk;
- Blue Mesa Wildlife Emphasis Area: mule deer and elk;

- Bull Hill Wildlife Emphasis Area: mule deer and elk;
- East Salt Creek Wildlife Emphasis Area: mule deer and elk;
- Glade Park Wildlife Emphasis Area: Gunnison Sage-Grouse, mule deer, and elk;
- Prairie Canyon Wildlife Emphasis Area: long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, and burrowing owl;
- Rapid Creek Wildlife Emphasis Area: mule deer and elk;
- Winter Flats Wildlife Emphasis Area: deer and elk;
- Sunnyside Wildlife Emphasis Area: mule deer, elk, and Greater Sage-Grouse; and
- Timber Ridge Wildlife Emphasis Area: mule deer, elk, and Gunnison Sage-Grouse.

F&W-TRW-AU-01:
LEASE NOTICE LN-3: *Biological Inventories.* The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, Sage-Grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy on that area is prohibited. (Refer to Appendix B.)

F&W-TRW-AU-02:
STIPULATION CSU-10: *Wildlife Habitat.* Require proponents of surface-disturbing activities to implement specific measures to minimize and mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures will be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs (Appendix H). (Refer to Appendix B.) See Figures 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

F&W-TRW-AU-03:
STIPULATION *WILDLIFE HABITAT CSU CO*: Surface occupancy or use may be restricted within the following wildlife emphasis or priority areas, as identified in the Resource Management Plan:

- Beehive (habitat for mule deer and elk) (4,700 acres);
- A portion of East Salt Creek (habitat for mule deer and elk) (20,500 acres);
- Glade Park (habitat for Gunnison sage-grouse, mule deer, and elk) (27,200 acres);

- A portion of Prairie Canyon (long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, and burrowing owl habitat) (16,500 acres);
- A portion of Rapid Creek (wintering and migratory habitat for mule deer and elk) (26,900 acres); and
- Winter Flats (deer and elk wintering grounds) (3,500 acres).

Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. A plan of development may be required to demonstrate how potential adverse impacts to wildlife habitat will be mitigated.

F&W-TRW-AU-04:
STIPULATION LN-5: *Working in Wildlife Habitat*. Require operators to establish and submit to the GJFO a set of operating procedures for employees and contractors working in important wildlife habitats. Design such procedures to inform employees and contractors of ways to minimize the effect of their presence on wildlife and wildlife habitats. Procedures may address items such as working in bear or snake country, controlling dogs, not feeding wildlife, and understanding and abiding by hunting and firearms regulations. (Refer to Appendix B.)

F&W-TRW-OBJ-02:

Maintain the integrity of ongoing biological research locations.

F&W-TRW-MA-02:
Manage the Ant Research Site as a ROW exclusion area.

F&W-TRW-MA-03:
To preserve the integrity of the ant research site (120 acres) designate the area as closed to motorized and mechanized travel.

F&W-TRW-MA-04:
Manage the Owl Banding Station as a ROW avoidance area.

F&W-TRW-AU-05:
STIPULATION NSO-32: *Research Sites.* Prohibit surface occupancy and surface-disturbing activities in approved research sites including, but not limited to, the Ant Research Area (16 Road) and the Owl Banding Station (south of DeBeque). (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

Big Game Species (deer, elk, moose, and bighorn sheep)

F&W-BGS-OBJ-1:

Provide sufficient forage, cover, and protection from disturbance for large ungulates (deer, elk, bighorn sheep, pronghorn antelope, and moose) to maintain healthy viable populations across the landscape commensurate with BLM Colorado's Standards for Public Land Health (BLM 1997a).

F&W-BGS-MA-01:
Deer and elk habitat will be managed to meet BLM Colorado's Standards for Public Land Health and Guidelines for Livestock Grazing Management.

F&W-BGS-MA-02:
Use COAs listed in Appendix B and standard operating procedures and BMPs listed in Appendix H in designing wildlife projects.

F&W-BGS-AU-01:
Implement the following seasonal travel limitations for motorized and mechanized travel from December 1 to May 1 in the following areas:

- Beehive;
- Blue Mesa;
- Chalk Mountain;
- Coal Canyon;
- Demaree Canyon outside of the WSA;
- Garvey Canyon;
- Grand Mesa Slopes;
- Howard Canyon Flats;
- Indian Point; and
- Post/Lapham Canyons.

Seasonal limitations may be extended to include mechanized use in areas where monitoring indicates mechanized use is causing excessive disturbance to wildlife.

Seasonal limitation periods may be reduced based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

F&W-BGS-AU-02:
STIPULATION NSO-12: *ACECs.* Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

- Atwell Gulch;
- Indian Creek;
- The Palisade;
- Rough Canyon;
- Sinbad Valley; and

- South Shale Ridge.

F&W-BGS-AU-03:
STIPULATION TL-20: *Big Game Winter Range*. Prohibit surface occupancy and surface-disturbing activities from December 1 to May 1 to protect big game winter range as mapped by the CPW. Certain areas and/or routes within big game winter range may be closed to foot, horse, motorized, and/or mechanized travel from December 1 to May 1. (Refer to Appendix B.) See Figures 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

F&W-BGS-OBJ-02:
Protect state wildlife areas from surface occupancy and surface-disturbing activities to protect the values for which they were established.

F&W-BGS-AU-04:
STIPULATION *RECREATION PARKS NSO CO:* Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units:

- Horsethief Canyon State Wildlife Area (1,400 acres)
- Jerry Creek Reservoir State Wildlife Area (870 acres)
- Plateau Creek State Wildlife Area (1,400 acres)
- Highline State Park (350 acres)
- Vega State Park (2,000 acres)

See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

F&W-BGS-OBJ-03:
Minimize habitat fragmentation and restore habitat connectivity on big game winter ranges, winter concentration areas, severe winter ranges, and movement corridors.

F&W-BGS-MA-03:
Reduce habitat fragmentation by reducing road density (focusing primarily on duplicative or redundant routes) in production areas and winter ranges, (bighorn sheep, mule deer, elk, pronghorn antelope, and moose) to provide protection of big game production areas from disturbance and displacement by human activities during critical periods. Strive to reduce route densities to less than 2 miles of route per square mile in these areas.

F&W-BGS-AU-05:
STIPULATION CSU-24: *Deer and Elk Migration and Movement Corridors*. Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within migration and movement corridors for deer and elk. (Refer to Appendix B.) See Figures 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

F&W-BGS-MA-04:
Prohibit domestic sheep grazing on allotments within occupied bighorn sheep habitat.

F&W-BGS-MA-05:
Allow for permitting of domestic sheep grazing on allotments outside of occupied bighorn sheep habitat on a case-by-case basis per the following criteria:

- Presence of topographic features (e.g., natural barriers, rivers) to separate domestic and bighorn sheep;
- Adequate separation zones between domestic and bighorn sheep (WAFWA 2010);
- Current bighorn sheep management plan direction;
- The need to protect potential habitat;
- Local and national research results;
- Risk assessments from wildlife agencies or BLM;
- Timing of domestic sheep grazing; or
- Monitoring results indicating conflicts.

F&W-BGS-AU-06:
STIPULATION NSO-34: *Elk Production Area.* Prohibit surface occupancy and surface-disturbing activities in elk production areas year-round. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

F&W-BGS-AU-07:
STIPULATION *BIG GAME PRODUCTION AREAS TL CO.* No surface use is allowed during the following time period(s) in big game production areas, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM: Prohibit activities, including motorized travel, elk production areas from May 15 to June 15; in antelope production areas from April 15 to June 30; in Rocky Mountain bighorn sheep production areas from April 15 to June 30; in Moose production areas from April 15 to June 30; and in desert bighorn sheep production areas from February 1 to May 1. Standard and special exceptions apply; see Appendix B.

Pronghorn Antelope

F&W-PHA-OBJ-1:
Improve pronghorn antelope habitat on BLM lands.

F&W-PHA-MA-01:
Prioritize habitat improvement projects to increase habitat quality in pronghorn antelope range, including projects that improve fawning cover, reduce cheatgrass,

increase in native forage including warm season grasses, and improve water availability.

F&W-PHA-MA-02:
Within pronghorn range, minimize the number of fences, construct fences to accommodate passage by pronghorn, and replace existing fence that do not accommodate pronghorn passage.

F&W-PHA-AU-01:
STIPULATION TL-22: *Pronghorn Wintering Habitat.* Prohibit surface occupancy and surface-disturbing activities in pronghorn wintering habitat from January 1 to March 31. (Refer to Appendix B.) See Figures 2-15 in Appendix A. Standard and special exceptions apply; see Appendix B.

Wildlife Emphasis Areas

An emphasis area is an area of high wildlife value and significance for wildlife species including but not limited to Sage-Grouse, pronghorn antelope, mule deer, elk, bighorn sheep, prairie dog, and kit fox. Fire rehabilitation efforts and vegetation treatments to improve land health and/or wildlife habitat are not considered ground disturbance, as described in the actions under each emphasis area below. Wildlife emphasis areas are not designations, but rather polygons where more management emphasis is placed on protection and enhancement of the wildlife resource.

F&W-WEA-OBJ-01:
Emphasis areas meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (BLM 1997a). Prioritize those areas that do not meet land health standards as management action areas where actions are taken to work toward meeting land health standards.

F&W-WEA-MA-01:
In wildlife emphasis areas not managed as ROW exclusion or avoidance areas, apply BMPs to consolidate ROWs in existing disturbance and to avoid fragmentation of unfragmented habitat.

F&W-WEA-MA-02:
Consolidate surface occupancy and surface-disturbing activities within existing disturbance to avoid fragmentation.

F&W-WEA-MA-03:
Reduce habitat fragmentation by reducing road density (focusing primarily on duplicative or redundant routes) in wildlife emphasis areas. Route density of less than 0.5 miles of road per square mile preferred, where this cannot be achieved implement winter closures if feasible to seasonally limit route related disturbance in the most critical months.

F&W-WEA-MA-04:

Give priority to wildlife emphasis areas in carrying out actions to improve land health.

F&W-WEA-MA-05:
Focus management in emphasis areas on wildlife. Adopt additional management actions deemed necessary by the BLM (such as closing additional roads to maintain effective habitat patch size).

Beehive Wildlife Emphasis Area

F&W-WEA-OBJ-02:
Maintain or improve wildlife habitat in the Beehive wildlife emphasis area (4,700 acres) with an emphasis on wintering and migratory habitat for mule deer and elk (Figure 2-1, Appendix A).

F&W-WEA-MA-06:
Maintain the winter closure gate and enforce closure from December 1 to May 1 annually.

F&W-WEA-AU-01:
Implement seasonal travel limitations for motorized and mechanized travel from December 1 to May 1. Seasonal limitation periods may be adjusted based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

F&W-WEA-MA-07:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-AU-02:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within the wildlife emphasis area. (Refer to Appendix B.) See Figure 2-47 in Appendix A. Standard exceptions apply; see Appendix B.

Blue Mesa Wildlife Emphasis Area

F&W-WEA-OBJ-03:
Maintain or improve wildlife habitat in the Blue Mesa wildlife emphasis area (9,300 acres) with an emphasis on wintering habitat for mule deer and elk (Figure 2-1, Appendix A).

F&W-WEA-MA-08:
Maintain the winter closure gate and enforce closure from December 1 to May 1 annually.

F&W-WEA-AU-03:

Implement seasonal travel limitations for motorized and mechanized travel from December 1 to May 1. Seasonal limitation periods may be adjusted based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

F&W-WEA-MA-09:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-AU-04:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Bull Hill Wildlife Emphasis Area

F&W-WEA-OBJ-04:
Maintain or improve wildlife habitat in the Bull Hill wildlife emphasis area (4,800 acres) with an emphasis on wintering habitat for mule deer and elk (Figure 2-1, Appendix A).

F&W-WEA-MA-10:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-AU-05:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

East Salt Creek Wildlife Emphasis Area

F&W-WEA-OBJ-05:
Maintain or improve wildlife habitat in the East Salt Creek wildlife emphasis area (25,000 acres with an emphasis on wintering habitat for mule deer and elk (Figure 2-1Appendix A).

F&W-WEA-MA-11:
Maintain existing closure gates and enforce closure from December 1 to May 1 annually.

F&W-WEA-AU-06:
Implement seasonal travel limitations for motorized and mechanized travel from December 1 to May 1. Seasonal limitation periods may be adjusted based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

F&W-WEA-MA-12:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-MA-13:
Manage the area east of the Demaree Canyon WSA (4,100 acres) as a ROW exclusion area to maintain the existing unfragmented habitat.

F&W-WEA-MA-14:
Designate the area between the Demaree Canyon WSA and Highway 139 as closed to motorized vehicles to maintain the existing unfragmented habitat.

F&W-WEA-AU-07:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within a portion (4,500 acres) of the wildlife emphasis area. Standard exceptions apply; see Appendix B.

F&W-WEA-AU-08:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within a portion (20,500 acres) of the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Glade Park Wildlife Emphasis Area

F&W-WEA-OBJ-06:
Maintain or improve wildlife habitat in the Glade Park wildlife emphasis area (27,200 acres) with an emphasis on Gunnison Sage-Grouse, mule deer, and elk habitat (Figure 2-1, Appendix A).

F&W-WEA-MA-15:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-AU-09:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Prairie Canyon Wildlife Emphasis Area

F&W-WEA-OBJ-07:
Maintain or improve wildlife habitat in the Prairie Canyon wildlife emphasis area (22,200 acres) with an emphasis on long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, Scott's oriole, gray vireo, and burrowing owl habitat (Figure 2-1, Appendix A).

F&W-WEA-MA-16:

Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-MA-17:
Manage the pronghorn antelope migratory corridor as a ROW avoidance area for above-ground facilities (including renewable energy sites such as solar, wind, hydro, and biomass development).

F&W-WEA-AU-10:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within a portion (5,600 acres) of the wildlife emphasis area. Standard exceptions apply; see Appendix B.

F&W-WEA-AU-11:
STIPULATION NSO-30: *Occupied Prairie Dog Towns (no buffer).* Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area) within active white-tailed prairie dog towns. (Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

F&W-WEA-MA-18:
Within the area designated for pronghorn migration, seek to avoid additional disturbance and apply WILDLIFE HABITAT CSU CO (Alternative B) or CSU-25 (Wildlife Emphasis Areas; Alternative C) to avoid consolidate disturbance and minimize potential impacts to migrating pronghorn.

F&W-WEA-AU-12:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within a portion (16,500 acres) of the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Rapid Creek Wildlife Emphasis Area

F&W-WEA-OBJ-08:
Maintain or improve wildlife habitat in the Rapid Creek wildlife emphasis area (27,000 acres) with an emphasis on wintering and migratory habitat for mule deer and elk (Figure 2-1], Appendix A).

F&W-WEA-MA-19:
Install and maintain winter closure gates for a portion of the area (23,500 acres).

F&W-WEA-AU-13:
Implement seasonal travel limitations for motorized and mechanized travel in a portion of the area (23,500 acres) from December 1 to May 1 Seasonal limitation

periods may be adjusted based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

F&W-WEA-MA-20:
Manage a portion of the area (25,200 acres) as *limited* to designated routes for motorized and mechanized travel (including 23,500 acres with a winter seasonal limitation).

F&W-WEA-MA-21:
Manage a portion of the area (1,700 acres) as *closed* to motorized and mechanized travel.

F&W-WEA-MA-22:
Areas within big game winter range may be closed to foot, horse, motorized, and/or mechanized travel from December 1 to May 1.

F&W-WEA-MA-23:
Manage the portion of the wildlife emphasis area that is currently undisturbed as a ROW avoidance area (including renewable energy sites such as solar, wind, hydro, and biomass development). See Figure 2-9 (Appendix A).

F&W-WEA-MA-24:
Seek to avoid disturbance and apply WILDLIFE HABITAT CSU CO to avoid fragmenting the roadless area in the currently roadless, undisturbed section of the emphasis area that is ROW avoidance.

F&W-WEA-AU-14:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Winter Flats Wildlife Emphasis Area

F&W-WEA-OBJ-09:
Maintain or improve wildlife habitat quality and quantity in the Winter Flats wildlife emphasis area (3,200 acres) with an emphasis on deer and elk wintering grounds (Figure 2-1, Appendix A).

F&W-WEA-MA-25:
Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-AU-15:
STIPULATION *WILDLIFE HABITAT CSU CO:* Surface occupancy or use may be restricted within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Sunnyside Wildlife Emphasis Area

F&W-WEA-OBJ-10:
Maintain or improve wildlife habitat in the Sunnyside wildlife emphasis area (14,500 acres) with an emphasis on bighorn sheep, mule deer, elk, and Greater Sage-Grouse (Figure 2-1, Appendix A).

F&W-WEA-MA-26:
Classify as *limited to designated routes* for motorized and mechanized travel.

F&W-WEA-MA-27:
Manage the portions of the wildlife emphasis area that are not contained in the West-wide Energy Corridor as a ROW avoidance area for above-ground facilities (including renewable energy sites such as solar, wind, hydro, and biomass development).

F&W-WEA-AU-16:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

Timber Ridge Wildlife Emphasis Area

F&W-WEA-OBJ-11:
Maintain or improve wildlife habitat in the Timber Ridge wildlife emphasis area (11,800 acres) with an emphasis on habitat for mule deer, elk, and Sage-Grouse (Figure 2-1, Appendix A).

F&W-WEA-MA-28:
Close to motorized and mechanized travel. Allow for non-motorized game retrieval carts.

F&W-WEA-AU-17:
Manage the wildlife emphasis area as a ROW avoidance area, except along 9.8 Road.

F&W-WEA-AU-18:
STIPULATION *WILDLIFE HABITAT NSO CO:* No surface occupancy or use is allowed within the wildlife emphasis area. Standard exceptions apply; see Appendix B.

WILD HORSES

WHS-GOAL-01:
Manage the administratively designated Little Book Cliffs Wild Horse Range (LBCWHR) to sustain a healthy viable wild horse population while maintaining a thriving natural ecological balance of resources and uses. (Figure 2-4, Appendix A).

WHS-OBJ-01:
Emphasize protection of wild horses in the LBCWHR and minimize impacts to their population and habitat.

WHS-MA-01:
Continue to prohibit livestock grazing within the LBCWHR.

WHS-MA-02:
While maintaining access for administration and public viewing, reduce the number of duplicative and redundant routes in the Little Book Cliffs Wild Horse herd area.

WHS-OBJ-02:
Emphasize management of wild horses in the LBCWHR.

WHS-MA-03:
Manage the LBCWHR (35,200 acres) at an appropriate management level (AML), currently identified as a range of 90 to 150 wild horses. The appropriate management level is a dynamic number that will be adjusted as range conditions warrant and in accordance with BLM policy.

WHS-MA-04:
Utilize periodic removals and/or fertility control to maintain the appropriate management level.

WHS-MA-05:
Monitor and maintain genetic diversity within the LBCWHR by implementing the following actions, including but not limited to:

- Based on genetic analysis, periodically introduce wild horses from other wild horse areas into the LBCWHR and
- Periodically conduct a genetic analysis for the wild horse population.

WHS-OBJ-03:
Manage vegetative communities within the LBCWHR to maintain a forage base to support the established appropriate management level.

WHS-MA-06:

Utilize prescribed or wildfire and mechanized, biological, and chemical treatments to maintain the vegetative types in a state advantageous to wild horse use while meeting land health standards.

WHS-OBJ-04:
Protect wild horses in the LBCWHR by limiting activities which disturb or harass wild horses during critical time periods.

WHS-MA-07:
Prohibit target shooting in the Coal Canyon and Main Canyon areas.

WHS-MA-08:
Close the LBCWHR to motorized over-snow travel.

WHS-AU-01:
Close Coal Canyon to motorized and mechanized travel from December 1 to May 1.

WHS-MA-09:
Maintain and construct range improvements to ensure that the horses are confined to the LBCWHR and have adequate water and forage.

WHS-AU-02:
STIPULATION NSO-36: *Little Book Cliffs Wild Horse Range.* Prohibit surface occupancy and surface-disturbing activities in the LBCWHR. (Refer to Appendix B.) See Figures 2-13 in Appendix A.
Standard and special exceptions apply; see Appendix B.

WHS-AU-03:
Manage the LBCWHR as a ROW avoidance area outside of the Little Book Cliffs WSA.

CULTURAL RESOURCES

CUL-GOAL-01:
Identify, preserve, and protect significant cultural resources in order to ensure they are available for appropriate uses by present and future generations (i.e., for research, education, and preservation of cultural heritage).

CUL-OBJ-01:
Allocate all cultural resources currently recorded, or projected to occur on the basis of existing data synthesis, to use allocations according to their nature and relative preservation value (BLM Manual Section 8110.42 and Planning Handbook H-1601-1 [Appendix C]). Cultural Use Allocations include:

Use Category Allocation	Management Action	Desired Outcome
a. Scientific Use	Permit appropriate research including data recovery	Preserved until research or data recovery potential is realized
b. Conservation for Future Use	Propose protective measures/designation	Preserve until conditions for use are met
c. Traditional Use	Consult with tribes, determine limitations	Long-term preservation
d. Public Use	Determine permitted use	Long-term preservation, on-site interpretation
e. Experimental Use	Determine nature of experiment	Protected until used
f. Discharge from Management	Remove protective measures	No use after recordation; not preserved

CUL-MA-01:
Allocate all cultural resources currently recorded in Appendix I to category use allocations.

CUL-MA-02:
Assign use category allocations to discovered cultural resource sites and/or areas and apply appropriate management actions to achieve the desired outcome.

CUL-MA-03:
Use category allocations may be revised in response to changing site conditions or as additional data and information are obtained. Criteria allowing for revising allocation includes: 1) environmental change or human caused impacts that alter the significance or scientific potential; 2) through changes brought about by mitigation and/or data recovery; 3) new discovery that adds to the sites potential and changes its eligibility to the National Register of Historic Places; 4) new information or techniques that reveal a new scientific value that was not previously recognized; and 5) new information shared through Native American consultation.

CUL-OBJ-02:
Assign existing cultural resource sites and/or areas to (a) the Scientific Use category. These cultural resources generally meet National Register of Historic Places criterion D; they will yield significant archaeological information about prehistory and history. These cultural resources are available for permitted research and study (Appendix I).

CUL-AU-01:
STIPULATION CSU-27: *Allocation to Scientific Use Category.* Prohibit surface occupancy and surface-disturbing activities, except archaeological documentation and excavation, within 100 meters (328 feet) around eligible or potentially eligible sites allocated to Scientific Use. (Refer to Appendix B.) See Figures 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

CUL-MA-04:
Prioritize Scientific Use sites and/or areas for listing on the National Register of Historic Places and develop a cultural resource management plan for Scientific Use sites that outlines specific management objectives and actions for protection.

CUL-OBJ-03:
Assign existing cultural resource sites and/or areas to (b) the Conservation for Future Use category. These cultural resources generally meet any of the criteria of the National Register of Historic Places. They are set aside for long-term preservation because of their national and regional significance to prehistory and history (Appendix I).

CUL-AU-02:
STIPULATION NSO-37: *Allocation to Conservation Use Category*. Prohibit surface occupancy and surface-disturbing activities, including archaeological excavation, within 100 meters (328 feet) around eligible sites allocated to Conservation Use. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

CUL-MA-05:
Prioritize Conservation Use sites for listing on the National Register of Historic Places and within two years from the listing, develop a cultural resource management plan for Conservation Use sites that will outline specific management objectives and actions for protection.

CUL-OBJ-04:
Assign existing cultural resource sites and/or areas to (c) the Traditional Use category. These cultural resources generally meet any of the significance criteria of the National Register of Historic Places and are identified as traditional cultural properties, sacred sites, or areas identified as important to the Tribes in consultation. They are set aside for long-term preservation because of their cultural and religious value to Native American Tribes (Appendix I).

CUL-AU-03:
STIPULATION NSO-38: *Allocation to Traditional Use Category*. Prohibit surface occupancy and surface-disturbing activities within 200 meters (656 feet) around eligible or potentially eligible sites allocated to Traditional Use. In addition, consider visual impacts that projects may have on sites allocated to this use, and apply appropriate mitigation, which may include redesign. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

CUL-OBJ-05:
Assign existing cultural resource sites and/or areas to (d) the Public Use Category. Public Use sites are set aside for their educational and interpretive value to the public. These cultural resources may meet any of the significance criteria of the National Register of Historic Places, or they may not be eligible for nomination to the National Register of Historic Places but hold a local or regionally recognized visual value (e.g., historic cabins, railroad grades, roads and trails, mine ruins and mine workings) (Appendix I).

CUL-AU-04:
STIPULATION CSU-28: *Allocation to Public Use Category*. Prohibit surface occupancy and surface-disturbing activities within 100 meters (328 feet) around sites allocated to Public Use. In addition, consider factors such as integrity of setting, recreation opportunity, or visual impacts that projects may have on sites allocated to this use. (Refer to Appendix B.) See Figures 2-14 Appendix A.

CUL-MA-06:
Allocate historical sites on the uranium mesas (e.g., Tenderfoot, Calamity, Outlaw, Blue Mesa, Hubbard, and Dolores Point); Rough Canyon sites for environmental heritage education; historical buildings that may be suitable for adaptive use, historical roads and trails (e.g., Old Spanish National Historic Trail, Tabeguache Trail, Old Mill Road); and select rock art sites (e.g., Site 5ME4947 on the slopes of the Grand Mesa) to Public Use.

CUL-OBJ-06:
Promote public awareness and education.

CUL-MA-07:
Prioritize Public Use sites and as demand for use of these sites for heritage tourism or other public uses is proposed develop cultural resource management plans (CRMP) that develop site specific management actions for those Public Use sites. CRMPs include outlines for specific management objectives and actions for Heritage Tourism including retrieval of scientific information, hardening for public use, interpretation and long-term protection strategies.

CUL-MA-08:

Manage, protect, and use cultural resources allocated to Public Use, including traditional cultural properties or areas identified as important to the tribes with a secondary allocation to Public Use by implementing the following actions, including but not limited to:

- Developing heritage tourism at sites designated to Public Use using BMPs;
- Interpreting sites; and
- Organizing and conducting ongoing educational programs for tribal groups, the public, school groups, vocational archaeology groups, project proponents, permittees, contractors, and others about cultural resource ethics, and encouraging their assistance in reporting new discoveries and vandalism incidents.

CUL-OBJ-07:
Assign existing cultural resource sites and/or areas to (e) the Experimental Use category. These cultural resources may meet criterion D of the National Register of Historic Places but will not have a primary allocation to the Conservation, Traditional or Public Use categories. They are set aside for studying such problems as natural or human caused deterioration and may be damaged or destroyed in the process of experimentation or mitigation (scientific excavation of inadvertent discovery).

CUL-MA-09:
Prioritize the Experimental use sites focusing on sites allocated to this use in the Sunnyside, Grand Mesa Slopes, and Indian Creek areas. As permitted activities are authorized that may affect these sites develop cultural resource management plans for allowable use on all Experimental Use sites in the Sunnyside, Grand Mesa Slopes, and Indian Creek areas to outline research objectives and identify experimental parameters.

CUL-AU-05:
STIPULATION CSU-29: *Sub-surface Inventory*. Require sub-surface inventory for deep sub-surface-disturbing activities and buried ROW in the following locations and in additional areas where high potential for subsurface resources may be identified in the future. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

- Indian Creek (20,200 acres);
- Grand Mesa Slopes (16,000 acres); and
- Sunnyside (17,300 acres).

CUL-OBJ-08:
Assign existing cultural resource sites assigned to (f) the Discharged from Management category. These cultural resources generally are not eligible for the National Register of Historic Places and are not assigned to other use allocations. They are not protected from other resource uses.

CUL-MA-10:
On an annual basis develop a list of sites to allocate to the Discharge Use category, reevaluate as needed and compile supporting documentation, and submit for consultation with the State Historic Preservation Officer (SHPO).

CUL-OBJ-09:
Manage areas with scientifically and publicly valuable archaeological and cultural resources through documentation and nomination to the National Register of Historic Places and completion of Cultural Resource Management Plans.

CUL-MA-11:
Develop a cultural resource management plan to guide research and long term protection of two cultural properties associated with the Indian Creek Area:

- West Area (730 acres) and
- East Area (1,700 acres).

CUL-AU-06:
STIPULATION NSO-39: *Indian Creek.* Prohibit surface occupancy and surface-disturbing activities in the following areas to protect cultural resources. See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

- West Indian Creek (520 acres) and
- East Indian Creek (1,200 acres).

CUL-GOAL-02:
Seek to reduce imminent threats and resolve potential conflicts from natural or human-caused deterioration, or potential conflict with other resource uses (FLPMA Sec. 103(c), National Historic Preservation Act (NHPA) 106, 110 (a) (2)) by ensuring that all authorizations for land use and resource use will comply with the NHPA Section 106.

CUL-OBJ-10:
Allocate all cultural resources recorded to use allocations according to their nature and relative preservation value (BLM Manual Section 8110.42 and Planning Handbook H-1601-1 [Appendix C]) as part of the evaluation and determination of eligibility process.

CUL-MA-12:
Manage the integrity of cultural resources that are not included in sensitive site areas and mitigate impacts based on maintaining the integrity of the desired outcome of the cultural resource Use Category Allocations. This may require redesign of proposed projects or mitigation.

CUL-MA-13:
To minimize ongoing or potential impacts to cultural resources that are eligible or potentially eligible to the National Register of Historic Places (NRHP) or are listed

on the NRHP, close and/or re-route routes that are inside, pass through, or lead directly to these sites, or identify mitigation to protect sites.

CUL-MA-14:
To minimize the potential for impacts to sites, reduce density of routes in areas known to be of high expected cultural resource density or areas of high value to the cultural program or Tribes.

CUL-MA-15:
Use VRM and recreation (or management) objectives to minimize impacts to site integrity (maintaining the visual, audible, and setting characteristics of sites).

CUL-MA-16:
To minimize ongoing or potential impacts to historic trails identified as eligible or potentially eligible for listing on the NRHP, identify mitigation or protect the historic integrity of routes, if necessary.

CUL-GOAL-03:
Uphold Native American trust responsibilities and accommodate traditional uses. The GJFO is part of the Ute traditional homeland where physical remains of their occupation will be protected and preserved. Maintain and, where possible, improve natural and cultural resource conditions to enhance opportunities to exercise Native American use of cultural landscapes and cultural properties in their traditional homeland.

CUL-OBJ-11:
Continue the Ute Ethnohistory Project to compile information regarding traditional cultural properties, sacred sites, traditional uses, and cultural landscapes.

CUL-MA-17:
Accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of sacred sites.

CUL-MA-18:
Manage recorded traditional cultural properties or areas and natural resources of importance to the Ute Tribes to enhance opportunities to exercise Native American use of these resources.

CUL-MA-19:
The following sites of concern have been identified through consultation and will be a priority for nomination to the National Register of Historic Places and development of cultural resource management plans that will outline specific management objectives and actions for protection:

- Wickiup camps and open camps with definitive Ute occupation (associated to Ute rock art, artifact assemblages and/or trails);
- Isolated rock art;

- Culturally Modified Trees (includes Scarred and Prayer Trees); and
- Ceremonial features (e.g., eagle traps, vision circles, and special structures).

This list is in no way intended to be a comprehensive list and may continue to grow through consultation.

CUL-MA-20:
In cooperation with the recreation program, manage Unaweep Canyon/West and East Creek as a Ute heritage area, rename the West and East Creek Day Use areas in consultation with the Ute Tribes. With local partners and Ute tribal members interpret Ute Cultural Heritage for the public at this location.

CUL-MA-21:
Identify tribal plant gathering needs and establish tribal protocol for gathering materials for cultural and religious purposes. Do not charge members of federally recognized Tribes fees for the collection of non-commercial or personal-use quantities of plants or minerals used for food, medicine, utilitarian items, traditional use items, or items necessary for traditional, religious or ceremonial purposes. Threatened, endangered, candidate, proposed, or sensitive plants are not included as authorized for collection. Plants that are identified by a Tribe as important for traditional, religious or ceremonial purposes and are not widely available will not be offered as wilding plants for the general public.

CUL-MA-22:
In coordination with the recreation resource management objectives, collaborate with Ute tribal cultural departments and members to identify, allocate to appropriate Use Category, reestablish and interpret traditionally used trails.

PALEONTOLOGICAL RESOURCES

PAL-GOAL-01:
Provide for the identification, protection, and management of paleontological resources for the preservation, interpretation and scientific uses by present and future generations.

PAL-OBJ-01:
Manage paleontological resource to protect significant paleontological values.

PAL-MA-01:
Enhance, promote, and protect the dinosaur resources of the Dinosaur Diamond Prehistoric Highway (National Scenic Byway and All American Road).

PAL-MA-02:
To reduce ongoing damage to known paleontological sites, close routes that are inside or pass through sensitive paleontological sites, or identify mitigation necessary to protect sites.

PAL-MA-03:
To reduce the potential for vandalism or collection, reduce number of routes in proximity to known paleontological localities.

PAL-OBJ-02:
Identify and protect priority geographic areas.

PAL-MA-04:
Conduct field inventories and document highly sensitive paleontological sites.

PAL-MA-05:
Manage paleontological resources according to their Potential Fossil Yield Classification (Figure 2-25, Appendix A).

Class 1 - Xb Biotitic Gneiss, Schist, Migmatite, Yg Granitic Rocks of 1400 m.y., Xg *Granitic Rocks of 1700 m.y., YXg *Granitic Rocks of 1400 and 1700 m.y.

Class 2 - Pennh Hermosa

Class 3 - Pc Cutler, TRm Moenkopi, JTRgc *Glen Canyon Group, TRwc *Wingate, TRkc *Kayenta, JTRgc *Navajo, Jmwe *Entrada, Jmse *Summerville, KJdw *Burro Canyon Sandstone, Kd *Dakota Sandstone, Km *Mancos Shale, Kmv Mesaverde Group (Undivided), Kmvu Hunter Canyon, Kmvl Mount Garfield, Kh Sego Sandstone, Two Ohio Creek Formation, Tgl Green River Fm., Lower Part, Tgp Green River Fm., Parachute Creek Member, Tg Green River (Undivided), Tu Uinta, Q Quaternary deposits (Undifferentiated)

Class 4–5 - TRc *Chinle, Jmwe *Morrison, Two Wasatch (De Beque)

PAL-AU-01:
LEASE NOTICE: LN-6: *Class 4 and 5 Paleontological Areas.* Have a permitted paleontologist approved by the BLM's Authorized Officer perform an inventory of surface-disturbing activities in Class 4 and 5 paleontological areas. (Refer to Appendix B.)

VISUAL RESOURCES

VIS-GOAL-01:
Manage public lands in a manner that protects the quality of scenic values, specifically protecting those areas of cultural significance and highly valued scenic resources.

VIS-OBJ-01:
Maintain visual quality and integrity in accordance with VRM Classes.

- *Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention*
- *Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low*
- *Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.*
- *Class IV Objective: To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.*

VIS-MA-01:
Manage visual resources on BLM-administered land according to the objectives for each class as follows (Figure 2-6, Appendix A):

- VRM I = 98,700 acres
- VRM II = 392,400 acres
- VRM III = 396,800 acres
- VRM IV = 173,700 acres

Manage visual resources on BLM land according to the objectives for each class.

VIS-MA-02:
Manage 98,700 acres of BLM lands according to VRM Class I objectives, including the following areas:

- WSAs:
  - Demaree Canyon;
  - Little Book Cliffs;
  - The Palisade; and
  - Sewemup Mesa
- ACECs:
  - Mt. Garfield (except for Coal Canyon corridor) and
  - A portion of The Palisade (26,700 acres within The Palisade WSA).

VIS-AU-01:
Manage VRM Class I areas as ROW exclusion areas.

VIS-MA-03:
To preserve the visual character of the existing landscape, limit or reduce the number of routes in areas managed as VRM Class I. The level of change to the visual landscape should be very low and must not attract attention.

VIS-MA-04:
Manage 392,400 acres of BLM lands according to VRM Class II objectives, including the following areas:

- ACECs:
  - Atwell Gulch;
  - A portion of the Palisade (5,500 acres outside of the Palisade WSA);
  - A portion of Dolores River Riparian (7,100 acres);
  - Juanita Arch;
  - Indian Creek;
  - Pyramid Rock;
  - Roan and Carr Creeks
  - Rough Canyon;
  - South Shale Ridge;
  - Sinbad Valley; and
  - Unaweep Seep.
- Lands managed for wilderness characteristics
- SRMAs:
  - Bangs;
  - A portion of Dolores River Canyon (13,600 acres);
  - North Fruita Desert; and
  - Palisade Rim.
- Byways:
  - A portion of Dinosaur Diamond Prehistoric Highway (from the Bookcliffs north);
  - Grand Mesa Scenic and Historic Byway; and
  - Unaweep-Tabeguache Scenic and Historic Byway (The ROW corridors are designated as VRM III).
- Other VRM Class II areas:
  - Includes the following:
    - Bangs, Rough, Ladder and Northeast Creek Canyons;
    - Cliffs of Unaweep Canyon (outside of ROW corridor);

- Eastern Cliffs of Hunter Canyon;
- Colorado River corridor
- Gunnison river corridor (southwest side);
- Foreground of Interstate 70;
- Cliffs adjacent to Mt. Garfield;
- Dolores River corridor (except for 75 meters corridor along Highway 141); and
- Juanita Arch.

VIS-MA-05:
To retain the visual character of the existing landscape and minimize the level of change, limit or reduce the number of routes in areas managed as VRM Class II. The level of change to the visual landscape should be low. Changes should repeat the basic elements found in the natural features of the landscape – form, line, color and texture. Routes may be seen but should not attract the attention of the casual observer.

VIS-MA-06:
Manage 396,800 acres of BLM lands according to VRM Class III objectives, including, but not limited to, the following areas:

- Wildlife Emphasis Areas:
  - Timber Ridge
- ACECs:
  - Badger Wash; and
  - A portion of Dolores River Riparian (300 acres).
- SRMAs:
  - A portion of Dolores River Canyon (2,400 acres).
- Byways:
  - A portion of Dinosaur Diamond Prehistoric Highway (from the Bookcliffs south).
- Old Spanish National Historic Trail.
- Other VRM Class III areas:
  - West Salt Creek corridor;
  - Coal Canyon corridor;
  - Highway 141 along the Dolores River; and
  - Unaweep Canyon.

VIS-MA-07:
To partially retain the visual character of the existing landscape and to moderate the level of change to the existing environment, carefully consider the designation of routes or design/construction of new routes in areas managed as VRM Class III.

Routes may attract attention, but should not dominate the view of the casual observer. To the extent possible, routes should repeat the basic elements found in the natural landscape – form, line, color and texture.

VIS-MA-08:
Manage 1736,700 acres of BLM lands according to VRM Class IV objectives, including the following areas:

- Grand Valley OHV SRMA (9,700 acres);
- All other areas not identified as VRM Class I, II, or III.

VIS-MA-09:
In areas managed under VRM Class IV objectives, allow transportation/access routes that require major modification of the visual landscape. The level of change can be high and routes may dominate the view of the casual observer. To the extent possible, routes should repeat the basic elements found in the natural landscape – form, line, color and texture.

VIS-OBJ-02:
Protect the visual integrity of the landscape by managing all project proposals to meet or exceed objectives of the prescribed VRM classes by incorporating visual design BMPs (Appendix H).

VIS-MA-10:
Ecosystem restoration projects will ensure that visual impacts are minimized in the short term (5 years) and that VRM objectives in the project area are met in the long term (life of the project) when such projects are a) considered essential for public safety, achieving desired future conditions, or reducing fuels buildups; and b) expected to be visually prominent.

VIS-OBJ-03:
Minimize impacts to dark night sky conditions from permitted activities and other human caused disturbances on public lands.

VIS-AU-02:
Prohibit permanent outdoor lighting in VRM Class I areas.

VIS-MA-11:
Prevent or reduce impacts to dark night skies by using BMPs that reduce skyward projection of lighting, minimizing illumination and off-site projection of lighting, and by designing required lighting to be downward directing (see BMPs V-3 and FWS-24 in Appendix H).

VIS-AU-03:
STIPULATION *VISUAL CLASS I NSO CO:* No surface occupancy or use is allowed in

- VRM Objective Class I areas;

- the Goblins;
- Highway 141 along the Dolores River; and
- Unaweep Canyon.

Standard exceptions apply; see Appendix B.

VIS-AU-04:
STIPULATION CSU-30: *VRM Class II.* Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within all areas designated as VRM Class II. Require that surface-disturbing activities meet the objectives of VRM Class II. (Refer to Appendix B.) See Figures 2-14 (in Appendix A. Specific exceptions apply; see Appendix B.

WILDLAND FIRE MANAGEMENT

WFM-GOAL-01:
Providing for firefighter and public safety, manage fire to maximize ecological health benefits.

WFM-OBJ-01:
Use a full range of wildfire management strategies, from full suppression to resource benefit on unplanned ignitions. Multiple strategies can be applied to different areas of the same fire.

WFM-MA-01:
Utilize wildfires on 857,400 acres as identified in Figure 2-26 in Appendix A to manage diversity in desired plant communities.

WFM-MA-02:
Suppress all fires in Salt Desert Shrub communities to protect these communities that are not adapted to fire and to reduce cheatgrass invasion.

WFM-OBJ-02:
Work to restore Fire Regime Condition Classes 2 and 3 towards Class 1, and maintain areas of Fire Regime Condition Class 1.

WFM-MA-03:
Implement fuels treatments actions that may include, but are not limited to:

- Mechanical treatments, including mowing, weed-whacking, chopping (roller chopper), chipping, grinding (hydro-ax), chaining, tilling, and cutting.
- Manual treatments, including hand cutting (chainsaw/handsaw) and hand-piling.
- Prescribed fire, including pile and broadcast burning.
- Chemical spraying or biological treatments, such as insects or goats.
- Seeding, including aerial or ground application.
- Commercial stewardship projects.

WFM-OBJ-03:
Integrate fire and fuels management to meet Land Health Standards, WUI, and natural and cultural resource objectives across all levels of government and jurisdictional boundaries.

WFM-MA-04:
Use a combination of planned and unplanned fire along with fuels treatments including mechanical, manual, chemical, and seeding to meet resource objectives. The priority will be using any of the above treatments based on strategic goals for site-specific projects.

WFM-MA-05:
Prioritize vegetation treatments that are designed to strategically reduce wildfire threat in areas of high fire risk rather than where the probability of fire is low and the potential for natural post-fire recovery is high.

WFM-OBJ-04:
For the Emergency Stabilization (ES) program, determine the need to prescribe and implement emergency treatments to minimize threats to life or property or to stabilize and prevent unacceptable degradation to natural and cultural resources from the effects of a wildfire.

WFM-MA-06:
Design ES treatment actions based on the severity of the wildfire impacts. ES priorities include, but are not limited to, areas where:

- Life, safety, or property requires protection.
- Unique or sensitive cultural resources are at risk.
- Soils are highly susceptible to accelerated erosion or water quality protection is required.
- Perennial grasses and forbs are not expected to provide soil and watershed protection within two years.
- Unacceptable vegetation, such as noxious weeds, may invade and become established.
- It is necessary to quickly restore threatened, endangered, or special species habitat populations to prevent adverse impacts.
- Stabilization and rehabilitation are necessary to meet RMP resource objectives.

WFM-OBJ-05:
The Burned Area Rehabilitation (BAR) Program objectives are: 1) To evaluate actual and potential long-term post-fire impacts to critical cultural and natural resources and identify those areas unlikely to recover naturally from severe wildfire damage; 2) To develop and implement cost-effective plans to emulate historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with RMP objectives, or, if that is infeasible, restore or establish a healthy, stable ecosystem in which native species are well represented; and 3) To repair or replace minor facilities damaged by wildfire.

WFM-MA-07:
Design BAR treatment actions based on the severity of wildfire impacts. BAR priorities include, but are not limited to:

- Repairing or improving lands unlikely to recover naturally.
- Implementing weed treatments to remove invasive weeds and planting native or non-natives to restore or establish healthy ecosystems.
- Planting to reestablish native trees.

- Repairing or replacing minor facilities (e.g., fences, campgrounds, interpretive signs, shelters, wildlife guzzlers, etc.)

WFM-OBJ-06:
In partnership with local, state, and federal partners, conduct fire mitigation and fire-prevention activities to reduce human-caused wildfire ignition and improve public safety.

WFM-MA-08:
Use signage, mass media, personal contacts, assistance with Community Wildfire Protection Plans, and other associated activities to reduce human ignition and other threats from wildfire.

WFM-MA-09:
Coordinate fire restrictions closely with state, county and local partners while considering economic and social effect to local communities.

LANDS MANAGED FOR THE PROTECTION OF WILDERNESS CHARACTERISTICS

WIL-GOAL-01:
Manage lands to protect wilderness characteristics (e.g., appearance of naturalness, outstanding opportunities for primitive and unconfined recreation or solitude) while considering competing resource demands and manageability, such as valid and existing rights, mineral potential, proximity to residential and other development, existing and potential recreation uses.

WIL-OBJ-01:
Where wilderness characteristics are managed for protection:

- *Minimize surface disturbing activities such that the natural quality of the area is maintained;*
- *Maintain opportunities for solitude and primitive recreation where they occur in the areas.*

WIL-MA-01:
Manage 44,100 acres to protect wilderness characteristics in the following areas:

- Bangs (19,600 acres);
- Maverick (17,800 acres); and
- Unaweep (6,700 acres).

See Figure 2-4 in Appendix A.

WIL-MA-02:
Protect wilderness characteristics according to management actions and allowable uses for each individual unit, described below.

WIL-MA-03:
Reduce route density in areas where long-term management is designed to protect wilderness characteristics.

Bangs

WIL-OBJ-02:
Manage the Bangs Lands with Wilderness Characteristics Area for the protection of outstanding opportunities for solitude, primitive and unconfined recreation, and undisturbed landscapes compatible with zone objectives in the Bangs SRMA and with special attention to the protection of wildlife habitat and cultural resources.

WIL-MA-04:

Protect wilderness characteristics by applying the following management:

- Issue Class I-II Commercial and Organized Event SRPs that meet area objectives.
- Limited to designated routes for motorized and mechanized travel, including over-snow travel (except for administrative access to range improvements).
- Close to wood product sales, including Christmas tree cutting.
- Manage as a ROW exclusion area.
- Close to mineral material disposal.
- Close to non-energy leasable mineral exploration and/or development.
- In response to wildfire, use Minimum Impact Suppression Tactics (MIST) to limit impacts on wilderness characteristics. Only allow ground-disturbing mechanical tactics (e.g., bulldozers) if life and/or property are threatened.
- Manage as VRM Class II, except manage existing range improvements as VRM Class III.
- Manage consistently with the overlapping portions of the Bangs SRMA.

WIL-AU-01:
No Leasing: Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figures 2-12, Appendix A.

WIL-AU-02:
STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO:* No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan.

Maverick

WIL-OBJ-03:
Manage the Maverick Lands with Wilderness Characteristics Area to protect outstanding opportunities for solitude, undisturbed landscapes, and unique geologic features. A five-canyon complex and unique roadless area with outstanding opportunities for solitude given the topography, vegetation, and unique feature of Juanita Arch, which is the only natural bridge in Colorado.

WIL-MA-05:
Protect wilderness characteristics by applying the following management:

Issue no SRPs for competitive events.

- Close to motorized over-snow travel.

- Close the portion (1,600 acres) that overlaps the Juanita Arch ACEC to motorized and mechanized travel.
- A portion (16,200 acres) is limited to designated routes for motorized and mechanized travel.
- Close to wood product sales and/or harvest.
- Issue non-commercial Christmas tree cutting permits as long as monitoring indicates that naturalness of the unit is not being impacted.
- Manage as a ROW exclusion area.
- Close to mineral material disposal.
- Close to non-energy leasable mineral exploration and/or development.
- Manage as VRM Class II.
- In response to wildfire, use MIST to limit impacts on wilderness characteristics. Only allow ground-disturbing mechanical tactics (e.g., bulldozers) if life and/or property are threatened.

WIL-AU-03:
No Leasing: Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figures 2-12, Appendix A.

WIL-AU-04:
STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO:* No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan.

Unaweep

WIL-OBJ-04:
Manage the Unaweep Lands with Wilderness Characteristics Area to protect outstanding opportunities for solitude, primitive and unconfined recreation, and undisturbed landscapes with emphasis on wildlife, visual resources, range management, critical headwaters, and natural processes.

WIL-MA-06:
Protect wilderness characteristics by applying the following management:

- Issue no SRPs for competitive events.
- Limited to designated routes for motorized and mechanized travel, including over-snow travel.
- Allow for administrative access to range improvements and livestock management.
- Close to wood product sales and/or harvest.

- Manage as a ROW exclusion area.
- Close to mineral material disposal.
- Close to non-energy leasable mineral exploration and/or development.
- Manage as VRM Class II.
- In response to wildfire use MIST to limit impacts on wilderness characteristics. Only allow ground-disturbing mechanical tactics (e.g., bulldozer) if life and/or property are threatened.
- Allow for the placement of range improvements in locations that meet the naturalness and setting of the area.
- Close and restore unauthorized routes that affect naturalness.

WIL-AU-05:
No Leasing: Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figures 2-12, Appendix A.

WIL-AU-06:
STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO:* No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan.

WIL-GOAL-02:
Provide appropriate levels of protection to preserve inventoried wilderness characteristics of areas determined to possess wilderness characteristics (e.g., appearance of naturalness, outstanding opportunities for primitive and unconfined recreation or solitude) while considering competing resource demands and manageability.

WIL-OBJ-05:
Through project analysis analyze and disclose impacts to lands with wilderness characteristics in lands inventoried and found to have those values.

WIL-MA-07:
Maintain an ongoing up to date inventory of lands with wilderness characteristics.

WIL-OBJ-06:
As appropriate, develop a continual evaluation process for lands with wilderness characteristics.

WIL-MA-08:
Work with partners and cooperators to comply with current BLM guidance on maintenance of inventory data for lands with wilderness characteristics.

II. RESOURCE USES

FORESTRY

FOR-GOAL-01:
Manage for healthy woodlands while providing for use of forest and woodland products.

FOR-OBJ-01:
Use a variety of silvicultural techniques and harvest systems to manage for healthy forests and woodlands while offering a variety of forest products and meeting other resource objectives for the following forestry and woodland types:

- *Pinyon/Juniper;*
- *Ponderosa Pine;*
- *Douglas-fir;*
- *Aspen; and*
- *Spruce/Fir.*

FOR-MA-01:
Allow harvest of forest and woodland products in portions of the following forestry zones that are determined suitable for harvest in activity-level plans or site-specific analyses:

- Pinyon-juniper:
    - Bangs Canyon (59,100 acres)
    - Glade Park (67,100 acres);
    - Gateway (194,300 acres);
    - Book Cliffs (214,300 acres);
    - Plateau Valley (66,800 acres);
    - Grand Mesa Slopes (60,700 acres); and
    - Roan Creek (243,300 acres).
- Aspen:
    - Roan Creek (243,300 acres).
    - Book Cliffs (214,300 acres);
    - Plateau Valley (66,800 acres);
    - Grand Mesa Slopes (60,700 acres); and
    - Glade Park (67,100 acres).
- Spruce
    - Book Cliffs (214,300 acres);
    - Plateau Valley (66,800 acres);
    - Grand Mesa Slopes (60,700 acres); and

    - Roan Creek (243,300 acres).
- Douglas fir
    - Book Cliffs (214,300 acres); and
    - Roan Creek (243,300 acres).

FOR-MA-02:
Close the following areas (approximately 239,400 acres) to wood product sales and/or harvest (not including Christmas tree harvest). (Figure 2-27, Appendix A). Additional areas may be found as unsuitable for harvest in the site specific forest/woodland management plans:

- The Palisade municipal watershed;
- Known lynx habitat;
- VRM Class I areas;
- WSAs;
- Lands managed for wilderness characteristics; and
- ACECs.

Exception: Allow wood product sales and/or harvest to meet desired resource conditions.

FOR-MA-03:
Allow Christmas tree cutting in annually delineated tree cutting areas.
Close the following areas to Christmas tree cutting, except when tree removal supports the objectives of the following areas:

- Areas identified as being over harvested;
- ACECs;
- Lands managed for wilderness characteristics; and
- WSAs.

FOR-MA-04:
Where conditions are appropriate, allow removal of tamarisk, non-native elms, and Russian olive material for biomass or personal use.

FOR-MA-05:
In the LBCWHR, limit fuelwood sales to 30 acres or less and to commercial operators only. Design fuelwood sales to meet management objectives for wild horses.

FOR-MA-06:
Discourage clear cuts in small, isolated, and tall conifer stands and/or mature pinyon-juniper woodlands under 160 acres, unless such practices meet other resource objectives.

FOR-MA-07:
Allow treatments of aspen stands to stimulate regeneration through either mechanical or fuels projects. Allow fuelwood cutting of dead and down aspen only in areas identified for allowable harvest, while leaving adequate standing dead trees in place for wildlife habitat.

FOR-MA-08:
Based upon tribal and public demand, allow collection of unconventional forest products. Limit permitted use of vegetal collection of commonly available renewable resources (e.g., seeds, cones, wildlings, berries, mushrooms, nuts) for non-commercial use to the following amounts consistent with other resource goals/objectives:

- Boughs, All Coniferous Species: 50 pounds per person per year
- Cones – Ornamental: two bushels per person per year (one bushel is equal to 9 gallons or 35 liters)
- Cones – Nuts: one bushel per person per year
- Medicinal: one bushel per person per year (collection prohibited within WSAs and ACECs)
- Mushrooms: five gallons per species per person per year
- Wildings: 15 meters (50 feet) per species per person per year (collection prohibited within WSAs, ACECs and certain SRMAs)
- Traditional, religious, or ceremonial plants that are not widely available may be harvested for personal use by Native American tribal members and will not be offered as wilding plants for the general public.

FOR-MA-09:
Maintain motorized access to firewood, post and pole gathering, and Christmas tree cutting areas.

LIVESTOCK GRAZING

GRZ-GOAL-01:
Provide adequate forage for livestock while attaining healthy rangelands, in accordance with land health standards and in balance with other resources and uses, to contribute to local economies, ranching livelihoods, and the rural western character integral to many communities.

GRZ-OBJ-01:
Meet the forage demands of livestock operations based on current active preference (animal unit-months [AUMs]) while meeting the BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (BLM 1997a) (Appendix E).

GRZ-MA-01:
Manage livestock grazing in accordance with the BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (BLM 1997a) (Appendix E).

GRZ-MA-02:
Periodically evaluate current active preference and adjust as needed based on land health assessments, vegetative inventories, riparian monitoring, rangeland monitoring data, or other pertinent information. Allocate increases or decreases in forage availability to meet the greatest need (e.g., livestock, wildlife, watershed health).

GRZ-MA-03:
Make up to 960,500 acres available for livestock grazing. Provide up to 60,716 AUMs of livestock forage commensurate with public land health standards (BLM 1997a) (Appendix J). These acres may change if the cooperatively managed allotments (3,800 acres) are managed by the GJFO in the future. (Figure 2-5, Appendix A.)

GRZ-MA-04:
Make 66,600 acres unavailable for livestock grazing, which includes allotments, portions of allotments, and unalloted land. The purpose includes steep slopes, conflict with BLM recreation sites, or avoidance of sensitive resources such as those described in the *Areas of Critical Environmental Concern* section. Refer to Appendix J, Livestock Grazing Allotments.

GRZ-MA-05:
Close the following allotments to livestock use (see Appendix J):

- Baldridge Mesa;
- Bevan;
- Boulder Canyon;

- Browns Place;
- Brush Creek;
- Charlesworth;
- Clifton;
- Clover Gulch;
- Coon Creek;
- Dead Horse;
- Dry Kimball;
- Eby Point;
- Erven;
- Etcheverry;
- Fetters;
- Heely;
- Hight;
- Horizon;
- Hunter;
- LBCWHR:
- Logan Wash;
- Parkes Place;
- Plateau Creek;
- Red Mountain;
- Sewemup Mesa;
- Webber;
- Webb Isolated Tracts; and
- Whitewater Hill.

GRZ-MA-06:
In open allotments, close the following areas to livestock use:

- Ant Research Area;
- Badger Wash ungrazed paired plots or designated no grazing areas as defined in the study objectives;
- Miracle Rock picnic area;
- Mud Springs Campground;
- North Fruita Desert developed campground;
- Pyramid Rock ACEC;
- Study area exclosures; and
- West Creek picnic area.

- Eastern portion of the Palisade Municipal Watershed in the High Sensitivity area of the watershed.

GRZ-MA-07:
Allow for continuation of cooperatively managed grazing allotments by adjacent BLM field offices in accordance with Interoffice Agreements. Cooperative management of grazing allotments will be completed in accordance with Colorado Land Health Standards and under the guidance of this RMP. Cooperatively managed grazing allotments include, but are not limited to the following areas:

- Bar X (Moab FO): 8,330 acres;
- San Arroyo (Moab FO): 12,981 acres;
- Buckhorn (Moab FO): 1,400 acres; and
- Cathedral Bluffs (White River FO): 2,100 acres.

GRZ-MA-08:
Periodically evaluate whether to close other allotments or portions of allotments to livestock grazing, and implement with project level analysis, based on the following criteria:

- Areas identified as BLM disposal tracts;
- Lack of administrative access to public land;
- Small percentage of forage in allotment is contributed by BLM lands in allotment (less than 15 percent);
- Areas not accessible to livestock grazing (e.g., steep slopes);
- "C" category allotments that are relinquished and determined to be impractical for the administration of livestock grazing by the Authorized Officer;
- Major impact to sensitive resources such as wildlife or threatened and endangered species (e.g., competition for forage, winter range, Sage-Grouse habitat), or sensitive fish habitat, as determined by data analysis;
- Public health and safety;
- High intensity recreation areas/ facilities;
- Resource objectives for municipal watersheds;
- Impacts to cultural resources; and
- Conflicts with adjoining private lands (development).

GRZ-MA-09:
Work cooperatively with permittees, lessees, and other landowners to develop grazing management strategies that integrate both public and private lands into single management units.

GRZ-MA-10:

Identify appropriate utilization levels based on allotment or site-specific management practices, such as season-of-use, grazing intensity and duration, and utilization patterns, as well as vegetative conditions, riparian conditions, the presence or absence of range improvements, and resource issues or concerns. Use utilization levels and distribution of use as an indicator to evaluate if current grazing use is within the capacity of the land and appropriate to meet resource objectives for the area.

GRZ-MA-11:
Implement changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues.

GRZ-MA-12:
Allow modification of allotment boundaries to correspond with fence lines and natural features, and allow consolidation of allotments and pastures into a new allotment.

GRZ-MA-13:
Construct range improvement projects on allotments to implement changes in grazing management to improve vegetative conditions, riparian conditions, or reduce conflicts with other resources or public land users.

GRZ-MA-14:
Implement vegetation treatments, including mechanical, chemical, and fire, on priority allotments to improve rangeland health or reduce conflicts with other resources or public land users.

GRZ-MA-15:
Maintain a minimum of administrative access to range improvement projects, study sites, and to areas necessary to properly administer grazing permits.

GRZ-MA-16:
In some cases limit public access to protect range improvements from potential damage.

GRZ-OBJ-02:
Provide periodic rest during active growth periods of forage plants to maintain or improve plant vigor and health.

GRZ-MA-17:
When deemed necessary by the BLM's Authorized Officer, defer or exclude livestock grazing for a minimum of two growing seasons on disturbed areas (e.g., a fire event, reclamation of disturbed lands, seedings, surface-disturbing vegetation treatments) or until site-specific analysis and/or monitoring data indicates that vegetative cover, species composition, and litter accumulation are adequate to

support and protect watershed values, meet vegetation objectives, and sustain grazing use.

GRZ-MA-18:
Include periodic rest during the active growing season as part of authorized grazing use on Improve (I) category allotments.

GRZ-MA-19:
In limited precipitation zones (below 6,000 feet) of the Grand Valley and Kannah Creek management areas (176,800 acres), limit the grazing use period to October 1 to April 15, unless otherwise specified in an allotment management plan or grazing use agreement (Figure 2-5, Appendix A).

The change in the grazing use period could be phased in over a three-year period.

GRZ-OBJ-03:
Manage livestock grazing to maintain and/or improve Sage-Grouse habitat.

GRZ-MA-20:
Authorize new water developments for diversions from spring or seep source only when priority Sage-Grouse habitat will benefit on both upland and riparian habitat from the development or there are no negative impacts to Sage-Grouse. This includes developing new water sources for livestock as part of an AMP/conservation plan to improve sage-grouse habitat.

GRZ-MA-21:
Design any new structural range improvements to conserve, enhance, or restore Sage-Grouse habitat through an improved grazing management system relative to Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, enclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments.

GRZ-MA-22:
To reduce Sage-Grouse strikes and mortality, remove, modify, or mark fences in high risk areas. When fences are necessary, require a Sage-Grouse-safe design.

GRZ-MA-23:
Locate supplements (salt or protein blocks) in a manner designed to conserve, enhance, or restore Sage-Grouse habitat.

GRZ-MA-24:
Offer temporary use on a case-by-case basis in allotments where grazing preference has been relinquished, or non-use warrants to rest other allotments that include important Sage-Grouse habitat.

GRZ-MA-25:
When conducting NEPA analysis for water developments or other rangeland improvements, address the direct and indirect effects to Sage-Grouse populations and habitat.

GRZ-MA-26:
Pursue the opportunity to establish grass banks from unallotted grazing allotments to provide management options on other allotments (e.g., fire, drought, vegetation treatments, and allotments not meeting land health).

GRZ-OBJ-04:
Manage allotments to protect bighorn sheep with an emphasis on reducing the potential of disease transmission between domestic livestock and bighorn sheep.

GRZ-MA-27:
Prohibit domestic sheep grazing on allotments within occupied bighorn sheep habitat.

GRZ-MA-28:
Allow for permitting of domestic sheep grazing on allotments outside of occupied bighorn sheep habitat on a case-by-case basis per NEPA analysis and the following criteria:

- Presence of topographic features (e.g., natural barriers, rivers) to separate domestic and bighorn sheep;
- Allow for permitting of domestic sheep grazing on allotments outside of occupied bighorn sheep habitat on a case-by-case basis per NEPA analysis and the following criteria: Adequate separation zones between domestic and bighorn sheep (WAFWA 2010);
- Current bighorn sheep management plan direction;
- The need to protect potential habitat;
- Local and national research results;
- Risk assessments from wildlife agencies;
- Timing of domestic sheep grazing; or
- Monitoring results indicating conflicts.

RECREATION AND VISITOR SERVICES

Note: Many of the proactive management measures and approaches that set vision and encourage work with partners and communities are found in Appendix H, Best Management Practices, as well as Appendix K, Recreation Appendix. This section of Chapter 2 should be read in combination with those appendices.

REC-GOAL-01:
Produce a diversity of quality recreational opportunities that support outdoor-oriented lifestyles and add to participants' quality of life, enhance the quality of local communities, and foster protection of natural and cultural resources.

Note: Many of the proactive management measures and approaches that set vision and encourage work with partners and communities are found in Appendix H, Best Management Practices, as well as Appendix K, Recreation Appendix. This section of Chapter 2 should be read in combination with those appendices.

REC-OBJ-01 (*Field Office-Wide Resource Protection Objective***):**
Increase awareness, understanding, and a sense of stewardship in recreational activity participants so their conduct safeguards cultural and natural resources as defined by Colorado Standards for Public Land Health (see Appendix E) or area-specific objectives (e.g. ACEC, Wild and Scenic Rivers).

REC-AU-01:
Camping Limits. Unless otherwise posted, implement a 14-day camping limit in areas open to camping and overnight use on BLM-managed lands. A limit of less than 14 days or greater than 14 days may be applied in certain areas if applicable due to resource and social impacts.

REC-AU-02:
Allow undeveloped camping where not specifically restricted. Undeveloped camping may be seasonally restricted, sites may be designated or closed as impacts or environmental conditions warrant.

REC-AU-03:
Camping/Campfire Closures. Close the following BLM-managed lands to camping and campfires:

- 18 Road Open OHV Area within the North Desert ERMA
- Bangs SRMA (certain areas, see SRMA section below);
- Gunnison River Bluffs ERMA (with an exception for special events, see ERMA section below);
- Horse Mountain ERMA (certain areas, see ERMA section below);
- Palisade Rim SRMA;
- Pyramid Rock ACEC;
- Unaweep Seep ACEC; and
- Within 100 meters of standing historic structures to include but not limited to Calamity Camp and New Verde Mine, unless administratively permitted.

If BLM determines there is a public health and safety issue or resource concern with a cultural resource or historic structure, the site may be closed to camping and overnight use.

REC-AU-04:
Day-use Only. Close the following BLM-managed lands to overnight use (sunset to sunrise):

- 34 and C Roads (certain areas outside of, but adjacent to, the Horse Mountain ERMA)
- Grand Valley Shooting Ranges (with an exception for authorized training exercises);
- Horse Mountain ERMA (certain areas, see ERMA section below);
- Redlands Dam area along the Gunnison River; and
- The Potholes on the Little Dolores River off of 9.8 Road in the Glade Park area.

REC-MA-01:
Issue SRPs as a discretionary action as a means to: help meet management objectives, provide opportunities for economic activity, facilitate recreational use of the public lands, direct visitor use, protect recreational and natural resources, and provide for the health and safety of visitors. Cost recovery procedures for issuing SRPs will be applied where appropriate.

REC-MA-02:
All new SRP proposals will be reviewed using the Special Recreation Permit Evaluation as outlined in Appendix L, Special Recreation Permits.

REC-MA-03:
Special Recreation Permits: Develop and implement an allocation system for SRPs. This will include criteria for numbers of events and types of events (i.e., community-focused) that will be considered for authorization through SRPs. Monitoring will identify effectiveness of permit classification system and adjustments will be made if it is determined that recreation goals and objectives are not being met.

REC-MA-04:
All SRPs will contain standard stipulations appropriate for the type of activity and may include additional stipulations necessary to protect lands or resources, reduce conflicting user interactions, or minimize health and safety concerns.

REC-MA-05:
Prohibit cross-country motorized/mechanized travel for big game retrieval, except in open areas (e.g. Grand Valley OHV SRMA). Allow hand-held non-motorized/non-mechanized wheeled game retrieval carts.

REC-MA-06:
Provide recreational travel routes that are compatible with other resource objectives and connect the following areas:

- West side of North Desert ERMA to Rabbit Valley (within the McInnis Canyon NCA) and Utah Rims SRMA (within the Moab FO);
- Palisade Rim SRMA to Horse Mountain ERMA; and
- Grand Mesa to Palisade Rim SRMA and Horse Mountain ERMA.

REC-MA-07:
In balance with other resource considerations, retain or provide access to difficult to reach parcels of public land for hunting, fishing, and other recreation activities.

REC-MA-08:
Consider route features, quality user experience, and route connectivity to determine appropriate route use type (e.g. open, mechanized, ATV, UTV, foot, etc.).

REC-MA-09:
In balance with other resource considerations, provide access to undeveloped campsites that exist along dead-end spur roads.

REC-MA-10:
Work closely with Mesa and Garfield counties to maintain public access to areas identified as important for recreation.

REC-OBJ-02 (*Field Office-Wide Community Partnership and Service Provider Objective***):**
Increase collaboration and cooperation with community partners and other service providers to help communities produce greater well—being and socioeconomic health and deliver outstanding recreation experiences to visitors while sustaining the distinctive character of public lands recreation settings.

Note: See also the BMP appendix (Appendix H), which provides important guidance to meet this objective.

REC-MA-11:
Coordinate with Dominguez-Escalante NCA, CDOT, Mesa County, Unaweep-Tabeguache Scenic and Historic Byway Association, and other stakeholders (e.g., Western Colorado Climbers' Coalition) to design and construct parking/trailhead facilities and a campground along Highway 141 on Ninemile Hill.

REC-OBJ-03 (*Field Office-Wide Public Health and Safety Objective***):**
Limit visitor exposure to unhealthy or unsafe human-created conditions (defined by a repeat incident in the same year, of the same type, in the same location, due to the same cause).

REC-MA-12:
Continue to manage the existing developed recreation sites:

- Miracle Rock; and
- Mud Spring.

REC-MA-13:
Continue to actively manage and maintain existing developed recreation sites within the planning area, including ERMA and SRMA facilities and the following sites outside of designated RMAs:

- Low Gap Recreation Site;
- North Soda Recreation Site;
- Miracle Rock Recreation Site; and
- Mud Springs Campground.

REC-AU-05:
At designated sites allow overnight camping and campfires at Miracle Rock Recreation Site (prohibit camping outside of designated sites).

REC-MA-14:
If monitoring indicates a need for additional camping opportunities in the Miracle Rock area, redesign/reconfigure the Miracle Rock Recreation Site to better accommodate overnight camping.

REC-AU-06:
STIPULATION CSU-31: *Recreation.* Apply CSU (site-specific relocation) restrictions to surface occupancy and surface-disturbing activities to minimize conflicts with developed (and future) recreation sites and to mapped (and future) national/regional trails, local system trails that connect communities, and trailheads and interpretive sites with exceptional recreation values or significant public interest. (Refer to Appendix B.) See Figures 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

Apply this stipulation to the following sites that lie outside of designated RMAs:

- Low Gap Recreation Site;
- North Soda Recreation Site;
- Miracle Rock Recreation Site; and
- Mud Springs Campground.

REC-AU-07:
The discharge of firearms for recreational target shooting is permitted on BLM lands, outside of areas with firearm use restrictions, provided that the firearm is discharged toward a proper backstop sufficient to stop the projectile's forward progress beyond the intended target. Targets shall be constructed of wood,

cardboard, paper, or similar non-breakable materials. Clay targets and similar aerial targets shall be allowed. All targets, clays and shells are considered litter after use and must be removed and properly discarded.

Notify the public if areas are closed or restricted from recreational target shooting where monitoring or related data suggest that recreational shooting is causing or will cause considerable adverse impacts to public safety, or other sensitive resources (e.g., areas adjacent to a new housing development). Hunting in accordance with state regulations will continue to be allowed.

REC-AU-08:
Firearm Use. Allow the discharge of firearms for recreational target shooting on 1,013,700 acres. See Figure 2-28 Appendix A.

REC-AU-09:
Firearm Use Restrictions. In the following areas, prohibit recreational target shooting that uses any devices to propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns on 49,000 acres (Figure 2-28, Appendix A).

- Bangs SRMA RMZs 1, 2, and 3 (15,500 acres);
- Coal Canyon and Main Canyon areas (4,000 acres);
- Developed recreation sites;
- Grand Valley OHV SRMA (9,700 acres);
- Gunnison River Bluffs ERMA (810 acres);
- Horse Mountain ERMA, including RMZ 2 and adjacent areas west of Sink Creek and areas adjacent to residences at the east end of C Road (1,500 acres).
- Mt. Garfield ACEC (2,400 acres);
- North Desert ERMA, 18 Road Open area (170 acres);
- North Fruita Desert SRMA (11,600 acres);
- Palisade Rim SRMA (2,000 acres); and
- Pyramid Rock ACEC (1,300 acres).

The purpose of the restriction is to protect public safety by minimizing potential for accidental shootings and/or to protect sensitive resources (43 CFR 8364.1). This does not apply to the lawful taking of game.

REC-OBJ-04 (*Field Office-Wide Recreation User Interaction Objective***):**
Maximize positive interactions between a wide range of recreation users to protect a variety of recreation opportunities (Marcouiller 2008). Note: See BMP Appendix H for important guidance related to this objective.

REC-MA-15:

Designate and manage recreation management areas (ERMAs, SRMAs) to provide and protect a wide variety of recreation opportunities, using approaches including (but not limited to) the following:

- Work with managing partners and service providers to create informational materials that help visitors match their expectations with appropriate recreation areas and opportunities available throughout the GJFO and adjoining public lands.
- In SRMAs, work with recreation users and other stakeholders to ensure protection of targeted activities, experiences and outcomes.
- In ERMAs managed for multiple activities, consider separating incompatible recreation uses in either time or space if monitoring indicates that negative user interactions are occurring and warrants the change (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.).
- In areas managed for multiple activities, support cooperative efforts by recreation users and other stakeholders that develop strategies promoting compatible interactions between recreation users (e.g., multi-user/interdisciplinary working groups).

REC-AU-10:
In SRMAs and ERMAs, establish specific Trail Management Objectives for primary recreation routes.

REC-OBJ-05 (*De Beque Area Recreation Objective*):
If feasible, provide for recreation opportunities near the town of De Beque that enhance and protect sensitive cultural and biological resources, while providing a diverse mix of recreation activities and experiences, including intermediate to expert level singletrack motorcycling and mountain biking, and motorcycle trials riding utilizing the area's unique natural topography and scenery to enhance users' experiences. To a secondary extent, provide for shared compatible uses such as 4x4 and ATV touring, hiking, and horseback riding. Note: See BMP Appendix H for important guidance related to this objective.

REC-MA-16:
Further evaluate and assess resource values within the area southwest of De Beque (bounded by South Shale Ridge, the Colorado River, and the Little Book Cliffs WSA).

REC-MA-17:
Use the following process to determine if a recreation management area or areas (ERMA and/or SRMA) that meet resource objectives can be identified:

1. Develop the resource evaluation consultation with Tribes, SHPO, and USFWS;

2. Evaluate the feasibility and costs of the assessment process, working together with the public and other partners;
3. Determine potential RMA boundaries if the resource evaluation, process feasibility, and cost assessment support completion of this step, working together with the public and other partners.
4. Conduct NEPA analysis of any ERMA and/or SRMA designation proposal resulting from completion of the previous steps.
5. Define specific thresholds of acceptable change that can be used in monitoring protocols.
6. Construct a carefully designed trail system that supports recreation objectives while protecting sensitive resources, working together with the public and other partners.

Current known management guidance/considerations in the De Beque area:

- High value cultural resources, Tribal concerns and sensitive plants in the area require avoidance or other mitigation.
- Sensitive plants in the area require avoidance or other mitigation.
- Oil and gas exploration and development is prevalent in the area.
- Recreationists desire a diverse mix of recreation activities and experiences, including intermediate to expert level singletrack motorcycling and mountain biking, motorcycle trials riding, 4x4 and ATV touring, utilizing the area's unique natural topography and scenery to enhance users' experiences. To a secondary extent and if possible, provide for shared compatible uses such as 4x4 and ATV touring, hiking, and horseback riding.

Special Recreation Management Areas

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS AND SRMA BMPS)

The SRMAs are administrative units where the existing or proposed recreation opportunities and desired recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially as compared to other areas used for recreation.

Management Focus. The SRMAs are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics. The SRMAs may be subdivided into recreation management zones (RMZ) to further delineate specific recreation opportunities. Within SRMAs, R&VS management is recognized as the predominant land management focus, where specific recreation opportunities and recreation setting characteristics are managed and protected on a long-term basis.

Requirements. The SRMAs/RMZs must have measurable outcome-focused objectives. Supporting management actions and allowable use decisions are required to: 1) sustain or

enhance recreation objectives, 2) protect the desired recreation setting characteristics, and 3) constrain uses, including non-compatible recreation activities that are detrimental to meeting recreation or other critical resource objectives (e.g. cultural or threatened and endangered species).

REC-SRMA-OBJ-01:
Through the life of the plan, provide high quality recreation opportunities that result in improved quality of life for individuals and communities. Designate and manage individual SRMAs to provide for targeted recreation, activities, settings and associated outcomes.

REC-SRMA-MA-01:
Designate five SRMAs for the protection of the prescribed recreation outcomes and settings (87,200 acres) (Figure 2-7, Appendix A):

- Bangs (47,800 acres);
- Dolores River Canyon (16,100 acres);
- Grand Valley OHV (9,700 acres);
- North Fruita Desert (11,600 acres); and
- Palisade Rim (2,000 acres).

REC-SRMA-MA-02:
Manage travel management within each SRMA/RMZ to support SRMA/RMZ objectives.

REC-SRMA-AU-01:
No Leasing: *Special Recreation Management Areas.* Close the following SRMAs to fluid mineral leasing. (Refer to Appendix B.) See Figure 2-12, Appendix A:

- Bangs;
- Dolores River Canyon; and
- Palisade Rim.

REC-SRMA-AU-02:
Geophysical exploration:
Close the following SRMAs to geophysical exploration:

- Bangs;
- Dolores River Canyon;
- North Fruita Desert; and
- Palisade Rim.

REC-SRMA-AU-03:
Mineral Materials:

Close the following SRMAs to mineral material sales:

- Bangs (with an exception for the Community Bentonite Pit on Little Park Road);
- Dolores River Canyon (with an exception for the pit along the Niche Road);
- Grand Valley OHV;
- North Fruita Desert; and
- Palisade Rim.

REC-SRMA-AU-04:
Non-Energy Solid Leasable Minerals:

Close all SRMAs to non-energy solid leasable minerals.

REC-SRMA-AU-05:
STIPULATION CSU-32: *Recreation Management Areas.* Apply CSU (site-specific relocation) restrictions in the Grand Valley OHV SRMA. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

REC-SRMA-AU-06:
STIPULATION *RECREATION SRMA NSO CO:* No surface occupancy or use is allowed within the following Special Recreation Management Areas (SRMAs) as identified in the Resource Management Plan:

- Bangs;
- Dolores River Canyon;
- North Fruita Desert; and
- Palisade Rim.

Standard exceptions apply; see Appendix B.

REC-SRMA-MA-03:
Utilize current best management practices (Appendix H) and the "Recreation Management Guidelines to Meet Public Land Health Standards on Bureau of Land Management Lands in Colorado" to reduce or eliminate impacts from recreation to the other natural and cultural resources listed in the SRMA/RMZ objectives (except for the Grand Valley OHV SRMA). Appendix H describes BMPs current at the time of the RMP planning process. BMPs will likely evolve over the life of the plan. Implementation of management actions should be based on the most current BMPs.

Bangs SRMA - 47,800 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

Supporting Information for SRMA Allocation

The Bangs SRMA has four distinct recreation management zones (RMZs). Overall, the Bangs SRMA provides opportunities for: mountain biking, hiking and trail running on world class singletrack trails; OHV use on a network of motorcycle, ATV, 4X4 and rock crawling routes; discovering and learning about the area's natural and cultural history; and exploring primitive undeveloped canyon country on foot or horseback. This SRMA includes the Tabeguache (Lunch Loops), Little Park, Bangs Canyon, and Ribbon Trailheads. The area has scenic views of the Colorado National Monument, Grand Valley, Grand Mesa, and Book Cliffs. The area is in close proximity to the population center of the Grand Valley, which makes it an important community resource for local recreation and quality of life, well as tourism. Portions of the SRMA are managed in partnership with the City of Grand Junction, with shared responsibility for access and facilities.

Goal SRMA-Wide

The Bangs SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality recreational opportunities that will continue to add to area residents' quality of life by contributing to the local economy and enhancing stewardship and protection of the area's natural and cultural resources.

Objective SRMA-Wide

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

REC-SRMA-MA-04 (Bangs SRMA):

Manage the Tabeguache Trail from Little Park Road to Highway 141 as a high-clearance full-sized 4-wheel drive route to provide long-distance OHV recreation opportunities spanning portions of the Bangs SRMA, Dominguez-Escalante NCA, and Uncompahgre National Forest.

Bangs SRMA RMZ 1 Lunch Loops Community Recreation Area

3,900 ACRES (SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

REC-SRMA-OBJ-02 (Bangs SRMA RMZ 1):

Through the life of the plan, manage RMZ 1 targeting a local/regional market, providing non-motorized mixed-use trail opportunities, accommodating a range of skill levels (beginner, intermediate and advanced). Encourage community-based recreation that can be marketed as an urban interface recreation asset of the Grand Valley. Manage the zone for the following targeted recreation activities and outcomes:

Activities: *The targeted activities of the RMZ are mountain bicycling, trail running, dog walking, and hiking.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience frequent access to outdoor physical activity, often in groups of friends and family, for fitness and stress reduction, to*

increase endurance, and to develop outdoor skills and abilities through recreation in this zone.

2. *Visitors realize personal benefits of easy access to the outdoors, improved fitness and health maintenance (physical and mental), development of technical competence (e.g., mountain biking skills), and development of stronger social bonds with friends and family.*
3. *The local community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier community.*
4. *The area economy is strengthened through recreation-related revenue and increased desirability of the community as a place to live.*

Resource Values:
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), Grand Junction Milk Vetch (Astragalus linifolius), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

Resource Uses:
Minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: lands and realty.

REC-SRMA-MA-05 (Bangs SRMA RMZ 1):
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): This is a non-motorized, urban interface zone that is bounded by county and city roads. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, houses and other man-made developments. Due to topography and area scenery, the natural landscape is mostly retained despite the density of trails and proximity to the City of Grand Junction. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and shade shelters. Throughout the unit, a designated singletrack trail system with a spectrum of trails (varied level of difficulty) is marked and maintained to achieve defined trail

management objectives that support overall RMZ objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than15 other groups on designated trails. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are frequent throughout the RMZ, but more prominent near trailheads. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized singletrack trails with easy access from several trailheads in close proximity to the Grand Valley. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence prominent at trailheads, and less prominent away from trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-07 (Bangs SRMA RMZ 1):
VRM Class:

Manage the RMZ under VRM Class II objectives.

REC-SRMA-AU-08 (Bangs SRMA RMZ 1):
Minerals:

Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales, with the exception of the community bentonite pit on Little Park Road.
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-09 (Bangs SRMA RMZ 1):
ROW:
Designate as a ROW avoidance area.

REC-SRMA-MA-06 (Bangs SRMA RMZ 1):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-SRMA-AU-10 (Bangs SRMA RMZ 1):

Forestry and Vegetation:
Close the RMZ to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

REC-SRMA-AU-11 (Bangs SRMA RMZ 1):
Camping restrictions:
Close the RMZ to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

REC-SRMA-AU-12 (Bangs SRMA RMZ 1):
Firearm use restrictions:
Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns due to the high volume of use and density of designated routes in this area. This does not apply to the lawful taking of game.

REC-SRMA-AU-13 (Bangs SRMA RMZ 1):
Special Recreation Permits:

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Class IV SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

REC-SRMA-AU-14 (Bangs SRMA RMZ 1):
Comprehensive Trails and Travel Management:

- Close the RMZ to motorized travel, with the exception of trailhead access and administrative access to range improvements and other facilities.
- Limit mechanized travel to designated routes throughout the RMZ with the exception of small designated corridors where open travel is allowed (e.g., Free Lunch Trail play areas).
- Limit foot and horse travel to designated routes north of Little Park Road and Andy's Loop (core Lunch Loop trail system - see travel maps) due to the high volume of use and density of designated routes in this area.

REC-SRMA-MA-07 (Bangs SRMA RMZ 1):
Comprehensive Trails and Travel Management:

- Construct new system trails to accommodate activity-specific trails (e.g., limited to hiking).
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives. Reroute/repair unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-SRMA-MA-08 (Bangs SRMA RMZ 1):
Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Bangs SRMA RMZ 2 Magellan – Tabeguache OHV Trails
10,600 ACRES (SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

REC-SRMA-OBJ-03 (Bangs SRMA RMZ 2):
Through the life of this plan, manage RMZ 2 targeting a local/regional market, and providing a broad range of motorized OHV trail opportunities, accommodating a range of skill levels (beginner, intermediate and advanced) for varying distances, including route connections that create long-distance OHV recreation opportunities spanning portions of the Bangs SRMA, Dominguez-Escalante NCA, and Uncompahgre National Forest. Encourage community-based recreation that can be marketed as an urban interface recreation asset to the Grand Valley. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the RMZ are motorized OHV trail riding (motorcycles, ATV/UTV, 4x4 full-size vehicles, rock crawling).*

Outcomes and Experiences:

1. *Visitors experience or seek to experience easy access to adventure and exploration with family and friends in a natural landscape. Visitors also value the opportunity to test their equipment and driving/riding skills.*
2. *Visitors generally realize personal benefits of having easy access to outdoor recreation in a natural environment, development of technical competence (driving/riding skills), and development of stronger social bonds with friends and family.*
3. *The community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier populous.*
4. *The area economy is strengthened through recreation-related revenue and increased desirability of the community as a place to live.*

Resource Values:
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), Grand Junction Milk Vetch (Astragalus linifolius), Canyon Tree Frog (Hyla arenicolor), Northern Leopard Frog (Rana pipiens), desert bighorn sheep, deer and elk winter range, water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers), soils, riparian resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses:
Through the life of the plan, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: livestock grazing.

REC-SRMA-MA-09 (Bangs SRMA RMZ 2):
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): This area is moderately remote in character with singletrack, ATV, and jeep trails that offer motorized recreation opportunities bound by state and county roads. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, houses and other man-made developments. Due to the topography, vegetative screening and area scenery, the natural-appearing landscape is retained despite the proximity to the City of Grand Junction. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and other signs. Throughout the unit, a designated trail system with a range of trail opportunities (variety of use designations and varied levels of difficulty) is marked and maintained to achieve defined trail management objectives that support overall RMZ objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than six other groups on designated routes. Groups are generally small to medium-sized (3-6 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are relatively

infrequent throughout the RMZ, but more prominent near trailheads. Other users are more likely to be heard than seen due to the focus on motorized recreation. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): This RMZ is focused on motorized OHV use with trails and trailheads designed specifically for motorcycles, ATVs and full-size 4x4 vehicles. Access on the Tabeguache Trail through this zone, and continuing through RMZ 4, provides long-distance riding opportunities by linking the Tabeguache Trail through the Bangs SRMA, Dominguez-Escalante NCA and Uncompahgre National Forest. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local OHV businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence is prominent at trailheads, and less prominent away from trailheads. Rules, regulations, and land-use ethics are clearly posted at trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-15 (Bangs SRMA RMZ 2):
VRM Class:

Manage the RMZ under VRM Class II objectives.

REC-SRMA-AU-16 (Bangs SRMA RMZ 2):
Minerals:

Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-17 (Bangs SRMA RMZ 2):
ROW:
Designate as a ROW avoidance area.

REC-SRMA-MA-10 (Bangs SRMA RMZ 2):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-SRMA-AU-18 (Bangs SRMA RMZ 2):

Forestry and Vegetation:

Allow harvest of forest and woodland products if the RMZ is determined suitable for harvest. Close the RMZ to collection of vegetative material under a wilding permit.

REC-SRMA-AU-19 (Bangs SRMA RMZ 2):
Camping restrictions:

- Allow camping and campfires only in designated sites in the portion of the RMZ north of the drainage at the bottom of Rough Canyon. In this portion of the RMZ, require the use of firepans and portable toilet systems, and prohibit firewood collection, to minimize camping impacts.
- Allow undeveloped camping and campfires in the portion of the RMZ south of the drainage at the bottom of Rough Canyon. In this portion of the RMZ, allow collection of only dead and down wood for campfires.

REC-SRMA-AU-20 (Bangs SRMA RMZ 2):
Firearm use restrictions:

Prohibit the discharge of firearms (including any devices that propel a projectile, including but not limited to, bow and arrow, sling shots, paint ball guns and air guns) for recreational target shooting within the RMZ for the safety of other recreation users in this area of concentrated trail use. This does not apply to the lawful taking of game.

REC-SRMA-AU-21 (Bangs SRMA RMZ 2):
Special Recreation Permits:

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Class IV Commercial and Competitive SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Allow non-motorized events that have been coordinated with, and endorsed by, local OHV organizations, and do not significantly interfere with the SRMA's targeted activities, experiences and outcomes.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

REC-SRMA-AU-22 (Bangs SRMA RMZ 2):
Comprehensive Trails and Travel Management:

- Limit motorized and mechanized travel to designated routes throughout the RMZ with the exception of small designated corridors where open travel is allowed (e.g., Tabeguache Rough Canyon slickrock play area.)
- Manage that part of the Tabeguache Trail that is south of the zone, to Highway 141 as a high clearance full-sized 4-wheel drive route. This action is outside of the Magellan-Tabeguache OHV Zone (RMZ 2) but provides an essential trail link through the adjacent Bangs Primitive Backcountry Zone (RMZ 4) for meeting the RMZ 2 objective for long-distance OHV opportunities.

REC-SRMA-MA-11 (Bangs SRMA RMZ 2):
Comprehensive Trails and Travel Management:

- Work with stakeholders/partners to design and construct new system trails to create additional motorized OHV recreation opportunities that help achieve RMZ objectives.
- Work with stakeholders to create new access points and trailheads if necessary to accommodate increased use, and/or achieve RMZ objectives.
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives.
- Reroute/repair unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-SRMA-MA-12 (Bangs SRMA RMZ 1):
Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

REC-SRMA-AU-23 (Bangs SRMA RMZ 2):
Prohibit new trail development in the portion of the RMZ which overlaps the Rough Canyon ACEC unless impacts to ACEC relevance and importance criteria can be mitigated.

Bangs SRMA RMZ 3 Mica Mine/Rough Canyon Outdoor Classroom

1,100 ACRES (SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

REC-SRMA-OBJ-04 (Bangs SRMA RMZ 3):
Through the life of this plan, manage RMZ 3 targeting a local/regional market, providing hiking and educational outdoor classroom learning opportunities consistent with Rough Canyon ACEC management objectives to enhance the appreciation and protection of those values (geology, wildlife habitat, sensitive plants and cultural

resources). Encourage community-based use of the area as an outdoor classroom. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the RMZ are hiking/walking and experiential learning.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience the enjoyment and appreciation of the area's wildlife, scenery, views and aesthetics while learning more about the area's history, ecology and geology.*
2. *Visitors realize personal benefits of a closer relationship with the natural world.*
3. *The community benefits from an increased awareness and protection of natural landscapes and cultural resources on a community-wide basis.*

Resource Values:

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), Grand Junction Milk Vetch (Astragalus linifolius), Significant plant communities: West Slope Pinyon Woodland (Pinus edulis-Juniperus osteosperma/Coleogyne ramosisima Woodland); Canyon Tree Frog (Hyla arenicolor), Northern Leopard Frog (Rana pipiens), desert bighorn sheep, deer and elkwinter range, water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers), soils, riparian resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: mineral collecting, livestock grazing, lands and real estate.

REC-SRMA-MA-13 (Bangs SRMA RMZ 3):

Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:

Physical (remoteness, naturalness, facilities): This is a non-motorized/ non-

mechanized zone with easy access from Grand Junction via Little Park Road. The character of the landscape is mostly natural in appearance with few modifications that detract from naturalness. Evidence of past mining activities and developments are present in portions of Rough Canyon and Ladder Canyon. Due to topography, vegetative screening and area scenery, the natural landscape is mostly retained. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and other signs. Trails in the zone are designed and maintained to facilitate defined experiential learning objectives. Interpretive and educational displays can be expected at trailheads and along primary trails.

Social (contacts with other groups, group size, evidence of use): On developed trails (Mica mine, Rough Canyon trails), visitors are likely to encounter multiple groups per day with a fairly high potential of seeing large groups like school groups and scouts. Throughout the rest of the unit, encounters with other groups are infrequent. On developed trails, the sounds of other people are frequently heard. In the rest of the unit, depending on location in the zone and proximity to trailheads, the sounds of other people are infrequent. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized/non-mechanized trails provide easy access from the Bangs Trailhead which lies in close proximity to the Grand Valley. The large trailhead accommodates buses that transport school groups to the area. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Mesa County School District 51, Colorado Mesa University, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence prominent at trailheads, and less prominent away from trailheads. Staff or volunteer trail hosts or guides may be on primary trails providing education/interpretation services. Rules, regulations, and land-use ethics are clearly posted at trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-24 (Bangs SRMA RMZ 3):
VRM Class:

Manage the RMZ under VRM Class II objectives.

REC-SRMA-AU-25 (Bangs SRMA RMZ 3):
Minerals:

Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-26 (Bangs SRMA RMZ 3):
ROW:
Designate as a ROW exclusion area with an exception to allow consideration of ROW applications for access to private inholdings within the RMZ.

REC-SRMA-MA-14 (Bangs SRMA RMZ 3):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-SRMA-AU-27 (Bangs SRMA RMZ 3):
Forestry and Vegetation:

Close the RMZ to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

REC-SRMA-AU-28 (Bangs SRMA RMZ 3):
Camping restrictions:

Close the RMZ to overnight camping and campfires to reduce impacts to sensitive biological and cultural resources.

REC-SRMA-AU-29 (Bangs SRMA RMZ 3):
Firearm use restrictions:

For the safety of other recreation users and protection of sensitive resources, prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball, guns and air guns. This does not apply to the lawful taking of game.

REC-SRMA-AU-30 (Bangs SRMA RMZ 3):
Rock Climbing:

- Allow technical rock climbing to continue where it does not create conflicts with targeted recreation uses and outcomes.
- With partners (climbing clubs, retail service providers, etc.), close climbing routes that are causing resource concerns; identify and improve primary access trails to and between climbing routes to protect biological and cultural resources.
- To reduce resource impacts on the top of routes, encourage placement of permanent rappel anchors.

- To protect visual resources, require all permanent anchors to match the color of the rock surface (fixtures, hardware and webbing, etc.).

REC-SRMA-MA-15 (Bangs SRMA RMZ 3):
To protect the learning opportunities associated with the area's mica and quartz mining history, develop educational messages that encourage visitors to leave mica and quartz onsite. If monitoring shows significant loss of mica and quartz from the area, implement collection restrictions (e.g., prohibit collection of mica and quartz, requiring special permits for the collection of small quantities for classroom study).

REC-SRMA-AU-31 (Bangs SRMA RMZ 3):
Special Recreation Permits:
Issue Class I – II Commercial, Competitive and Organized group SRPs that are consistent with RMZ objectives. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.

REC-SRMA-AU-32 (Bangs SRMA RMZ 3):
Comprehensive Trails and Travel Management:

- Close the RMZ to motorized and mechanized travel.
- Close the Mica Mine trail and Rough Canyon trail to equestrian use to protect sensitive biological and cultural resources. Equestrian use is allowed elsewhere in the RMZ.

REC-SRMA-MA-16 (Bangs SRMA RMZ 3):
Comprehensive Trails and Travel Management:

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of RMZ objectives.
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives.
- Reroute/repair unsustainable and eroding routes.

REC-SRMA-MA-17 (Bangs SRMA RMZ 3):
Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Bangs SRMA RMZ 4 Bangs Primitive Backcountry Zone
32,200 ACRES (SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

REC-SRMA-OBJ-05 (Bangs SRMA RMZ 4):

Through the life of this plan, manage RMZ 4 targeting local/regional visitors, providing primitive backcountry hiking, horseback riding, hunting, and wildlife viewing opportunities in a largely undeveloped natural setting. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the RMZ are primitive cross-country hiking, horseback riding, hunting and wildlife viewing.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience quiet adventures to enjoy the area's wildlife, scenery, views and undeveloped natural landscapes while exploring the area by foot or horseback.*
2. *Visitors generally realize personal benefits of physical exercise, stress reduction, and a closer relationship with the natural world.*
3. *The community benefits from an increased awareness and stewardship of natural landscapes on a community-wide basis.*

Resource Values:
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/ mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), deer and elk winter range, water quality (non-point source erosion/ sedimentation into the Colorado River), soils, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: livestock grazing.

REC-SRMA-MA-18 (Bangs SRMA RMZ 4):
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): This is a remote backcountry zone bisected by the Tabeguache Trail which provides a through route for motorized and mechanized users to traverse the area between Bangs RMZ 1 and Highway 141. Apart from the Tabeguache Trail there are few signs of man-made developments in

the interior of this zone. Developments of man are visible in the distance from parts of the zone, and are more prominent near the perimeter of the zone. There are no developed recreation facilities in the zone with the exception of the Tabeguache Trail.

Social (contacts with other groups, group size, evidence of use): Except along the Tabeguache Trail, visitors to this zone can expect contacts with other groups to be infrequent (0-3 per day) and group sizes are small (1-6 people.) Evidence of other recreation activities is minimal. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Motorized and mechanized vehicle access is limited to the perimeter of the zone, and the Tabeguache Trail that bisects the zone. Foot and horse travel and camping utilizes primitive, undeveloped trails, or cross-country route-finding employing Leave No Trace travel and camping principles. Visitor services and management presence are minimal. There are no developed/maintained trails, with the exception of the Tabeguache Trail. Basic signs showing rules, regulations and land-use ethics may be posted at primary access points. BLM staff or volunteer field patrols in this zone are generally infrequent.

REC-SRMA-AU-33 (Bangs SRMA RMZ 4):
Allow motorized and mechanized vehicle use on the Tabeguache Trail through RMZ 4.

REC-SRMA-MA-19 (Bangs SRMA RMZ 4):
Lands with Wilderness Characteristics:

Manage the portion of the RMZ which overlaps the Bangs Canyon LWC unit consistently with the LWC unit management objectives. This includes the management actions and allowable uses shown below for the RMZ in addition to the following:

Allowable Use: **STIPULATION** *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO*. No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan. Standard exceptions apply; see Appendix B.

REC-SRMA-AU-34 (Bangs SRMA RMZ 4):
VRM Class:

Manage the RMZ under VRM Class II objectives.

REC-SRMA-AU-35 (Bangs SRMA RMZ 4):

Minerals:

Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-36 (Bangs SRMA RMZ 4):
ROW:
Manage as a ROW exclusion area with an exception to allow consideration of ROW applications for access to private inholdings within the RMZ.

REC-SRMA-MA-20 (Bangs SRMA RMZ 4):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-SRMA-AU-37 (Bangs SRMA RMZ 4):
Forestry and Vegetation:

Close the RMZ to the following:

- Timber harvest, fire wood cutting, and special forest product harvest.
- Collection of vegetative material under a wilding permit.

REC-SRMA-AU-38 (Bangs SRMA RMZ 4):
Camping restrictions:

Allow overnight camping and campfires using Leave No Trace camping principles.

REC-SRMA-AU-39 (Bangs SRMA RMZ 4):
Special Recreation Permits:

- Issue Class I and II Commercial and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Competitive SRPs except on the Tabeguache Trail.

REC-SRMA-AU-40 (Bangs SRMA RMZ 4):
Comprehensive Trails and Travel Management:

- Limited to designated routes for motorized and mechanized travel.
- Limited to designated routes for motorized over-the-snow travel.

REC-SRMA-MA-21 (Bangs SRMA RMZ 4):
Special Recreation Permits:

All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

REC-SRMA-MA-22 (Bangs SRMA RMZ 4):
If monitoring indicates that foot or horse travel in the zone is causing resource damage, consider limiting recreation use and/or limited trail development/maintenance to address the resource concern. Trail work, including but not limited to, signage/marking, reroutes, construction, should only be considered after other adaptive management strategies (group size limits, permitting, area closures, etc.) have been implemented to resolve resource concerns.

Dolores River SRMA - 16,100 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

Supporting Information for SRMA Allocation
The Dolores River Canyons SRMA encompasses scenic canyon country along the lower Dolores River west to the Utah Border, portions of West Creek, and lands adjacent to the Town of Gateway. It also includes a portion of the Unaweep-Tabeguache Scenic and Historic Byway. This SRMA will be directly affected by the development of the Gateway Canyons Resort and their partnership with BLM.

Goal SRMA-Wide
Dolores River Canyons SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality recreational opportunities that will continue to add to area residents' quality of life by contributing to the local economy and enhancing stewardship and protection of the area's natural and cultural resources.

Objective SRMA-Wide
The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

REC-SRMA-OBJ-06 (Dolores River SRMA):
Through the life of this plan, manage the Dolores River Canyons SRMA targeting a regional, national and international market providing educational opportunities for visitors to experience the history, culture, geology and scenic diversity of this region. Encourage stewardship and environmental and cultural appreciation through education and experiential learning. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the RMZ are automobile/motorized scenic touring, mountain biking, day hiking, float boating (canoes, kayaks, rafts), and environmental learning.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience the area's wildlife, scenery, views, aesthetics and culture by learning about this area during self-exploration or guided tours.*
2. *Visitors generally realize personal benefits of gaining greater appreciation of the area's natural and cultural heritage through education and improved mental well-being.*
3. *The community benefits by having an enhanced appreciation of public lands and the associated economic benefits of a more robust tourism market.*
4. *Visitor experiences will likely result in enhanced resource stewardship of the area's natural, scenic and cultural resources.*

Resource Values:

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: rare plants, including Kachina daisy (Erigeron kachinensis), Eastwood's monkeyflower (Mimulus eastwooodiae), San Rafael milkvetch (Astragalus rafaelensis), Fisher milkvetch (Astragalus piscator),Dolores River skeleton plant (Lygodesmia doloresensis), horseshoe milkvetch (Astragalus equisolensis), Grand Junction milkvetch (Astragalus linifolius), Tufted frasera (Frasera paniculatum), Osterhout's cryptantha (Cryptantha osterhoutii), and Gypsum catseye; Significant plant communities: Foothills Riaprian Shrubland (Forestiera pubescens shrubland), Narrowleaf Cottonwood Riparian Forest (Acer negundo – Populus angustifolia/ Celtis reticulate Forest); (Cryptantha gypsophila); invasive non-native vegetation including Russian knapweed (Acroptilon repens) and tamarisk(Tamarix spp.); bald eagle (Haliaeetus leucocephalus); peregrine falcon (Falco peregrinus); deer and elk winter range; riparian resources, visual resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: gold prospecting, lands and realty (ROW corridor), livestock grazing. In the portions of this RMZ that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

REC-SRMA-MA-23 (Dolores River SRMA):

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): This area is a corridor along Colorado State Highway 141, which is also a state scenic and historic byway (Unaweep-Tabeguache) and along county dirt roads paralleling the Dolores River. Despite its proximity to the highway, ranching development, and the small town of Gateway, this unit remains largely natural in appearance due to the area's topography and scenic integrity. Few facilities currently exist, but trailheads and other interpretive exhibits will likely be developed over time.

Social (contacts with other groups, group size, evidence of use): The majority of visitors use the scenic byway to explore this unit, with a smaller percentage of visitors floating the river or using the trails. Contacts with other groups are moderate to high (15-25) along the highway, and low (3-6) on the river and trails. Group sizes for all activities are variable. The evidence of use is low in regards to alteration of the natural landscapes, but sights and sounds of other users are common along the highway, and less prominent along the river, county roads, and trails. Use is highest during the spring, summer and fall months.

Operational (access, visitor services, management controls): Rural highway auto, truck and motorcycle traffic is characteristic in the majority of this unit. The highway affords easy access to the river and trails. Information and environmental education are prevalent along the highway corridor and at trailheads. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Town of Gateway, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. BLM staff or volunteers may occasionally be onsite, but most visitor use is supported by services in Gateway, or is self-guided, relying on signage or web-based information. Regulatory and educational information and use ethics are clearly signed to educate visitors and reduce resource damage.

REC-SRMA-AU-41 (Dolores River SRMA):
VRM Class:

Manage a portion of the SRMA under VRM Class II objectives (13,600 acres) and a portion under VRM Class III objectives (2,400 acres).

REC-SRMA-AU-42 (Dolores River SRMA):
Minerals:

Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales (exception for area near Niche Road).
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-43 (Dolores River SRMA):

ROW:
Designate as a ROW avoidance area.

REC-SRMA-MA-24 (Dolores River SRMA):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-SRMA-AU-44 (Dolores River SRMA):
Camping restrictions:

Limit camping and campfires to designated developed campgrounds and designated undeveloped campsites. Require the use of firepans and portable toilet systems at undeveloped campsites.

REC-SRMA-AU-45 (Dolores River SRMA):
Special Recreation Permits:

- Prohibit Class III and IV Commercial and Competitive SRPs. Allow an exception for historical, reoccurring events (e.g., Gateway Dynamite Shoot).
- Only issue vending permits in conjunction with event SRPs.

REC-SRMA-AU-46 (Dolores River SRMA):
Comprehensive Trails and Travel Management:

Limit motorized and mechanized travel to designated routes.

REC-SRMA-MA-25 (Dolores River SRMA):
Comprehensive Trails and Travel Management:

Work with Colorado Department of Transportation and the Unaweep-Tabeguache Scenic and Historic Byway to design and develop access from Highway 141 to interpretive sites and other recreation sites along the Dolores River.

REC-SRMA-AU-47 (Dolores River SRMA):
Special Recreation Permits:

- Issue Class I and II Commercial, Competitive, and Organized Group SRPs that are consistent with SRMA objectives.
- Allow only SRPs that support management objectives of BLM and stakeholders (e.g., environmental and cultural education).

REC-SRMA-MA-26 (Dolores River SRMA):
Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit

Classification System (see Appendix L).

REC-SRMA-MA-27 (Dolores River SRMA):
Connect/reroute routes to make loop opportunities that help achieve SRMA objectives. Reroute/repair unsustainable and eroding routes.

Grand Valley OHV SRMA - 9,700 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

Supporting Information for SRMA Allocation
The Grand Valley OHV SRMA is located northeast of the Grand Junction Regional Airport and encompasses approximately 15 square miles of desert-like terrain bounded by 27 ¼ Road on the west, the 32 Road alignment on the east, and the Little Book Cliffs on the northeast. The barren hills of Mancos shale offer challenging rides for all types of vehicles and all rider skill levels. 27 ¼ Road and 29 Road provide relatively easy access from the Grand Valley, and offer opportunities for development of recreation support facilities such as parking/unloading areas, informational signage, restrooms, campsites, and event venues. Existing roads, property boundaries and prominent topographic features provide distinct area boundaries that could be signed and/or fenced to clearly define the areas open for cross-country OHV travel.

Goal SRMA-Wide
The Grand Valley OHV SRMA, through recreation program management and stakeholder involvement, will produce opportunities for visitors to experience the freedom to participate in a variety of motorized OHV recreation activities which lead to a variety of beneficial recreation and economic outcomes for participants and Grand Valley communities.

Objective SRMA-Wide
The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

REC-SRMA-OBJ-07 (Grand Valley OHV SRMA):
Through the life of this plan, manage the SRMA to provide local and regional visitors the freedom to participate in unconfined motorized OHV recreation activities in close proximity to the urban amenities of the Grand Valley. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the RMZ are* are all forms of motorized OHV recreation, and undeveloped camping.

Outcomes and Experiences:

1. *Visitors experience or seek to experience the freedom of cross-country riding and risk-taking adventure while testing their equipment and building their skills often in groups of friends and family.*
2. *Visitors generally realize personal benefits of a greater sense of adventure that tests their endurance and equipment, and an improved capacity to engage in motorized OHV recreation.*
3. *The Grand Valley community benefits from increased local tourism and tax revenue, and an enhanced sense of community ownership in the area's recreation resources.*

Resource Values:

Manage this area to minimize recreation impacts in areas adjacent to the SRMA, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), Grand Junction suncup (Camissonia eastwoodiae), Grand Junction buckwheat (Eriogonum contortum), water quality (salinity, non-point source erosion/sedimentation into the Colorado River), Mancos soils.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: lands and realty (ROW corridor, land acquisitions, private property trespass) and livestock grazing. In the portions of this SRMA that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

REC-SRMA-MA-28 (Grand Valley OHV SRMA):

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:

Physical (remoteness, naturalness, facilities): The area's proximity to the Grand Valley, Interstate 70 and the Grand Junction Regional Airport creates an urban interface setting at the primary access points, with more remote settings available in the interior of the area. The character of the natural landscape has been largely altered by nearby development and cross country travel that has been the dominant use of the area for many years. Developed recreation facilities currently do not exist, but will likely be prominent in the future along the perimeter of the SRMA to

direct and focus use within the open area. The recreation facilities at primary access points may include, but are not limited to, parking/staging areas that accommodate OHV-hauling rigs, OHV loading/ unloading ramps, vault toilets, informational kiosks and shade shelters. Additional recreation facility developments within the area may include event/festival/ vending areas, and OHV race tracks (e.g., motocross track).

Social (contacts with other groups, group size, evidence of use): This SRMA is generally a busy place, with other people constantly in view, traveling or congregating in large groups at trailheads and throughout the unit. Large disturbed areas are present, with sights, sounds, and tracks of other targeted users prominent throughout the SRMA, but more prominent near staging areas. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

*Operational (access, visitor services, management controls): A*ccess to the southern and western periphery of the area is on regularly-maintained paved or gravel roads. Access into the interior of the SRMA is unrestricted by vehicle size or type. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local OHV businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Maps, signs and physical barriers (e.g., fences) delineate area boundaries. Management presence prominent at trailheads, and less prominent away from trailheads. Federal, state and local personnel are frequently present for information, education and law enforcement efforts. Portions of the area are designated for camping, festivals, equipment demonstrations, food vendors, and motorized events and competitions. Visitor use fees may be charged to support infrastructure and services (staging/event/camping area facilities, field patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-48 (Grand Valley OHV SRMA):
VRM Class:

Manage the SRMA under VRM Class IV objectives with the exception of the portion of the SRMA along the face of the Little Book Cliffs managed under VRM Class II objectives.

REC-SRMA-AU-49 (Grand Valley OHV SRMA):
Minerals:

Close the RMZ to the following:

Mineral material sales.

REC-SRMA-AU-50 (Grand Valley OHV SRMA):
ROW:

Designate as a ROW avoidance area except for existing ROW corridor.

REC-SRMA-MA-29 (Grand Valley OHV SRMA):
Lands and Realty:

- Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.
- Adjust SRMA boundary to match future land tenure adjustments related to expansion of the Grand Junction Regional Airport.

REC-SRMA-AU-51 (Grand Valley OHV SRMA):
Camping restrictions:

- Allow dispersed undeveloped camping throughout the SRMA as long as it does not interfere with frequently used OHV routes.
- Camping emphasis areas may be designated to direct and focus camping activities in areas that reduce interference with OHV use, and/or provide desirable camping opportunities.

REC-SRMA-AU-52 (Grand Valley OHV SRMA):
Firearm use restrictions:
Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

REC-SRMA-AU-53 (Grand Valley OHV SRMA):
Special Recreation Permits:

- Issue Class I, II, III and IV Commercial, Competitive and Organized Group SRPs that are consistent with SRMA objectives.
- Throughout the year, issue vending SRPs that achieve SRMA objectives and support local outdoor recreation businesses or organizations.
- In association with permitted competitive events, issue vending SRPs to vendors that support the authorized event.
- Do not issue vending SRPs for alcohol sales in the SRMA.
- Actively promote this area for motorized OHV events and activities.
- Allow non-motorized events that have been coordinated and endorsed by local OHV organizations, and do not significantly interfere with the SRMA's targeted activities, experiences and outcomes.

REC-SRMA-AU-54 (Grand Valley OHV SRMA):
Comprehensive Trails and Travel Management:

Allow unrestricted travel for all types of use within the SRMA, with the exception

of small designated camping areas, special use areas (e.g., motocross track) and vending/event areas.

REC-SRMA-AU-55 (Grand Valley OHV SRMA):
Comprehensive Trails and Travel Management:

To provide navigational assistance to visitors, consider providing directional signing on some primary arterial routes that traverse the SRMA and access primary staging areas.

REC-SRMA-MA-30 (Grand Valley OHV SRMA):
Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

REC-SRMA-MA-31 (Grand Valley OHV SRMA):
Clearly identify OHV open area boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to contain use along portions of an open OHV area boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.

REC-SRMA-MA-32 (Grand Valley OHV SRMA):
Continue to comply with the Federal Pollution Control Act regulations to minimize point sources of pollutants to navigable waters by obtaining (or requiring project proponents through conditions of approval to obtain) National Pollutant Discharge Elimination System (NPDES) permits where necessary to reduce impacts from stormwater runoff.

North Fruita Desert SRMA - 11,600 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

Supporting Information for SRMA Allocation

The North Fruita Desert SRMA is located at the base of the Book Cliffs north of the City of Fruita and encompasses a singletrack trail network that has gained international attention as a mountain bike riding destination. The trail system, and associated camping opportunities, provides a variety of unique opportunities for visitors to experience the diverse terrain of the desert environment along the base of the Book Cliffs. The area's close proximity to the City of Fruita makes it an important community resource for local recreation as well as tourism.

Goal SRMA-Wide

The North Fruita Desert SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality mountain bicycling

opportunities that add visitors' quality of life while contributing to the local economy and fostering stewardship of natural and cultural resources.

Objective SRMA-Wide

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

REC-SRMA-OBJ-08 (North Fruita Desert SRMA):

Through the life of this plan, manage the SRMA to be a tourism-based recreation area, providing singletrack bicycling trail opportunities accommodating a range of skill levels (beginner, intermediate and advanced) that can be marketed by stakeholders and partners as a family-focused mountain biking destination with close proximity to camping. Manage the SRMA for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the SRMA are mountain bicycling and camping.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience the closeness of family and friends while developing their riding skills and abilities.*
2. *Visitors realize personal benefits of easy access to the outdoors, improved fitness and health maintenance (physical and mental), development of technical competence (i.e., mountain biking and camping skills), and development of stronger social bonds with friends and family.*
3. *The community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier community.*
4. *The area economy is strengthened through recreation-related tourism revenue and increased desirability of the community as a place to live.*

Resource Values:

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: mule deer and elk winter range, water quality (non-point source erosion/sedimentation into the Colorado River) and soils.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: livestock grazing.

REC-SRMA-MA-33 (*North Fruita Desert SRMA*):

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to

more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): This is primarily a singletrack mountain biking trail network that is easily accessed from county roads, developed trailheads and campgrounds. More remote settings are available in the interior of the area. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, campground facilities, fences, livestock developments and other man-made structures. Due to topography and area scenery, the natural landscape is mostly retained despite the density of trails. The recreation facilities at trailheads and campgrounds may include, but are not limited to, parking lots, vault toilets, picnic tables, fire grates, informational kiosks and shade shelters. Throughout the unit, a designated singletrack trail system with a spectrum of trails (varied level of difficulty) is marked and maintained to achieve defined trail management objectives that support overall SRMA objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than15 other groups on designated trails, and 25 or more other groups in developed campgrounds during peak seasons. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are frequent throughout the area, but more prominent near trailheads and camping areas. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Mountain bicycle singletrack trails provide easy access from trailheads off of county roads. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local bicycle shops, City of Fruita, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Portions of the area are designated for camping, festivals, mountain bike events and races. Maps, signs and physical barriers (e.g., fences) delineate area boundaries. Management presence prominent at trailheads and camping areas, and less prominent away from trailheads. Campground host onsite at campground during peak seasons. Visitor use fees may be charged to support infrastructure and services (trailhead, campground and event facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-56 (*North Fruita Desert SRMA*):

VRM Class:

Manage the SRMA under VRM Class II objectives.

REC-SRMA-AU-57 (*North Fruita Desert SRMA*):
Minerals:

Close the SRMA to the following:

- Mineral material sales
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-58 (*North Fruita Desert SRMA*):
ROW:

Designate as a ROW exclusion area, with an exception for recreation projects requiring electric or water utilities, or for minimally intrusive access/utility ROWs to private inholdings within the SRMA.

REC-SRMA-MA-34 (*North Fruita Desert SRMA*):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.

REC-SRMA-AU-59 (*North Fruita Desert SRMA*):
Forestry and Vegetation:
Close the SRMA to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

REC-SRMA-AU-60 (*North Fruita Desert SRMA*):
Camping restrictions:

To reduce resource impacts and conflicting user interactions:

- Limit camping to designated campgrounds and campsites.
- Limit the number of people and/or vehicles allowed at each campsite.
- Require the use of portable toilet systems and firepans at designated undeveloped sites.

REC-SRMA-AU-61 (*North Fruita Desert SRMA*):
Firearm use restrictions:
For the safety of trail users and campers, prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and

arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

REC-SRMA-AU-62 (*North Fruita Desert SRMA*):
Special Recreation Permits:

- Issue Class I – IV Commercial, Competitive and Organized Group SRPs that are consistent with SRMA objectives.
- In association with Competitive events, issue vending SRPs to vendors that support the authorized event.
- Do not issue vending SRPs for alcohol sales in the SRMA.

REC-SRMA-AU-63 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

Limit motorized and mechanized travel to designated routes throughout the SRMA.

REC-SRMA-AU-64 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of SRMA objectives, including promotion of the area as a regional, national and international mountain biking tourism destination.

REC-SRMA-MA-35 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

Design and construct an event staging area and trail system to accommodate large-scale mountain bike races/events.

REC-SRMA-MA-36 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

- Construct new system trails to accommodate activity-specific trails (e.g., mountain bike racing, directional travel trails, constructed technical trail features).

REC-SRMA-MA-37 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

- Connect/reroute routes to make loop opportunities that help achieve SRMA objectives. Reroute/repair unsustainable and eroding routes.

REC-SRMA-MA-38 (*North Fruita Desert SRMA*):
Comprehensive Trails and Travel Management:

- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations

(allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-SRMA-MA-39 (*North Fruita Desert SRMA*):
Construct additional developed camping opportunities to address camping demand.

REC-SRMA-MA-40 (*North Fruita Desert SRMA*):
Special Recreation Permits:

Special Recreation Permits:
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Palisade Rim SRMA - 2,000 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF SRMAS *AND SRMA BMPS*)

Supporting Information for SRMA Allocation
The Palisade Rim SRMA encompasses the rim and bench lands east of the Town of Palisade. Public lands and trails in the area are popular close-to-home recreation destinations for the community of Palisade, neighboring communities and seasonal tourism. The area offers outstanding views of the Grand Valley, the Colorado River, the Little Book Cliffs and the Grand Mesa. It also contains significant cultural and wildlife resources.

Goal SRMA-Wide
The Palisade Rim SRMA, through recreation program management and stakeholder involvement, will produce quality recreation and learning opportunities that will continue to enhance area residents' quality of life, contribute to the local economy, and provide stewardship and protection of natural and cultural resources. The area's close proximity to the Town of Palisade makes it an important community resource for local recreation as well as tourism.

Objective SRMA-Wide
The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

REC-SRMA-OBJ-09 (Palisade Rim SRMA):
Through the life of this plan, manage the SRMA to be a community-based recreation area, providing intermediate to advanced non-motorized trail-based recreation with an emphasis on the area's scenery, cultural heritage educational opportunities and stewardship of cultural and natural resources. Manage the SRMA for the following targeted recreation activities, experiences and outcomes:

Activities: *The targeted activities for the SRMA are hiking, dog walking, trail running, mountain biking and horseback riding.*

Outcomes and Experiences:

1. *Visitors experience or seek to experience outdoor physical activity for fitness and stress reduction, as well as experiencing and learning about the area's scenic vistas, wildlife and cultural resources, often in small groups of family members and/or friends.*
2. *Visitors realize personal benefits of having recreation, outstanding scenery, cultural appreciation opportunities and wildlife viewing opportunities close to home. Individuals also benefit from improved fitness and health maintenance (physical and mental), development of technical competence (e.g., mountain biking skills), and development of stronger social bonds with friends and family.*
3. *The community benefits from improved quality of life with higher levels of public land stewardship, increased awareness of the area's natural, historic and cultural resources, stronger community relationships and a healthier community.*
4. *The area economy is strengthened through recreation-related tourism revenue and increased desirability of the community as a place to live.*

Resource Values:
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, Colorado Hookless Cactus (Sclerocactus glaucus), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

Resource Uses:

Minimize impacts from other resource uses to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: lands and realty (access across BOR withdrawal parcel), land acquisition, private property trespass). In the portions of the SRMA that overlap the ROW corridor, manage recreation to achieve ROW corridor management objectives.

REC-SRMA-MA-41 (*Palisade Rim SRMA*):
Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 in Appendix K.

Desired Recreation Setting Characteristics:
Physical (remoteness, naturalness, facilities): The character of the landscape is

largely natural in appearance, with some viewsheds that include roads, trails railroads, canals, houses, farms and other man-made developments. Due to topography and area scenery, the natural landscape is mostly retained despite the area's proximity to the Town of Palisade, Interstate 70 and the Grand Valley. The recreation facilities at trailheads (adjacent to the SRMA on CDOT property) may include, but are not limited to, vault toilets, informational/interpretive kiosks and shade shelters. Throughout the unit, a designated singletrack trail system is marked and maintained to achieve defined trail management objectives that support overall SRMA objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than seven other groups on designated trails. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights and sounds of other targeted users are moderately frequent throughout the SRMA, but more frequent near the trailhead. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized singletrack trails and use are predominant with primary access from a single trail and trailhead on non-BLM land (CDOT and BOR withdrawal). Bicycles may access the SRMA starting from locations in the nearby Town of Palisade. Secondary access from adjacent BLM, Forest Service and municipal lands to the south and east (depending on potential future development of connector trails.) A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Town of Palisade, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Management presence is moderate at trailheads, and less prominent away from trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.).

REC-SRMA-AU-65 (*Palisade Rim SRMA*):
VRM Class:

Manage the SRMA under VRM Class II objectives.

REC-SRMA-AU-66 (*Palisade Rim SRMA*):
Minerals:

Close the SRMA to the following:

- Fluid mineral leasing and geophysical exploration;
- Mineral material sales;
- Non-energy leasable mineral exploration and/or development.

REC-SRMA-AU-67 (*Palisade Rim SRMA*):

ROW:

Designate as a ROW avoidance area with the exception of the ROW corridor that crosses the SRMA. Recognize and grant priority status to utility developments in the ROW corridor. Utilize BMPs to minimize impacts to targeted recreation activities.

REC-SRMA-MA-42 (*Palisade Rim SRMA*):
Lands and Realty:

Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.

REC-SRMA-AU-68 (*Palisade Rim SRMA*):
Forestry and Vegetation:
Close the SRMA to the following:

Timber harvest, fire wood cutting and special forest product harvest.

REC-SRMA-AU-69 (*Palisade Rim SRMA*):
Camping restrictions:

Close the SRMA to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

REC-SRMA-AU-70 (*Palisade Rim SRMA*):
Firearm use restrictions:
Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

REC-SRMA-AU-71 (*Palisade Rim SRMA*):
Special Recreation Permits:

- Prohibit all Class III and IV SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Prohibit vending permits.

REC-SRMA-AU-72 (*Palisade Rim SRMA*):
Comprehensive Trails and Travel Management:

- Close the SRMA to motorized travel.
- Limit mechanized travel to designated routes throughout the SRMA.
- With partners (e.g., user groups, local municipalities, retail shops, service providers) develop connective trails to adjoining BLM lands, and the Horse Mountain ERMA, that are consistent with SRMA objectives.
- Limit new trail development to the minimum necessary to achieve SRMA objectives.

REC-SRMA-AU-73 (*Palisade Rim SRMA*):
Comprehensive Trails and Travel Management:

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of SRMA objectives.
- Reroute, repair, or close and restore unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-SRMA-AU-74 (*Palisade Rim SRMA*):
Special Recreation Permits:

- Issue Class I and II Commercial, Competitive, and Organized Group SRPs that are consistent with SRMA objectives.
- Require organized group SRPs for groups exceeding 12 participants
- All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Extensive Recreation Management Areas (ERMAs)

Extensive Recreation Management Areas are recreation areas that are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA. ERMA management is commensurate and considered in context with the management of other resources and resource uses. *The following general approaches apply to protect activities within the ERMAs designated in this RMP:*

- *Management.* In ERMAs, new recreation facilities (e.g., trails, trailheads, restrooms) to effectively address demand for identified recreation activity created by growing communities and recreation-tourism will be considered if: 1) the proposal is consistent with interdisciplinary land use plan objectives; and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or managing partners, visitor fees, or other sources.
- *Funding.* In ERMAs, BLM funding and staff will be prioritized toward effectively addressing visitor health and safety and user interaction issues and resource protection issues created by recreation activities.

- *Visitor Services. In ERMAs,* visitor services (e.g., visitor information/maps, directional signage, facilities, on-the-ground staff presence) will generally be provided at the level to maintain activity participation opportunities and achieve ERMA objectives.
- *Access.* In ERMAs, recreation access will be maintained to and through BLM lands by creating route connectivity and/or by creating loop trails, and by maintaining and developing appropriate trails and trailhead facilities to achieve ERMA objectives and facilitate targeted recreation activities.
- *Partnerships.* For ERMAs, the BLM will focus on partnerships to maintain recreation activity opportunities (e.g., partner with the business community to encourage collaborative efforts on BLM lands, partner with ATV and mountain biking groups where appropriate).
- *Information/Education.* For ERMAs, information boards, web-based materials, brochures, etc. will be used to explain conditions of use for recreation participants and encourage stewardship.
- *Information.* For ERMAs, the BLM will partner with local chambers of commerce, tourism boards and private service providers to communicate appropriate recreation information (e.g., accurate recreation opportunity information, user ethics, distinctiveness of the area and use/user expectations).*Monitoring.* In ERMAs, the BLM will monitor visitor use, visitor safety, and resource conditions through BLM staff, volunteers and recreation-tourism partnerships (e.g., towns, outfitters, recreation organizations, CPW). Monitoring methods include direct visitor contact, electronic traffic counters, visitor/community assessments, and physical resource condition measurements
- *Best Management Practices.*

  1. Utilize current best management practices (Appendix H) to balance targeted recreation activities with other resource uses. Appendix H describes BMPs current at the time of the RMP planning process. BMPs will likely evolve over the life of the plan. Implementation of management actions should be based on the most current BMPs.

  2. Utilize current best management practices (Appendix H) and the "Recreation Management Guidelines to Meet Public Land Health Standards on Bureau of Land Management Lands in Colorado" to reduce or eliminate impacts from recreation to the other natural and cultural resources listed in the ERMA objectives. Appendix H describes BMPs current at the time of the RMP planning process. BMPs will likely evolve over the life of the plan. Implementation of management actions should be based on the most current BMPs.

REC-ERMA-OBJ-01:
Through the life of the plan, protect opportunities to participate in identified recreation activities and associated qualities and conditions in ERMAs.

REC-ERMA-MA-01:
Designate the following ERMAs to address local recreation management issues (217,400 acres). (Figure 2-6, Appendix A):

- Barrel Spring (24,700 acres);
- Gateway (78,100 acres);
- Grand Valley Shooting Ranges (750 acres);
- Gunnison River Bluffs (810 acres);
- Horse Mountain (5,100 acres); and
- North Desert (107,900 acres).

REC-ERMA-AU-01:
STIPULATION *CSU-32: Recreation Management Areas.* Apply CSU (site-specific relocation) restrictions in the following ERMAs:

- Barrel Spring ERMA
- Gateway ERMA
- Grand Valley Shooting Ranges ERMA
- Gunnison River Bluffs ERMA
- Horse Mountain ERMA
- North Desert ERMA

(Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

REC-ERMA-AU-02:
Mineral Material*s:*
Close the Gunnison River Bluffs ERMA to mineral material sales.

Barrel Springs ERMA – 24,700 acres
(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-02:
Through the life of the plan, provide visitors with opportunities to participate in long-distance ATV/UTV riding/touring activities, and big game hunting in the upper East Salt Creek and Barrel Spring Creek drainages, with access from 16 Road. The ERMA provides a recreation setting with a relatively unchanged, natural-appearing landscape.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing, livestock grazing, lands and realty.

REC-ERMA-AU-03 (Barrel Springs ERMA):
VRM Class:
Manage the ERMA under VRM Class III objectives.

REC-ERMA-AU-04 (Barrel Springs ERMA):
ROW:
Designate as a ROW avoidance area.

REC-ERMA-AU-05 (Barrel Springs ERMA):
Forestry and Vegetation:
Allow timber harvest, fire wood cutting, and special forest product harvest if the ERMA is determined suitable for harvest.

REC-ERMA-AU-06 (Barrel Springs ERMA):
Special Recreation Permits:

- Issue Class I-II Commercial and Organized Event SRPs that meet ERMA objectives.
- Do not issue Competitive SRPs in the ERMA.

REC-ERMA-AU-07 (Barrel Springs ERMA):

Comprehensive Trails and Travel Management:

- Maintain public access for ATVs and UTVs from 16 Road to the upper East Salt Creek and Barrel Spring Creek drainages.
- Limit motorized and mechanized travel to designated routes.

REC-ERMA-MA-02 (Barrel Springs ERMA):
To achieve recreation outcomes under Comprehensive Trails and Travel Management:

- Establish specific Trail Management Objectives for primary recreation routes.
- Work with partners to repair/reroute/close and maintain travel routes to reduce resource impacts and achieve ERMA objectives.
- Mark trail system route intersections with signs showing trail names/numbers, and allowable uses. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-ERMA-OBJ-03:
Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, fragile and slumping soils, riparian habitat, paleontological resources, rare plants - Piceance Bladderpod (Lesquerella parviflora), and the following Significant plant communities: Montane Riparian Woodland (Populus balsamifera Woodland), Emergent Wetlands (Eleocharis rostellata Herbaceous Vegetation), Foothills Riparian Shrubland (Betula occidentalis / Maianthemum stellatum Shrubland).

REC-ERMA-AU-08 (Barrel Springs ERMA):
Close to motorized and mechanized vehicles the portion of the ERMA within designated big game winter range from December 1 to April 30 (TL - 20).

Gateway ERMA – 78,100 acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-04:
Through the life of the plan, provide visitors with opportunities to participate in motorized exploration, scenic touring and heritage tourism along the Mesas and side canyons surrounding the Dolores River and the town of Gateway. Visitors to the ERMA have the opportunity to explore and connect to other public lands managed by Grand Junction Field Office, Uncompahgre Field Office and Moab Field Office, as well as the Uncompahgre National Forest and Manti-La Sal National Forest. The ERMA provides a recreation setting with a relatively unchanged, natural-appearing landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: scenic values; wilderness characteristics; geological features; plant species of concern - Gypsum Valley cateye (Cryptantha gypsophila), San Rafael milkvetch (Astragalus rafaelensis), Naturita milkvetch (Astragalus naturitensis), Grand Junction milkvetch (Astragalus linifolius); two Significant Plant Communities - Fremont's Cottonwood Riparian Forests (Populus deltoides ssp. wislizeni /Rhus trilobata Woodland), and Emergent Wetlands (Eleocharis rostellata Herbaceous Vegetation); deer and elk winter range; cliff-nesting raptors; cultural resources; and paleontological resources. The resources listed above are also identified for special management and protection in one or more of the following areas that the ERMA overlaps, or is immediately adjacent to: Palisade WSA, Sewemup WSA , Maverick LWC unit, Unaweep Canyon LWC unit, Dolores River Riparian ACEC, Juanita Arch ACEC, The Palisade ACEC, Sinbad Valley ACEC, Unaweep Seep ACEC, Blue Mesa wildlife emphasis area, Bull Hill wildlife emphasis area, Calamity Camp National Historic Register site, and Dolores River Riparian SRMA.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: uranium exploration and mining, mineral material sales, livestock grazing.

REC-ERMA-AU-09 (Gateway ERMA):
VRM Class:
Manage the ERMA under VRM Class II and III objectives (as described in the VRM section).

REC-ERMA-AU-10 (Gateway ERMA):
ROW:

Designate as a ROW avoidance area.

REC-ERMA-MA-03 (Gateway ERMA):
Lands and Realty:
Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA that enhance public access and recreation opportunities consistent with ERMA objectives.

REC-ERMA-AU-11 (Gateway ERMA):
Forestry and Vegetation:
Allow timber harvest, fire wood cutting, and special forest product harvest if the ERMA is determined suitable for harvest.

REC-ERMA-AU-12 (Gateway ERMA):
Special Recreation Permits:
Issue only Class I, II, and III SRPs in the ERMA.

REC-ERMA-AU-13 (Gateway ERMA):

Comprehensive Trails and Travel Management:
Limit motorized and mechanized travel to designated routes.

REC-ERMA-MA-04 (Gateway ERMA):
Comprehensive Trails and Travel Management:

- Establish specific Trail Management Objectives for primary recreation routes.
- Work with stakeholders to identify opportunities to connect/reroute routes to create loop opportunities that help achieve ERMA objectives.
- Work with partners to repair/reroute/close and maintain travel routes to reduce resource impacts and achieve ERMA objectives.
- Mark trail system route intersections with signs showing trail names/numbers, and allowable uses. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

REC-ERMA-AU-14 (Gateway ERMA):
Special Recreation Permits:
Issue Class I-III Commercial, Competitive, and Organized Group SRPs that are consistent with ERMA objectives.

Grand Valley Shooting Ranges ERMA - 750 acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-05:

Through the life of the plan, provide visitors with opportunities to participate in recreational target shooting at a developed shooting range in close proximity to Grand Junction. The ERMA provides a recreation setting with a significantly altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), water quality (lead contamination, non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing, fluid mineral leasing.

REC-ERMA-MA-05 (Grand Valley Shooting Ranges ERMA):
Physically delineate the boundaries of the ERMA using signage, fencing and other appropriate markers/barriers.

REC-ERMA-MA-06 (Grand Valley Shooting Ranges ERMA):
Develop run-on/run-off control plan to mitigate lead contamination to surface and ground water.

REC-ERMA-MA-07 (Grand Valley Shooting Ranges ERMA):
Develop a regular lead recovery program to mitigate soil and water contamination.

REC-ERMA-AU-15 (Grand Valley Shooting Ranges ERMA):
VRM Class:
Manage the ERMA under VRM Class IV objectives.

REC-ERMA-AU-16 (Grand Valley Shooting Ranges ERMA ERMA):
ROW:
Designate as a ROW avoidance area.

REC-ERMA-MA-08 (Grand Valley Shooting Ranges ERMA):
Lands and Realty:
Identify area for disposal to stakeholder(s) who will manage the area with similar objectives.

REC-ERMA-AU-17 (Grand Valley Shooting Ranges ERMA):
Camping restrictions:
Close the ERMA to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism to recreation facilities. Exceptions to this restriction may be granted in order to accommodate training exercises or other special events.

REC-ERMA-AU-18 (Grand Valley Shooting Ranges ERMA):
Special Recreation Permits:

- Do not issue Class IV SRPS in the ERMA.
- Allow vending SRPs only in conjunction with event SRPs.

REC-ERMA-AU-19 (Grand Valley Shooting Ranges ERMA):

Comprehensive Trails and Travel Management:
Allow travel within the ERMA only for the placement and retrieval of targets. Motorized and mechanized vehicles must remain on designated routes.

REC-ERMA-MA-09 (Grand Valley Shooting Ranges ERMA):
Comprehensive Trails and Travel Management:

Work with stakeholders to maintain adequate access to shooting range facilities, consistent with ERMA objectives.

REC-ERMA-AU-20 (Grand Valley Shooting Ranges ERMA):
Special Recreation Permits:
Issue Class I – III Commercial, Competitive and Organized Group SRPs that are compatible with ERMA objectives.

Gunnison River Bluffs ERMA – 800 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-06 (Gunnison River Bluffs ERMA):
Through the life of the plan, support local community partnerships to protect and promote trail-based hiking, dog walking, trail running, mountain bicycling, horseback riding and other non-motorized recreation activities between Orchard Mesa and Whitewater along the Gunnison River bluffs. The ERMA provides an urban interface recreation setting with a moderately altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), cliff-nesting raptors, paleontological resources, and cultural resources.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing, lands and realty.

REC-ERMA-MA-10 (Gunnison River Bluffs ERMA):
Lands and Realty:

With partners (Mesa County, private landowners, Old Spanish Trail Association and City of Grand Junction), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA

that enhance public access and recreation opportunities consistent with ERMA objectives.

REC-ERMA-AU-21 (Gunnison River Bluffs ERMA):
Comprehensive Trails and Travel Management:

Close the ERMA to motorized travel. Limit all other travel (including foot and horse) to designated routes in order to accommodate targeted recreation activities in a concentrated urban interface area while protecting sensitive biological and cultural resources.

REC-ERMA-AU-22 (Gunnison River Bluffs ERMA):
Firearm use restrictions:
Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

REC-ERMA-OBJ-07 (Gunnison River Bluffs ERMA):
Through community partnerships, protect the scenic views of the Gunnison River and Pinyon Mesa, support trail connectivity between communities and public land resources, and provide opportunities to learn about the Old Spanish National Historic Trail.

REC-ERMA-MA-11 (Gunnison River Bluffs ERMA):
Partnerships:

- Work with partners (Mesa County, private landowners, Old Spanish Trail Association (OSTA) and City of Grand Junction) to connect/reroute routes to make loop and/or through-route trail opportunities as necessary; reroute or close and naturalize unsustainable and eroding routes.
- Work with partners (OSTA, Mesa County, City of Grand Junction) to create and/or support education/interpretation of Old Spanish Trail resources.

REC-ERMA-AU-23 (Gunnison River Bluffs ERMA):
VRM Class:

- Manage the ERMA under VRM Class III objectives.
- Landscapes in the viewshed to the south and west of the ERMA lie within the Bangs Canyon SRMA and are managed under VRM Class II objectives.

REC-ERMA-AU-24 (Gunnison River Bluffs ERMA):
Minerals:
Close the ERMA to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

REC-ERMA-AU-25 (Gunnison River Bluffs ERMA):
ROW:
Designate as a ROW avoidance area.

REC-ERMA-AU-26 (Gunnison River Bluffs ERMA):
Camping restrictions:

- Close the ERMA to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.
- Allow exceptions for overnight camping and campfires only when those activities support the ERMA objectives (e.g., historical reenactments.)

REC-ERMA-AU-27 (Gunnison River Bluffs ERMA):
Special Recreation Permits:

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with ERMA objectives (i.e., support partnership efforts).
- Prohibit Class IV SRPs.
- Only issue event permits that have been coordinated with the local community and that result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the ERMA.

Horse Mountain ERMA - 5,100 Acres
(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-MA-12 (Horse Mountain ERMA):
The Horse Mountain ERMA has three distinct recreation management zones (RMZs). Those zones include: the Horse Mountain Trails RMZ (RMZ 1) featuring opportunities to participate in mountain biking, hiking, trail running, motorcycle riding, ATV riding and 4x4 vehicle driving; the C Road OHV Open Area (RMZ 2) offering an open OHV play area; and the C Road Target Shooting Area (RMZ 3) offering recreational target shooting opportunities. Overall, the ERMA provides a diverse mix of recreation activity opportunities in the urban interface zone along the eastern edge of the Grand Valley. The specific management objectives and actions for each RMZ are described below.

Horse Mountain ERMA RMZ 1 – Horse Mountain Trails – 4,700 Acres
(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-08 (Horse Mountain RMZ 1):

Through the life of the plan, support local community partnerships to plan, develop and promote a trail system for a variety of motorized and non-motorized trail-based recreation activities. The trail system should provide easy access to the Horse Mountain area, and trail connectivity to/from the Town of Palisade, East Orchard Mesa, the Palisade Rim SRMA and other BLM-managed lands along the Grand Mesa Slopes. Targeted activities include, but are not limited to, hiking, dog walking, trail running, mountain bicycling, horseback riding, ATV riding and motorcycle riding. The RMZ provides a recreation setting with a moderately to significantly altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), water quality (non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. Consider the following resource uses: fluid mineral leasing and livestock grazing. In the portions of this RMZ that overlap the ROW corridor and Wind Energy Emphasis Area, manage recreation to achieve management objectives for those designations.

REC-ERMA-AU-28 (Horse Mountain RMZ 1):
VRM Class:
Manage the eastern portion of the RMZ under VRM Class III objectives, and the western portion under VRM Class IV objectives (See VRM section.)

REC-ERMA-MA-13 (Horse Mountain RMZ 1):
Lands and Realty:

- Recognize and grant priority status to utility developments in the ROW corridor and the Wind Energy Emphasis area that overlap the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- With managing partners (Town of Palisade, Mesa County, City of Grand Junction, private landowners), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.
- Work with adjacent landowners, including the City of Grand Junction to minimize recreation conflicts and/or trespass on private property.

REC-ERMA-AU-29 (Horse Mountain RMZ 1):
Camping restrictions:
Close the RMZ to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

REC-ERMA-AU-30 (Horse Mountain RMZ 1):
Close the portion of the RMZ west of Sink Creek to overnight use (sunset to sunrise) to reduce occurrences of vandalism and resource damage.

REC-ERMA-AU-31 (Horse Mountain RMZ 1):
Firearm use restrictions:
Close to recreational target shooting the portion of the RMZ west of Sink Creek for the safety of adjacent residents, and recreationists using the C Road OHV Open Area, the C Road Target Shooting Area, and the connector trails leading to Horse Mountain.

REC-ERMA-AU-32 (Horse Mountain RMZ 1):
Special Recreation Permits:

- Only issue event permits that have been coordinated with the local community and that result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

REC-ERMA-AU-33 (Horse Mountain RMZ 1):

Comprehensive Trails and Travel Management:
Limit motorized and mechanized travel to designated routes.

REC-ERMA-MA-14 (Horse Mountain RMZ 1):
Comprehensive Trails and Travel Management:

If monitoring indicates conflicting interactions between recreation users, promote positive interactions between visitors by implementing strategies that separate incompatible recreation uses in either time or space (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.)

REC-ERMA-AU-34 (Horse Mountain RMZ 1):
Special Recreation Permits:
Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with RMZ objectives (i.e., support partnership efforts).

Horse Mountain ERMA RMZ 2 – C Road Open Area – 180 Acres
(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-09 (Horse Mountain RMZ 2):
Through the life of the plan, this RMZ will provide visitors with opportunities to participate in unconfined day-use motorized OHV recreation activities in close proximity to the urban amenities of the Grand Valley. The RMZ will also provide an OHV practice/play area serving as a gateway to the designated route system on adjoining public lands to the east. The RMZ provides a recreation setting with a

significantly altered natural landscape due to intensive motorized OHV use, and nearby residential and agricultural development.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), water quality (non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: lands and realty (ROW corridor), fluid mineral leasing. In the portions of this RMZ that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

REC-ERMA-MA-15 (Horse Mountain RMZ 2):
Physically delineate the boundaries of the RMZ using signage, fencing and other appropriate markers/barriers.

REC-ERMA-AU-35 (Horse Mountain RMZ 2):
VRM Class:
Manage under VRM Class IV objectives.

REC-ERMA-AU-36 (Horse Mountain RMZ 2):
Lands and Realty:

- Recognize and grant priority status to utility developments in the ROW corridor that overlaps the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.

REC-ERMA-AU-37 (Horse Mountain RMZ 2):
Camping restrictions:
Designate the RMZ as a day-use only area. Close the RMZ to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism, dumping, resource damage and disturbance of nearby residents.

REC-ERMA-AU-38 (Horse Mountain RMZ 2):
Firearm use restrictions:
Close the RMZ to recreational target shooting for the safety of adjacent residents, recreationists using the OHV area and recreationists using the connector trails leading to Horse Mountain.

REC-ERMA-AU-39 (Horse Mountain RMZ 2):
Special Recreation Permits:

Do not issue SRPs in this RMZ. Exception: Allow event staging in the RMZ for events outside of the RMZ.

REC-ERMA-AU-40 (Horse Mountain RMZ 2):

Comprehensive Trails and Travel Management:

- Allow unrestricted travel for all types of motorized OHV use within the RMZ.
- Ensure connectivity between the RMZ and the Horse Mountain Trails RMZ (RMZ 1).

Horse Mountain ERMA RMZ 3 – Target Shooting – 240 Acres
(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-10 (Horse Mountain RMZ 3):
Through the life of the plan, provide visitors with opportunities to participate in day-use recreational target shooting in close proximity to Grand Junction, Clifton and Palisade, while protecting the property and personal safety of private residences in the area. The RMZ provides a recreation setting with a significantly altered natural landscape due to intensive recreation use in the area.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), water quality (lead contamination, non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing, livestock grazing. In the portions of this RMZ that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

REC-ERMA-MA-16 (Horse Mountain RMZ 3):
Physically delineate the boundaries of the RMZ using signage, fencing and other appropriate markers/barriers.

REC-ERMA-MA-17 (Horse Mountain RMZ 3):
Clearly identify BLM-managed lands adjacent to the RMZ that are closed to target shooting (900 acres) for the protection of the property and personal safety of nearby private residences in the area.

REC-ERMA-AU-41 (Horse Mountain RMZ 3):
VRM Class:
Manage under VRM Class IV objectives.

REC-ERMA-AU-42 (Horse Mountain RMZ 3:

Lands and Realty:

- Recognize and grant priority status to utility developments in the ROW corridor that overlaps the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.
- Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

REC-ERMA-AU-43 (Horse Mountain RMZ 3):
Camping restrictions:
Designate the RMZ as a day-use only area. Close the RMZ to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism, dumping, resource damage and disturbance of nearby residents.

REC-ERMA-AU-44 (Horse Mountain RMZ 3):
Special Recreation Permits:

- Issue Class I, II and III Commercial, Competitive and Organized Group SRPs that provide financial or in-kind support for ongoing maintenance of the RMZ facilities.
- Do not issue Class IV SRPS in the ERMA.
- Allow vending SRPs only in conjunction with event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

REC-ERMA-AU-45 (Horse Mountain RMZ 3):

Comprehensive Trails and Travel Management:
Allow travel within the RMZ only for the placement and retrieval of targets. Motorized and mechanized vehicles must remain on designated routes.

REC-ERMA-AU-46 (Horse Mountain RMZ 3):
Work with stakeholders to maintain adequate access to facilities, consistent with RMZ objectives.

North Desert ERMA - 107,900 Acres

(SEE APPENDICES K AND H FOR FULL DESCRIPTIONS OF ERMAS AND ERMA BMPS)

REC-ERMA-OBJ-11 (North Desert ERMA):
Through the life of the plan, provide visitors with opportunities to participate in motorized OHV recreation (motorcycle, ATV, UTV, full-sized 4x4 vehicles) on a variety routes designated for different motorized uses (e.g., motorcycle, ATV/UTV, full-size vehicles) that link the desert terrain on the north side of the Grand Valley

from Grand Junction and Fruita to Rabbit Valley and the Utah Rims trails and provide multiple long-distance motorized loop opportunities. The ERMA will provide a recreation setting with a moderately altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (Sclerocactus glaucus), Grand Junction buckwheat (Eriogonum contortum), Grand Junction suncup (Camissonia eastwoodiae), Dolores River skeletonplant (Lygodesmia doloresensis); Significant plant communities: Saline Bottomland Shrublands (Sarcobatus vermiculatus / Suaeda moquinii Shrubland), Western Slope Grasslands (Achnatherum hymenoides Shale Barren Herbaceous Vegetation), Cold Desert Shrublands (Atriplex confertifolia / Achnetherum hymenoides Shrubland), Gardner's Mat Saltbush Shrublands (Atriplex gardneri / Leymus salinus Dwarf-shrubland), Skunkbrush Riparian Shrubland (Rhus triloblata Shrubland); water quality (non-point source erosion/sedimentation into the Colorado River), Mancos Shale, saline soils, deer and elk winter range, pronghorn.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: coal leasing, mineral material sales, fluid mineral leasing and livestock grazing. In the portions of this ERMA that overlap the ROW corridor and Solar Energy Emphasis Areas (Mitchell Road and 21 Road), manage recreation to achieve management objectives for those designations.

REC-ERMA-AU-47 (North Desert ERMA):
VRM Class:

Manage the ERMA under VRM Class II, III and IV objectives (See VRM section.) The majority of the ERMA is VRM Class IV.

REC-ERMA-MA-18 (North Desert ERMA):
Lands and Realty:

- Designate as a ROW avoidance area with the exception of the ROW corridor that crosses the ERMA.
- Recognize and grant priority status to utility developments in the ROW corridor and Solar Energy Emphasis areas that overlap the ERMA (Mitchell Road and 21 Road). Utilize BMPs to minimize impacts to targeted recreation activities.
- With managing partners (City of Fruita, Mesa County, City of Grand Junction, private landowners), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA that enhance public access and recreation opportunities consistent with ERMA objectives.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.

REC-ERMA-AU-48 (North Desert ERMA):
Camping Restrictions:

- Allow camping and campfires in the ERMA where it does not interfere with targeted OHV recreation opportunities, and is compatible with the management of other resources and resource uses.
- Close the 18 Road Open OHV area to overnight camping.
- Allow collection of only dead and down wood for campfires.

REC-ERMA-MA-19 (North Desert ERMA):
Camping Management:

If monitoring indicates unacceptable impacts from camping and campfires, implement progressive measures to mitigate those impacts. Mitigation measures may include, but are not limited to: requiring the use of firepans and portable toilet systems; prohibiting firewood collection; limiting portions of the ERMA to designated campsites only; closing portions of the ERMA to camping and campfires.)

REC-ERMA-AU-49 (North Desert ERMA):
Firearm use restrictions:

Close the 18 Road OHV Open area to recreational target shooting for the safety of OHV recreationists in this intensively used portion of the ERMA.

REC-ERMA-AU-50 (North Desert ERMA):
Special Recreation Permits:

- Issue Class I – IV Competitive Special Recreation Permits that achieve ERMA objectives.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the ERMA.

REC-ERMA-AU-51 (North Desert ERMA):

Comprehensive Trails and Travel Management:

- Limit motorized and mechanized travel to designated routes.

REC-ERMA-MA-20 (North Desert ERMA):
Comprehensive Trails and Travel Management:

- Work with stakeholders/partners to plan, develop and maintain a route system that helps achieve ERMA objectives while mitigating impacts to the area's sensitive resources and resource uses (listed in the objectives). This includes identifying appropriate existing routes, repairing or rerouting unsustainable routes, constructing connecting routes, and closing redundant routes.

REC-ERMA-AU-52 (North Desert ERMA):
Comprehensive Trails and Travel Management:

- Designate the 18 Road Open OHV area (330 acres).

REC-ERMA-MA-21 (North Desert ERMA):
Comprehensive Trails and Travel Management:

- Ensure route connectivity between the ERMA and the Rabbit Valley area of McInnis Canyons National Conservation Area and the Utah Rims SRMA in Utah.

REC-ERMA-MA-22 (North Desert ERMA):
Comprehensive Trails and Travel Management:

Ensure route connectivity between the ERMA and the Grand Valley OHV SRMA. To provide a transition zone between the high-use urban interface area directly north of Grand Junction, allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27¼ Road, with route density generally decreasing as the trail system extends to the northwest toward 25 Road and 21 Road (travel management Zone L.)

REC-ERMA-MA-23 (North Desert ERMA):
Comprehensive Trails and Travel Management:

- Identify a multi-use singletrack trail on BLM-managed lands that connects the City of Fruita to the North Fruita Desert SRMA. If monitoring indicates the need to separate uses to ensure visitor safety, construct a bicycle-only trail through the ERMA that directly connects from the City of Fruita to the North Fruita Desert SRMA.

REC-ERMA-MA-24 (North Desert ERMA):
Comprehensive Trails and Travel Management:

- Identify a multi-use singletrack trail on BLM-managed lands that connects Highline State Park to the North Fruita Desert SRMA. If monitoring indicates the need to separate uses to ensure visitor safety, construct a bicycle-only trail through the ERMA that directly connects from Highline State Park to the North Fruita Desert SRMA.

REC-ERMA-MA-25 (North Desert ERMA):
Comprehensive Trails and Travel Management:

Work with stakeholders to create new access points and trailheads if necessary to accommodate increased use, and/or achieve ERMA objectives.

- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations

(allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

- Promote positive interactions between recreation users by implementing strategies that separate conflicting uses. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc.

REC-ERMA-AU-53 (North Desert ERMA):
Special Recreation Permits:

- Issue Class I, II and III Commercial and Organized Group SRPs that achieve ERMA objectives.

REC-ERMA-AU-54 (North Desert ERMA):
Special Recreation Permits:

- Develop an event staging area in the ERMA that helps achieve ERMA objectives.

COMPREHENSIVE TRAILS AND TRAVEL MANAGEMENT

TRV-GOAL-01:
Manage the travel system to support the BLM mission, achieve resource management goals and objectives, and provide for appropriate public and administrative access.

TRV-OBJ-01:
Maintain a comprehensive travel network that best meets the full range of public, resource management, and administrative access needs.

TRV-MA-01:
Off-highway vehicle and off road vehicles are synonymous with motorized travel and will be regulated consistent with 43 CFR 8340.

TRV-MA-02:
Designate motorized travel in the GJFO as follows (Figure 2-8, Appendix A):

- Open: 10,200 acres
- Closed: 126,200 acres
- Limited to designated routes: 925,200 acres (includes 105,200 acres with seasonal limitations)

TRV-MA-03:
Manage 10,200 acres as *open* to motorized recreational travel.

- Grand Valley OHV SRMA, including Skinny Ridge (9,700 acres);
- 18 Road Open Area (330 acres);
- Horse Mountain ERMA (RMZ 2 [180 acres]); and
- Tabeguache OHV Play Area (2 acres).

TRV-MA-04:
Manage the Grand Valley Open Area SRMA as a ROW avoidance area (except for areas in delineated ROW corridors.

TRV-MA-05:
Manage 126,200 acres as *closed* to motorized travel (administrative and permitted vehicular access only):

- WSAs
- ACECs:
    - Atwell Gulch;
    - Juanita Arch;
    - Mt. Garfield;
    - A portion of the Palisade (26,700 acres);

  - Pyramid Rock;
  - A portion of Rough Canyon (600 acres); and
  - Unaweep Seep
- Lands managed for wilderness characteristics:
  - A portion of Maverick (1,600 acres)
- Critical Habitat and Research Areas:
  - Ant Research Area; and
  - Reeder Mesa Cactus Study Site
- Wildlife Emphasis Areas:
  - Timber Ridge (deer/elk/sage-grouse);
  - A portion of East Salt between Demaree Canyon WSA and Highway 139) (deer/elk/kit fox); and
  - A portion of Rapid Creek (deer/elk)
- SRMAs
  - Bangs (RMZ 1 and 3), with the exception of trailhead access and the Tabeguache Trail;
  - Palisade Rim
- ERMAs
  - Gunnison River Bluffs.

TRV-MA-06:
Manage motorized travel on the remaining portion of the GJFO as limited to designated routes (820,000 acres); acreage does not include seasonal limitations. Refer to BLM's Travel Management Plan (Appendix M) for route designations in limited areas.

TRV-AU-01:
Implement the following seasonal travel limitations for motorized and mechanized travel from December 1 to May 1 (105,200 acres):

- Big game winter range;
- Little Book Cliffs Wild Horse Range;
- Beehive;
- Blue Mesa;
- Chalk Mountain;
- Coal Canyon;
- Demaree Canyon outside of the WSA;
- Garvey Canyon;
- Grand Mesa Slopes;
- Howard Canyon Flats;

- Indian Point;
- Post/Lapham Canyons;
- Rapid Creek;
- SRMAs:
    - A portion of the North Fruita Desert SRMA (4,300 acres).

These areas will be managed by BLM to reflect CPW's most current big game winter range maps. Seasonal limitation periods may be adjusted based on coordination with CPW (e.g., mild winters, late hunting seasons, etc.).

TRV-MA-07:
Designate mechanized travel in the GJFO as follows (Figure 2-8, Appendix A):

- Open: 10,200 acres
- Closed: 119,500 acres
- Limited to designated routes:
  931,900 acres (includes 105,200 acres with seasonal limitations)

TRV-MA-08:
Manage 119,500 acres as *closed* to mechanized travel:

- WSAs
- ACECs:
    - Atwell Gulch;
    - Juanita Arch
    - Mt. Garfield;
    - Pyramid Rock;
    - A portion of Rough Canyon (600 acres); and
    - Unaweep Seep
- Wildlife Emphasis Areas:
    - Timber Ridge (deer/elk/sage-grouse);
    - A portion of Rapid Creek (1,700 acres); and
- SRMAs
    - Bangs (RMZ 3) except for the Tabeguache Trail
- Lands managed for wilderness characteristics:
    - A portion of Maverick (1,600 acres).

TRV-MA-09:
Manage mechanized travel on the remaining portion of the GJFO as limited to designated routes (826,700 acres); acreage does not include seasonal limitations. Refer to BLM's Travel Management Plan (Appendix M) for route designations in limited areas.

TRV-MA-10:
Designate equestrian travel in the GJFO as follows (Figure 2-8, Appendix A):

- Open: 1,056,100 acres
- Closed: 1,300 acres
- Limited to designated routes: 2,200 acres.

TRV-MA-11:
Manage 1,056,100 acres as *open* to equestrian travel.

TRV-MA-12:
Manage 1,300 acres as *closed* to equestrian travel:

- Pyramid Rock ACEC
- And the Mica Mine Trail and Rough Canyon Trail

TRV-MA-13:
Limit equestrian travel to designated routes in the following areas (2,200 acres) (Refer to Appendix M for route designations in limited areas):

- Bangs SRMA (part of RMZ 1 – 1,400 acres)
- Gunnison River Bluffs (800 acres)

TRV-MA-14:
Designate foot travel in the GJFO as follows (Figure 2-8, Appendix A):

- Open: 1,057,800 acres
- Closed: 1,300 acres
- Limited to designated routes: 2,200 acres

TRV-MA-15:
Manage 1,056,100 acres as *open* to foot travel.

TRV-MA-16:
Manage 1,300 acres as *closed* to foot travel.

- Pyramid Rock ACEC.

TRV-MA-17:
Limit foot travel to designated routes in the following areas (2,200 acres) (Refer to Appendix M for route designations in limited areas):

- Bangs SRMA (part of RMZ 1 - 1,400 acres)
- Gunnison river Bluffs ERMA (800 acres)

TRV-MA-18:

Manage the following areas as *closed* to over-snow motorized travel:

- LBCWHR (closed to mechanized and motorized over-snow travel)
- Lands managed for wilderness characteristics, except for Unaweep and the Tabeguache Trail in the Bangs LWC area.
- ACECs:
  - Atwell Gulch;
  - Mount Garfield;
  - Pyramid Rock; and
  - Unaweep Seep.
- SRMAs:
  - Bangs (RMZ 4).

TRV-MA-19:
Within lynx (Lynx Canadensis) habitat, limit the expansion of consistent snow compaction unless it serves to consolidate use and improve lynx habitat.

TRV-IMP-01:
Route Designations. Designate travel on routes as follows (see Appendix M for maps):

- Limited to vehicles under 50 inches wide only: 37 miles (1 percent of total routes)
- Limited to vehicles under 50 inches wide only with a seasonal limitation: 7 miles (<1 percent of all routes)
- Limited to bicycle travel only: 1 miles (<1 percent of total routes)
- County roads: 309 miles (8 percent of total routes)
- Limited to foot and bicycle travel only: 6 miles (<1 percent of total routes)
- Limited to foot travel only: 7 miles (<1 percent of total routes)
- Limited to foot and horse travel only: 47 miles (1 percent of total routes)
- Limited to foot, horse, bicycle, and motorcycle travel only: 89 (2 percent of total routes)
- Limited to foot, horse, bicycle, and motorcycle travel only with a winter seasonal limitation: 3 miles (<11 percent of all routes)
- Limited to foot, horse, and bicycle travel only: 99 miles (2 percent of total routes)
- Limited to foot, horse, and bicycle travel only with a seasonal limitation: 14 miles (<1 percent of all routes)
- Open to all uses: 871 miles (22 percent of all routes)
- Open to all uses with a seasonal limitation: 235 miles (6 percent of all routes)
- Undesignated (Zone L): 545 miles (14 percent of all routes)

- Open to all uses (in OHV open areas): 291 miles (7 percent of all routes)
- Limited to administrative and permitted uses only: 524 miles (13 percent of all routes), includes 332 miles of routes with no legal public access
- Closed: 723 miles (18 percent of all routes)
- Total open to non-motorized travel only: 174 miles (4 percent of all routes), sum of non-motorized categories
- Total open to motorized travel: 2,576 miles (64 percent of all routes), sum of motorized categories and included routes with deferred designations
- **Approximate total all routes: 3996 miles**

TRV-GOAL-02:
To manage a comprehensive travel and transportation management system that allows for diverse recreational use of motorized and nonmotorized interests; promotes the safety of all users; minimizes conflicts among federal land uses; communicates with the public about available opportunities, and monitors the effects of use.

TRV-OBJ-02:
Seek to effectively manage new modes of travel that cannot be foreseen through this planning effort.

TRV-MA-20:
Manage new modes of travel in a manner that is consistent with resource protection and resource use goals, objectives, and restrictions until appropriate use areas and designations are determined.

TRV-GOAL-03:
To manage a comprehensive travel and transportation management system that minimizes damage to natural and cultural resources (historical and archeological sites, traditional cultural properties and natural resources of importance to Native Americans, soil, water, air, vegetation, scenic values, etc.) and minimizes harassment of wildlife and/or significant disruption of wildlife habitats.

TRV-OBJ-03:
Manage travel consistent with outcomes defined by resource programs.

TRV-MA-21:
Prohibit cross-country motorized/mechanized travel for big game retrieval, except in open areas (i.e. OHV open areas). Allow hand-held non-motorized/non-mechanized wheeled game retrieval carts.

TRV-MA-22:

Additional closures or seasonal restrictions on areas or routes may be implemented to reduce resource conflicts, public health and safety concerns, or road and trail damage as necessary.

TRV-MA-23:
Open areas and designated roads and trails may be closed during severe droughts and wind events to reduce particulate matter (e.g., during National Weather Service high wind warning).

TRV-MA-24:
Require proper road design, construction, and/or surfacing on BLM authorized roads to reduce fugitive dust emissions.

TRV-MA-25:
To minimize ongoing or potential impacts to cultural resources that are eligible or potentially eligible to the National Register of Historic Places (NRHP) or are listed on the NRHP, close and/or re-route routes that are inside, pass through, or lead directly to these sites, or identify mitigation necessary to protect sites.

TRV-MA-26:
To minimize potential impacts to sites, reduce density of routes in areas known to be high expected cultural resource density or areas of high value to the cultural program or Tribes.

TRV-MA-27:
Use VRM and recreation (or management) objectives to minimize impacts to site integrity (maintaining the visual, audible, and setting characteristics of sites).

TRV-MA-28:
To minimize ongoing or potential impacts to historic trails identified as eligible or potentially eligible for listing on the NRHP, identify mitigation to protect the historic integrity of routes, if necessary.

TRV-MA-29:
Maintain administrative access to active oil and gas wells, but limit public access to provide for public safety at active well sites.

TRV-MA-30:
Maintain administrative access to active mines.

TRV-MA-31:
To facilitate proper reclamation in compliance with pipeline stipulations on rights of way grants and to protect shallow pipeline infrastructure, maintain administrative (but close public) access over pipeline facilities, unless pipelines are placed along existing routes or impacts pipelines and reclamation are not a concern.

TRV-MA-32:
Maintain motorized access to firewood, post and pole gathering, and Christmas tree cutting areas.

TRV-MA-33:
Consider whether parcels are identified for disposal in determining long-term access needs.

TRV-MA-34:
Consider whether parcels are identified for management by another entity in determining long-term access needs.

TRV-MA-35:
During route designations, pursue easements in areas where enhanced public access is desired and interest is expressed by willing sellers.

TRV-MA-36:
Maintain a minimum of administrative access to rights-of-way, other land use authorizations, and utility corridors.

TRV-MA-37:
Reduce trespass from routes that dead-end onto private property by closing routes, managing as administrative, or by signing property boundaries. Allow for landowner access on closed routes through administrative designation and right-of-way grants.

TRV-MA-38:
Maintain a minimum of administrative access to range improvement projects, study sites, and to areas necessary to properly administer grazing permits.

TRV-MA-39:
In some cases limit public access to protect range improvements from potential damage.

TRV-MA-40:
Reduce route density in areas where long-term management is designed to protect wilderness characteristics.

TRV-MA-41:
To reduce ongoing damage to known paleontological sites, close routes that are inside or pass through eligible cultural sites, or identify mitigation necessary to protect sites.

TRV-MA-42:
To reduce the potential for vandalism or collection, reduce number of routes in proximity to known paleontological localities.

TRV-MA-43:
Within each individual SRMA/RMZ, clearly prescribe travel management allowable uses and implementation actions that help achieve SRMA/RMZ objectives.

TRV-MA-44:
In balance with other resource considerations, provide access to undeveloped campsites that exist along dead-end spur roads.

TRV-MA-45:
In balance with other resource considerations, retain or provide access to difficult to reach parcels of public land for hunting, fishing, and other recreation activities.

TRV-MA-46:
Consider route features, quality user experience, and route connectivity to determine appropriate route use type (i.e. open, mechanized, ATV, UTV, foot, etc.)

TRV-MA-47:
Work closely with Mesa and Garfield counties to maintain public access to areas identified as important for recreation.

TRV-MA-48:
Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements that enhance public access and recreation opportunities consistent with recreation and resource program objectives.

TRV-MA-49:
In high disturbance areas, utilize best available science to model sediment loss relative to natural rates. Based on model results, modify land uses including travel infrastructure to minimize resource damage while maintaining resource and resource use sustainability on public lands.

TRV-MA-50:
While maintaining access, eliminate duplicative or redundant routes in areas of fragile soils, Mancos Shale areas, slump areas, and on slopes exceeding 40 percent. (Public Land Health Standard 1).

TRV-MA-51:
While maintaining access for administration and public viewing, reduce the number of duplicative and redundant routes in the Little Book Cliffs Wild Horse herd area.

TRV-MA-52:
To protect and maintain unique ecological values for which the ACEC was designated, limit or reduce the number of routes within ACECs that are managed as limited to designated routes for motorized and mechanized travel.

TRV-MA-53:
To preserve the visual character of the existing landscape, limit or reduce the number of routes in areas managed as VRM Class I. The level of change to the visual landscape should be very low and must not attract attention.

TRV-MA-54:
To retain the visual character of the existing landscape and minimize the level of change, limit or reduce the number of routes in areas managed as VRM Class II. The level of change to the visual landscape should be low. Changes should repeat the basic elements found in the natural features of the landscape – form, line, color and texture. Routes may be seen but should not attract the attention of the casual observer.

TRV-MA-55:
To partially retain the visual character of the existing landscape and to moderate the level of change to the existing environment, carefully consider the designation of routes or design/construction of new routes in areas managed as VRM Class III. Routes may attract attention, but should not dominate the view of the casual observer. To the extent possible, routes should repeat the basic elements found in the natural landscape – form, line, color and texture.

TRV-MA-56:
In areas managed under VRM Class IV objectives, allow transportation/access routes that require major modification of the visual landscape. The level of change can be high and routes may dominate the view of the casual observer. To the extent possible, routes should repeat the basic elements found in the natural landscape – form, line, color and texture.

TRV-MA-57:
To reduce impairment of wilderness characteristics, generally close routes in WSAs. Routes may be left open in WSAs if they were documented at the time of the original wilderness inventory, and adequate documentation exists to indicate that they continue to be used in the same manner and degree as they were at the time of the inventory so as to not impair wilderness characteristics.

TRV-MA-58:
Reduce redundancies in routes to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails on relic vegetation communities and sensitive plant species.

TRV-MA-59:
Identify mitigation where open routes are negatively effecting significant plant communities, relic vegetation, and ensure that Land Health Standard 4 is being achieved or progress is being made towards meeting this Standard.

TRV-MA-60:
To reduce the spread of cheatgrass and noxious weeds, reduce duplicative and redundant routes in areas with susceptibility to cheatgrass or invasive and noxious weed infestations.

TRV-MA-61:
Reduce duplicative and redundant routes in riparian areas, especially those identified as not functioning or functioning at risk. Identify mitigation where open routes are contributing to problems with riparian function.

TRV-MA-62:
Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails on listed species and in designated critical habitat for threatened and endangered plants. Identify mitigation where open routes are negatively effecting listed species and/or designated critical habitat, and ensure that Land Health Standard 4 is being achieved or progress is being made towards meeting this Standard.

TRV-MA-63:
While maintaining access, close routes with multiple stream crossings and/ or identify mitigation including reroutes and proper design, construction, and maintenance plans in accordance with BLM manual handbook guidance.

TRV-MA-64:
Reduce point and non-point source contributions of water quality contaminants from public lands by reducing disturbance footprints associated with travel infrastructure and other surface disturbing actions while also maintaining access and meeting resource use objectives.

TRV-MA-65:
Promote the delisting of impaired water bodies (303d listed) by monitoring actions including but not limited to grazing, travel management, and other surface disturbing actions and implementing appropriate management change.

TRV-MA-66:
Reduce routes through currently suitable or potentially suitable Gunnison and Greater Sage-Grouse habitat by reducing routes through sage brush parks, with an emphasis on routes that bisect sage brush parks.

TRV-MA-67:
Maintain and/or create connections between key sagebrush habitats by encouraging placement of new utility developments (power lines, pipelines, etc.) and transportation routes (roads, trails etc.) in existing utility or transportation corridors to minimize fragmentation of sagebrush vegetation.

TRV-MA-68:

To reduce disturbance to Gunnison or Greater Sage-Grouse, close duplicative or redundant routes within Sage-Grouse habitat and within 4 miles of a lek.

TRV-MA-69:
Reduce habitat fragmentation by reducing road density (focusing primarily on duplicative or redundant routes) in production areas, (bighorn sheep, mule deer, elk, pronghorn antelope, moose) To provide protection of big game production areas from disturbance and displacement by human activities during critical periods.

TRV-AU-02:
STIPULATION *BIG GAME PRODUCTION AREAS TL CO.* No surface use is allowed during the following time period(s) in big game production areas, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM: Prohibit activities, including motorized travel, in elk production areas from May 15 to June 15; in antelope production areas from April 15 to June 30; in Rocky Mountain bighorn sheep production areas from April 15 to June 30; in Moose production areas from April 15 to June 30; and in desert bighorn sheep production areas from February 1 to May 1. Standard and special exceptions apply; see Appendix B.

TRV-MA-70:
To preserve the integrity of long term research study sites close areas consistent with current management.

TRV-AU-03:
STIPULATION NSO-32: *Research Sites*. Prohibit surface occupancy and surface-disturbing activities in approved research sites including, but not limited to, the Ant Research Area (120 acres) located near16 Road, and the Owl Banding Station located south of De Beque; see Appendix B.

TRV-MA-71:
Reduce habitat fragmentation by reducing road density (focusing primarily on duplicative or redundant routes) in wildlife emphasis areas. Route density of less than 0.5 km of road per square km preferred, where this cannot be achieved implement winter seasonal limitations if feasible to seasonally limit route related disturbance in the most critical months.

TRV-MA-72:
Within wildlife emphasis areas consolidate surface occupancy and surface-disturbing activities within existing disturbance to avoid fragmentation.

TRV-MA-73:
Focus management in wildlife emphasis areas on wildlife. Adopt additional management actions deemed necessary by the BLM (such as closing additional

roads to maintain effective habitat patch size).

TRV-MA-74:
While maintaining desired levels of access, identify and reroute or close and rehabilitate redundant, duplicative, or poorly constructed routes to reduce point sources of erosion and resulting sedimentation and turbidity impacts within watersheds containing known pure populations of cutthroat trout. Focus on routes within closest proximity to occupied streams.

TRV-MA-75:
Reduce disturbance at known golden eagle nesting sites by closing routes permanently or seasonally where possible, with an emphasis on routes that result in disturbance above the nest (at the top of a cliff nest). Disturbance above a nest has been shown to cause greater likelihood of nest abandonment

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TRV-MA-76:
To reduce potential for vandalism of bat gates and associated disturbance to bats minimize motorized access to gated sites.

TRV-MA-77:
In accordance with 43 CFR 8341.2, where monitoring or related data suggest that OHVs are causing or would cause considerable adverse impacts, areas may be closed or restricted from OHV use. The public will be notified. The BLM could impose limitations on types of vehicles allowed on specific designated routes if monitoring indicates that a particular type of vehicle is causing unacceptable disturbance to the soil, wildlife habitat, special status species habitat, cultural or vegetative resources, or other sensitive resources, especially by off-road travel in an area that is limited to designated routes.

TRV-MA-78:
There are a number of locations throughout the GJFO that are commonly known and consistently used for aircraft landing and departure activities that, through such casual use, have evolved into backcountry airstrips (the definition contained in Section 345 of Public Law 106-914, the Interior and Related Agencies Appropriation Act of 2001). In accordance with that law, require full public notice, consultation with local and state government officials, the Federal Aviation Administration, and compliance with all applicable laws, including NEPA, when considering any closure of an aircraft landing strip.

TRV-OBJ-04:
Manage nonmotorized travel consistent with outcomes defined by resource programs.

TRV-MA-79:
Where monitoring or related data suggest that mechanized travel, horseback use or nonmechanized, cross-country travel are causing or would cause considerable adverse impacts, areas may be closed or travel restricted. The public will be

notified. The BLM could impose limitations on types of use allowed on specific designated routes or areas if monitoring indicates that a particular type of use is causing disturbance to the soil, wildlife habitat, cultural or vegetative resources.

TRV-MA-80:
Limit nonmechanized/nonmotorized travel to designated roads and trails in specific areas to protect resource values, provide for public safety, and/or maintain an identified opportunity. These areas include urban interface and high density use areas. Refer to Appendix M for nonmechanized/nonmotorized route designations.

Travel Management Zone L

TRV-OBJ-05:
Manage travel through route designations within Zone L to be consistent with the following recreation and resource objectives:

Watershed and Soils

- *Manage to maintain or contribute to long term improvement of surface and groundwater quality.*
- *Promote geomorphic balance.*
- *Meet Public Land Heath Standard 1 for soils and 5 for water quality*
- *Minimize salt and sediment production to natural background rates.*
- *Preserve and promote soil productivity.*

Special Status Species (Plants)

- *Meet Public Land Heath Standard 3 for plant communities and 4 for Special Status and Threatened & Endangered species and their habitats.*
- *Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by CNHP*

Vegetation

- *Manage vegetation to meet BLM Standards for Public Land Health while taking into account site potential, and site-specific management objectives. Ensure vegetation resources are managed to achieve balance in soil and watershed protection, wildlife habitat, livestock grazing, forestry, and biodiversity values, while maintaining or enhancing special status species habitat.*

Recreation

- *Ensure route connectivity between the North Desert ERMA and the Grand Valley OHV SRMA. To provide a transition zone between the high-use urban interface area directly north of Grand Junction, allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27 ¼ Road, with route density generally decreasing as the trail system extends to the*

northwest toward 25 Road and 21 Road (Travel Management Zone L.)

TRV-MA-81:
Develop a route system in Zone L (outside of the open area) through cooperation with key stakeholders that utilizes screening measures identified in Appendix M specific to this area within 5 years of approving the Travel Management Plan.

TRV-MA-82:
Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails on listed species. Identify mitigation where open routes are negatively effecting listed species.

TRV-MA-83:
To reduce the spread of cheatgrass and noxious weeds, reduce duplicative and redundant routes in areas with susceptibility to cheatgrass or invasive and noxious weed infestations.

TRV-AU-04:
STIPULATION NSO-13: *Current and Historically Occupied Habitat of Threatened, Endangered, Proposed, and Candidate Species.* Prohibit certain surface uses, as specified in Appendix B, to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

LANDS AND REALTY

L&R-GOAL-01:
Meet resource needs while providing public use authorizations such as Rights-of-Way (ROWs), renewable energy sources, permits, and leases.

L&R-OBJ-01:
Provide for the development and operation of transportation systems, pipelines, transmission lines, communication sites, renewable energy resources, and other land use authorizations in an environmentally responsible and timely manner.

L&R-AU-01:
ROW Exclusion Areas (including renewable energy sites such as solar, wind, hydroelectric, and biomass development): Manage 210,000 acres as ROW exclusion areas that are not available for the location of ROWs or other realty authorizations under any conditions, to include the following (Figure 2-9, Appendix A):

- ACECs:
  - A portion of Atwell Gulch (2,600 acres);
  - A portion of Badger Wash (1,800 acres);
  - Indian Creek;
  - Juanita Arch;
  - Mt. Garfield (excluding the Coal Canyon Corridor);
  - Pyramid Rock;
  - Rough Canyon;
  - South Shale Ridge (except for ROWs to existing oil and gas leases issued under the 1987 RMP without NSO stipulations); and
  - Unaweep Seep
- Ant Study Area
- LBCWHR (22,800 acres inside WSA)
- Lands managed for wilderness characteristics
- Parachute penstemon occupied habitat
- SRMAs:
  - Bangs (RMZs 3 and 4);
  - North Fruita Desert.
- VRM Class I
- Wildlife emphasis areas:
  - A portion of East Salt Creek (west of Highway 139 [4,100 acres])
- Within a 0.4-mile radius of Sage-Grouse leks

- WSAs (allow for ROWs to existing leases without an NSO stipulation issued under the 1987 RMP)
- High sensitivity zone of the Palisade municipal watershed, except for the Lands End Communication Site.

L&R-AU-02:
ROW Avoidance Areas: Manage 789,400 acres as ROW avoidance areas (Figure 2-9, Appendix A) (see Appendix B):

- ACECs:
  - A portion of Atwell Gulch (260 acres)
  - A portion of Badger Wash (400 acres)
  - Dolores River Riparian
  - The Palisade
  - Roan and Carr Creeks
  - Sinbad Valley
- Administrative sites (e.g., study sites, monitoring plots, range exclosures)
- Developed recreation sites
- Disposal parcels
- Fragile soils
- Floodplains
- National Historic, Scenic, and Recreation Trails (e.g., Old Spanish National Historic Trail)
- LBCWHR (6,500 acres outside of WSA)
- Mapped Mancos shale areas
- OHV open areas (except for areas in delineated ROW corridors)
- Owl banding station
- Sage-Grouse: occupied habitat
- Sage-Grouse: within a 4-mile radius of leks
- Scenic byways (except for areas within corridors)
- SRMAs:
  - Bangs (RMZs 1 and 2, exception for Little Park Road and Monument Road [75-meter setback])
  - Dolores River Canyon
  - Grand Valley OHV
  - Palisade Rim
- Special status species occupied and suitable habitat
- Steep slopes greater than or equal to 40 percent
- Streams/springs possessing lotic/lentic riparian characteristics

- Segment suitable for inclusion in the NWSRS:
  - Dolores River
- Areas designated as VRM Class II
- Wetlands, springs, seeps, and riparian areas.
- Wildlife Emphasis Areas:
  - Prairie Canyon antelope migratory corridor;
  - Rapid Creek (except for West-wide Energy Corridor);
  - Sunnyside (outside of West-wide Energy Corridor); and
  - Timber Ridge (exception along 9.8 Road).
- Wildlife habitat treatments
- Old growth forests and woodlands.

L&R-AU-03:
Manage the remaining public land not identified as ROW exclusion or avoidance areas as suitable for consideration for public utilities.

L&R-AU-04:
STIPULATION CSU-29: *Sub-surface Inventory*. Require sub-surface inventory for deep sub-surface-disturbing activities and buried ROW in the following locations. (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

- Indian Creek (20,200 acres);
- Grand Mesa Slopes (16,000 acres); and
- Sunnyside (17,300 acres).

L&R-MA-01:
Maintain a minimum of administrative access to rights-of-way, other land use authorizations, and utility corridors.

L&R-MA-02:
Communication Sites: Work with applicants to prioritize co-locating communication site facilities and use existing sites, as feasible. Consider new communication sites if these requirements cannot be met.

L&R-OBJ-02:
Manage corridors for public utilities and other facilities, and establish new corridors in an environmentally responsible manner as necessary to meet future demands and protect sensitive resources.

L&R-AU-05:
Consider the placement of new facilities or upgrades to existing facilities in delineated corridors or in other areas with previous disturbance and existing

facilities, as consistent with other resource values.

L&R-MA-03:
Manage five corridors (96,000 acres) (widths are approximate) for public utilities and other facilities, including:

- Coal Canyon
  - Telephone/fiber optic and power lines (wood poles only, or material and designs that look natural or similar to wood poles)
  - 0.5-mile wide
- Highway 139
  - All facilities
  - 0.5-mile wide
- Unaweep Canyon
  - Telephone/fiber optic and power lines (wood poles only, or material and designs that look natural or similar to wood poles)
  - 0.5-mile wide
- West Salt Creek
  - All facilities
  - 0.5-mile wide
- West-wide Energy Corridor
  - All facilities
  - 1 to 5 miles wide

L&R-AU-06:
Consider increased bonding for projects within the Unaweep and Highway 139 Corridors to ensure that reclamation, visual, and other objectives are met.

L&R-OBJ-03:
Provide for the development and operation of actions for leases, permits, and easements authorized under 43 CFR 2920 (such as site facilities and commercial filming) in an environmentally responsible and timely manner.

L&R-MA-04:
Leases, permits, and easements authorized under 43 CFR 2920 may be subject to additional protective measures in areas identified as ROW avoidance areas and restrict activities in areas identified as ROW exclusion areas, except for low impact temporary permits, such as filming by foot and horseback.

L&R-MA-05:
Limit applications for filming permits and still photography involving motorized, mechanized, or other intensive uses to existing highways and pullouts; designated routes, roads, and trails; and previously disturbed or cleared areas. Issue permits

without requiring any NEPA analysis only if the following criteria of minimal impact are met. Prior to permit approval, filming projects that do not meet these criteria will be subject to site-specific NEPA analysis, or use of programmatic NEPA documents, including EAs that may be developed on a local, state, or BLM-wide basis.

- Project will not impact sensitive habitat or species.
- Project will not impact cultural resources or traditional cultural properties and natural resources of importance to Native Americans.
- Project will not involve use of pyrotechnics.
- Project will not involve more than minimum impacts to land, air, or water. (Minimum is defined as temporary impact only and does not include permanent impacts or surface disturbance that cannot be raked out or rehabilitated so that there is no sign of activity at the end of the filming).
- Project will not involve use of explosives.
- Project will not involve use of exotic plant or animal species that could cause danger of introduction into the area.
- Project will not involve WSAs or lands managed for wilderness characteristics.
- Project will not involve adverse impacts to sensitive surface resource values including paleontological sites; sensitive soils; relict environments; wetlands or riparian areas; or ACECs.
- Project will not involve substantial restriction of public access.
- Project will not involve substantial use of domestic livestock.
- Project will not involve 10 production vehicles within sensitive areas.
- Project will not involve 60 or more people within sensitive areas.
- Filming activity within sensitive areas will not continue in excess of 10 days.
- Refueling will not occur within sensitive areas.
- Aircraft use in area with wildlife concerns is not proposed during crucial wildlife periods.
- Aircraft use in area with no wildlife concerns is proposed for no more than two days and does not exceed frequency of three projects per 30-day period.
- Use of aircraft is not proposed within 0.5-mile of a designated campground located within a sensitive area, and the number of low-elevation passes will not exceed four passes per day.
- Filming activities are not proposed in developed recreation sites on weekends or during times of anticipated high use.

L&R-OBJ-04:
Resolve trespass uses as they are identified and prioritized.

L&R-MA-06:
Monitor for trespass actions and manage as appropriate through ROW authorization or trespass procedures for removal and site restoration.

Renewable Energy

L&R-MA-07:
Encourage applications for both small scale (less than 20 megawatts) and large scale (greater than 20 megawatts) development in solar and wind emphasis areas.

Manage 8,700 acres as emphasis areas for solar energy development and operation, and 2,400 acres as emphasis areas for wind energy development and operation (Figure 2-87, Appendix A). Manage additional areas as identified and determined suitable for development in an environmentally responsible and economically feasible manner. ROW avoidance and exclusion areas apply. Allow for competitive leasing in identified renewable energy emphasis areas, and in new emphasis areas as identified in the future. All ROWs and other realty authorizations shall be relocated to avoid sensitive resources. Special stipulations shall also be applied to protect sensitive resources in avoidance areas.

L&R-MA-08:
Upon receipt of application for development and subsequent approval within solar and wind emphasis areas (Figures 2-29, Appendix A), consider modification of route designations and/or route relocation to accommodate wind energy development.

Land Tenure

L&R-GOAL-02:
Adjust BLM land ownership patterns and implement other realty actions (e.g., withdrawals and easements) to meet resource and community needs.

L&R-OBJ-05:
Consolidate the BLM's land ownership patterns through land tenure adjustments for improved management efficiency, and acquire from willing sellers suitable private land with special resource values.

L&R-AU-07:
Disposals. Identify 10,200 acres as available for disposal through exchanges, state selections, boundary adjustments, R&PP Act leases and patents, leases under Section 302 of FLPMA, sales under Sections 203 and 209 of FLPMA, and sales authorized by other Congressional Acts and special legislation. (Figure 2-10, Appendix A).

Disposal lands must meet one or more of the following criteria:

- Lands suitable for public purposes adjacent to or of special importance to local communities and to state or federal agencies for purposes such as community expansion, extended community services, or economic development.
- Isolated parcels that are small or so located as to make effective and efficient management impractical.
- Lands identified for the Grand Junction Regional Airport expansion (2,100 acres).*
- Unintentional occupancy trespasses in existence prior to 2010.
- Parcels containing or integral to significant habitat for special status species may be disposed of only if the habitat for the species of concern can be maintained and if the USFWS and CPW concur.
- Parcels containing or integral to NRHP eligible cultural resources may be disposed of only if the resources can be mitigated through data recovery and if the SHPO concurs with the proposed mitigation.
- Additional lands may be identified for disposal in urbanizing areas on a case-by-case basis to meet community expansion needs and where the public interest will be well served.
- Lands managed as recreational target shooting areas (e.g., 27¼ Road in the Grand Valley Shooting Areas ERMA), if lands will be managed with similar objectives to current use.
- Lands without legal public access.

* Lands identified for the Grand Junction Regional Airport expansion may be reclassified as retention lands if a future update to the Airport Master Plan determines that the lands are not needed for airport expansion.

L&R-MA-09:
Dispose isolated tracts of public lands not presently shown on the base map (Alternative A) that become known in the future and that are not required to meet other resource objectives. See Figure 2-10, in Appendix A.

L&R-MA-10:
Reserve public access in patents where it will benefit the public.

L&R-AU-08:
Identify 20 tracts totaling 5,200 acres for cooperative management (Figure 2-10, Appendix A). Offer these tracts to qualified agencies or entities for management, transfer, or exchange. Tracts that are not in the process of being transferred or do not have a cooperative management agreement in place within 10 years of signing of the record of decision for this RMP may become available for disposal.

L&R-MA-11:
Retention Areas. Retain for long-term management the remaining public lands (not identified for disposal), totaling 1,051,900 acres (Figure 2-10, Appendix A).

L&R-MA-12:
Consider land exchanges in retention areas on a case-by-case basis in order to meet resource objectives if the exchange is in the public interest and will: 1) improve management efficiency; or 2) result in the acquisition of private property with high resource values.

L&R-MA-13:
Consider applications in retention areas to meet community or organization needs under the R&PP Act in accordance with resource objectives.

L&R-AU-09:
STIPULATION *DISPOSAL CSU CO.* Surface occupancy or use may be restricted due to lands identified for disposal in the Resource Management Plan. Standard exceptions apply; see Appendix B.

L&R-MA-14:
Consider whether parcels are identified for disposal or for management by another entity in determining long-term access needs and route designations.

L&R-OBJ-06:
Acquire lands or interests in lands through exchanges, purchases, easements, or donations to facilitate resource goals and objectives.

L&R-MA-15:
Consider acquisition of lands that meet the following criteria:

- Lands within or adjacent to WSAs;
- Lands adjacent to NCAs;
- Lands needed for management of Wild and Scenic Rivers;
- National cultural, historic, or scenic trails and byways;
- Areas for cultural, paleontological, or natural history designation;
- Lands within or adjacent to ACECs;
- Habitat for species of concern (including, but not limited to, special status species);
- Lands that will help conserve, enhance, or restore Sage-Grouse habitat;
- Lands within or adjacent to lands managed for wilderness characteristics;
- Lands within or adjacent to the LBCWHR;
- Lands within or adjacent to SRMAs;
- Lands that provide public or administrative access;
- Lands that consolidate BLM ownership and improve management efficiency;

- Lands that meet the intent of the Land and Water Conservation Fund or other Congressional Acts and special legislation;
- Wetland areas as defined in Executive Order 11990, dated May 24, 1977;
- Floodplain areas (100-year) as defined in Executive Order 11988, dated May 24, 1977; and
- Other lands for other administrative purposes.

L&R-MA-16:
Manage lands or interests in acquired lands in a manner consistent with management of other public lands in the surrounding area.

L&R-MA-17:
Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements that enhance public access and recreation opportunities consistent with recreation and resource program objectives.

L&R-MA-18:
To facilitate proper reclamation in compliance with pipeline stipulations and COAs (on rights-of-way grants and APDs) and to protect shallow pipeline infrastructure, maintain administrative (but close to the public) access over pipeline facilities, unless pipelines are placed along existing routes or impacts pipelines and reclamation are unlikely.

L&R-OBJ-07:
Withdraw lands from the public land laws or mining laws where necessary to meet resource and other management objectives of the BLM or other Federal agencies.

L&R-MA-19:
Continue to manage approximately 23,300 acres as withdrawn from mineral entry (Figure 2-16, Appendix A):

- Badger Wash Study Area (3,100 acres)
- Mack Mesa Reservoir (40 acres)
- Sieber Canyon (200 acres)
- West Creek and the Unaweep Seep (1,500 acres)
- Rough Canyon ACEC (2,700 acres)
- Pup Tent Mine (1 acre)
- Developed recreation sites
    - Mud Springs (40 acres)
    - Miracle Rock (50 acres)
- Department of Energy uranium withdrawal (5,800 acres)
- Existing Bureau of Reclamation (BOR) withdrawals (7,900 acres[1])

Also see Locatable Minerals section.

[1] Of the 7,900 acres of BOR withdrawals, 4,900 surface acres are managed by BOR, 3,000 surface acres are managed by BLM.

L&R-MA-20:
Review withdrawals, as needed, and recommend their renewal, continuation, or termination. Continue all existing withdrawals initiated by other agencies unless the initiating agency requests that the withdrawal be terminated. Following revocation of a withdrawal and issuance of an opening order, manage the lands in a manner consistent with adjacent or comparable public land within the planning area.

Existing BOR withdrawals include:

- Grand Valley Project (5A Withdrawal; approximately 3,100 acres);
- Grand Valley Salinity Unit, Colorado River Basin Salinity Control Project (5A Withdrawal; 500 acres);
- Collbran Project (5A Withdrawal; 1,300 acres); and
- Dominguez Project (5B Withdrawal; 3,000 acres)*

*Project not authorized for construction.

L&R-MA-21:
Recommend revocation of the Dominguez Project withdrawal (3,000 acres) as requested by the BOR. Following revocation of the withdrawal and issuance of an opening order, manage the lands in a manner consistent with adjacent or comparable public land within the planning area.

L&R-MA-22:
Consider disposal of any withdrawn lands only upon concurrence by the holding agency and revocation or modification of the withdrawal.

COAL

COA-GOAL-01:
Provide opportunities for environmentally sound exploration and development of coal resources.

COA-OBJ-01:
Maintain coal leasing, exploration, and development within the planning area while minimizing impacts to other resource values.

COA-AU-01:
Within the coal resource development potential area, manage 252,100 acres* as acceptable for further coal leasing and development per Screens 1 and 3, set forth in 43 CFR 3420.1. See Figure 2-35, Appendix A.

*Acreage based off a maximum development depth of 2,500 feet.

COA-AU-02:
Manage areas identified in Screen 2 criteria, set forth in 43 CFR 3461.5, as acceptable for further consideration for coal leasing but unsuitable for surface mining or surface mining operations, and subject to the resource objectives outlined in the RMP (Appendix N, Coal Screening Criteria in the GJFO).

COA-AU-03:
Manage 57,400 acres in the coal resource development potential area as unacceptable for further consideration of leasing and development per Screen 3, set forth in 43 CFR 3420.1 (Appendix N, Coal Screening Criteria in the GJFO). See Figure 2-11 in Appendix A):

- Unacceptable areas include the following:
  - Colorado River Corridor;
  - Demaree Canyon WSA;
  - Little Book Cliffs WSA;
  - Pyramid Rock ACEC;
  - A portion of Roan and Carr Creeks ACEC (700 acres); and
  - The Grand Junction and Palisade municipal watersheds.

COA-AU-04:
Apply special conditions that must be met during more-detailed planning, lease sale, or post-lease activities, including measures required to protect other resource values, as outlined in Appendix B (Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities) and Appendix H (Best Management Practices and Standard Operating Procedures). Provide special conditions as recommended stipulations during post-lease activities and mine plan permitting processes.

COA-AU-05:
STIPULATION *COAL MINE CSU CO:* ***(Fluid Minerals Only)*** Surface occupancy or use (for fluid minerals only) may be restricted due to surface or underground coal mines. Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Operations proposed within the area of an approved surface or underground coal mine will be relocated outside the area to be mined or to accommodate room and pillar mining operations. Standard exceptions apply; see Appendix B.

FLUID MINERALS (OIL AND GAS, OIL SHALE, AND GEOTHERMAL RESOURCES)

MIN-GOAL-01:
Provide opportunities for leasing, exploration, and development of fluid minerals using balanced multiple-use management to meet local and national energy needs.

Oil and Gas and Geothermal Resources

MIN-OBJ-01:
Facilitate orderly, economic, and environmentally sound exploration and development of oil and gas resources (including coalbed natural gas and geothermal), using the best available technology.

MIN-MA-01:
Lease Notices (all Lease Notices): Use a Lease Notice to alert oil and gas and geothermal lessees of special inventory requirements or reporting requirements in certain areas to protect resources (See Appendix B).

MIN-MA-02:
Apply lease stipulations and lease notices to all new leases.

MIN-MA-03:
BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as stipulations will be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into COAs of the permit, plan of development, and/or other use authorizations.

MIN-MA-04:
Develop and apply COAs for authorizations such as, but not limited to, applications for permit to drill, sundry notices, and geophysical exploration to supplement regulation and policy, provided the COAs are consistent with lease rights granted.

MIN-MA-05:
In areas being actively developed, the operator will be encouraged to submit a Master Development Plan (formerly known as Geographic Area Proposal) that describes a minimum of two to three years activity for operator-controlled federal leases within a reasonable geographic area (to be determined jointly with BLM). Use the Master Development Plan to plan development of federal leases within the area to account for well locations, roads, and pipelines, and to identify cumulative environmental effects and appropriate mitigation. The extent of the analysis will be dependent on the extent of surface ownership, extent of lease holdings, topography, access, and resource concerns.

MIN-MA-06:
Resource condition objectives identified in this RMP will guide reclamation activities in areas that are currently under development and areas to be developed prior to their abandonment.

MIN-AU-01:
Leasing: Manage 935,600 acres of the federal mineral estate as open to fluid mineral leasing and geophysical exploration:

- BLM surface/federal minerals: 790,700 acres (Figure 2-12, Appendix A)
- Private and State surface/federal fluid mineral estate: 144,900 acres.

MIN-AU-02:
No Leasing: *BLM surface/federal minerals.* Manage 295,600 acres of the federal mineral estate underlying BLM surface as closed to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12 in Appendix A:

- No leasing areas include the following:
  - Gunnison Sage-Grouse critical habitat;
  - ACECs:
    - Badger Wash (1,700 acres)
    - Dolores River Riparian (7,400 acres)
    - Juanita Arch (1,600 acres)
    - The Palisade (32,200 acres)
    - Rough Canyon (2,800 acres)
    - Sinbad Valley (6,400 acres)
    - Unaweep Seep (85 acres)
  - Lands managed for wilderness characteristics (44,100 acres)
  - SRMAs:
    - Bangs (47,800 acres)
    - Dolores River Canyon (16,100 acres)
    - Palisade Rim (2,000 acres)
  - Watersheds:
    - Grand Junction (1,900 acres)
    - Palisade (5,200 acres)
  - BOR withdrawals where surface estate is managed by the BLM (3,000 acres)
  - WSAs:
    - Demaree Canyon (22,700 acres)
    - Little Book Cliffs (29,300 acres)
    - The Palisade (26,700)
    - Sewemup Mesa (17,800 acres)

MIN-AU-03:
No Leasing: *Split-estate.* Manage 29,800 acres of Private and State surface/federal fluid mineral estate as closed to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12 in Appendix A:

- City of Grand Junction Municipal Watershed (1,300 acres);
- Palisade Municipal Watershed (7,100 acres);
- Gunnison Sage-Grouse critical habitat (16,500 acres); and
- BOR withdrawals where the surface is managed by BOR (4,900 acres).

MIN-AU-04:
STIPULATION *LN-16 (Alternative A)/*LN-7 (Alternatives B and D)*: Powderhorn Ski Area*. If drilling operations are proposed, the lessee is hereby notified that there are concerns about ski lift structures, other facilities, and ski runs within the Powderhorn ski area. The lessee is hereby notified that special design, construction, and scheduling measures may be required in order to minimize the impacts of drilling and production operations. Proposed drilling and production facilities and operations shall be relocated and rescheduled as needed to avoid physical interference with ski area facilities and recreation use. This can include relocations of more than 200 meters (656 feet) or seasonal closures of more than 60 days (See Appendix B).

MIN-AU-05:
STIPULATION *RECREATION PARKS NSO CO*: Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units:

- Horsethief Canyon State Wildlife Area (1,400 acres)
- Jerry Creek Reservoir State Wildlife Area (870 acres)
- Plateau Creek State Wildlife Area (1,400 acres)
- Highline State Park (350 acres)
- Vega State Park (2,000 acres)

(Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

MIN-AU-06:
Where drainage in areas closed to leasing is likely, the BLM may issue new leases with an NSO stipulation with appropriate exception, waiver, and modification criteria.

MIN-AU-07:
STIPULATION *NSO* (all NSOs): Apply major constraints (NSO/no surface-disturbing activities) to 424,500 acres that are open to fluid mineral leasing and geophysical exploration. Lease areas with fluid minerals NSO stipulations to protect resources (Refer to Appendix B):

- BLM surface/federal minerals: 371,500 acres (Figure 2-13, Appendix A)
- Private and State surface/federal fluid mineral estate: 53,800 acres..

MIN-AU-08:
STIPULATION *CSU* (all CSUs): Apply constraints (CSUs) to 501,700 acres that are open to fluid mineral leasing and geophysical exploration. Lease areas with CSU stipulations to protect resources (Refer to Appendix B):

- BLM surface/federal minerals: 481,800 acres (Figure 2-14, Appendix A)
- Private and State surface/federal fluid mineral estate: 19,900 acres.

MIN-AU-09:
STIPULATION *TL* (all TLs): Apply constraints (TLs) to 383,800 acres that are open to fluid mineral leasing and geophysical exploration. Lease areas with TL stipulations to protect resources (Refer to Appendix B):

- BLM surface/federal minerals: 342,200 acres (Figure 2-15, Appendix A)
- Private and State surface/federal fluid mineral estate: 41,600 acres.

MIN-MA-07:
Maintain administrative access to active oil and gas wells, but limit public access to provide for public safety at active well sites.

Oil Shale

MIN-OSH-OBJ-01:
Maintain opportunities to lease oil shale with further NEPA analysis while minimizing impacts to other resources.

MIN-OIL-AU-01:
Accept applications to lease oil shale on 560 acres of the federal mineral estate within the GJFO, as identified in the *Approved Resource Management Plan Amendments/ROD for Oil Shale and Tar Sands Resources to Address Land Use Allocations in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement* (BLM 2008c). See Figure 2-90 in Appendix A. Other decisions related to oil shale leasing made in the *Oil Shale and Tar Sands PEIS* (BLM 2008) are also incorporated here by reference. These decisions are currently being revisited by the BLM in a programmatic planning process and any additional decisions will be adopted by this RMP, as applicable.

MIN-OIL-AU-02:
Applications for commercial leases using surface mining technologies shall not be permitted.

MIN-OIL-MA-01:

Accept applications for commercial leasing using underground mining technologies. The BLM will then publish a notice in the Federal Register. Prior to making any leasing decision, the BLM will conduct site specific NEPA analysis and assess the conformance of leasing with this RMP. If the application is not in conformance with the RMP, then a plan amendment will be required.

MIN-OIL-MA-02:
Consider and give priority to the use of land exchanges, where appropriate and feasible, to consolidate land ownership and mineral interests within the oil shale basins to facilitate development pursuant to Section 369(n) of the Energy Policy Act of 2005.

Shale Ridges and Canyons Master Leasing Plan

Shale Ridges and Canyons Master Leasing Plan (MLP) Vision:
Facilitate the exploration and development of oil and gas resources in the Shale Ridges and Canyons MLP area, while resolving possible conflicts with future leasing and development, and ensuring protection of the area's resources and resource uses, including, but not limited to: air quality; soils; water; riparian; fish and wildlife (including Wildlife Emphasis Areas); Special Status Species; recreation; and ACECs.

MIN-MLP-OBJ-01:
Promote a proactive approach to planning for oil and gas development in the proposed Shale Ridges and Canyons Master Leasing Plan area based on known resource values and reasonably foreseeable oil and gas development. Manage oil and gas operations in the Shale Ridges and Canyons MLP area to prevent degradation of sensitive soils, special status species, and other resources. All management objectives, goals, and actions are the same for the MLP and the entire GJFO decision area unless otherwise stated.

MIN-MLP-AU-01:
Approximately 183,400 acres of Federal mineral estate in the Shale Ridges and Canyons MLP analysis area that are currently unleased will be open to oil and gas leasing and development. Approximately 37,600 acres of Federal mineral estate in the Shale Ridges and Canyons MLP analysis area that are currently unleased will be closed to oil and gas leasing and geophysical exploration.

- Apply NSO, CSU, and TL leasing stipulations in the Shale Ridges and Canyons MLP analysis area to protect resources.
- Apply major constraints (NSO) to about 328,700 acres of Federal mineral estate that are open to fluid minerals leasing. (See Figure 4-2).
- Apply moderate constraints (CSU) to about 362,500 acres of Federal mineral estate that are open to fluid minerals leasing. (See Figure 4-3)
- Apply moderate constraints (TL) to about 237,500 acres of Federal mineral estate that are open to fluid minerals leasing. (See Figure 4-4)

The following energy and minerals, reclamation, livestock grazing, and transportation and access Conditions of Approval (COAs) from Appendix H will be analyzed at the development stage and may be applied consistent with environmental analysis and existing lease rights. Additional resource-specific COAs are listed under each resource subheading below.

- Minerals and Energy (M&E) 1-100
- Reclamation (R) 1-17
- Livestock Grazing (LG) 11, 12, 14, and 15
- Transportation and Access (TA) 2

Master Leasing Plan – Air Quality

MIN-MLP-OBJ-02:
Limit air quality degradation within the MLP analysis area by ensuring that land use activities are in compliance with Federal, State, and local regulations.

MIN-MLP-AU-02:
Require that oil and gas operators use reduced emission completion technology (i.e., "green" completion) as defined in COGCC Rule 805 and the New Source Performance Standards for Crude Oil and Natural Gas
Production at 40 CFR Part 63 Subpart OOOO at all wells on BLM-administered lands and wells that access federal minerals. An exemption may be granted on a case-by-case basis. The following COAs also may be applied to development proposals:

- Air Quality (A) 1-28 and 30-32

Refer to the Air Quality section for other air quality management actions that will be applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Water Resources

MIN-MLP-OBJ-03:
Manage and protect surface water and groundwater in order to maintain or contribute to the long term improvement of surface and ground water quality and minimize or control elevated levels of salt, sediment, and selenium contributions to water resources. All streams on public lands in the MLP Analysis Area that meet or exceed State water quality standards, and that have acceptable channel stability, will be maintained in the present condition through limited management. Streams not meeting State standards, or having unstable channels, will be improved in order to meet minimum standards through intensive management.

MIN-MLP-AU-03:
Apply the following stipulations on future oil and gas leases in the Shale Ridges

and Canyons MLP analysis area to protect water quality. See Appendix B for a detailed description of stipulations.

Hydrology:

- NSO-2 Streams/Springs Possessing Lotic Riparian Characteristics (See Figure 4-2)
- NSO-3 Definable Streams (See Figure 4-2)
- NSO-4 Lentic Riparian Areas (including springs, seeps, and fens) (See Figure 4-2)
- CSU-3 Definable Streams (See Figure 4-3)
- HYDROLOGY RIVER NSO CO (See Figure 4-2)

The following COAs from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Water Resources (H) 1-12, 14-41, and 43-50

Refer to the Water Resources section for other water resources management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Soil Resources

MIN-MLP-OBJ-04:
Ensure that surface disturbances do not cause accelerated erosion (such as rills, soil pedestals, and actively eroding gullies) on a watershed scale (e.g., 6th hydrologic unit code scale). Minimize or control elevated levels of salt, sediment, and selenium contribution from public lands to rivers. Maintain or improve soil productivity, preserve proper function and condition of uplands, and ensure that surface disturbances do not cause accelerated erosion.

MIN-MLP-AU-04:
Apply the following stipulations on future oil and gas leases in the Shale Ridges and Canyons MLP analysis area to protect soils. See Appendix B for a detailed description of stipulations.

- GEOLOGY SLOPE NSO CO (See Figure 4-2)
- GEOLOGY SOIL NSO CO (See Figure 4-2)
- GEOLOGY SOIL CSU CO (See Figure 4-3)

The following Condition of Approval (COA) from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Soils (S) 1-23

Refer to the Soil Resources section for other soil resources management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Vegetation

MIN-MLP-OBJ-05:
Manage for a healthy diversity of successional-stage plant communities and properly functioning riparian zones within the MLP analysis area.

MIN-MLP-AU-05:
Apply the following stipulations and conservation measures on future oil and gas leases within the Shale Ridges and Canyons MLP analysis area to protect vegetation communities: See Appendix B for a detailed description of stipulations.

Stipulations:

- NSO-2 Streams/Springs Possessing Lotic Riparian Characteristics (See Figure 4-2)
- NSO-3 Definable Streams (See Figure 4-2)
- NSO-4 Lentic Riparian Areas (including springs, seeps, and fens) (See Figure 4-2)
- PLANT COMMUNITY CSU CO (See Figure 4-3)
- The following Conditions of Approval (COAs) from Appendix H will be analyzed at the development stage and may be applied to development proposals:
- Vegetation Rangeland (VR): 1-3, and 4-13
- Vegetation Riparian Habitat and Wetlands (VRW): 1-5, 9-11, 13-14, and 24
- Noxious and Invasive Weed Prevention (WEED): 1-29

Refer to the Vegetation section for other vegetation management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area

Master Leasing Plan – Special Status Species

MIN-MLP-OBJ-06:
Protect occupied and suitable habitat for federal proposed, candidate, and threatened or endangered species, and protect occupied habitat for BLM sensitive species necessary for:

- *Maintenance and recovery of proposed, candidate, and threatened or endangered species and*
- *Support of BLM sensitive species and significant plant communities, consistent with BLM policy on special status species management (BLM manual 6840, BLM 2008o).*

MIN-MLP-AU-06: Apply the following stipulations and conservation measures on future oil and gas leases within the Shale Ridges and Canyons MLP analysis area to protect Special Status Species: See Appendix B for a detailed description of restrictions.

Stipulations:

- NSO-12 ACECs (See Figure 4-2)
- NSO-13 Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species (See Figure 4-2)
- NSO-23 Golden Eagle Nest Sites (See Figure 4-2)
- NSO-24 Bald Eagle Nest Sites (See Figure 4-2)
- NSO-25: Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat (4 miles) (See Figure 4-2)
- NSO-26 Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad (See Figure 4-2)
- NSO-30: Occupied Prairie Dog Towns in Prairie Canyon WEA (See Figure 4-2)
- WILDLIFE BAT NSO CO (See Figure 4-2)
- CSU-9 BLM Sensitive Plant Species Occupied Habitat (See Figure 4-3)
- CSU-13: Osprey Nests (See Figure 4-3)
- CSU-14: Ferruginous Hawk Nest Sites (See Figure 4-3)
- CSU-15: Red-tailed Hawk Nest Sites (See Figure 4-3)
- CSU-16: Swainson’s Hawk Nest Sites (See Figure 4-3)
- CSU-17: Peregrine Falcon Nest Sites (See Figure 4-3)
- CSU-18: Prairie Falcon Nest Sites (See Figure 4-3)
- CSU-19: Other Raptor Species (See Figure 4-3)
- CSU-23: Occupied Prairie Dog Towns (See Figure 4-3)
- CSU-39 Roan and Carr Creeks ACEC (See Figure 4-3)
- TL-1 Salmonid and Native, Non-salmonid Fishes (See Figure 4-4)
- TL-3 Migratory Bird Habitat (See Figure 4-4)
- TL-7 Red-tailed Hawk Nests (See Figure 4-4)
- TL-13 Golden Eagle Nest Sites (See Figure 4-4)
- TL-15 Bald Eagle Winter Roost (See Figure 4-4)
- TL-16: Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat (0.6 mile) (See Map See Figure 4-4)

- WILDLIFE RAPTOR NESTS TL CO (See Figure 4-4)
- SENSITIVE WILDLIFE RAPTOR NESTS TL CO (See Figure 4-4)
- LN-3: Biologic Inventories
- LN-4: Threatened and Endangered Species

The following COAs from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Fish and Wildlife Management and Special Status Species (FWS) 1, 4-21, 23-26, and 28-55
- Wildlife Damage Management (WDM) 7 and 9

Refer to the Special Status Species section for other special status species management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Greater Sage-Grouse

MIN-MLP-OBJ-07:
Sustain the integrity of the sagebrush biome in order to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of Greater Sage-Grouse and other sagebrush-dependent species.

MIN-MLP-AU-07:
Apply the following stipulations and mitigation measures on future oil and gas leases to protect Greater Sage-Grouse habitat. See Appendix B for a detailed description of restrictions.

Stipulations:

- NSO-12 ACECs (See Figure 4-2)
- NSO-13 Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species (See Figure 4-2)
- CSU-39 Roan and Carr Creeks ACEC (See Figure 4-3)
- TL-16: Occupied Sage-Grouse Winter Habitat (See Figure 4-4)
- TL-17 Sage-Grouse Leks (4 mile) (See Figure 4-4)

Mitigation Measures:
Measures to mitigate impacts to Greater Sage-Grouse, including leasing stipulations, may be applied to future oil and gas leases in the MLP Analysis Area upon publication of the Northwest Colorado BLM Greater Sage-Grouse Record of Decision (ROD).

Refer to the Special Status Species section for other Greater Sage-Grouse management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Fish and Wildlife

MIN-MLP-OBJ-08:
Maintain and improve BLM lands for priority habitat requirements for the following high-value species: Critical and severe winter range, winter concentration areas, production areas, and big game migrations corridors for big games species (e.g., mule deer (Odocoileus hemionus), elk (Cervus canadensis), antelope (Antilocapra americana), bighorn sheep (Ovis canadensis), and moose (Alces alces).

Maintain and improve lands for priority habitat requirements for highly valued species such as, but not limited to, cold water sport fishes including rainbow, brown, and brook trout.
Protect state wildlife areas from unnecessary surface occupancy and surface disturbing activities.

MIN-MLP-AU-08:
Designate the following areas in the Shale Ridges and Canyons MLP analysis area as Wildlife Emphasis Areas. Wildlife Emphasis Areas are areas of high habitat value.

Two areas in Garfield County:

- East Salt Creek: 25,000 acres
- A portion of Prairie Canyon: 1,400 acres

Nine areas in Mesa County:

- Beehive: 4,700 acres
- Blue Mesa: 9,300 acres
- Bull Hill: 4,800 acres
- Glade Park: 27,200 acres
- Prairie Canyon (a portion): 20,800 acres
- Rapid Creek: 27,000 acres
- Sunnyside: 14,500 acres
- Timber Ridge: 11,800 acres
- Winter Flats: 3,200 acres

Apply the following stipulations on future oil and gas leases in the Shale Ridges and Canyons MLP analysis area to protect big game, raptors, and fish. See Appendix B for a detailed description of stipulations.

- NSO-32 Research Sites (See Figure 4-2)
- NSO-34 Elk Production Area (See Figure 4-2)
- WILDLIFE HABITAT NSO CO (See Figure 4-2)
- RECREATION PARKS NSO CO (See Figure 4-2)
- CSU-10 Wildlife Habitat (See Figure 4-3)

- CSU-24 Deer and Elk Migration and Movement Corridors (See Figure 4-3)
- WILDLIFE HABITAT CSU CO (See Figure 4-3)
- TL-19 Occupied Prairie Dog Towns (See Figure 4-4)
- TL-20 Big Game Winter Range (See Figure 4-4)
- TL-22 Pronghorn Wintering Habitat (See Figure 4-4)
- BIG GAME PRODUCTION AREAS TL CO (See Figure 4-4)
- LN-3 Biologic Inventories
- LN-5 Working in Wildlife Habitat

Fisheries and Aquatic:

- NSO-12 ACECs (See Figure 4-2)
- WILDLIFE HABITAT NSO CO (See Figure 4-2)
- CSU-39 Roan and Carr Creeks ACEC (See Figure 4-3)
- WILDLIFE HABITAT CSU CO (See Figure 4-3)
- TL-1 Salmonid and Native, Non-salmonid Fishes (See Figure 4-4)

The following Conditions of Approval (COAs) from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Fish and Wildlife Management and Special Status Species (FWS) 1, 4-21, 23-26, and 28-55
- Wildlife Damage Management (WDM) 7 and 9

Refer to the Fish and Wildlife and Special Status Species sections for other big game, raptor, and fish management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Wild Horses

MIN-MLP-OBJ-09:
Emphasize protection of wild horses in the LBCWHR and minimize impacts to their population and habitat.

MIN-MLP-AU-09:
Apply the following stipulations and mitigation measures on future oil and gas leases to protect wild horses and the wild horse range. See Appendix B for a detailed description of restrictions.

Stipulations:

- NSO-36 Little Book Cliffs Wild Horse Range (See Figure 4-2)

The following COAs from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Wild Horses (WH) 1-11

Refer to the Wild Horses section for other wild horse management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Cultural and Paleontological Resources

MIN-MLP-OBJ-10:
Protect cultural resources within the MLP Area and manage them according to their Use Category Allocation of one of the following: scientific, conservation, traditional, public, or experimental use. Manage paleontological resources in the MLP analysis area to protect sensitive sites and geologic formations of Class PFYC 4 and 5 potential.

MIN-MLP-AU-10:
Apply the following stipulations and mitigation measures on future oil and gas leases to protect cultural resources. See Appendix B for a detailed description of restrictions.

Stipulations:

- NSO-37 Allocation to Conservation Use Category (See Figure 4-2)
- NSO-38 Allocation to Traditional Use Category (See Figure 4-2)
- NSO-39 Cultural Resources (Indian Creek) (See Figure 4-2)
- CSU-27 Allocation to Scientific Use Category (See Figure 4-3)
- CSU-28 Allocation to Public Use Category (See Figure 4-3)
- CSU-29 Sub-surface Inventory (See Figure 4-3)
- LN-6: Paleontology

The following COAs from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Cultural Resources (CR) 1-7 and 10-13
- Tribal Consultation (TC) 1-6 and 8-10
- Paleontology (P) 1-6

Refer to the Cultural and Paleontological Resources sections for other cultural and paleontological resources management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Visual Resources

MIN-MLP-OBJ-11:
Manage visual resources within the MLP analysis area according to VRM

classifications. Protect the visual integrity of the landscape by managing all project proposals to meet or exceed objectives of the prescribed VRM classes by incorporating visual design BMPs and COAs.

MIN-MLP-AU-11:
Apply the following stipulations and mitigation measures on future oil and gas leases to protect visual resources. See Appendix B for a detailed description of restrictions.

Stipulations:

- VISUAL CLASS I NSO CO (See Figure 4-2)
- CSU-30: VRM Class II (See Figure 4-3)

The following COAs from Appendix H will be analyzed at the development stage and may be applied to development proposals:

- Visual Resources (V) 1-20

Refer to the Visual Resources section for other visual resources management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Recreation and Visitor Services

MIN-MLP-OBJ-12:
Provide for a focus on meeting recreation goals and objectives in RMAs to reduce conflict between users and oil and gas development.

MIN-MLP-AU-12:
Apply the following stipulations on future oil and gas leases in the Shale Ridges and Canyons MLP analysis area to protect recreation outcomes and settings. See Appendix B for a detailed description of restrictions.

- RECREATION SRMA NSO CO (See Figure 4-2)
- RECREATION MANAGEMENT AREAS CSU CO (See Figure 4-3)

Designate the following areas in the Shale Ridges and Canyons MLP area as ERMAs to address local recreation issues:

- North Desert (107,900 acres)
- Grand Valley Ranges (750 acres)
- Barrel Spring (24,700 acres)

Apply the following stipulation on future oil and gas leases in the Shale Ridges and Canyons MLP analysis area to address local recreation issues. See Appendix B for a detailed description of restrictions.

- RECREATION MANAGEMENT AREAS CSU CO (See Figure 4-3)

Other:

- CSU-31 Recreation (See Figure 4-3)
- RECREATION PARK NSO CO (See Figure 4-2)

Refer to the Recreation and Visitor Services section for other recreation and visitor services management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

Master Leasing Plan – Areas of Critical Environmental Concern

MIN-MLP-OBJ-13:
Provide for protection of ACEC resource values by reducing impacts from oil and gas development in these areas.

MIN-MLP-AU-13:
Apply the following stipulations on future oil and gas leases in the Shale Ridges and Canyons MLP analysis area to protect the relevant and important characteristics of ACECs. See Appendix B for a detailed description of restrictions.

- NSO-12 ACECs (See Figure 4-2)
- CSU-39 Roan and Carr Creeks ACEC (See Figure 4-3)

Refer to the ACEC section for other ACEC management actions that are applied throughout the RMP decision area, including the Shale Ridges and Canyons MLP analysis area.

SOLID MINERALS (LOCATABLE MINERALS, SALABLE MINERALS/MINERAL MATERIALS, AND NON-ENERGY LEASABLE MINERALS)

SOL-GOAL-02:
Provide opportunities to develop locatable minerals, mineral materials, and non-energy leasable minerals consistent with other resource goals and uses to meet local and national energy and mineral needs.

Locatable Minerals

LOC-OBJ-01:
Facilitate environmentally responsible exploration and development of locatable minerals subject to BLM policies, laws, and regulations.

LOC-MA-01:
Allow mineral exploration and development (locatable minerals) under the General Mining Law of 1872 on all BLM-administered lands unless it is proposed for administrative withdrawal or wilderness designation. Regulate locatable mineral exploration and development on BLM land under 43 CFR 3800. Open all surface estate (1,061,400 acres), except the withdrawn areas identified below, to location of mining claims activity (Figure 2-16, Appendix A).

LOC-AU-01:
Maintain the following areas (23,300 acres) as withdrawn from mineral entry, per the Secretary of the Interior:

- Badger Wash Study Area (3,100 acres)
- Mack Mesa Reservoir (40 acres)
- Calamity Camp (40 acres)
- Sieber Canyon (200 acres)
- West Creek and the Unaweep Seep (1,500 acres)
- Rough Canyon ACEC (2,700 acres)
- Pup Tent Mine (1 acre)
- Developed recreation sites
    - Mud Springs (40 acres)
    - Miracle Rock (50 acres)
- Existing BOR withdrawals (7,900 acres)

Also see Lands and Realty section.

LOC-AU-02:
Petition to the Secretary of the Interior for withdrawal of the following areas (20,600 acres) from mineral entry (Figure 2-17, Appendix A):

- ACECs:
  Priority 1:
  - Sinbad Valley;

  Priority 2:
  - Badger Wash;
  - Juanita Arch;
  - Mt. Garfield;
  - A portion of The Palisade (5,600 acres);
  - Pyramid Rock;
- Recreation sites:
  - Campgrounds;
  - Developed target shooting zones (Grand Valley Shooting Ranges ERMA);
  - Trailheads/picnic areas; and
- Logan Wash Mine Site.

LOC-MA-02:
Petition lands for withdrawal from locatable mineral development on a case-by-case basis for the protection of important resource values. The size of any mineral withdrawal are commensurate with what is desirable to protect the values requiring the withdrawal.

LOC-MA-03:
Maintain administrative access to active mines.

Salable Minerals/Mineral Materials

SAL-OBJ-01:
Manage mineral material (salable minerals) resources to provide for the needs of individuals, municipalities, and businesses while ensuring compatibility with other resource objectives.

SAL-MA-01:
Identify additional common use areas in locations and sizes to meet the existing and reasonably foreseeable demand for the commodity(ies) available at each site, where compatible with resource objectives.

SAL-MA-02:
Prohibit commercial sales of petrified wood products due to limited availability of such resources.

SAL-MA-03:

Permit future common use areas where compatible with resource objectives. Establish sites in appropriate locations and with sufficient capacity while avoiding a proliferation of sites for similar materials in a given area.

SAL-MA-04:
Maintain designated bentonite common use area on Little Park Road.

SAL-AU-01:
Identify 783,800 acres as open for consideration for mineral material disposal on a case-by-case basis. (Figure 2-18, Appendix A).

SAL-AU-02:
Close 277,700 acres to mineral material disposal (Figure 2-18, Appendix A):

- Colorado, Dolores, and Gunnison River Corridors;
- WSAs;
- ACECs;
- Lands managed for wilderness characteristics;
- Gunnison River Bluffs ERMA
- SRMAs:
    - Bangs (except for the Little Park Road bentonite mine);
    - Dolores River (exception for area near Niche Road); and
    - North Fruita Desert.

Non-Energy Solid Leasable Minerals

NEL-OBJ-01:
Provide opportunities for non-energy leasable exploration and/or development subject to standard stipulations (e.g., NSO, CSU, TL).

NEL-AU-01:
Identify 518,600 acres as open for consideration of non-energy leasable mineral exploration and/or development (e.g., potash), subject to stipulations in Appendix B (Figure 2-62, Appendix A).

NEL-AU-02:
Close 542,800 acres in the following areas to non-energy leasable mineral exploration and/or development (Figure 2-19, Appendix A):

- WSAs
- ACECs
- Gunnison Sage-Grouse critical habitat
- Lands managed for wilderness characteristics
- LBCWHR

- SRMAs
- Wildlife Emphasis Areas:
    - Blue Mesa
    - Bull Hill
    - Glade Park
    - Timber Ridge
- Watersheds:
    - Grand Junction
    - Palisade
- VRM Class I and II areas

NEL-MA-01:
Issue prospecting permits in areas where potash values are not known, which could lead to issuance of a preference right lease.

III. SPECIAL DESIGNATIONS

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

ACEC-GOAL-01:
Manage ACECs to protect significant resource values and prevent damage to important natural, biological, cultural, recreational, or scenic resources and values, or to protect life and safety from natural hazards.

ACEC-OBJ-01:
Continue to manage those areas within the GJFO that require some special management and that meet the criteria for ACEC designation.

ACEC-MA-01:
Designate the following areas as ACECs (123,000 acres). (Figure 2-20, Appendix A):

- Atwell Gulch (2,900 acres);
- Badger Wash (2,200 acres);
- Dolores River Riparian (7,400 acres);
- Indian Creek (2,300 acres);
- Juanita Arch (1,600 acres);
- Mt. Garfield (2,400 acres)
- The Palisade (32,200 acres);
- Pyramid Rock (1,300 acres);
- Roan and Carr Creeks (33,600 acres);
- Rough Canyon (2,800 acres);
- Sinbad Valley (6,400 acres);
- South Shale Ridge (27,800 acres); and
- Unaweep Seep (85 acres).

ACEC-AU-01:
Close all ACECs to mineral material disposal and non-energy solid leasable mineral exploration and development.

ACEC-AU-02:
To protect and maintain unique ecological values for which ACECs are designated, limit or reduce the number of routes within ACECs that are managed as *limited to designated routes* for motorized and mechanized travel.

ACEC-AU-03:
Prohibit surface occupancy and use, and prohibit surface occupancy and use and

surface-disturbing activities within the following ACECs:

- Atwell Gulch (2,900 acres);
- Badger Wash (2,200 acres);
- Dolores River Riparian (7,400 acres);
- Indian Creek (2,300 acres);
- Juanita Arch (1,600 acres);
- Mt. Garfield (2,400 acres);
- Palisade (32,200 acres);
- Pyramid Rock (1,300 acres);
- Rough Canyon (2,800 acres);
- Sinbad Valley (6,400 acres);
- South Shale Ridge (27,800 acres); and
- Unaweep Seep (85 acres).

Standard exceptions apply; see Appendix B.

Atwell Gulch Area of Critical Environmental Concern

ACEC-MA-02:
Designate the Atwell Gulch ACEC (2,900 acres) to protect rare plants, cultural resources, scenic values, and wildlife habitat. Management actions include the following:

- Manage as VRM Class II.
- Close to motorized travel, including over-snow motorized travel.
- Close to mechanized travel.
- Issue no SRPs for competitive events.
- Close 2,600 acres to livestock grazing (approximately 250 acres will remain unallotted).
- Manage 2,600 acres as a ROW exclusion area (except allow for ROWs to existing oil and gas
- leases issued under the 1987 RMP without NSO stipulations).
- Manage 260 acres as a ROW avoidance area for natural gas pipelines, water pipelines, and produced water pipelines.
- Allowable Use: Only allow vegetation treatments for the benefit of the identified relevant and important values.
- Close to fossil collection.
- Allowable Use:

STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Badger Wash Area of Critical Environmental Concern

ACEC-MA-03:
Designate the Badger Wash ACEC (2,200 acres) to protect rare plants and use as a hydrologic study area. Management actions include the following:

- Manage as VRM Class III.
- Classify motorized and mechanized travel as *limited to designated routes*.
- Issue no SRPs for competitive events.
- Close to grazing in the paired study watersheds (186 acres).
- Open to grazing outside of the paired watersheds in accordance with watershed study objectives (400 acres).
- Manage the paired watersheds (1,800 acres) as a ROW exclusion area.
- Manage 400 acres as ROW avoidance areas.
- Petition to the Secretary of the Interior for withdrawal from mineral entry.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-39, Appendix A.
- Allowable Use:

  STIPULATION: NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Dolores River Riparian Area of Critical Environmental Concern

ACEC-MA-04:
Designate the Dolores River Riparian ACEC (7,400 acres) to protect riparian, hydrology, scenic and paleontological resources, and special status species. Management actions include the following:

- Manage a portion under VRM Class II (7,100 acres) and a portion under VRM Class III (300 acres).
- Manage as ROW avoidance area.
- Allowable Use: Only allow vegetation treatments that do not negatively impact the identified relevant and important values.
- Classify motorized and mechanized travel as *limited to designated routes.*
- Only allow camping in designated sites.

- Close to recreational placer mining outside of active mining claims.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12, Appendix A.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Indian Creek Area of Critical Environmental Concern

ACEC-MA-05:
Designate the Indian Creek ACEC (2,300 acres) to preserve research and cultural values. Management actions include the following:

- Manage as VRM Class II.
- Manage as a ROW exclusion area.
- Classify motorized and mechanized travel as *limited to designated routes*.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

Juanita Arch Area of Critical Environmental Concern

ACEC-MA-06:
Designate the Juanita Arch ACEC (1,600 acres) to protect rare plants and geologic values. Management actions include the following:

- Manage as VRM Class II.
- Close to motorized and mechanized travel.
- Manage as a ROW exclusion area.
- Petition to the Secretary of the Interior for withdrawal from mineral entry.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-39, Appendix A.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Mt. Garfield Area of Critical Environmental Concern

ACEC-MA-07:
Designate the Mt. Garfield ACEC (2,400 acres) to protect its scenic values. Management actions include the following:

- Manage as VRM Class I.
- Close to motorized travel, including over-snow motorized travel.
- Prohibit target shooting.
- Manage as a ROW exclusion area.
- Close to fossil collection.
- Petition to the Secretary of the Interior for withdrawal from mineral entry.
- Classify as unsuitable for coal leasing.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

The Palisade Area of Critical Environmental Concern

ACEC-MA-08:
Designate the Palisade ACEC (32,200 acres) to protect rare plant populations and special status wildlife. Management actions include the following:

- Manage 5,500 acres as VRM Class II.
- Classify 26,700 acres as *closed* and 5,500 acres as *limited to designated routes* for motorized and mechanized travel.
- Issue no SRPs for competitive events.
- Manage as a ROW avoidance area.
- Allowable Use: Only allow vegetation treatments that do not negatively impact relevant and important values.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12, Appendix A.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Pyramid Rock Area of Critical Environmental Concern

ACEC-MA-09:
Designate the Pyramid Rock ACEC (1,300 acres) to preserve habitat for rare plant species and to protect paleontological and cultural resources:

- Manage as VRM Class II.
- Close to motorized, mechanized, equestrian, and foot travel, including over-snow motorized travel.
- Prohibit target shooting.
- Issue no SRPs for competitive events.
- Close to camping.
- Close to livestock grazing.
- Manage as a ROW exclusion area.
- Close to all types of collection (e.g., fossil, vegetation, rocks, etc.), except for permitted collection for scientific research.
- Petition to the Secretary of the Interior for withdrawal from mineral entry.
- Require permit and agreement to allow research activities that support the objectives of the ACEC.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Roan and Carr Creeks Area of Critical Environmental Concern

ACEC-MA-10:
Designate the Roan and Carr Creeks ACEC (33,600 acres) to protect unique riparian habitats, genetically pure populations of cutthroat trout, and Greater Sage-Grouse habitat. Management actions include the following:

- Manage as VRM Class II.
- Allowable Use: Only allow vegetation treatments for the benefit of the identified relevant and important values.
- Limit motorized and mechanized travel to designated routes.
- Manage as ROW avoidance area.
- Close to mechanized travel.
- Classify the portion of the ACEC (700 acres) within the coal resource development potential area as unacceptable for coal leasing.
- Allowable Use:

  STIPULATION CSU-12: Roan and Carr Creeks *ACEC*. Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within the Roan and Carr Creek ACEC. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.
- Allowable Use:

  STIPULATION NSO-25: *Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat.* Prohibit surface occupancy and surface-disturbing

activities within 4 miles of an active lek or within Sage-Grouse nesting and early brood-rearing habitat. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard and special exceptions apply; see Appendix B.

Rough Canyon Area of Critical Environmental Concern

ACEC-MA-11:
Designate the Rough Canyon ACEC (2,800 acres) to protect geologic, wildlife habitat, cultural resources, and plants. Management actions include the following:

- Manage as VRM Class II.
- Classify a portion of the ACEC (2,200 acres) for motorized and mechanized travel as *limited to designated routes*.
- Classify a portion of the ACEC (600 acres) for motorized and mechanized travel as *closed*.
- Prohibit new trail development in those portions of Bangs Canyon RMZ 2 that are located within the ACEC, unless impacts on the ACEC relevance and importance criteria can be mitigated.
- Manage as a ROW exclusion area.
- Withdrawn from mineral entry.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12, Appendix A.
- Allowable Use:

  STIPULATION NSO-13: *Current and Historically Occupied Habitat of Threatened, Endangered, Proposed, and Candidate Species.* Prohibit certain surface uses, as specified in Appendix B, to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred. Standard exceptions apply; see Appendix B.

- Allowable Use:

  STIPULATION NSO-37: *Allocation to Conservation Use Category*. Prohibit surface occupancy and surface-disturbing activities, including archaeological excavation, within 100 meters (328 feet) around eligible sites allocated to Conservation Use. (Refer to Appendix B.) See Figure 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

Sinbad Valley Area of Critical Environmental Concern

ACEC-MA-12:
Designate the Sinbad Valley ACEC (6,400 acres) to protect rare plants, wildlife, cultural resources, geologic and scenic values. Management actions include the following:

- Manage as VRM Class II.
- Classify motorized and mechanized travel as *limited to designated routes*.
- Manage as a ROW avoidance area.
- Petition to the Secretary of the Interior for withdrawal from mineral entry.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figures 2-12, Appendix A.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

South Shale Ridge Area of Critical Environmental Concern

ACEC-MA-13:
Designate the South Shale Ridge ACEC (27,800 acres) to protect rare plants, wildlife habitat, and scenic values. Management actions include the following:

- Issue no SRPs for competitive events.
- Classify motorized and mechanized travel as *limited to designated routes*.
- Manage as VRM Class II
- Manage as a ROW exclusion area (except allow for ROWs to existing oil and gas leases issued under the 1987 RMP without NSO stipulations).
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

Unaweep Seep Area of Critical Environmental Concern

ACEC-MA-14:
Designate the Unaweep Seep ACEC (85 acres) to protect habitat for the rare Great Basin silverspot butterfly, rare plants, riparian habitat, and hydrologic values. Management actions include the following:

- Manage as VRM Class II.

- Close to unauthorized motorized travel activities, including over-snow travel (see 43 CFR 8342.1).
- Closed to mechanized travel.
- Issue no SRPs for competitive events.
- Prohibit commercial wood product sales, harvesting forest and woodland products, and Christmas tree cutting.
- Prohibit camping.
- Manage as a ROW exclusion area.
- Close to fossil collection.
- Open to livestock grazing.
- Withdrawn from mineral entry.
- Close to mineral material disposal.
- **No Leasing:** *ACECs.* Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figure 2-12, Appendix A.
- Allowable Use:

  STIPULATION NSO-12: *ACECs*. Prohibit surface occupancy and surface-disturbing activities. (Refer to Appendix B.) See Figure 2-13, Appendix A. Standard exceptions apply; see Appendix B.

WILDERNESS STUDY AREAS

WSA-GOAL-01:
Preserve the wilderness character of WSAs.

WSA-OBJ-01:
Preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined under BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012i), until Congress either designates these lands as wilderness or releases them for other purposes.

WSA-MA-01:
Manage the four WSAs (96,500 acres) under BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012i), pending congressional action on wilderness recommendations (Figure 2-21, Appendix A):

- Demaree Canyon (22,700 acres)
- Little Book Cliffs (29,300 acres)
- The Palisade (26,700 acres)
- Sewemup Mesa (17,800 acres)

WSA-MA-02:
Manage all WSAs as VRM Class I.

WSA-MA-03:
Manage all WSAs as closed to motorized and mechanized travel. Travel required for valid existing rights and grandfathered uses will be allowed.

WSA-AU-01:
STIPULATION NSO-43: *Wilderness Study Areas.* Prohibit surface occupancy and surface-disturbing activities in WSAs in accordance with BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012i)). (Refer to Appendix B.) See Figures 2-13, in Appendix A. Standard exceptions apply; see Appendix B.

WSA-MA-04:
In the event Congress designates any of the WSAs as Wilderness, management direction will be adapted to the actions defined in the designating legislation in a manner consistent with the 1964 Wilderness Act, until an activity plan is developed detailing management direction for the area(s).

WSA-GOAL-02:
Implement management strategies for lands within WSAs, should Congress release one or more of these areas from wilderness consideration.

WSA-OBJ-02:

If Congress releases one or more WSAs from wilderness consideration, manage those lands consistent with land use designations and resource objectives described below.

WSA-MA-05:
If Congress releases one or more WSAs from wilderness consideration, update the wilderness characteristics inventory for lands that were formerly WSAs (FLPMA Section 201).

WSA-MA-06:
If Congress Releases WSAs from wilderness consideration, reconsider acceptability for further coal leasing using the Coal Screening Criteria (**Appendix N**).

Sewemup Mesa

WSA-OBJ-03:
If the Sewemup Mesa WSA is released from Wilderness consideration, manage the lands for the following resource values where present: cultural and visual resources, wilderness characteristics, and un-fragmented wildlife habitat.

WSA-MA-07:
If Congress releases Sewemup Mesa WSA from Wilderness consideration, manage the area to protect wilderness characteristics by applying the following management:

- Issue no SRPs for competitive events.
- Close to motorized and mechanized travel, including over-snow motorized travel.
- Close to wood product sales and/or harvest (including Christmas tree harvest).
- Manage as a ROW exclusion area.
- Close to mineral material disposal
- Close to non-energy leasable mineral exploration and/or development
- Manage as VRM Class II.
- **No Leasing**: *Lands with wilderness characteristics outside WSAs*. Close to fluid mineral leasing and geophysical exploration. (Refer to Appendix B.) See Figures 2-12 in Appendix A.
- Allowable Use:

  STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO.* No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

Little Book Cliffs

WSA-OBJ-04:
If the Little Book Cliffs WSA is released from Wilderness consideration, manage the lands for the following resource values where present: wild horses and wild horse viewing, big horn sheep, and the Colorado hookless cactus.

WSA-MA-08:
If Congress releases Little Book Cliffs WSA from Wilderness consideration, manage the portion of the WSA within LBCWHR in accordance with the Alternative B management prescriptions for the LBCWHR. For the remainder of the WSA:

- Consider SRPs for competitive events.
- Limit motorized and mechanized travel to designated routes.
- Manage as ROW avoidance area.
- Manage as VRM Class III.
- Allowable Use:

  STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO.* No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan. (Refer to Appendix B.) See Figures 2-13 in Appendix A. Standard exceptions apply; see Appendix B.

Demaree Canyon

WSA-OBJ-05:
If the Demaree Canyon WSA is released from Wilderness consideration, manage the lands for the following resource values where present: Kit Fox habitat and sage brush flats (within critical deer/elk winter range.

WSA-MA-09:
If Congress releases Demaree Canyon WSA from Wilderness consideration:

- Consider SRPs for competitive events.
- Limit motorized and mechanized travel to designated routes.
- Manage as ROW avoidance area.
- Manage a portion as VRM Class II and a portion as VRM Class III.
- Allowable Use:
- **STIPULATION** NSO-29: *Active Kit Fox Dens.* Prohibit surface occupancy and surface-disturbing activities within 200 meters (656 feet) of active kit fox dens. (Refer to Appendix B.) See Figures 2-43 (Alternative

B) 2-44 (Alternative C) in Appendix A. Standard exceptions apply; see Appendix B.

- Allowable Use:

  STIPULATION CSU-10: *Wildlife Habitat.* Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures will be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs (Appendix H). (Refer to Appendix B.) See Figure 2-14 in Appendix A. Standard exceptions apply; see Appendix B.

The Palisade Wilderness Study Area

WSA-OBJ-06:
If The Palisade WSA is released from Wilderness consideration, manage the lands for the following resource values where present: rare plants, water quality/fish habitat (e.g., North Fork), cliff nesting habitat, lands with wilderness characteristics, and recreation activities.

WSA-MA-10:
If Congress releases The Palisade WSA from Wilderness consideration, manage in accordance with the Alternative B management prescriptions for The Palisade ACEC with the following exceptions:

- Close to motorized travel, including over-snow motorized travel.
- Close most portions of the area to motorized travel, including over-snow motorized travel.
- Manage portions of the perimeter of the area that provide important hunting access as limited to designated routes for motorized travel. Limit mechanized travel to designated routes
- Manage as VRM Class II.

WILD AND SCENIC RIVERS (CONGRESSIONAL DESIGNATION)

WSR-GOAL-01:
Evaluate eligible river segments and identify suitable segments for inclusion in the NWSRS, protecting them in accordance with the Wild and Scenic River Act and BLM Manual 6400 – Wild and Scenic Rivers.

WSR-OBJ-01:
Implement interim protective management of each suitable segment by protecting its tentative classification, free-flowing condition, water quality, and ORV(s), pending Congressional action or for the duration of the RMP (Figures 2-22 , Appendix A).

WSR-MA-01:
Determine all eligible stream segments as not suitable for inclusion in the NWSRS, except for the Dolores River (see action below), and release them from interim management protections afforded eligible segments. This concludes the suitability study phase for these segments. See Table 3-44, Summary of Wild and Scenic River Study Segments, for total segment lengths and segment study corridor acreages, as well as segment lengths on BLM land and segment study corridor acreages on BLM land (a description of each segment is provided in Appendix C)..

WSR-MA-02:
Determine that 10.38 miles of the Dolores River are suitable for inclusion in the NWSRS (tentative recreational classification; ORVs are Scenic, Fish, Recreation, Geologic, Paleontological). Manage the suitable stream miles according to interim protective management guidelines for suitable stream segments until Congressional action occurs. Determine that 8.24 miles are not suitable for inclusion in the NWSRS. Release stream miles determined not suitable from interim management protection afforded to eligible segments. Refer to Wild and Scenic River Suitability Analysis (Appendix C) for exact description of the stream miles determined to be suitable and not suitable.

WSR-MA-03:
In addition to the actions described in Alternative A, establish the following interim protective management guidelines for segments of the Dolores River determined suitable. All interim protective management is subject to valid existing rights. In addition to actions described in Alternative A:

- Manage as VRM Class II.
- Manage as ROW avoidance area.
- Allowable Use:

  STIPULATION *HYDROLOGY RIVER NSO CO:* No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers:

Colorado, Dolores, and Gunnison. Standard exceptions apply; see Appendix B. See Figure 2-13.

NATIONAL TRAILS (CONGRESSIONAL DESIGNATION)

NTR-GOAL-01:
Enhance, promote, and protect the scenic, natural, recreational, and cultural resource values associated with current and future designated National Scenic and Historic Trails.

NTR-OBJ-01:
Manage the congressionally designated Old Spanish National Historic Trail in consideration of the BLM and National Park Service (NPS) jointly developed trail-wide comprehensive plan and in coordination with the NPS (Figure 2-31, Appendix A). Identify the nature and purposes of the Old Spanish National Historic Trail, and, to the greatest extent possible, manage the trail in a manner so as to safeguard the nature and purpose of the trail and in a manner that protects the values for which the trail was designated. The interim nature and purpose of the trail is to afford the public the opportunity to connect to the trail resources and the trail story. This nature and purposes statement may be refined with completion of the trailwide comprehensive plan, and updates to the nature and purposes statement within this RMP will occur through plan maintenance.

NTR-MA-01:
Manage the 50-meter wide National Trail Management Corridor for the Old Spanish Trail. After additional cultural resource Class III inventories are conducted revise the corridor as necessary. The congressionally designated Old Spanish Trail route (currently 6.9 miles on BLM lands within the GJFO planning area) is not based on completed field inventories. Where extant portions of the Old Spanish Trail may exist, complete Class III cultural resource inventories on all BLM parcels. Pursue partners for grant funding where practical to conduct surveys on adjacent lands with land owner's permission. The National Historic Trail designation allows for small location changes without congressional authorization. If the location of the trail changes as a result of Class III inventory the management actions in this RMP will apply to the newly mapped location(s) and may be modified to better address the findings of the inventory. That land no longer identified as trail location, as proven through the archaeological survey, will be managed for similar purposes and with similar VRM class to the adjacent public land.

NTR-MA-02:
Establish collaborative partnerships with the Old Spanish Trail Association, academic institutions, professional and non-profit organizations, individual scholars, tribes, and other entities to perform research on Old Spanish Trail-related topics and highway-related auto-tourism interpretive opportunities (e.g., roadside kiosks, brochures, etc.). Coordinate with partner groups, interest groups, interested individuals, local communities, and other stakeholders on Old Spanish Trail issues and projects.

NTR-MA-03:

Recreation opportunities will be provided consistent with the Old Spanish Trail comprehensive plan objectives. Facilities will be developed and placed outside the trail corridor when feasible to protect resource values, provide for visitor safety, and support selected use opportunities. Facilities will be developed within the trail corridor only when needed to protect trail integrity and resources, or to establish an Old Spanish Trail recreation retracement route.

NTR-MA-04:
Scientific and historical studies of cultural landscapes, sites, historic trails, and other resources, including excavation, will be allowed by qualified researchers on a case-by-case basis within the Old Spanish Trail corridor with written authorization.

NTR-MA-05:
Retain or cooperatively manage BLM-administered lands to assure long-term use, protection, and access to areas along the Old Spanish Trail.

NTR-MA-06:
Manage the Old Spanish Trail as VRM Class III (50 meter buffer on either side of the center line).

Manage newly located sections of the trail according to their VRI classification.

NTR-MA-07:
Manage 50 meters on both sides of the Old Spanish Trail as a ROW avoidance area.

NTR-AU-01:
STIPULATION NSO-45: *Old Spanish National Historic Trail.* Prohibit surface occupancy and surface-disturbing activities within a 50-meter (164-foot) buffer from the center line. (Refer to Appendix B.) See Figure 2-13 (Alternative B) in Appendix A. Standard and special exceptions apply; see Appendix B.

NTR-MA-08:
Seek to acquire legal access for full-size vehicles along the Tabeguache Trail from Little Park Road to Colorado State Highway 141 near Whitewater.

NATIONAL, STATE, AND BLM BYWAYS (ADMINISTRATIVE DESIGNATION)

BYW-GOAL-01:
Enhance, promote, and protect the scenic, natural, and cultural resource values associated with current and future designated byways.

BYW-OBJ-01:
Support efforts of corridor management plans for the designated byways and provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP (Figures 2-31 , Appendix A).

BYW-MA-01:
Support efforts of corridor management plans for the Grand Mesa Scenic and Historic Byway; provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP.

BYW-MA-02:
Support efforts of corridor management plans for the Dinosaur Diamond Prehistoric Highway (National Scenic Byway and All American Road); provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP.

BYW-MA-03:
Support efforts of corridor management plans for the Unaweep-Tabeguache Scenic and Historic Byway (Colorado Scenic and Historic Byway); provide assistance, where feasible, in the development of byway facilities consistent with other decisions of the RMP.

BYW-MA-04:
Manage the following byways as VRM Class II:

- A portion of Dinosaur Diamond Prehistoric Highway (from the Bookcliffs north);
- Grand Mesa Scenic and Historic Byway; and
- Unaweep-Tabeguache Scenic and Historic Byway.

BYW-MA-05:
Manage a portion of Dinosaur Diamond Prehistoric Highway (from the Bookcliffs south) as VRM Class III.

BYW-AU-01:
STIPULATION CSU-37: *Scenic Byways.* Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within 0.5-mile of either side of centerline of scenic byways. (Refer to Appendix B.) See

Figures 2-14 , in Appendix A. Standard and special exceptions apply; see Appendix B.

IV. SUPPORT

INTERPRETATION AND ENVIRONMENTAL EDUCATION

IEE-GOAL-01:
Provide interpretation, education, and information that promote the health of the land, the appreciation and protection of cultural and natural resources to foster greater community stewardship; and enhance users' experience and safety.

IEE-OBJ-01:
Increase outreach efforts and provide the public with environmental education opportunities.

IEE-MA-01:
Develop an interpretive and information services plan that outlines partnership development, product and service delivery methods (media), key messages or themes, and associated markets (audience).

IEE-MA-02:
Seek to develop partnerships with local education institutions, visitor centers, tribes, field institutes, museums, visitor centers, and cooperators.

IEE-MA-03:
Provide opportunities for tribal participation in developing key messages and themes.

IEE-MA-04:
Pursue multicultural interpretation and environmental education opportunities for outreach, development, and implementation programs. Apply learning modalities and incorporate various learning styles in program design and delivery. Encourage the use of multiple intelligence or other theories for program presentations.

IEE-MA-05:
Establish repository of photographs and images that illustrate BLM's mission, including digital photographs and slides for program design.

IEE-MA-06:
Allow interpretation signs, facilities, and other delivery methods that address key messages, themes, or program/resource goals and objectives, including those for recreation, travel management, cultural resources, wildlife, and others.

TRANSPORTATION FACILITIES

TRN-GOAL-01:
Provide a transportation system that is manageable, maintainable, and meets the needs, as defined by the goals and objectives, for resources and resource uses.

TRN-OBJ-01:
Maintain BLM roads and trails to identified maintenance intensity levels (appropriate intensity, frequency, and type of maintenance) consistent with public safety and land use plan objectives.

TRN-MA-01:
All system roads and trails will be given a unique road/trail number to aid in public navigation, safety, Emergency Medical Services, and maintenance.

TRN-MA-02:
Acquire public or administrative access to public lands as opportunities become available.

TRN-MA-03:
Use and improve designated roads where feasible.

APPENDICES

GRAND JUNCTION FIELD OFFICE
APPROVED RESOURCE MANAGEMENT PLAN

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Appendix A

Figures

APPENDIX A
FIGURES

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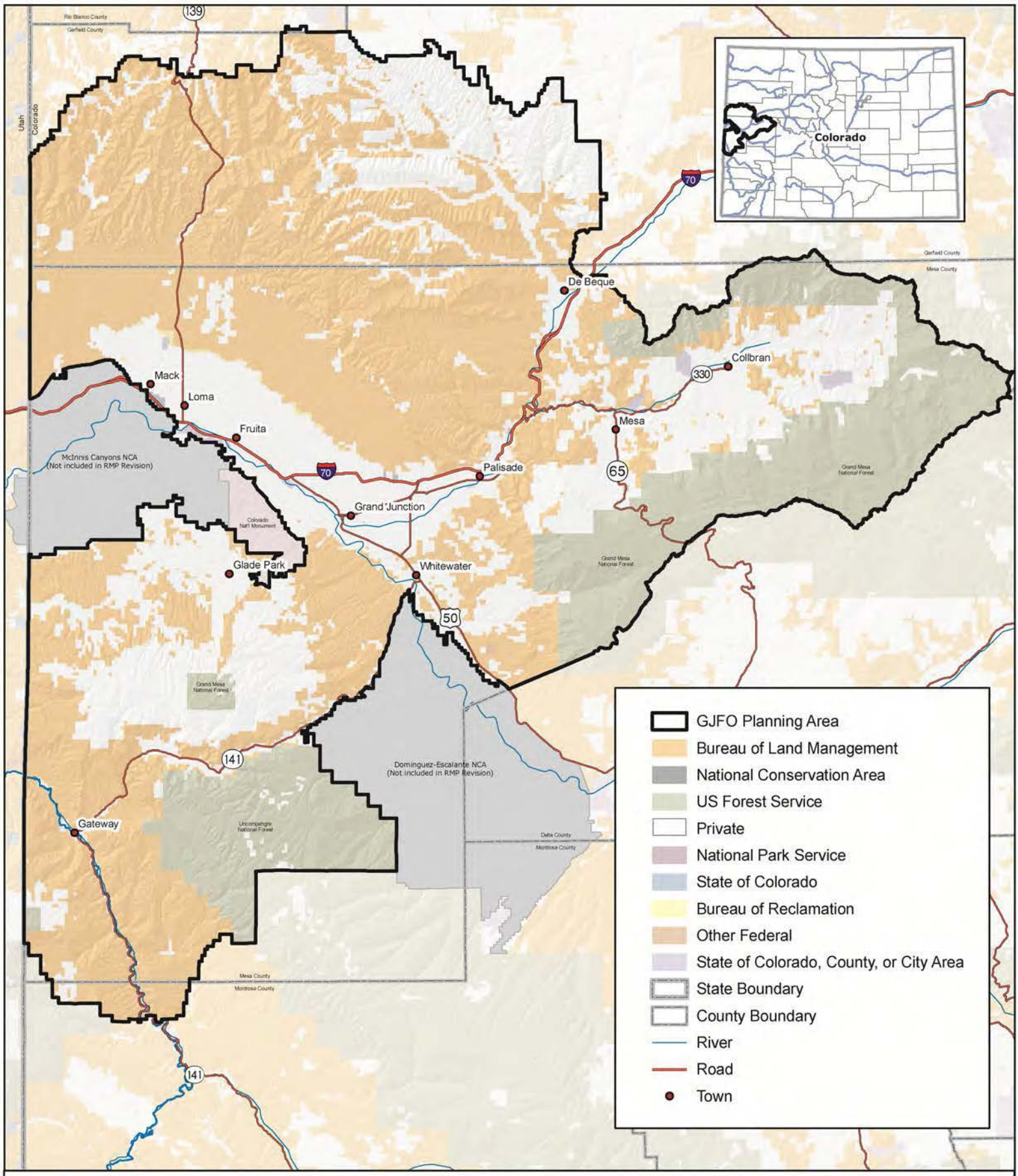
A4-4 Master Leasing Plan Timing Limitations
A4-5 Master Leasing Plan ACECs and Wildlife Emphasis Areas
A4-6 Master Leasing Plan Recreation Management Areas
A4-7 Master Leasing Plan VRM Classes
A4-8 Current Oil and Gas Leases and Proposed Fluid Minerals Leasing



Source: BLM 2010a

Project Planning Area

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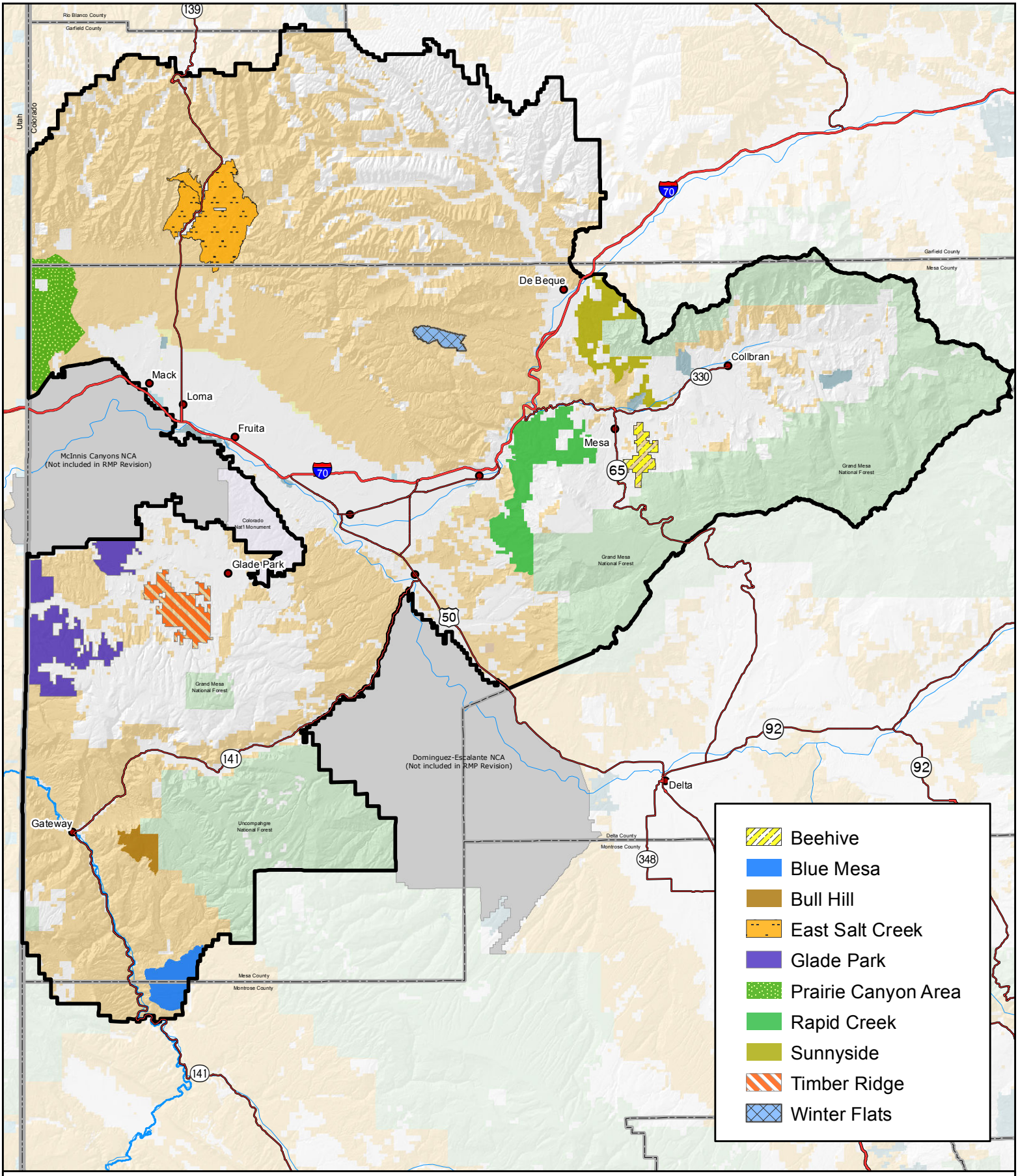
0 2.5 5 10 15 20
Miles

Figure 1-1

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Wildlife Emphasis Areas

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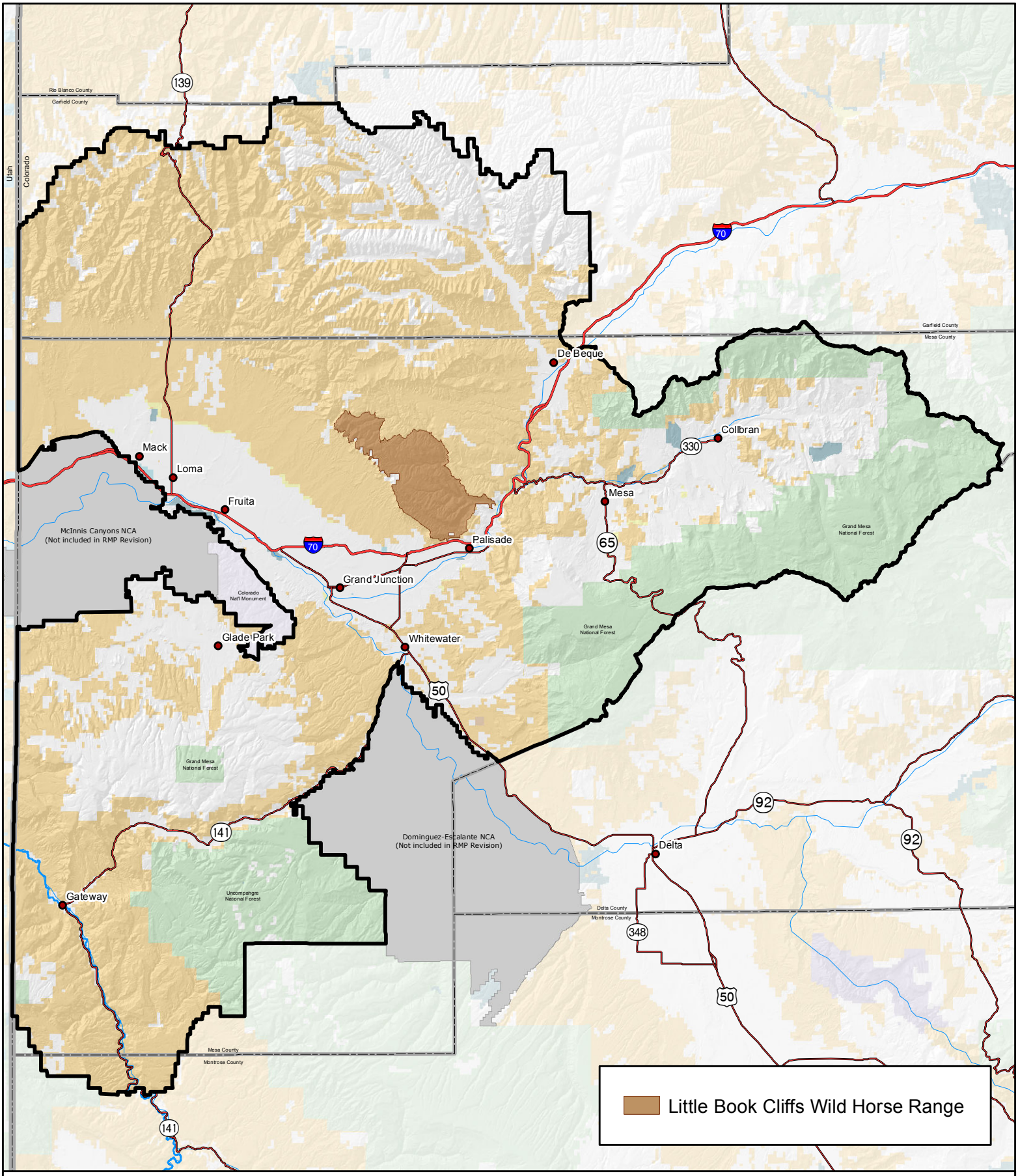
Figure A-1



Source: BLM 2010a

Little Book Cliffs Wild Horse Range

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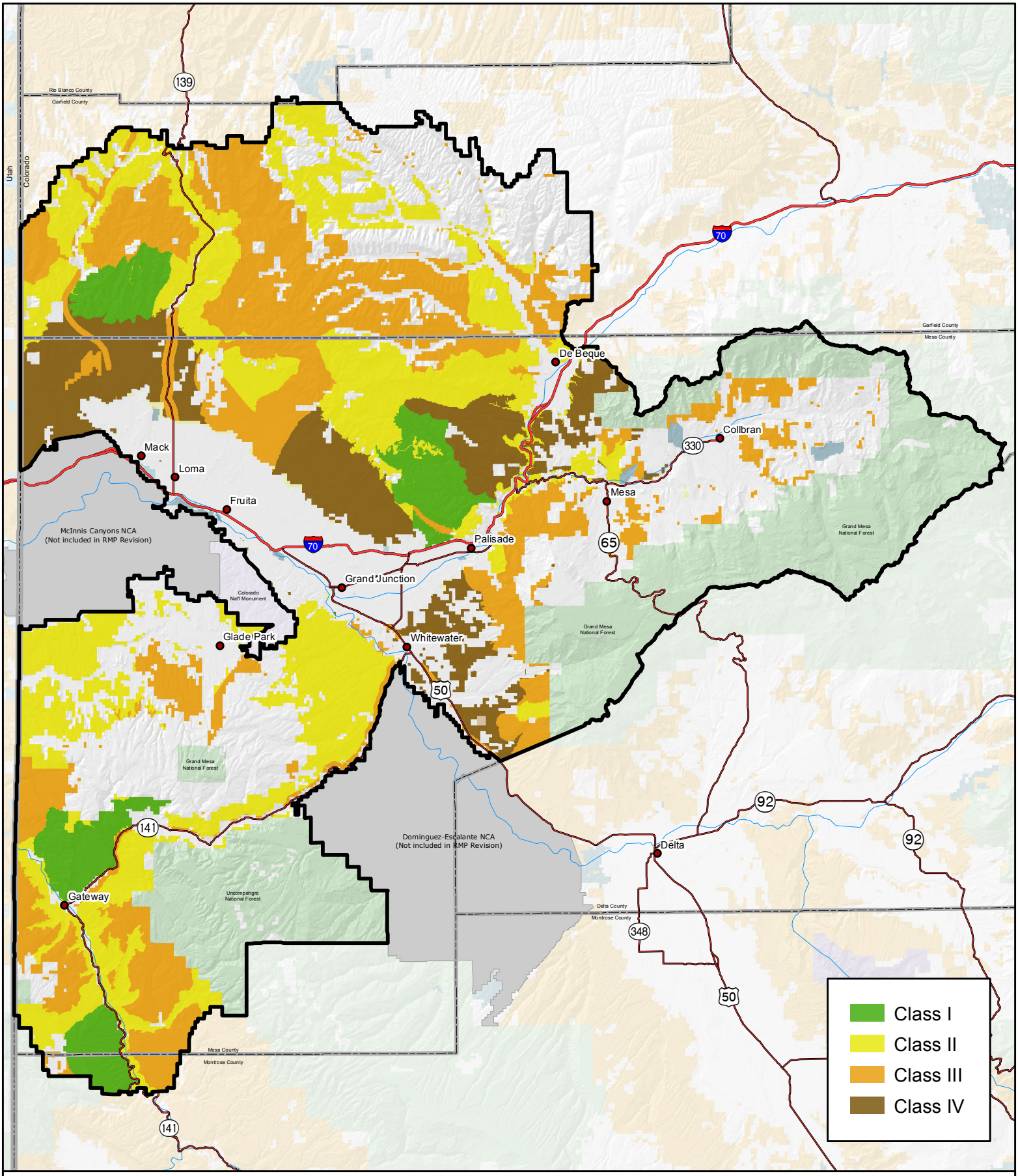
0 2.25 4.5 9 13.5 18
Miles

Figure A-2



Source: BLM 2010a

Visual Resource Management

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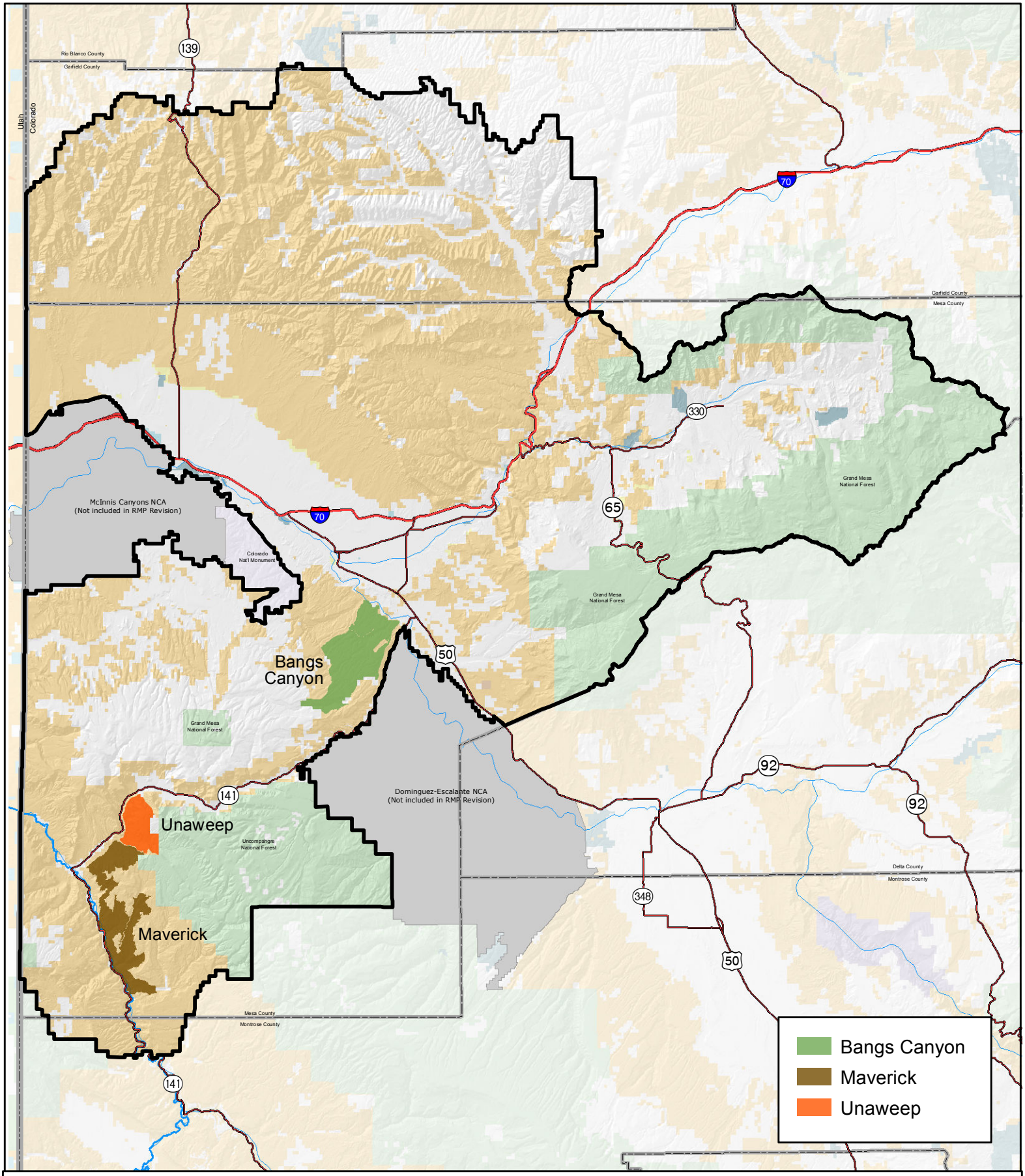
Miles

Figure A-3

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Lands Managed to Protect Wilderness Characteristics

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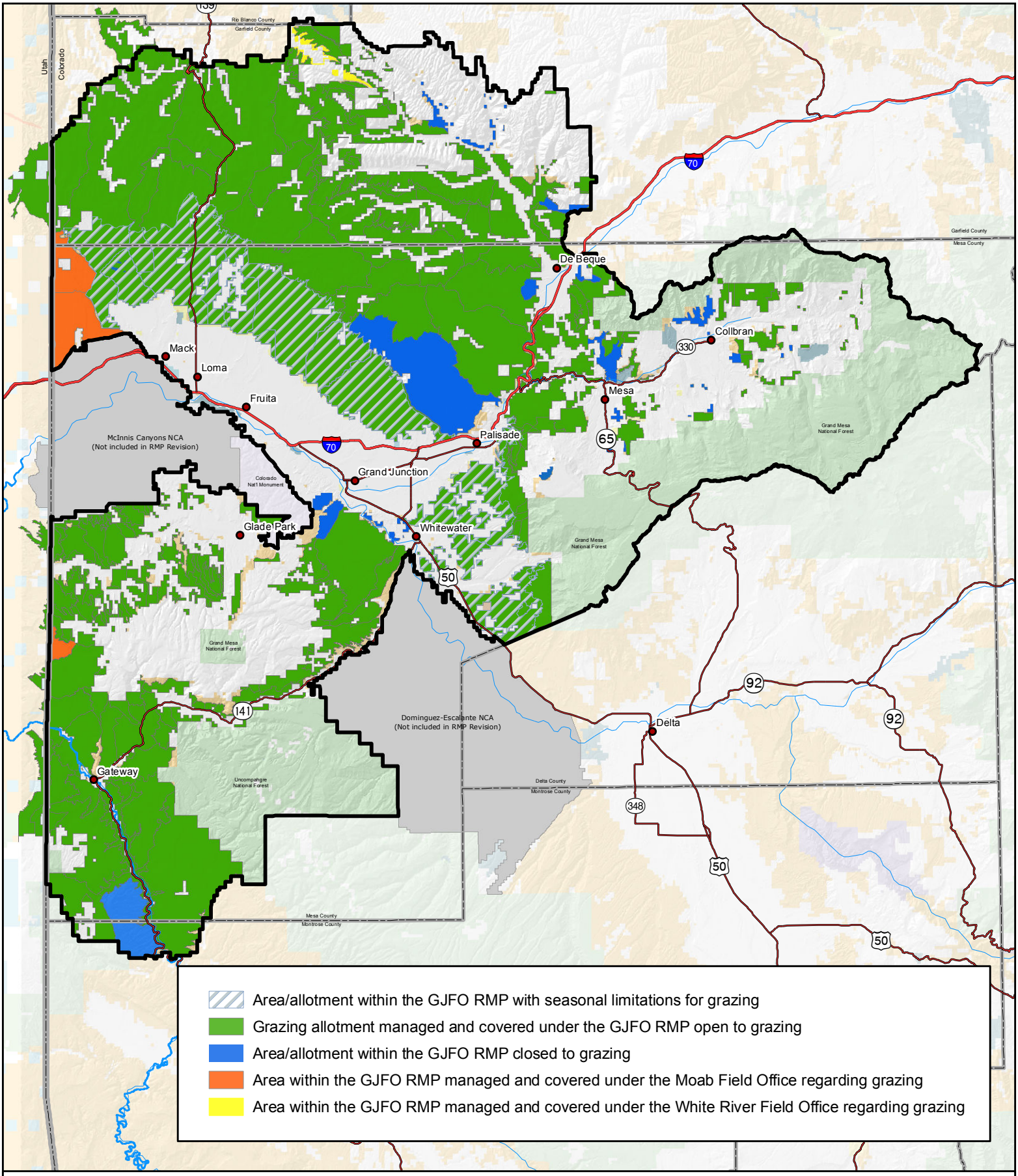
Figure A-4



Source: BLM 2010a

Grazing Allotments

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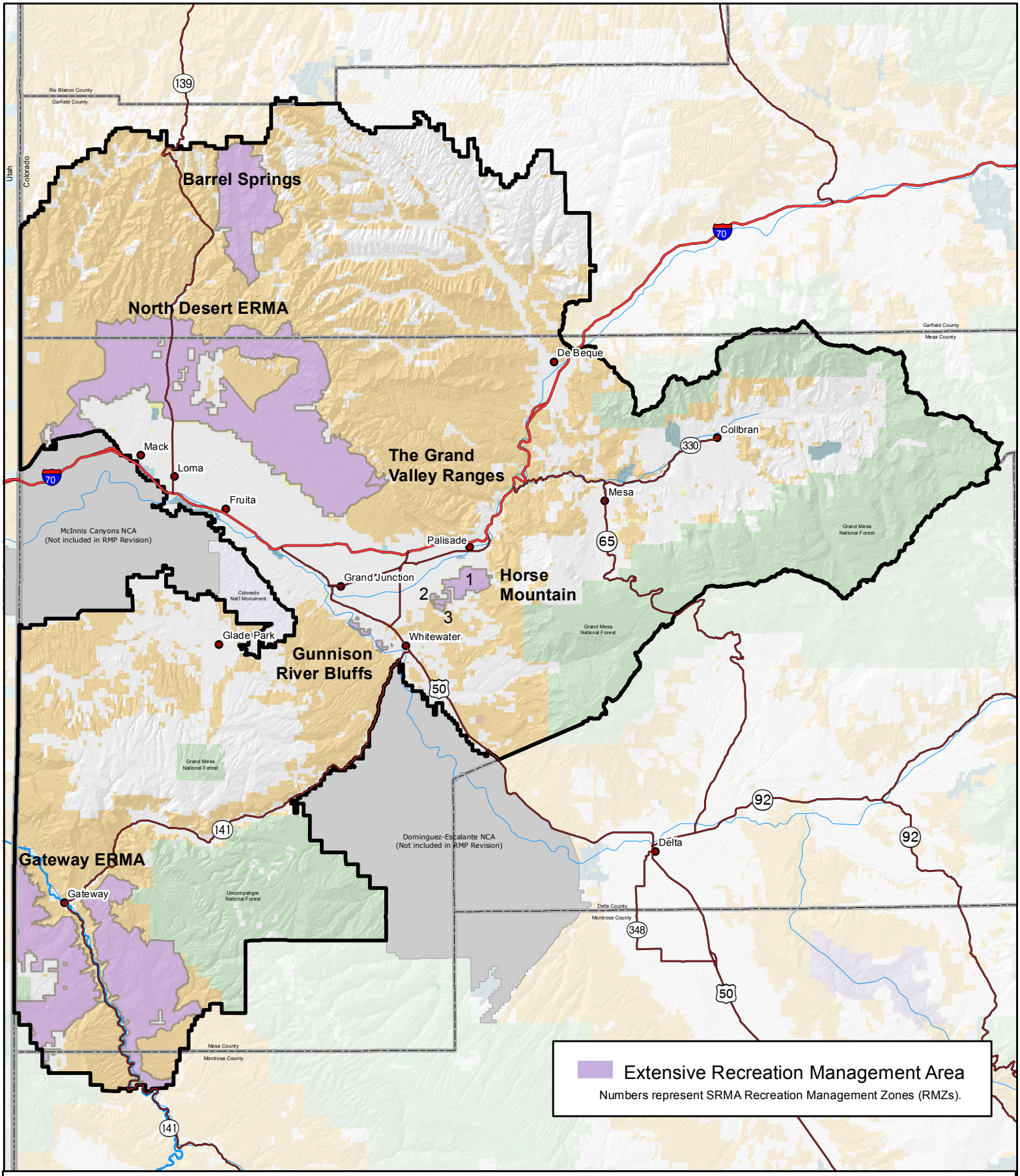
Figure A-5



Source: BLM 2010a

Extensive Recreation Management Areas

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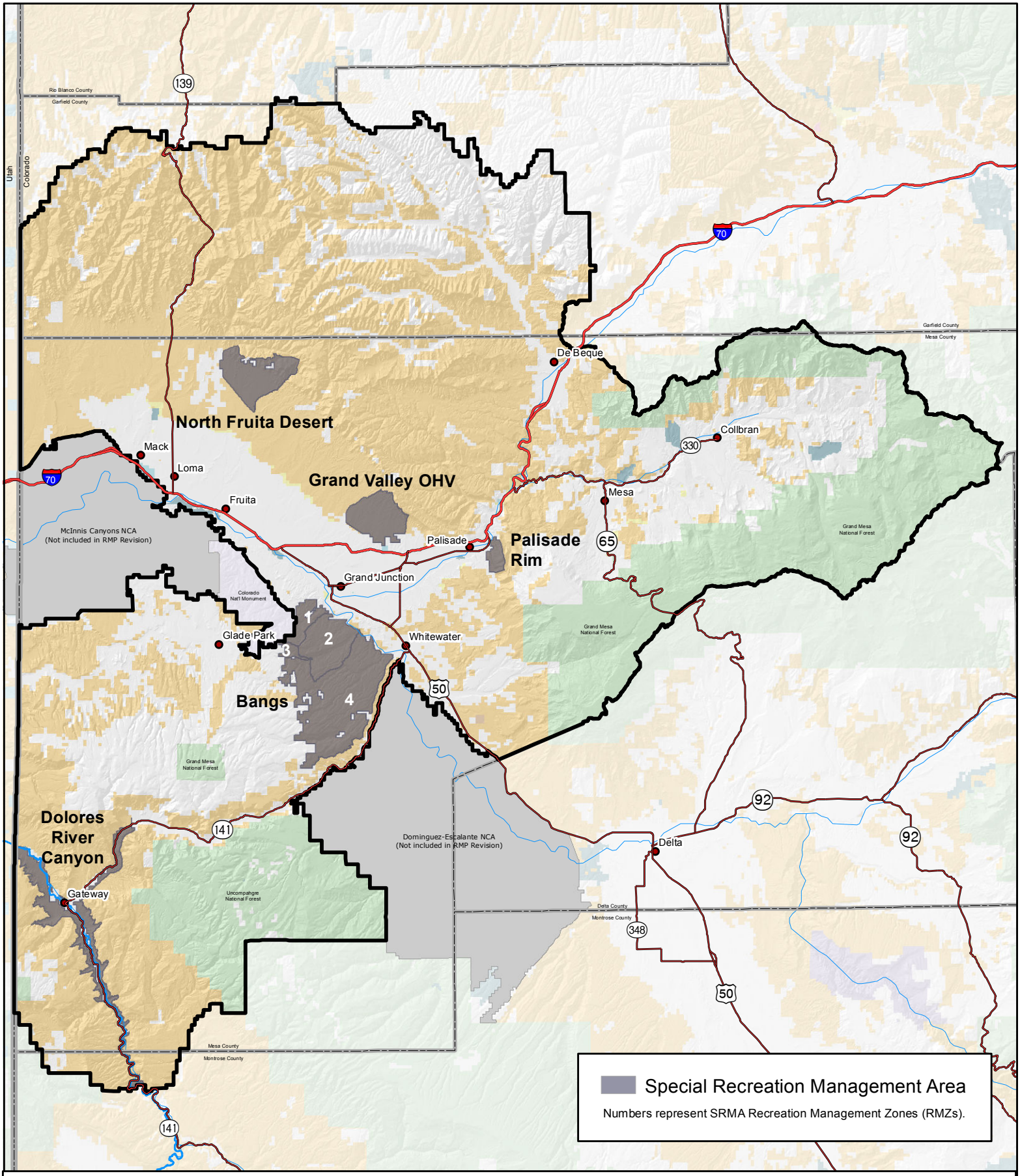
Figure A-6



Source: BLM 2010a

Special Recreation Management Areas

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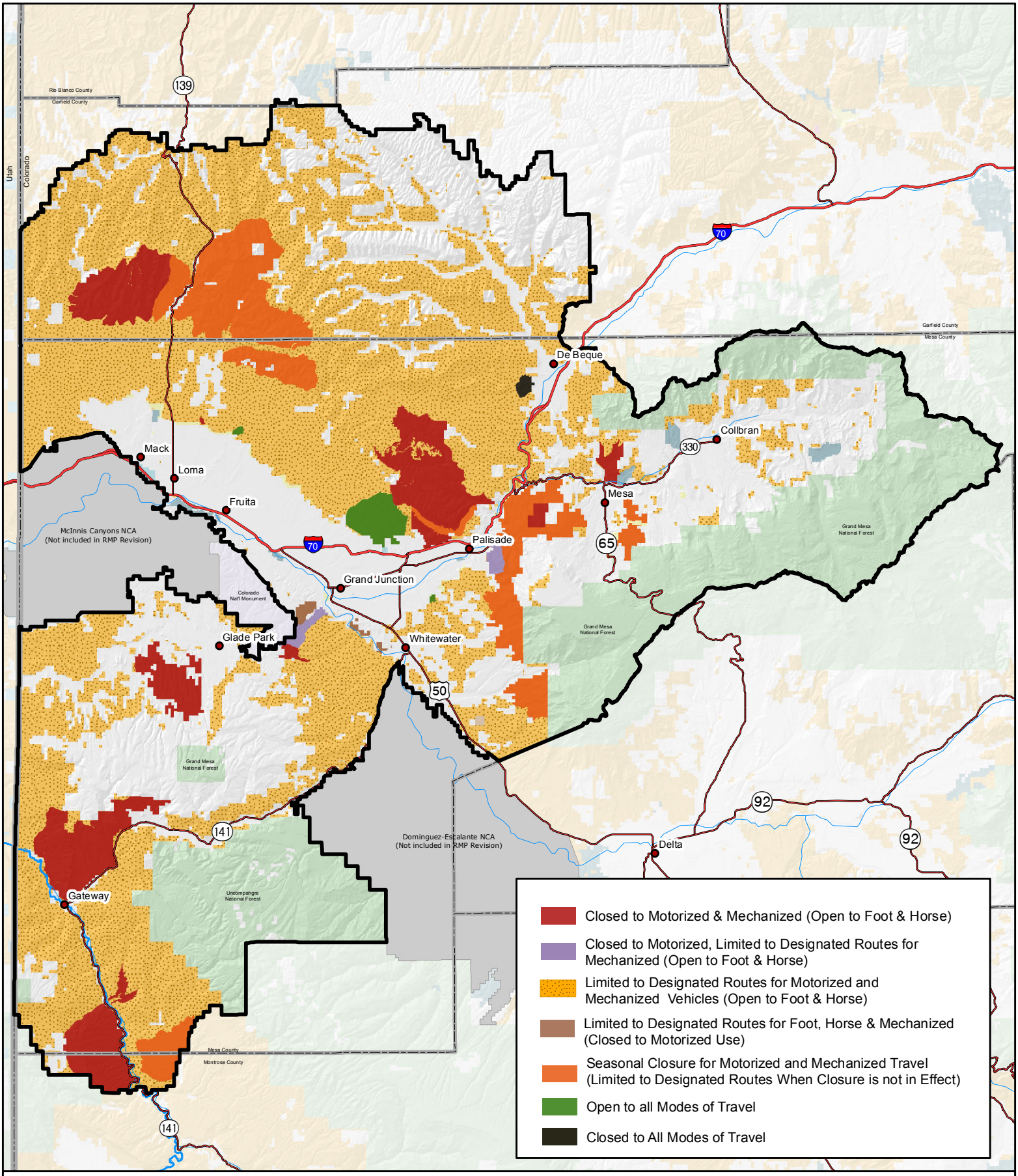
Figure A-7



Source: BLM 2010a

Comprehensive Travel and Transportation Management

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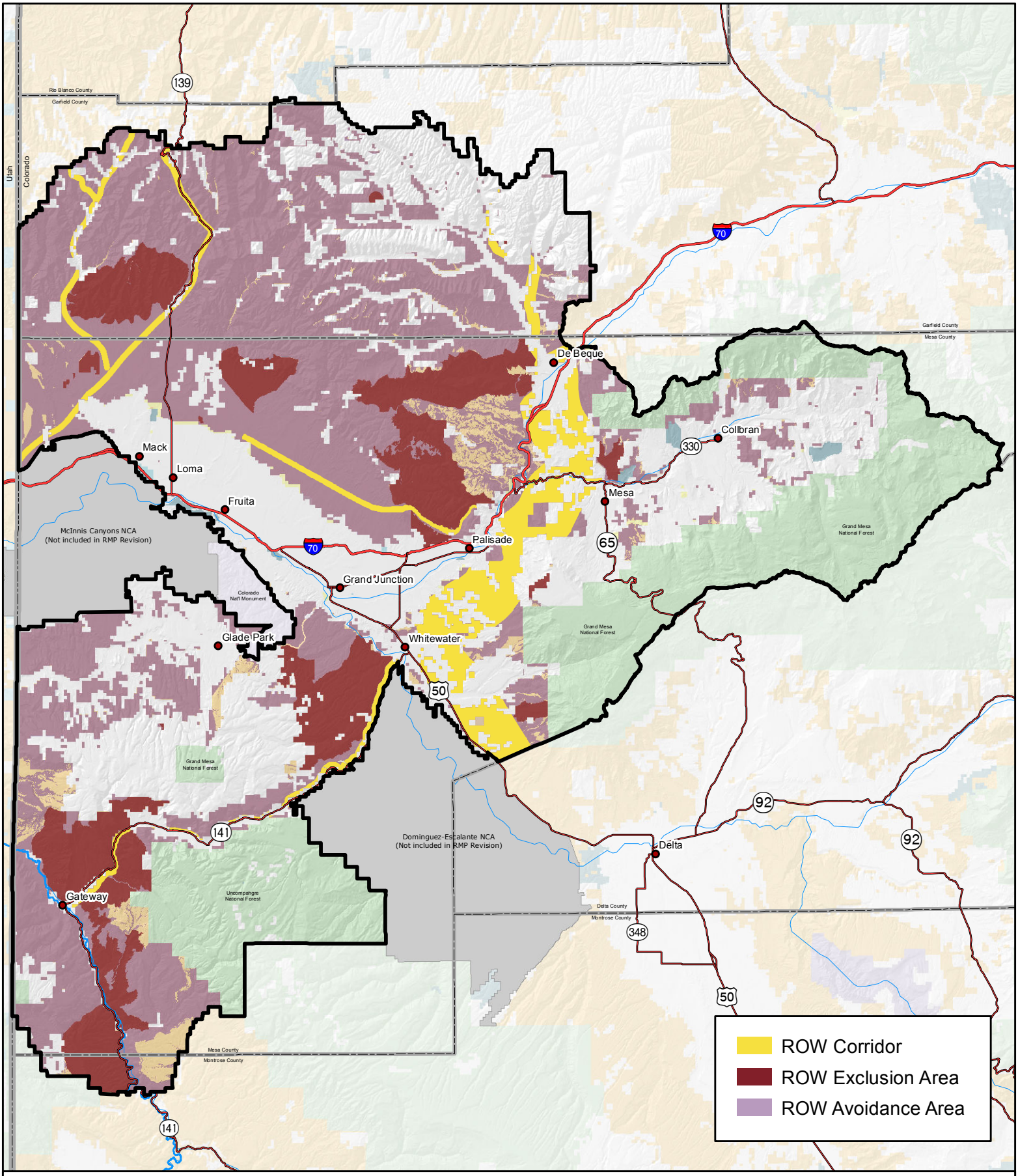
Figure A-8

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This project was developed through digital means and may be updated without notice. Map produced by Grand Junction Field Office, Bureau of Land Management, Grand Junction, CO.



Source: BLM 2010a

Right-of-Way Corridors, Exclusion and Avoidance Areas

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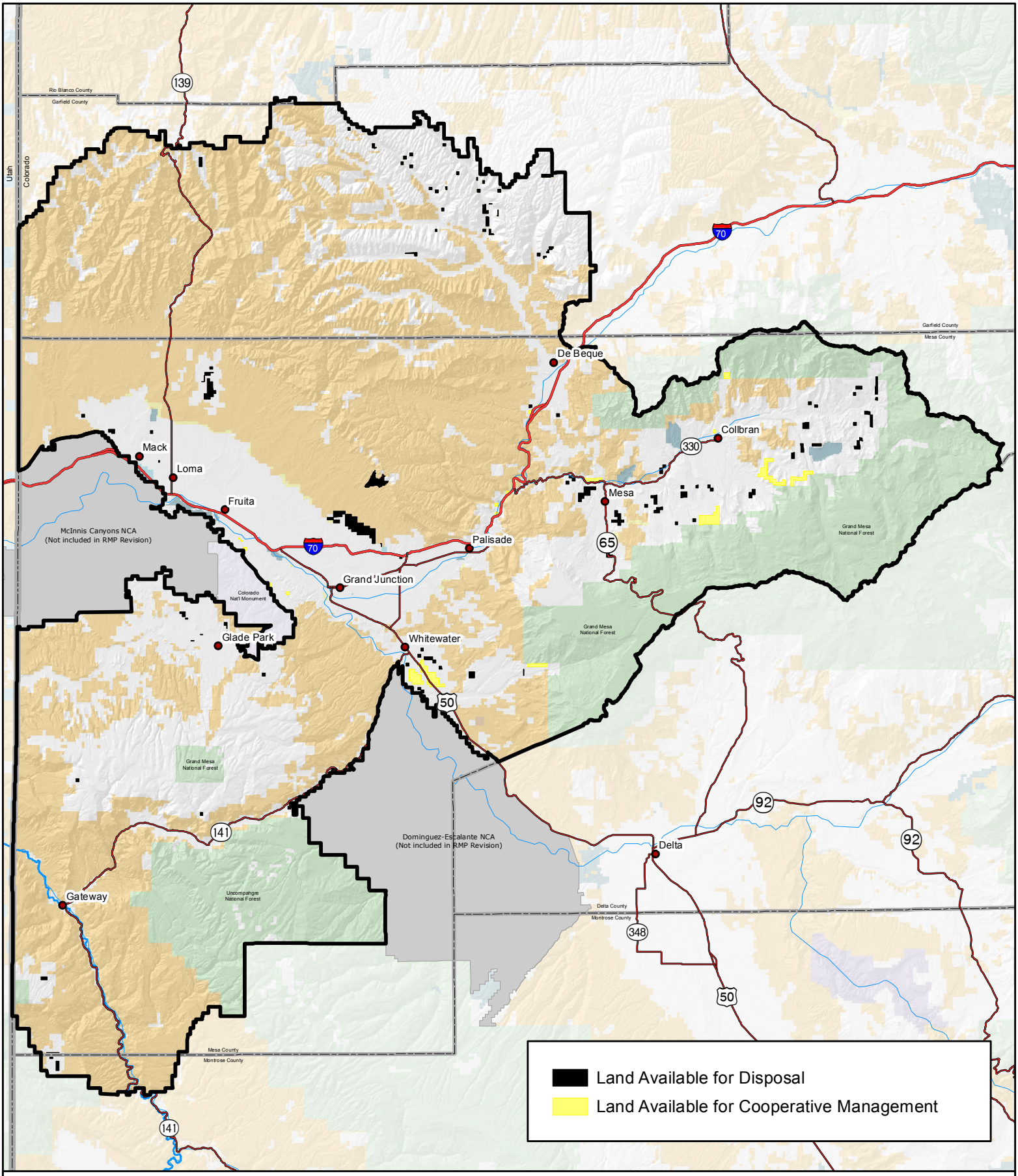
Figure A-9



Source: BLM 2010a

Land Tenure Adjustments

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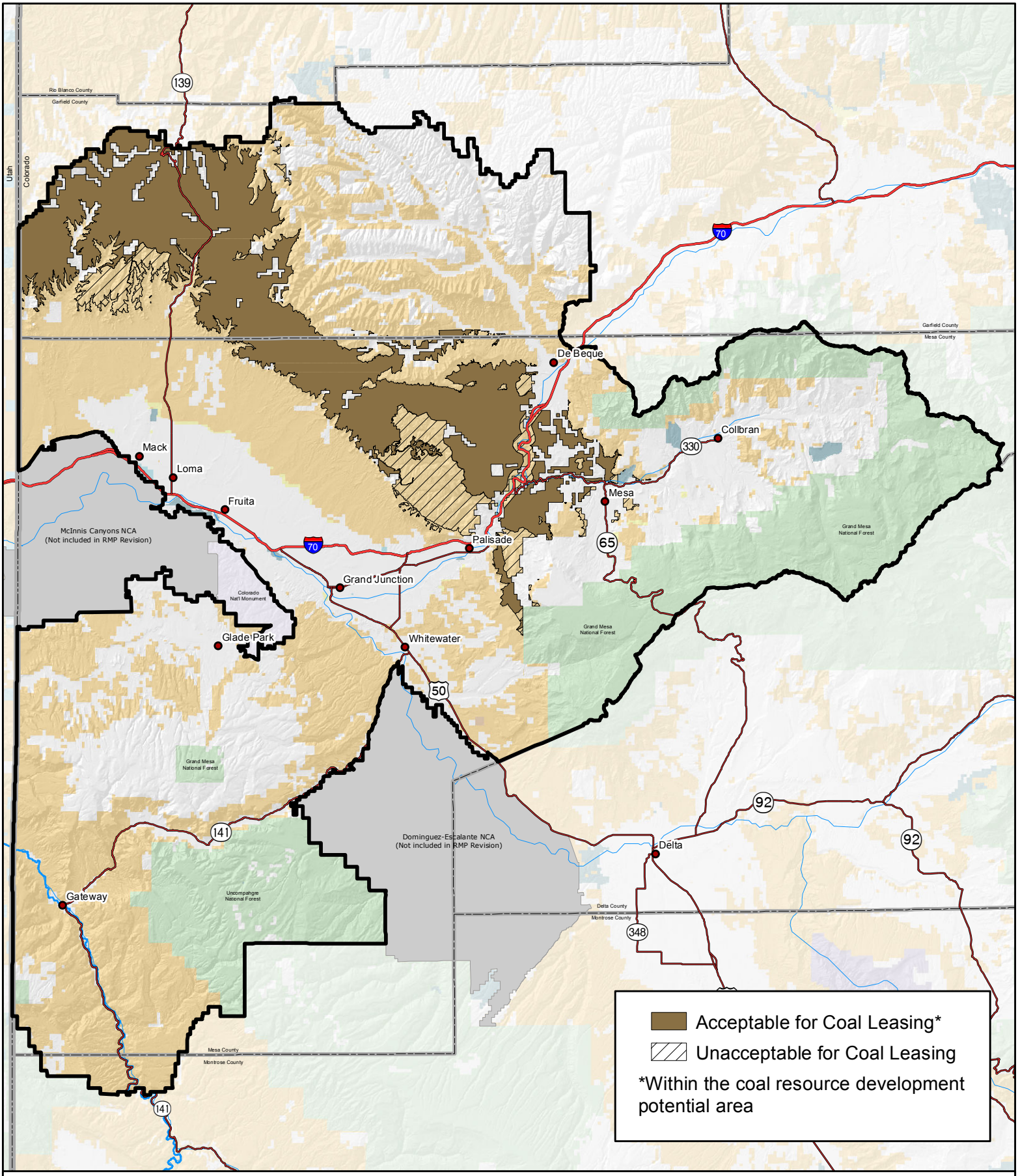
Figure A-10



Source: BLM 2010a

Coal Leasing

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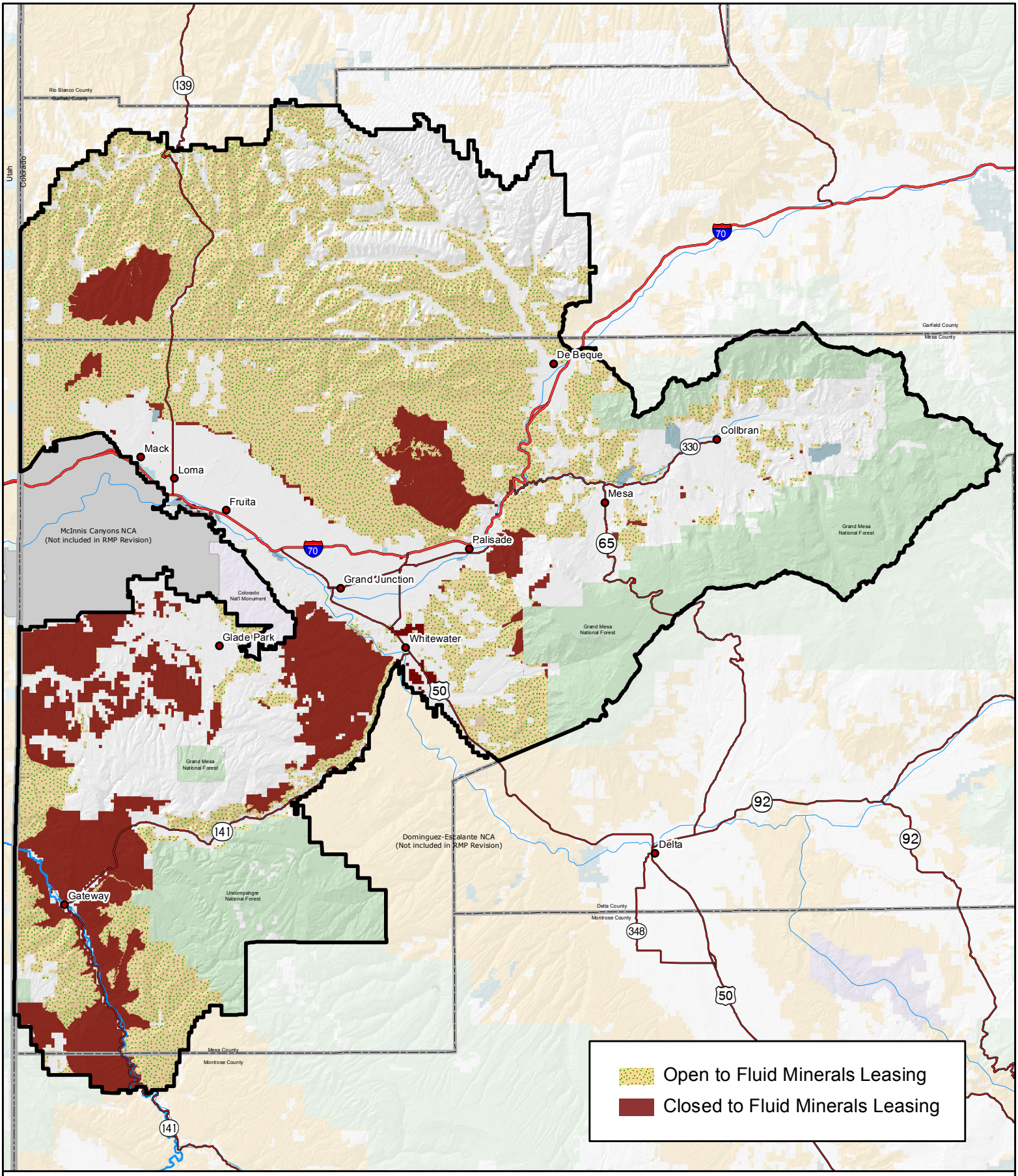
Figure A-11



Source: BLM 2010a

Fluid Minerals

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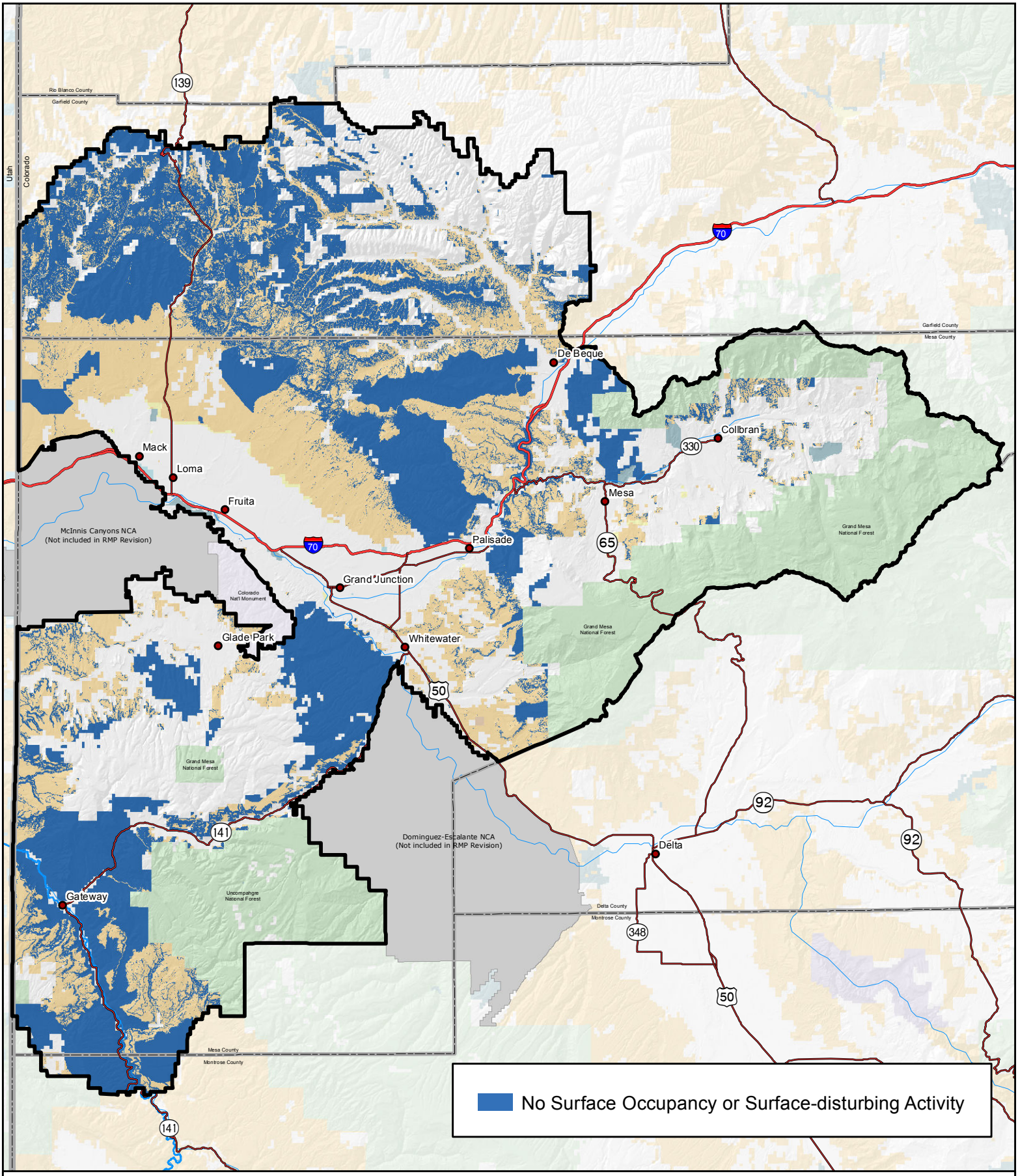
Figure A-12



Source: BLM 2010a

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No Surface Occupancy or Surface-disturbing Activities

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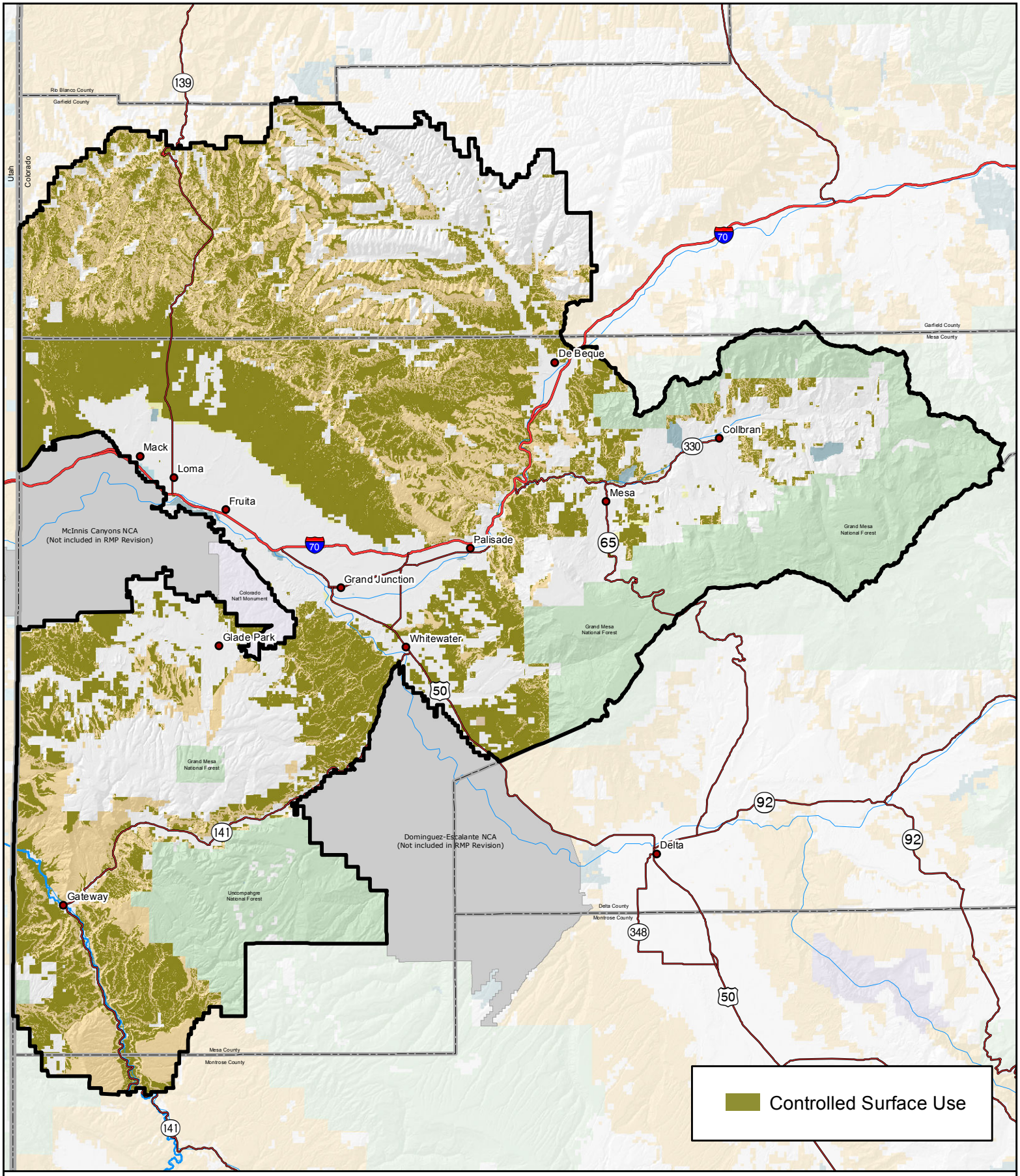
Miles

Figure A-13



Source: BLM 2010a

Controlled Surface Use

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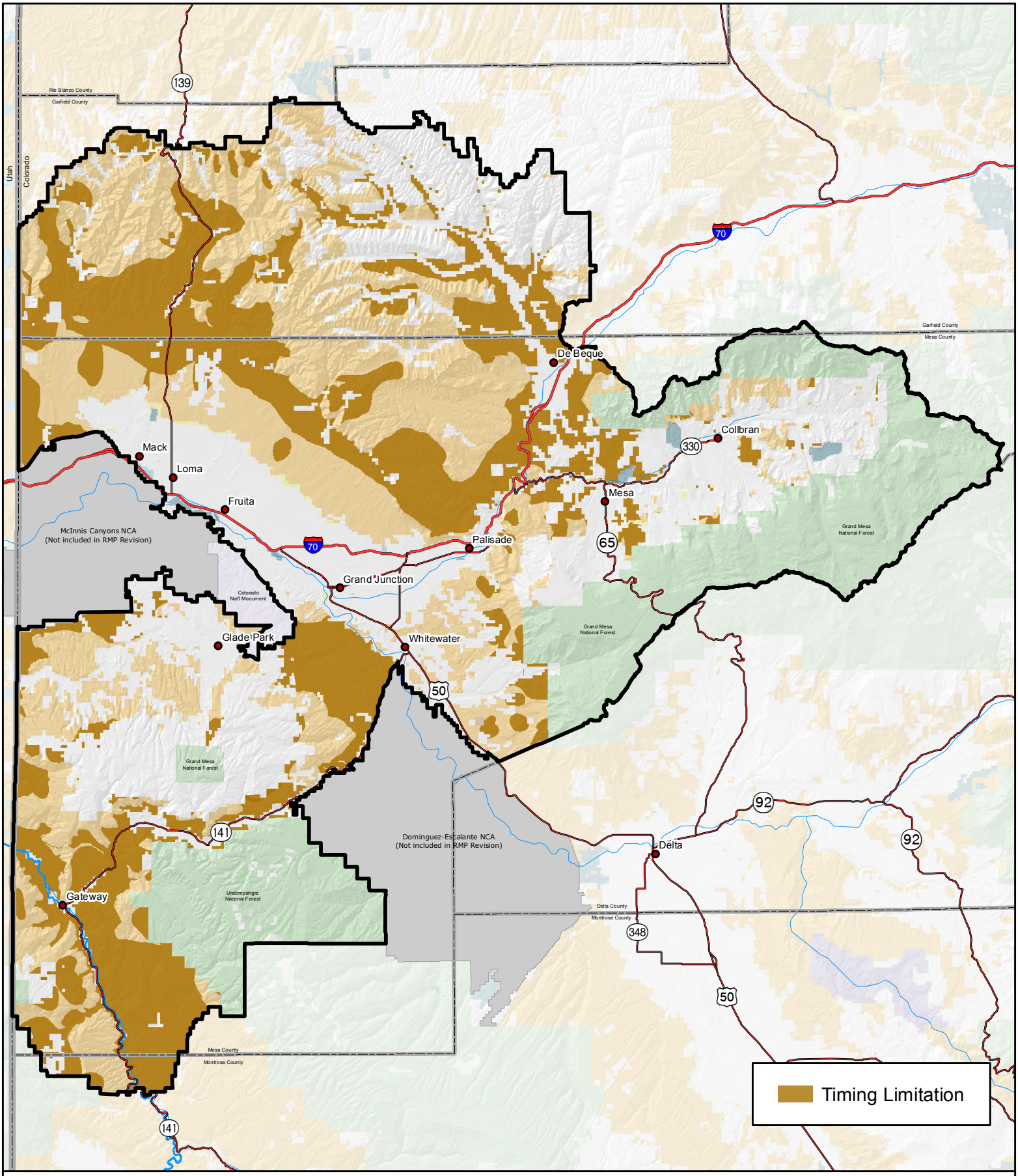
Figure A-14



Source: BLM 2010a

Timing Limitations

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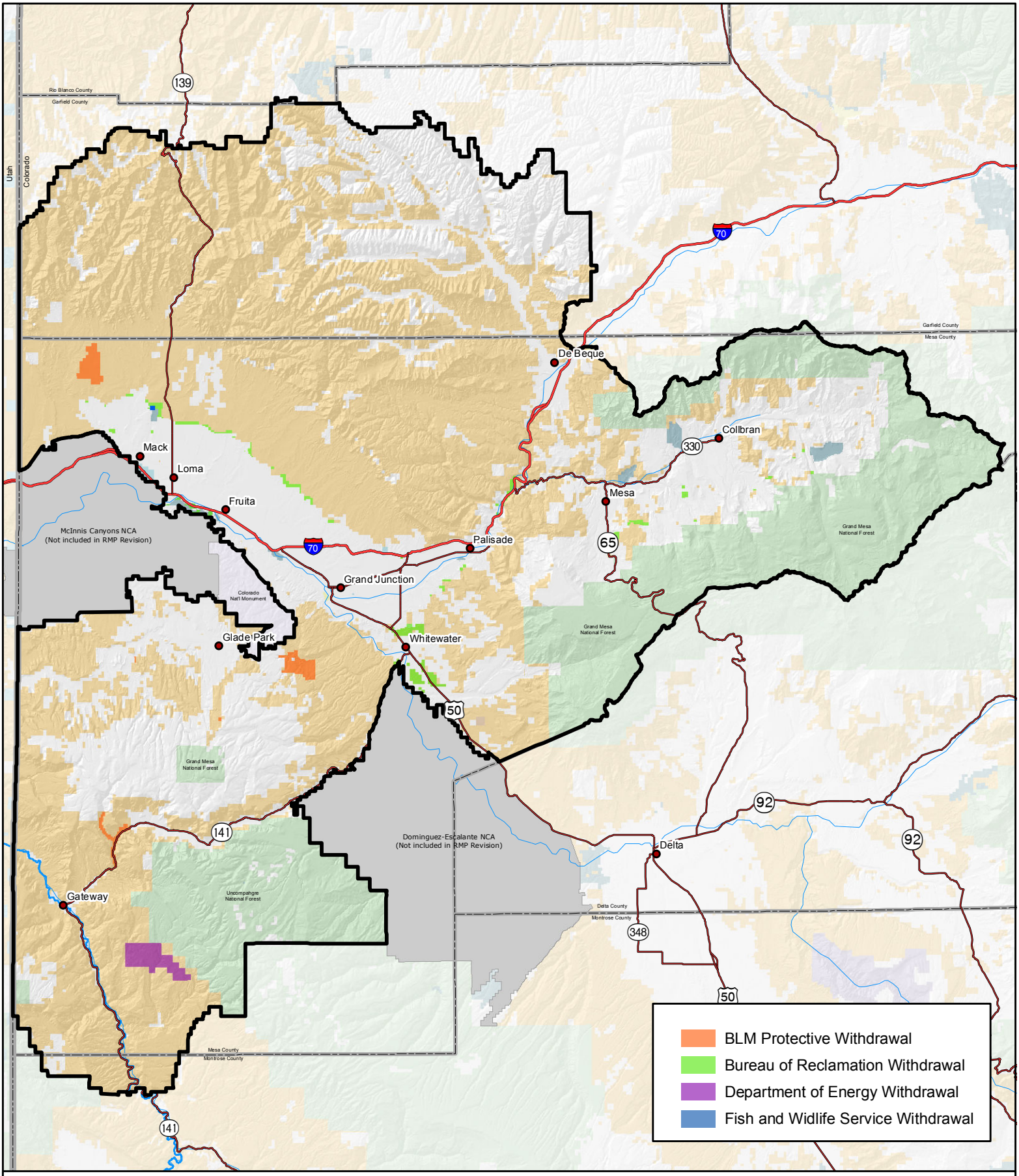
Miles

Figure A-15

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Lands Withdrawn from Mineral Entry

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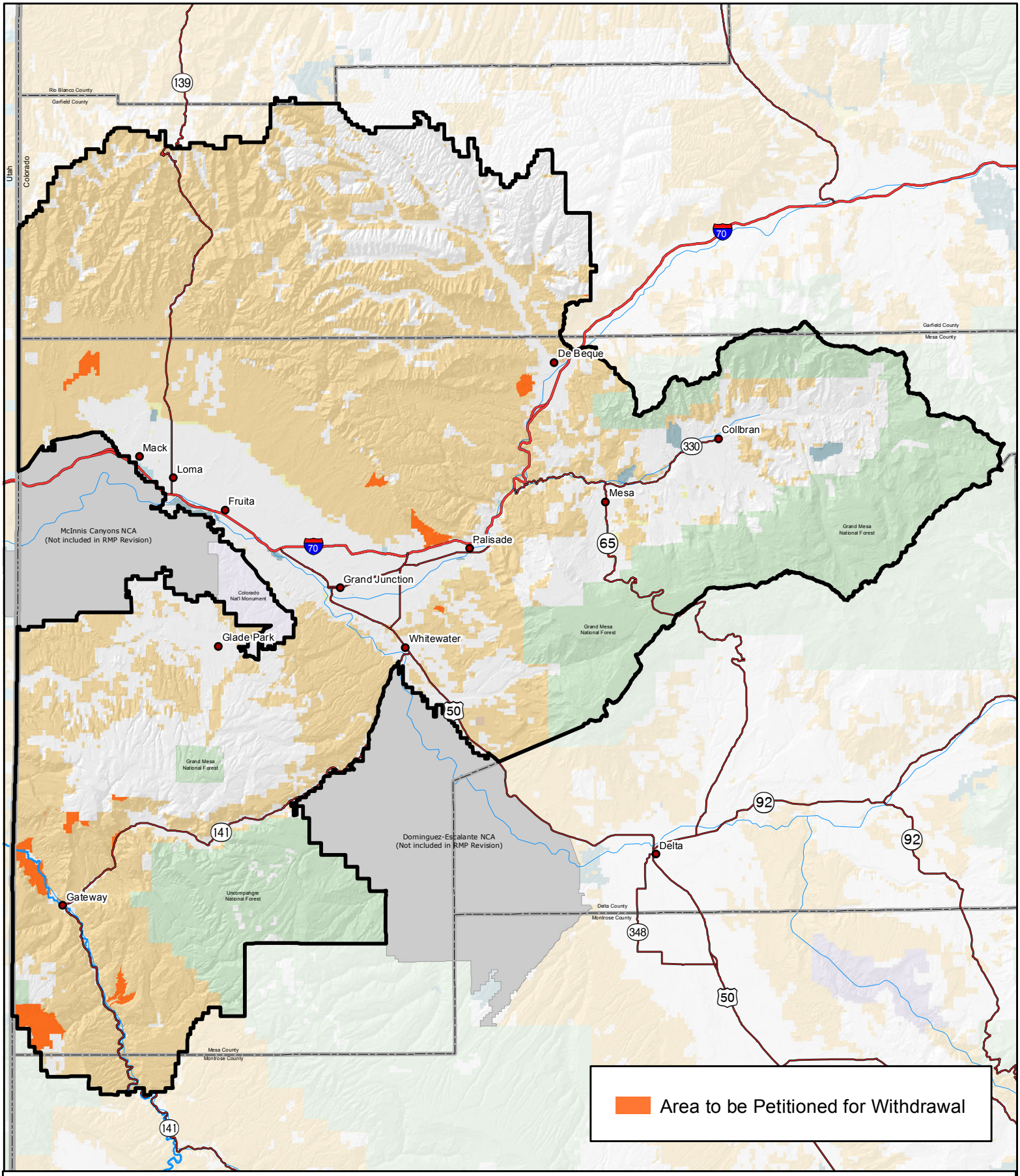
0 2.5 5 10 15 20
Miles

Figure A-16



Source: BLM 2010a

Locatable Minerals

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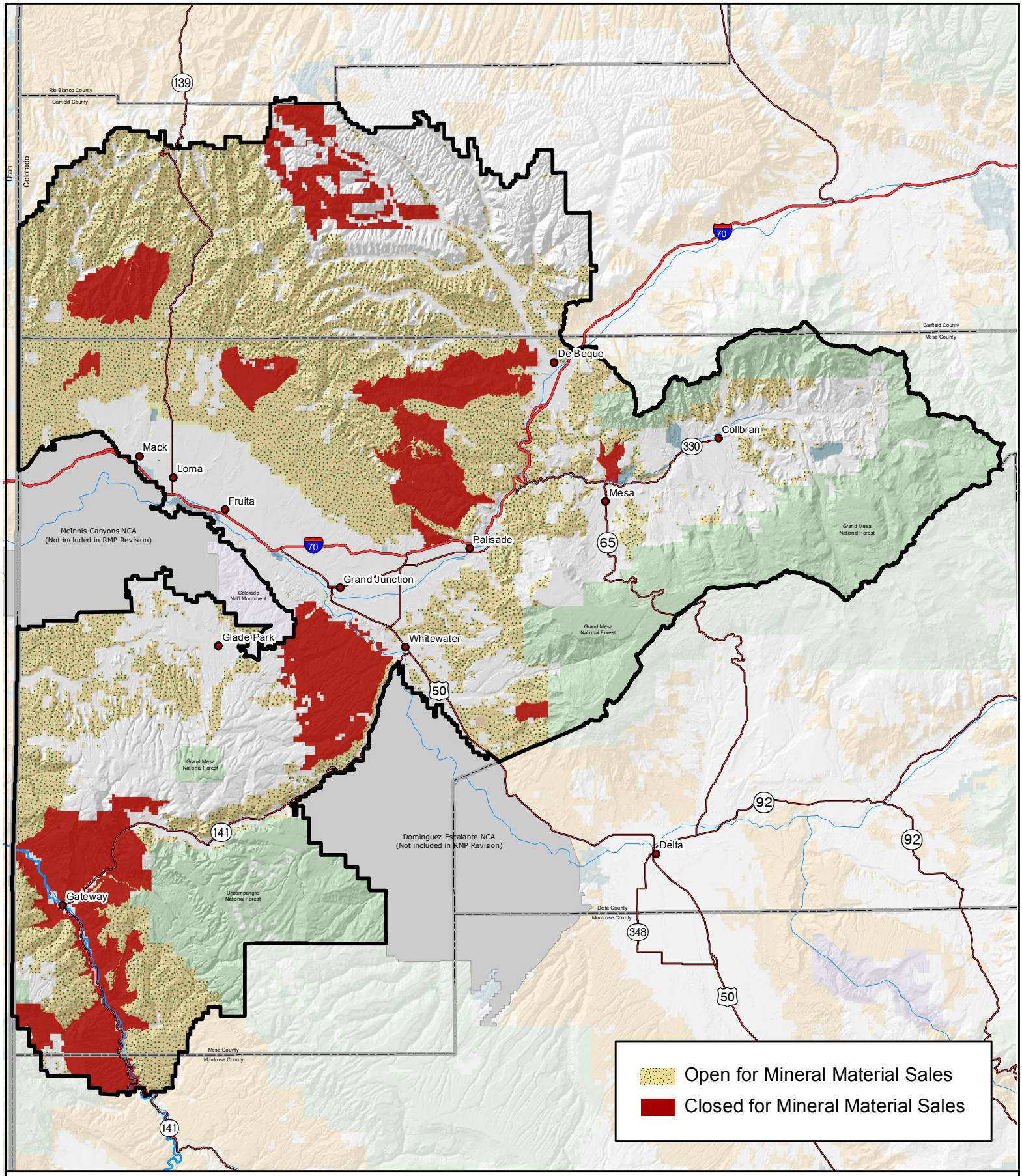
0 2.5 5 10 15 20
Miles

Figure A-17

BLM Grand Junction Field Office Resource Management Plan



Source:BLM 2010a

Mineral Materials

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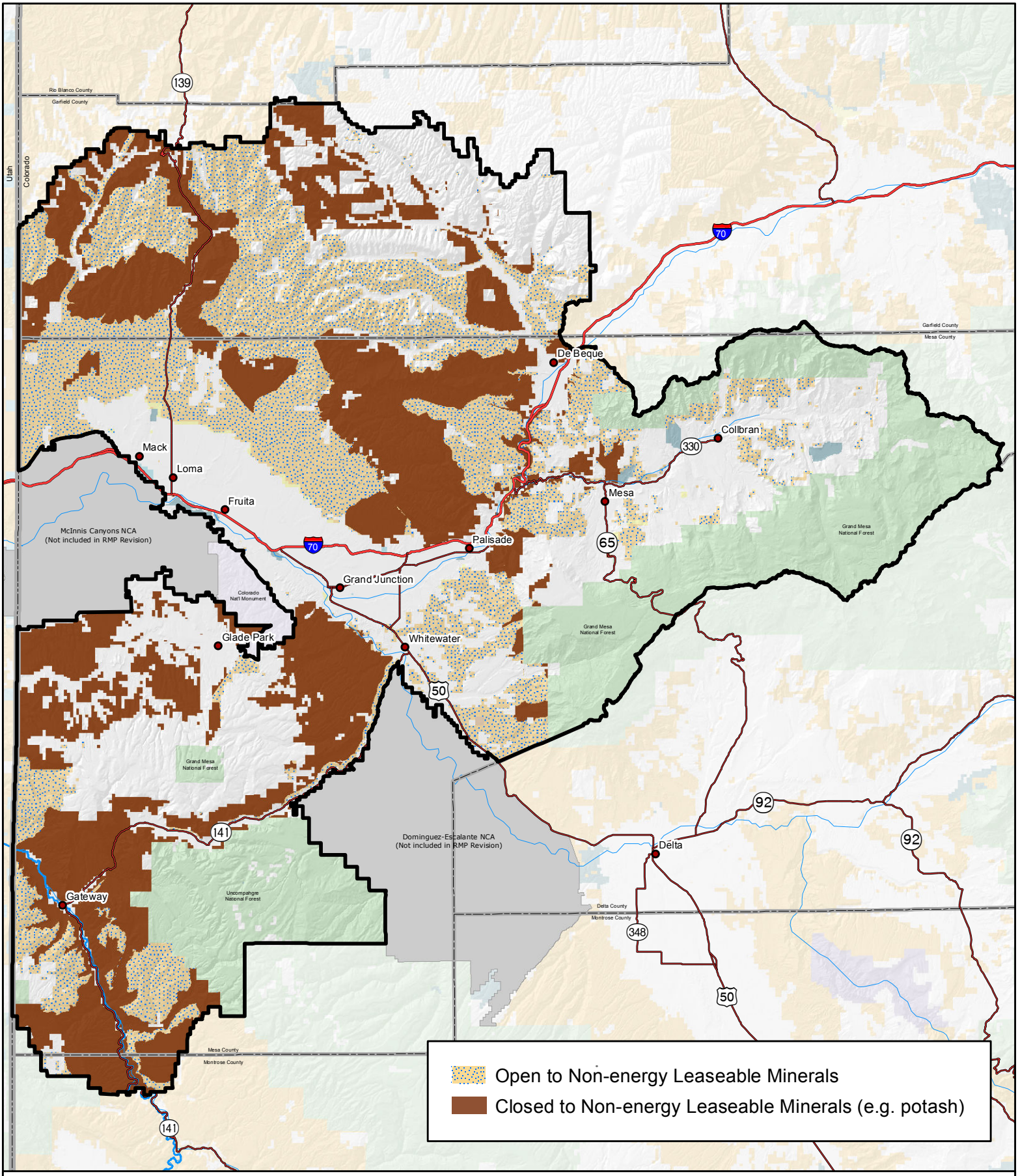
0 2.5 5 10 15 20
Miles

Figure A-18



Source: BLM 2010a

Non-energy Leasable Minerals

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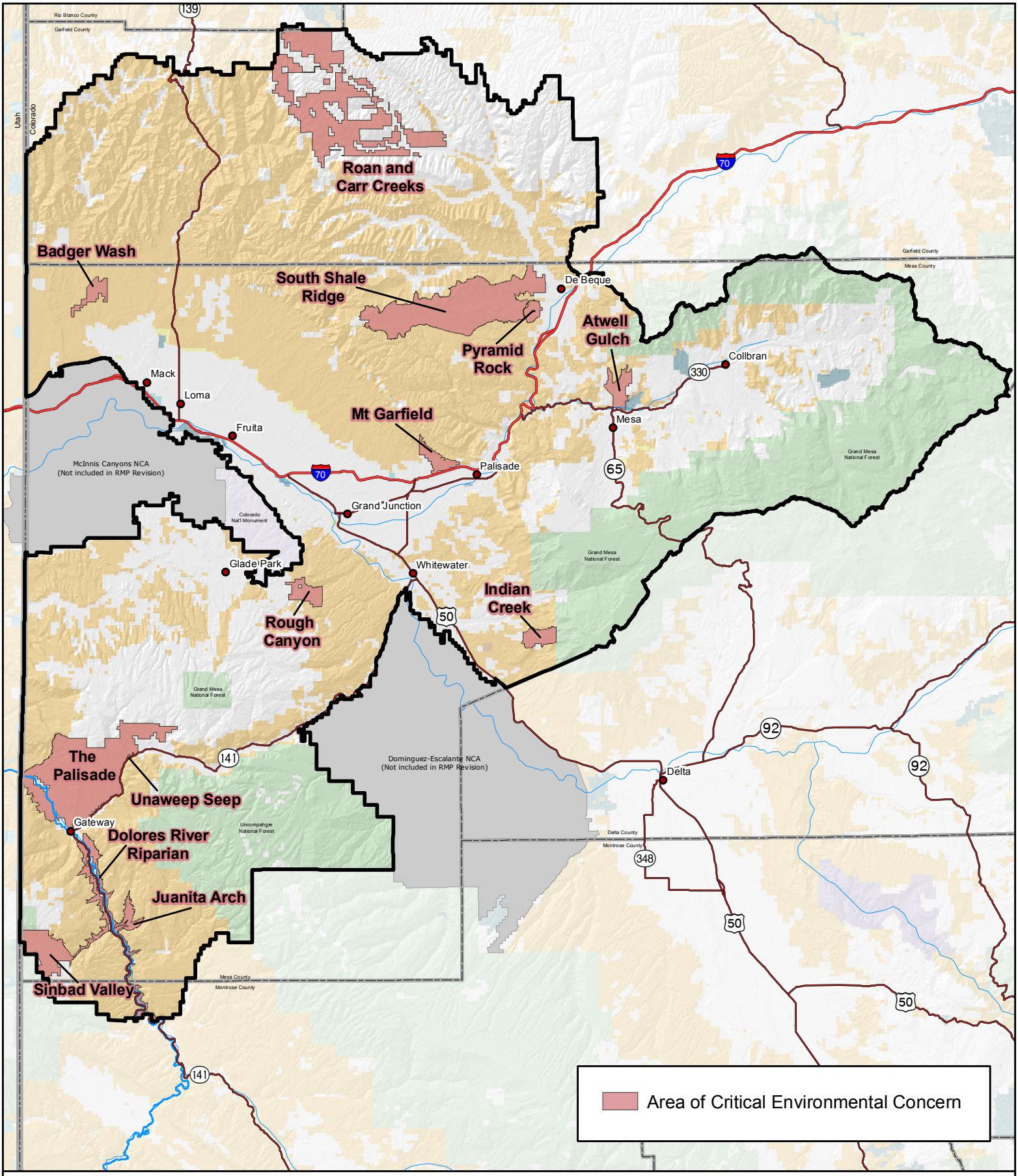
Figure A-19



Source: BLM 2010a

Areas of Critical Environmental Concern

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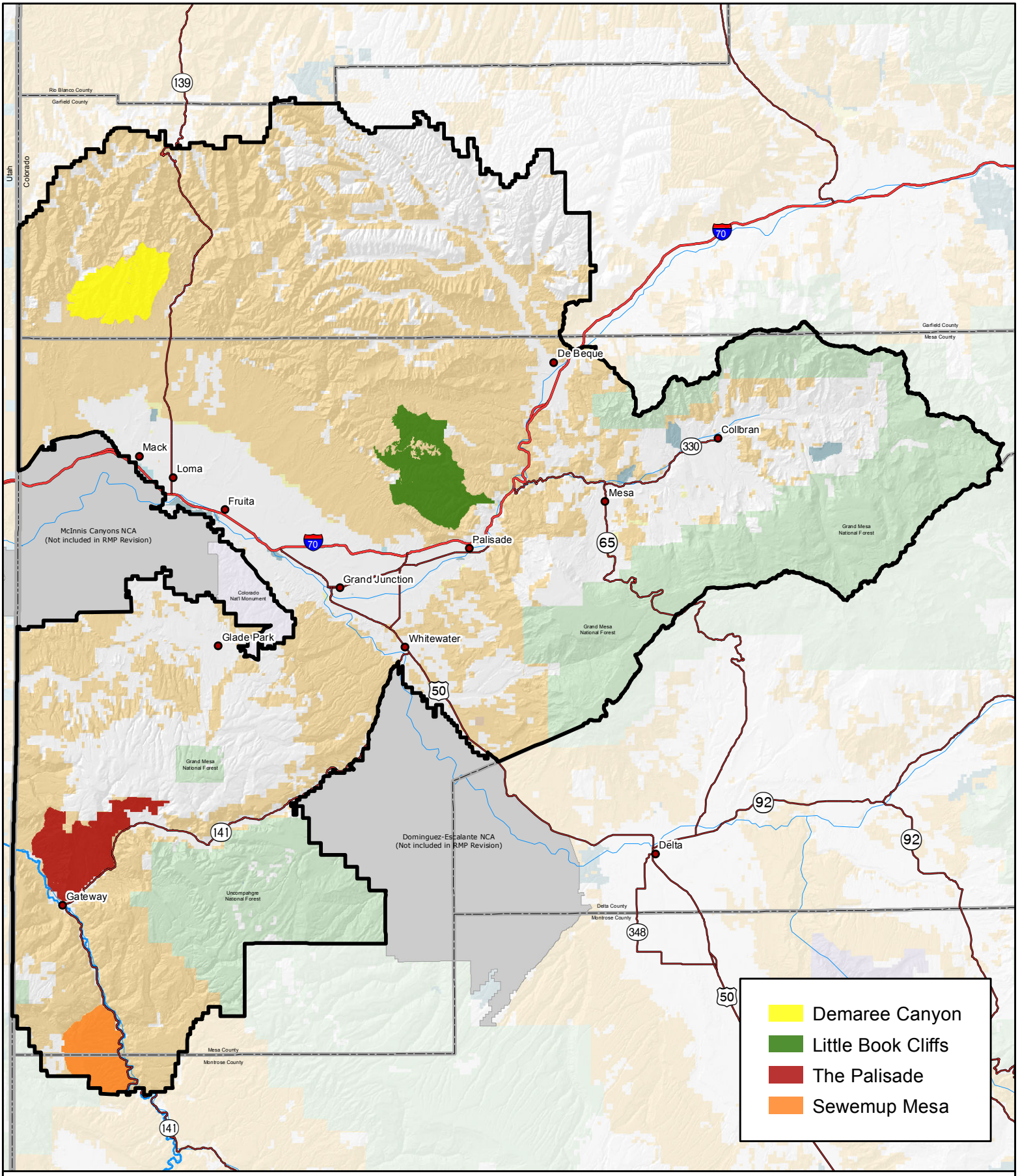
Figure A-20



Source: BLM 2010a

Wilderness Study Areas

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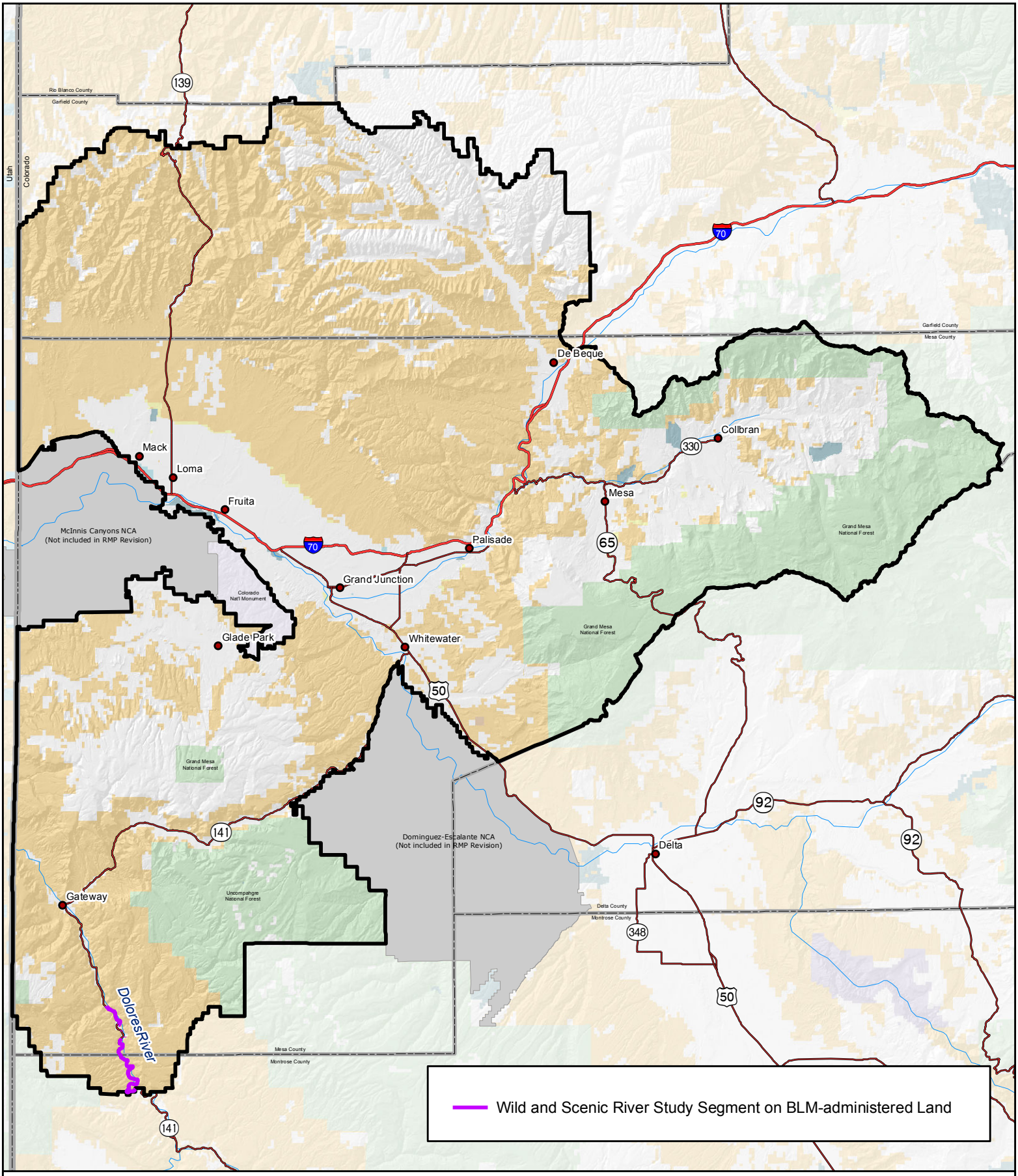
Miles

Figure A-21

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Segments Suitable for Inclusion in the NWSRS

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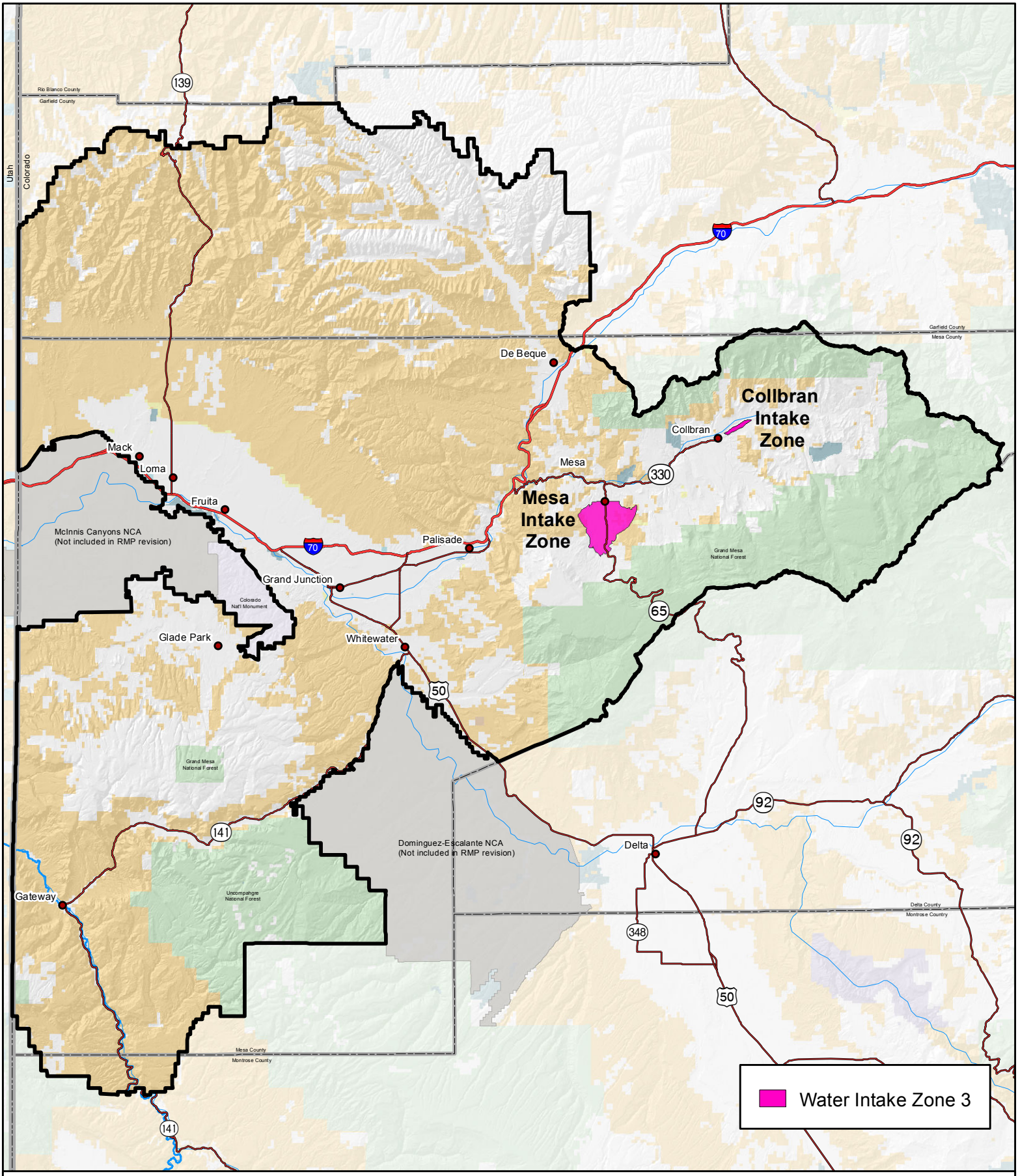
0 2.5 5 10 15 20
Miles

Figure A-22



Source: BLM 2010a

Water Intake Zone 3

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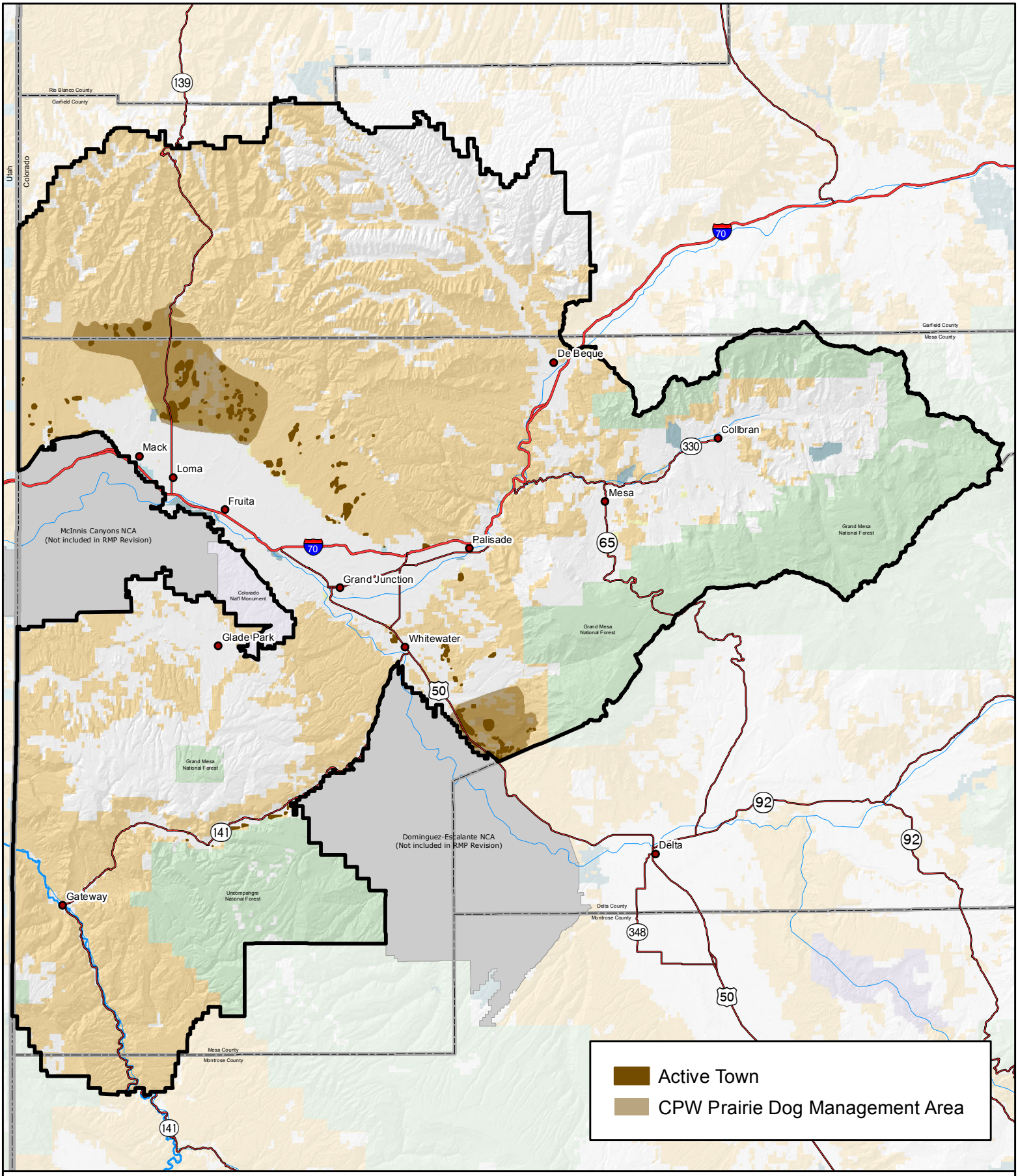
Miles

Figure A-23



Source: BLM 2010a

Prairie Dog Towns

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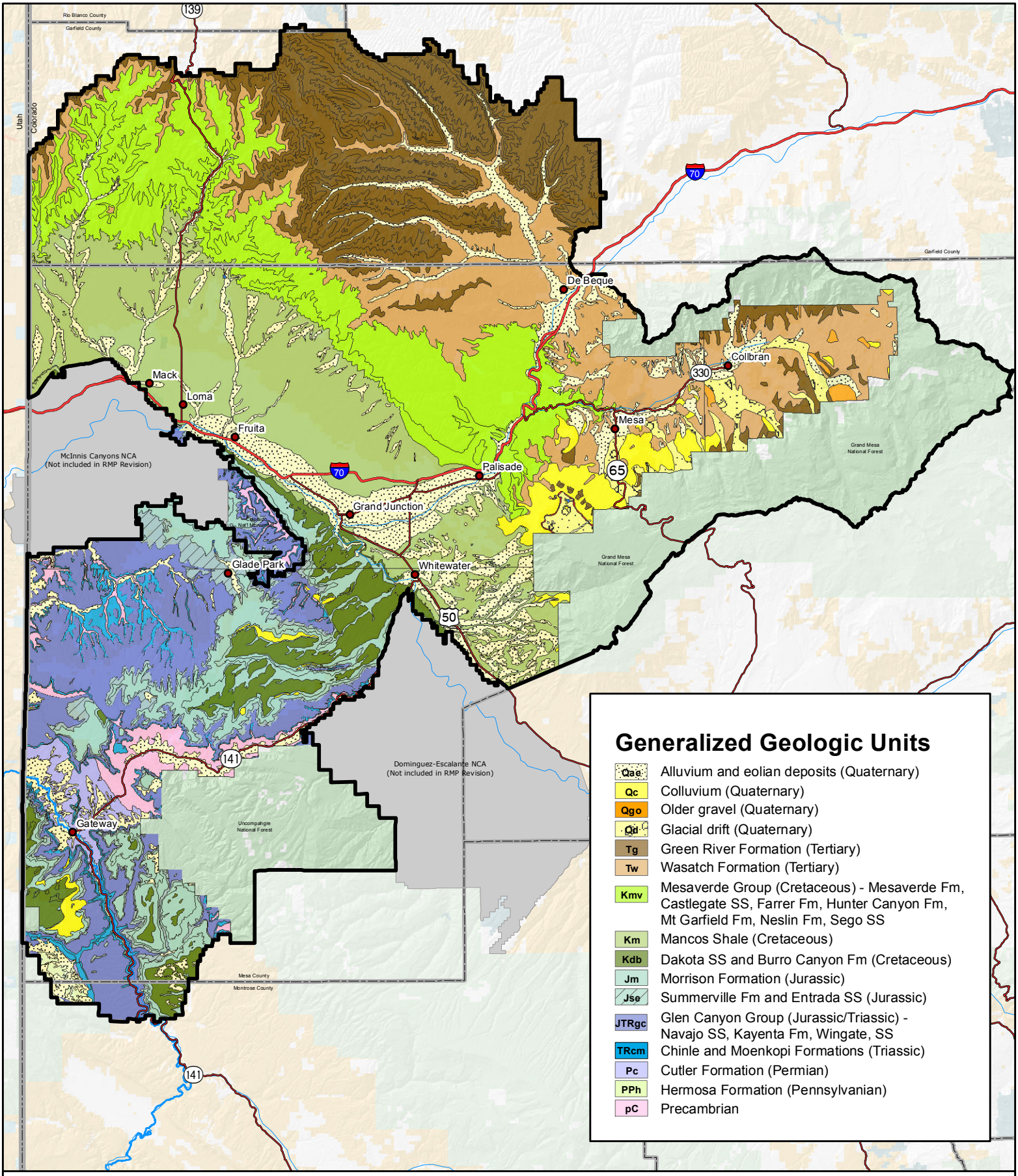
0 2.5 5 10 15 20
Miles

Figure A-24



Source: BLM 2010a

Surface Geology

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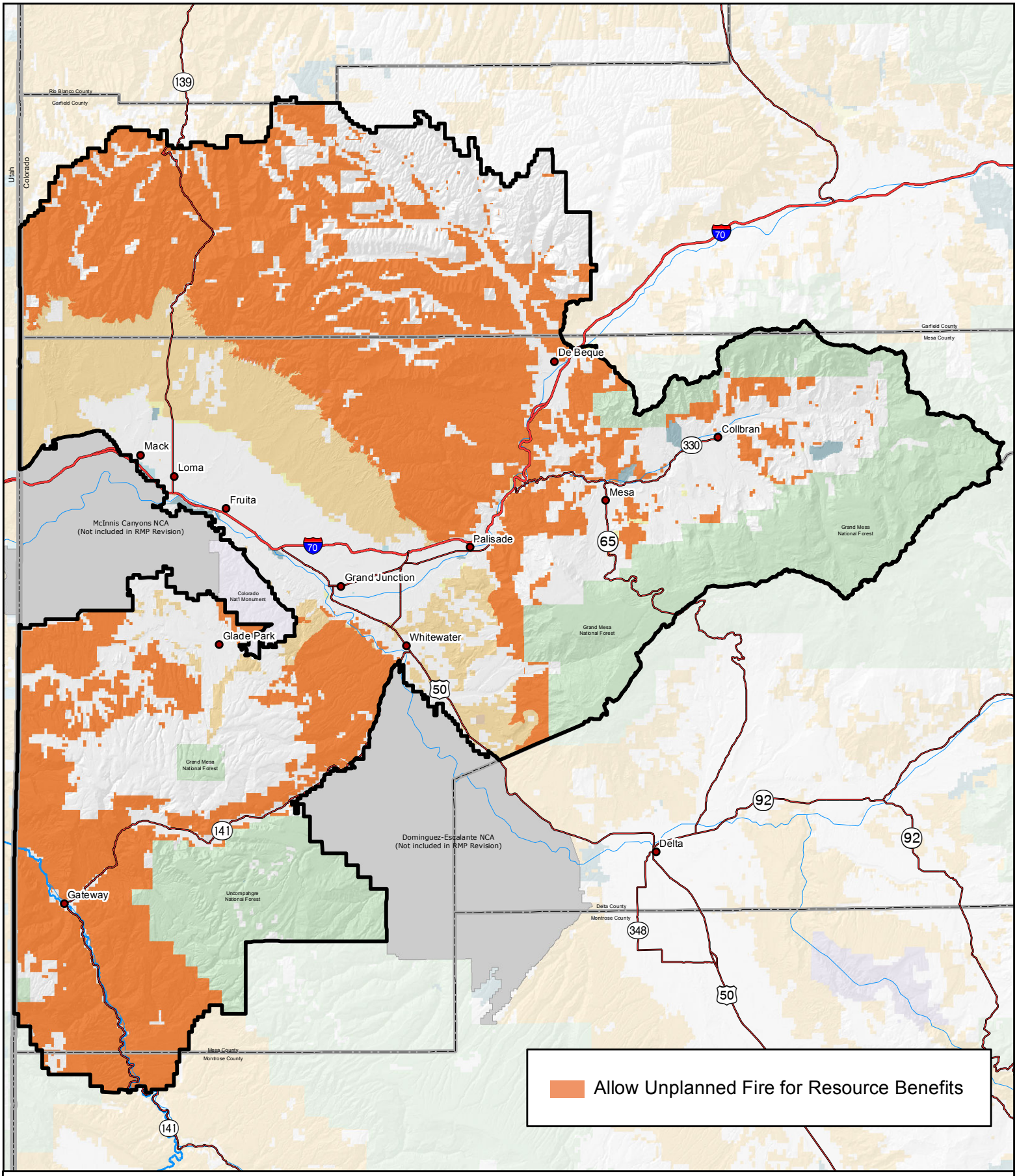
0 2.5 5 10 15 20
Miles

Figure A-25



Source: BLM 2010a

Wildland Fire Management

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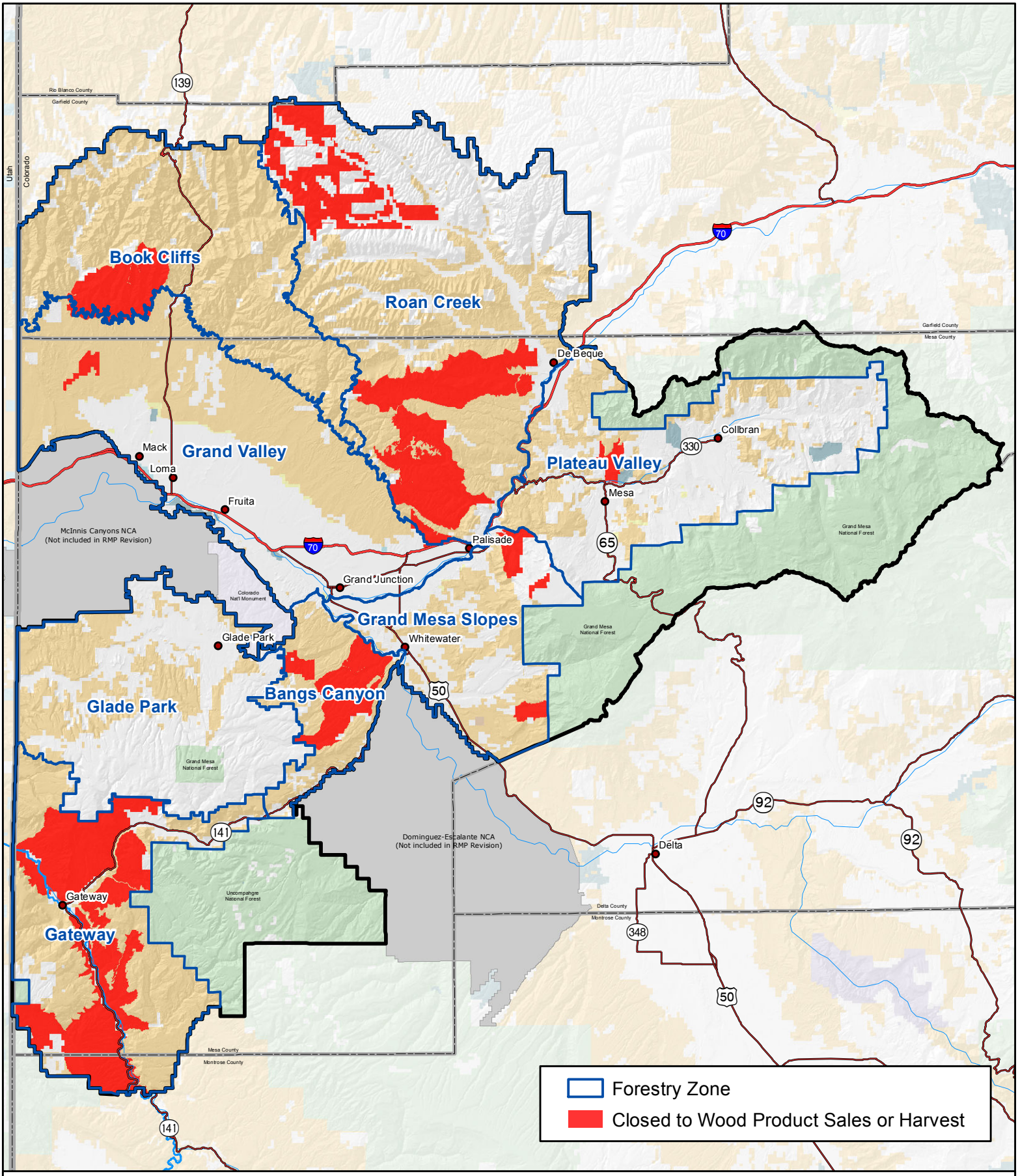
0 2.5 5 10 15 20
Miles

Figure A-26

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Forest Management

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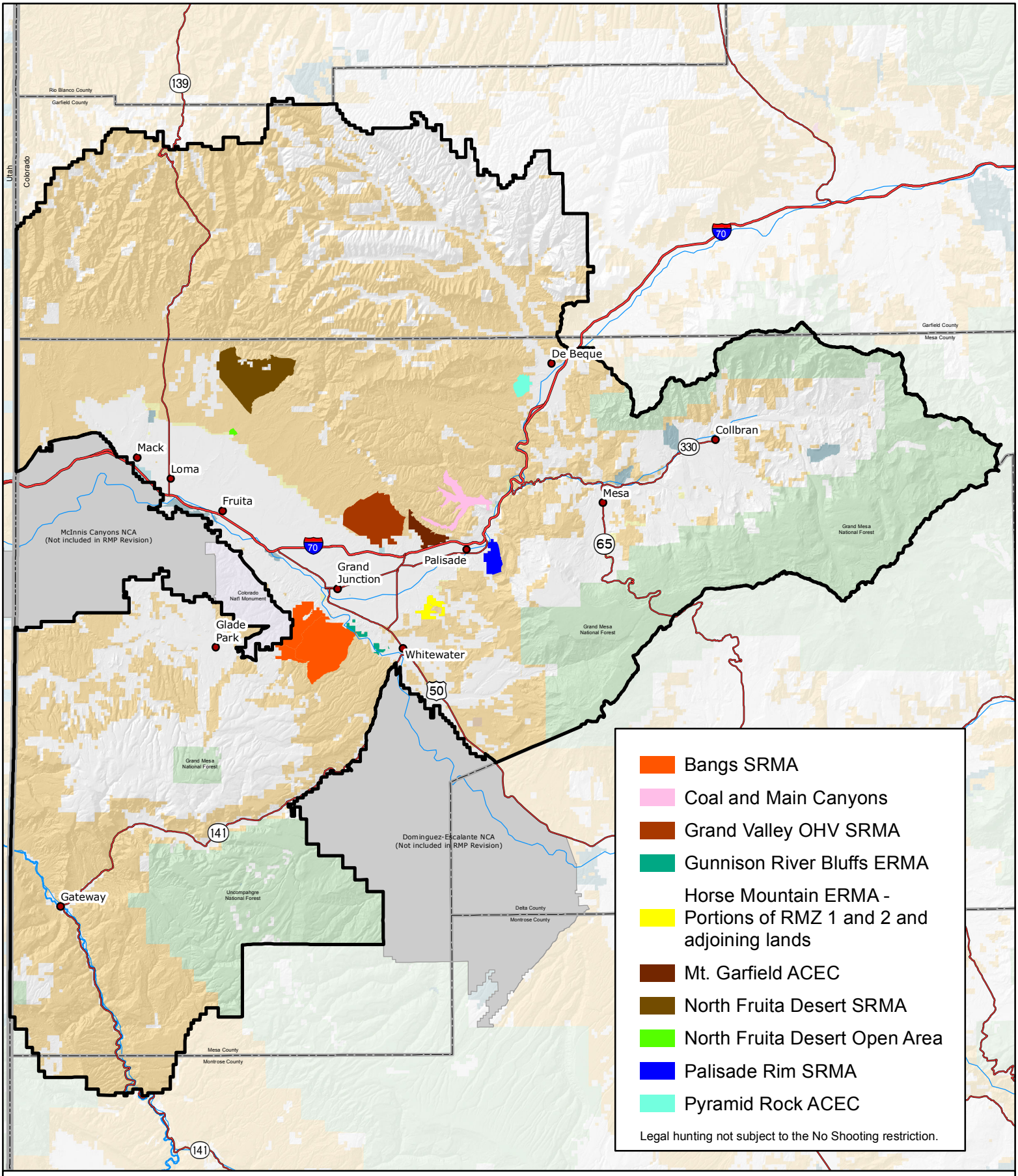
0 2.5 5 10 15 20
Miles

Figure A-27



Source: BLM 2010a

Target Shooting Closures

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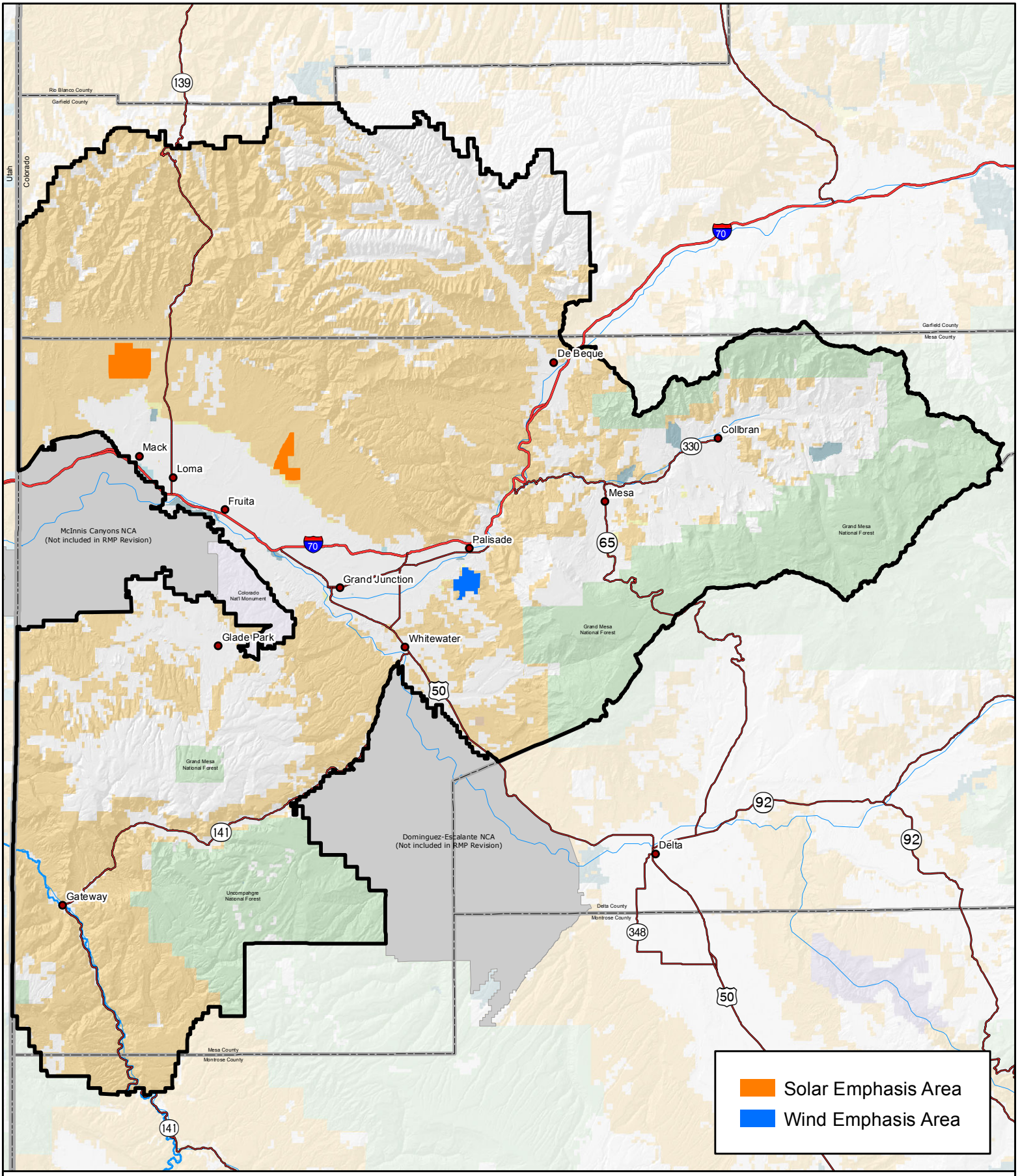
0 2.5 5 10 15 20
Miles

Figure A-28



Source: BLM 2010a

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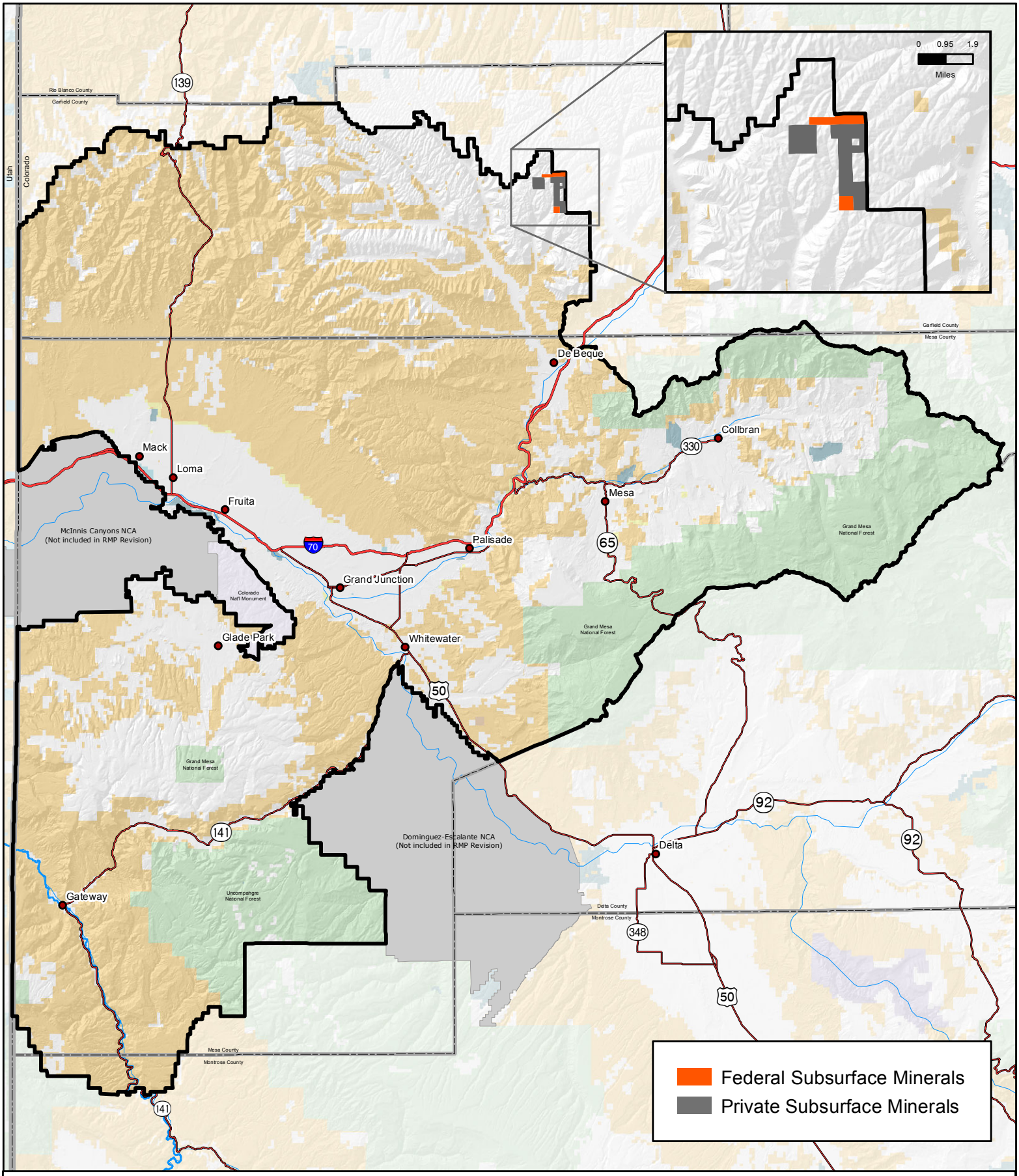
Solar and Wind Energy Development Emphasis Areas

0 2.5 5 10 15 20

Miles

Figure A-29



Source: BLM 2010a

Oil Shale

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0 2.5 5 10 15 20
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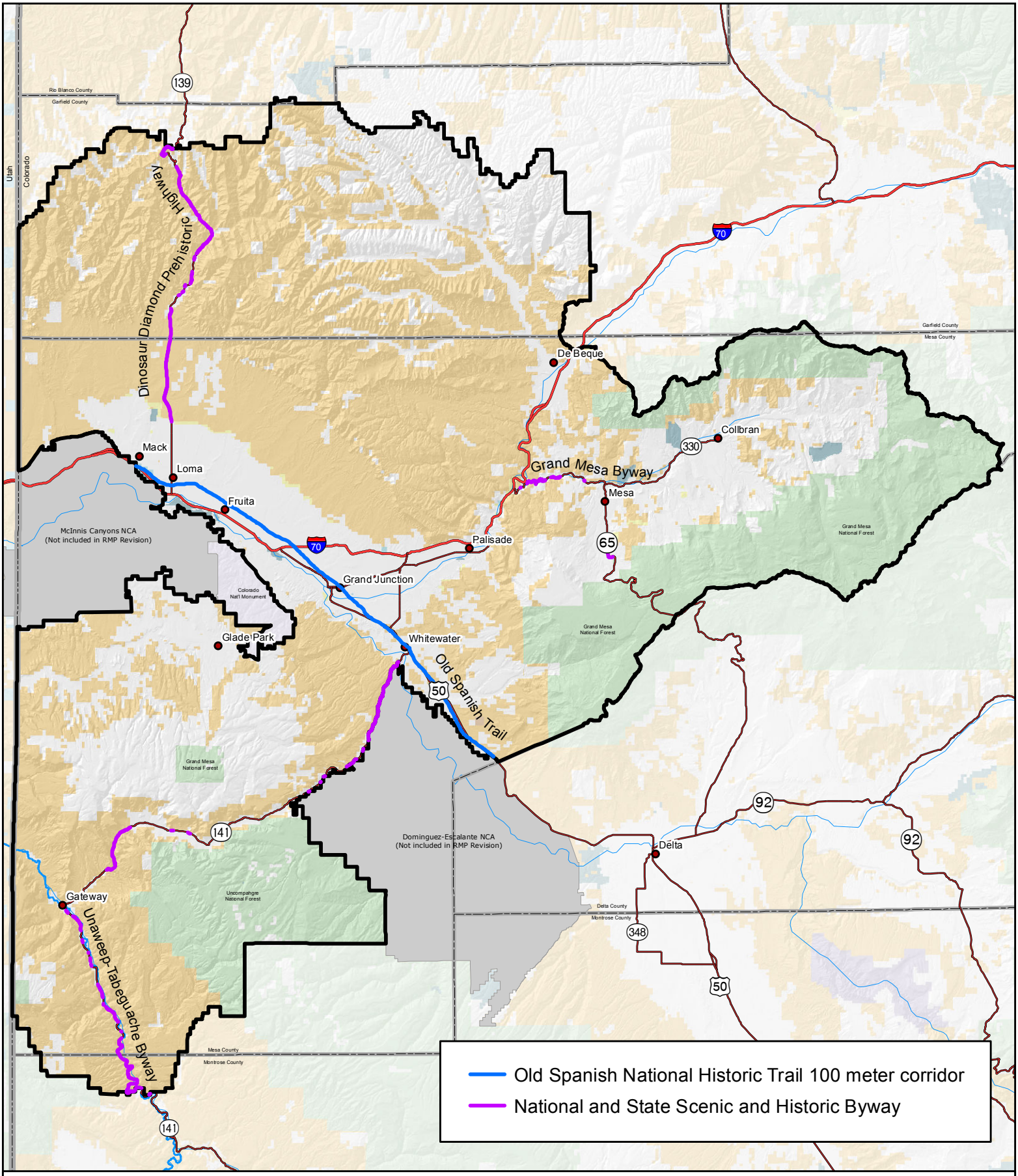
Figure A-30



Source: BLM 2010a

National Scenic, Historic, and Recreational Trails and State and BLM Byways

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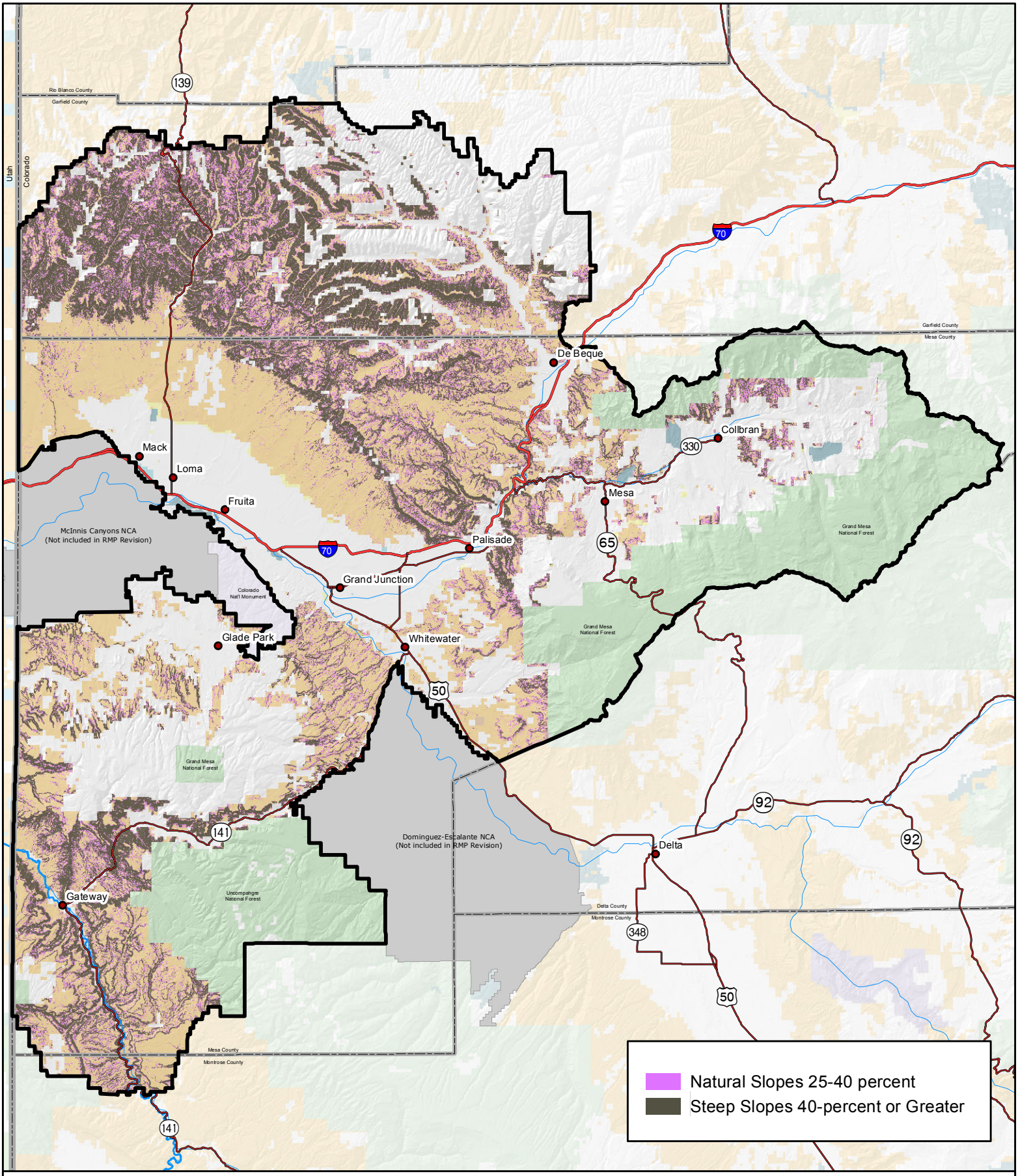
0 2.5 5 10 15 20
Miles

Figure A-31



Source: 2010a

Steep Slopes

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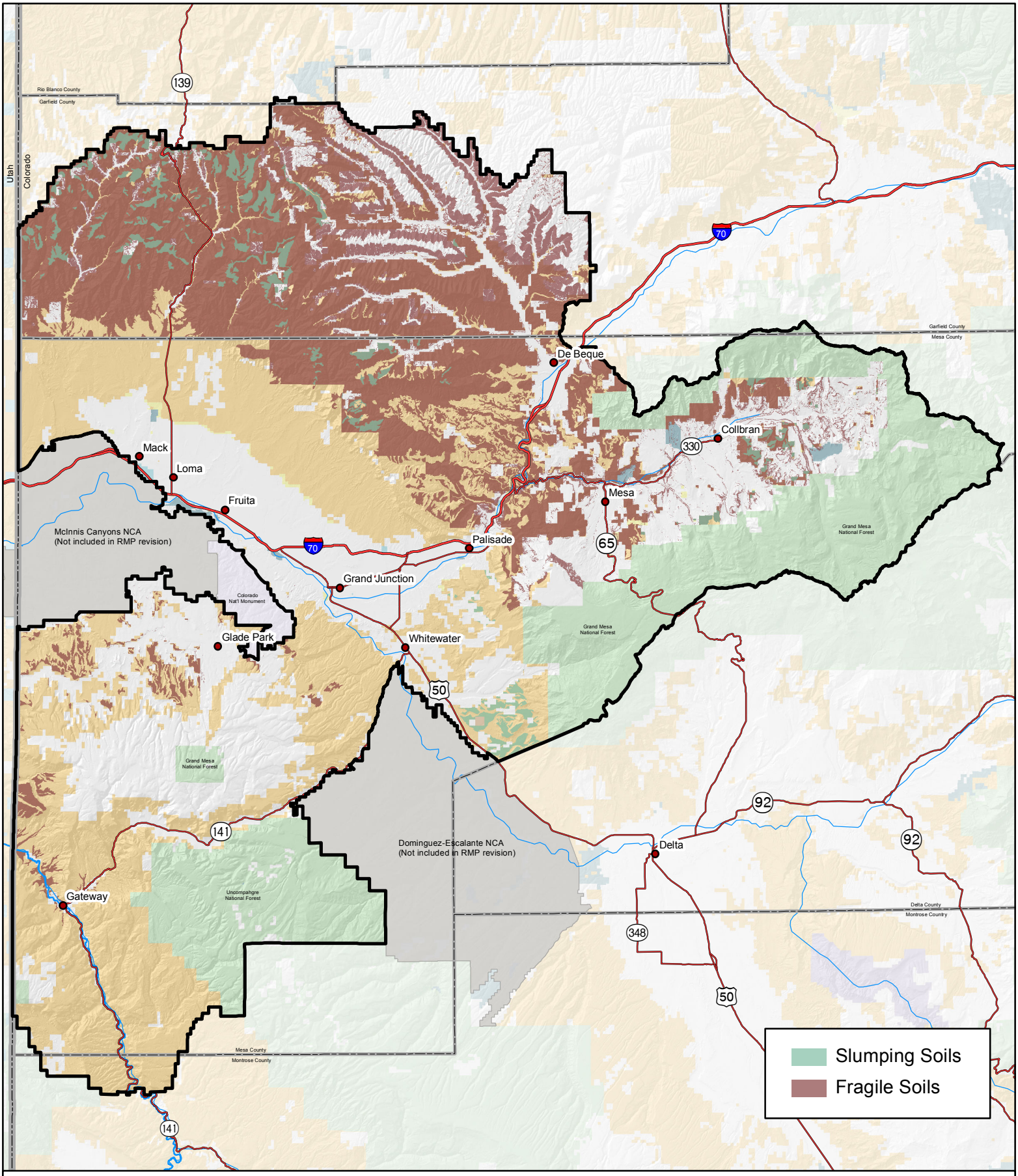
Miles

Figure A3-1

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Fragile and Slumping Soils

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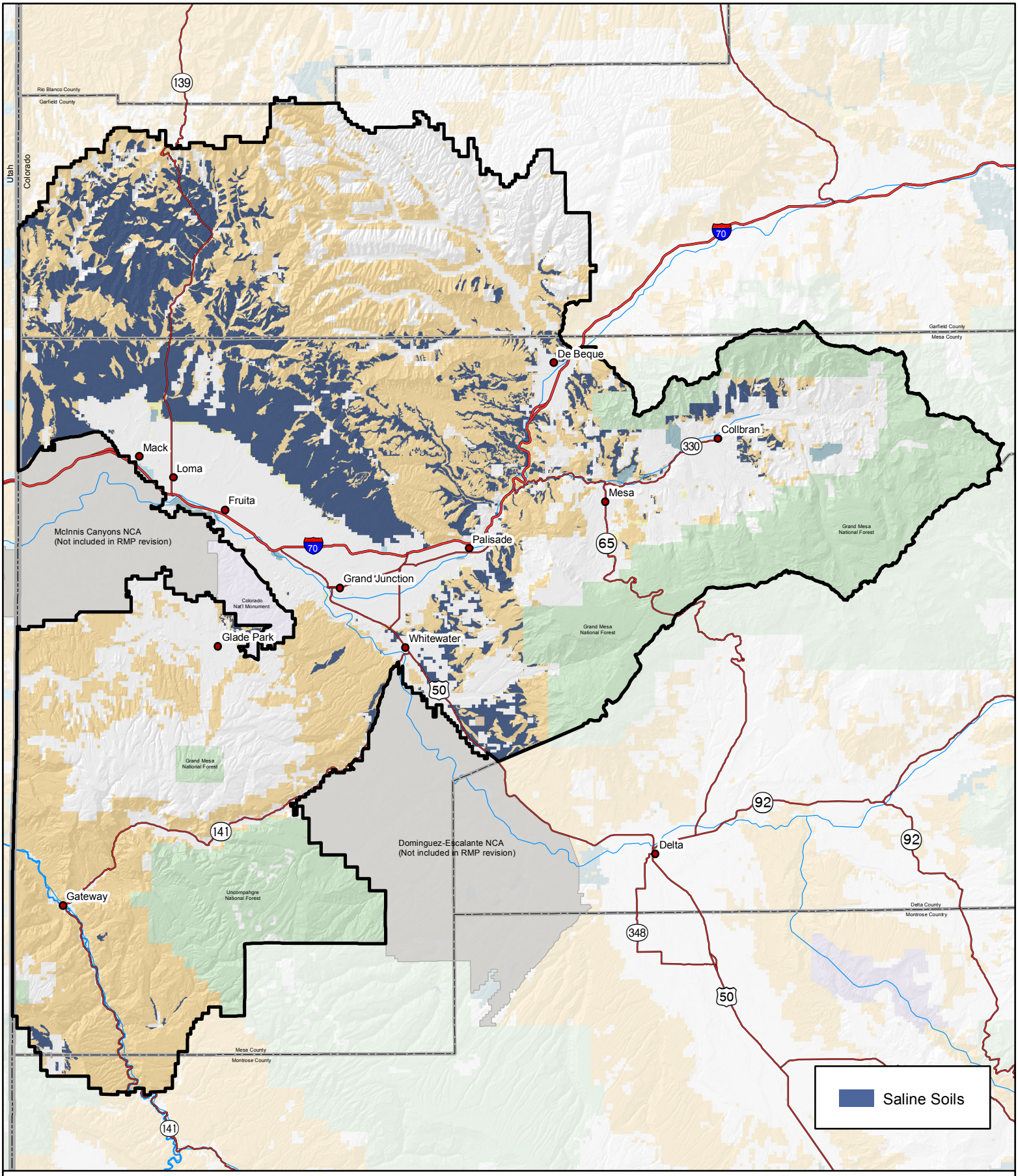
Figure A3-2

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Saline Soils

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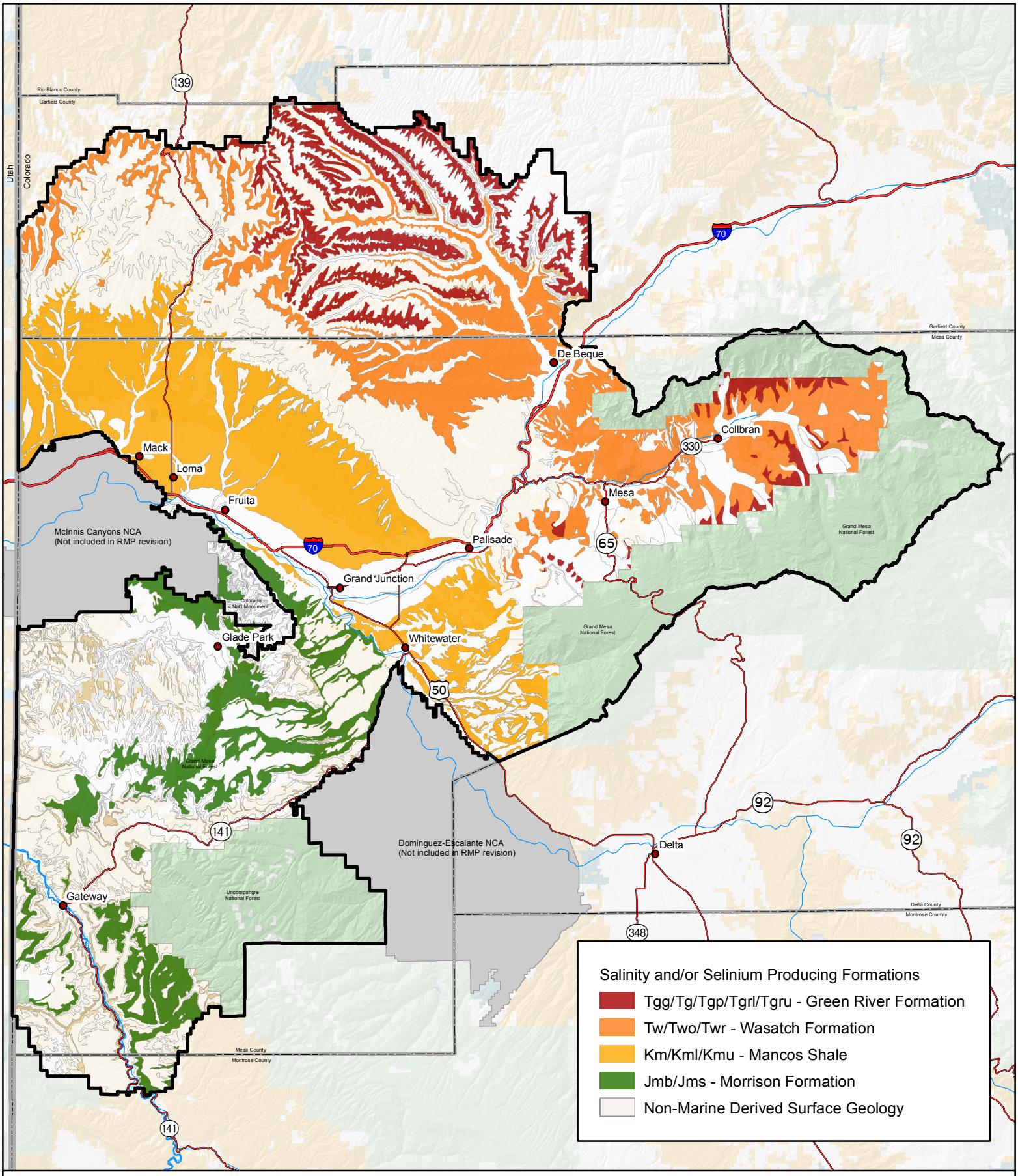
Figure A3-3

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Local Geologic Formations Affecting Water Quality

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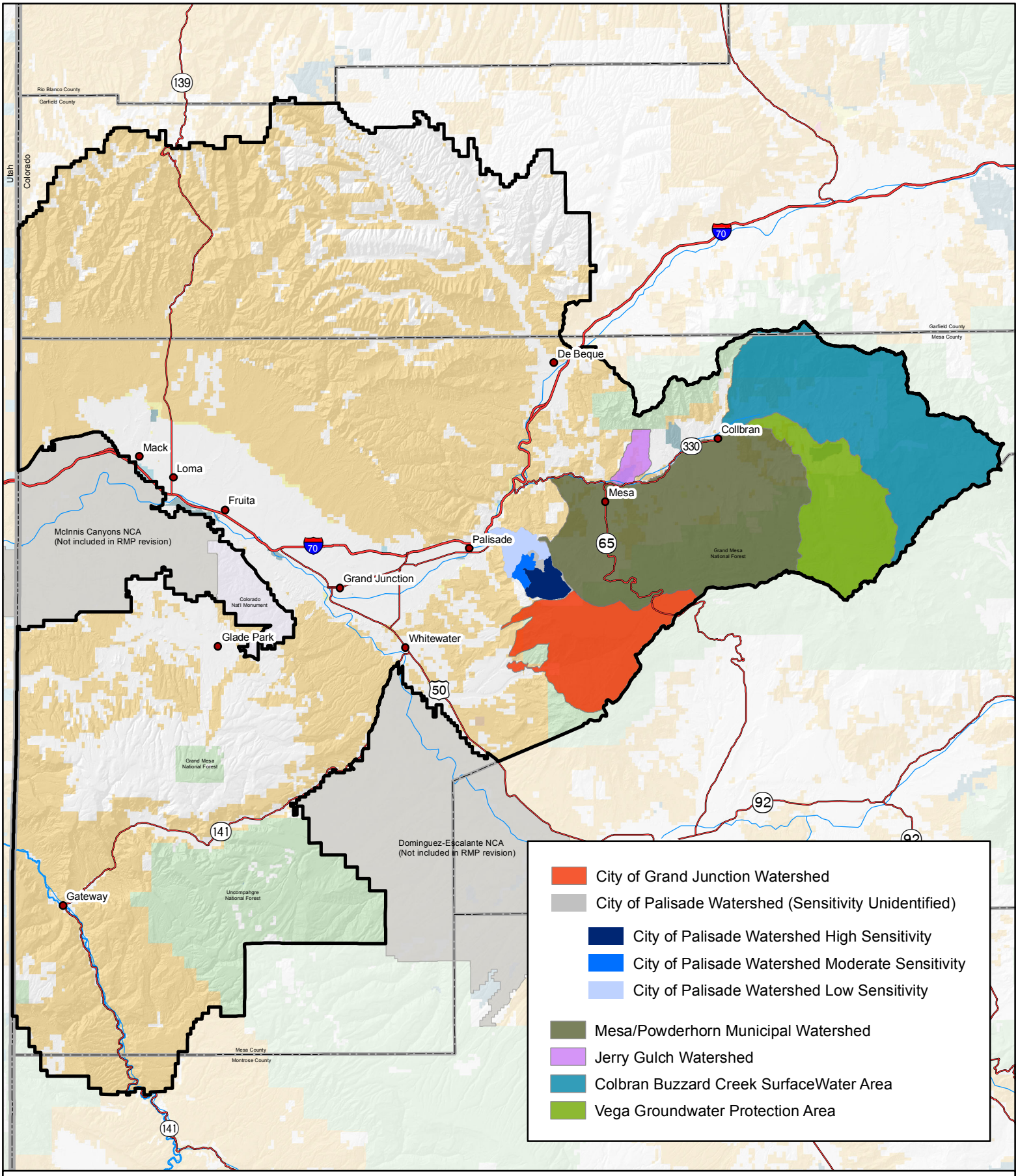
Figure A3-4



Source: BLM 2010a

Municipal Watersheds and Source Water Protection Areas

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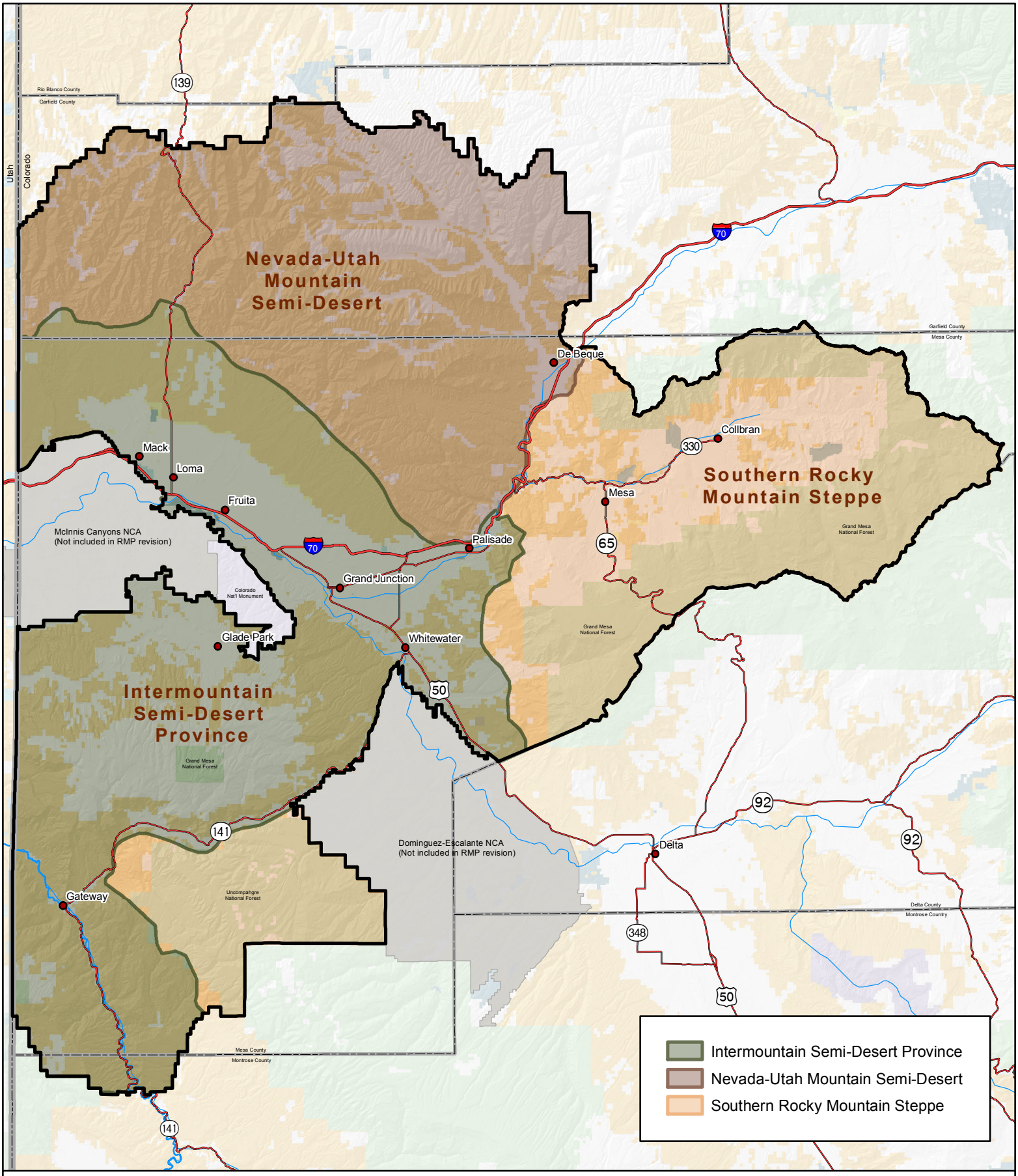

Source: BLM 2010a

Ecoregions

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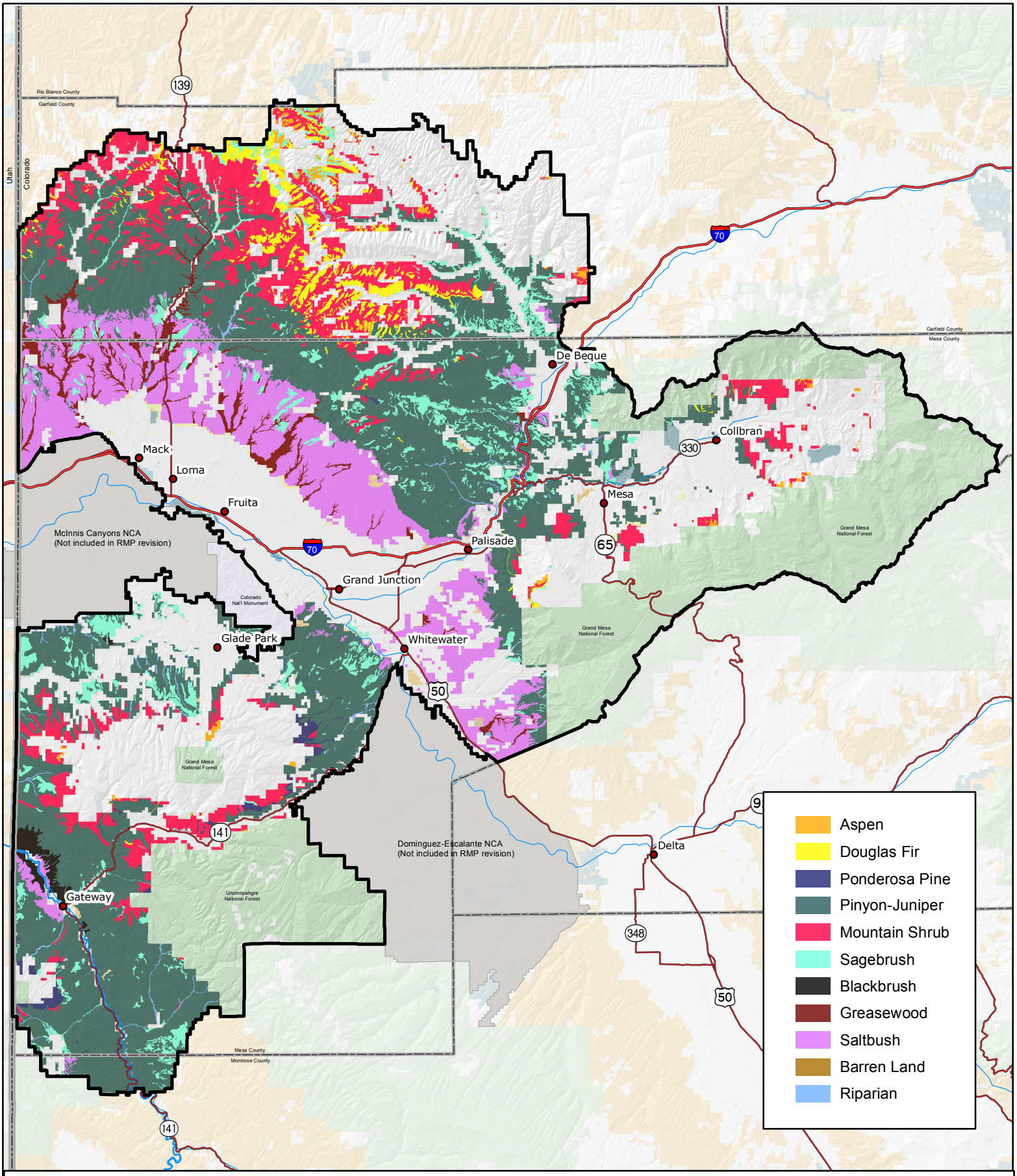
Figure A3-6

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Major Vegetation Groups

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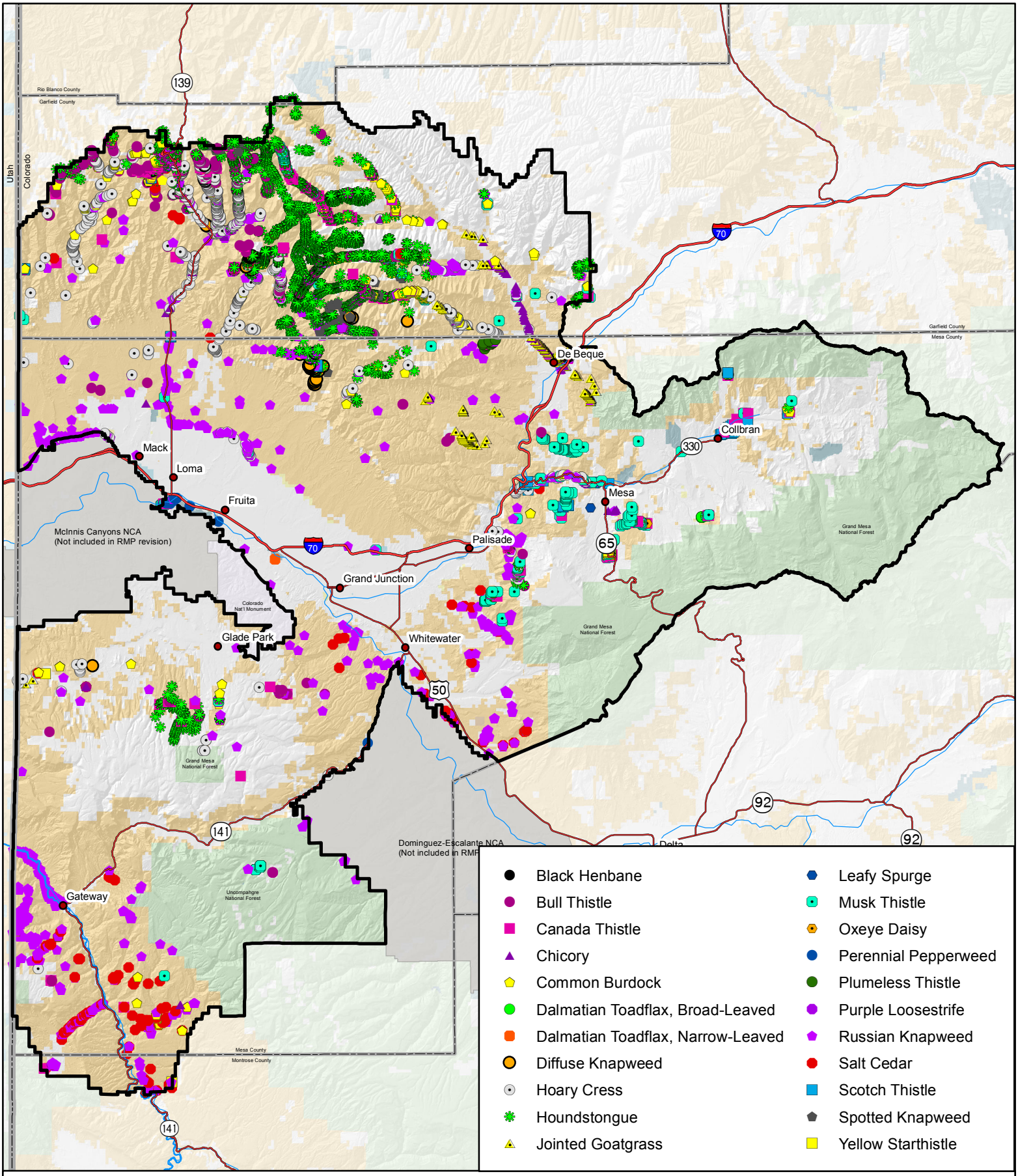
Figure A3-7



Source: BLM 2010a

Noxious Weeds: All Species Surveyed Since 2000

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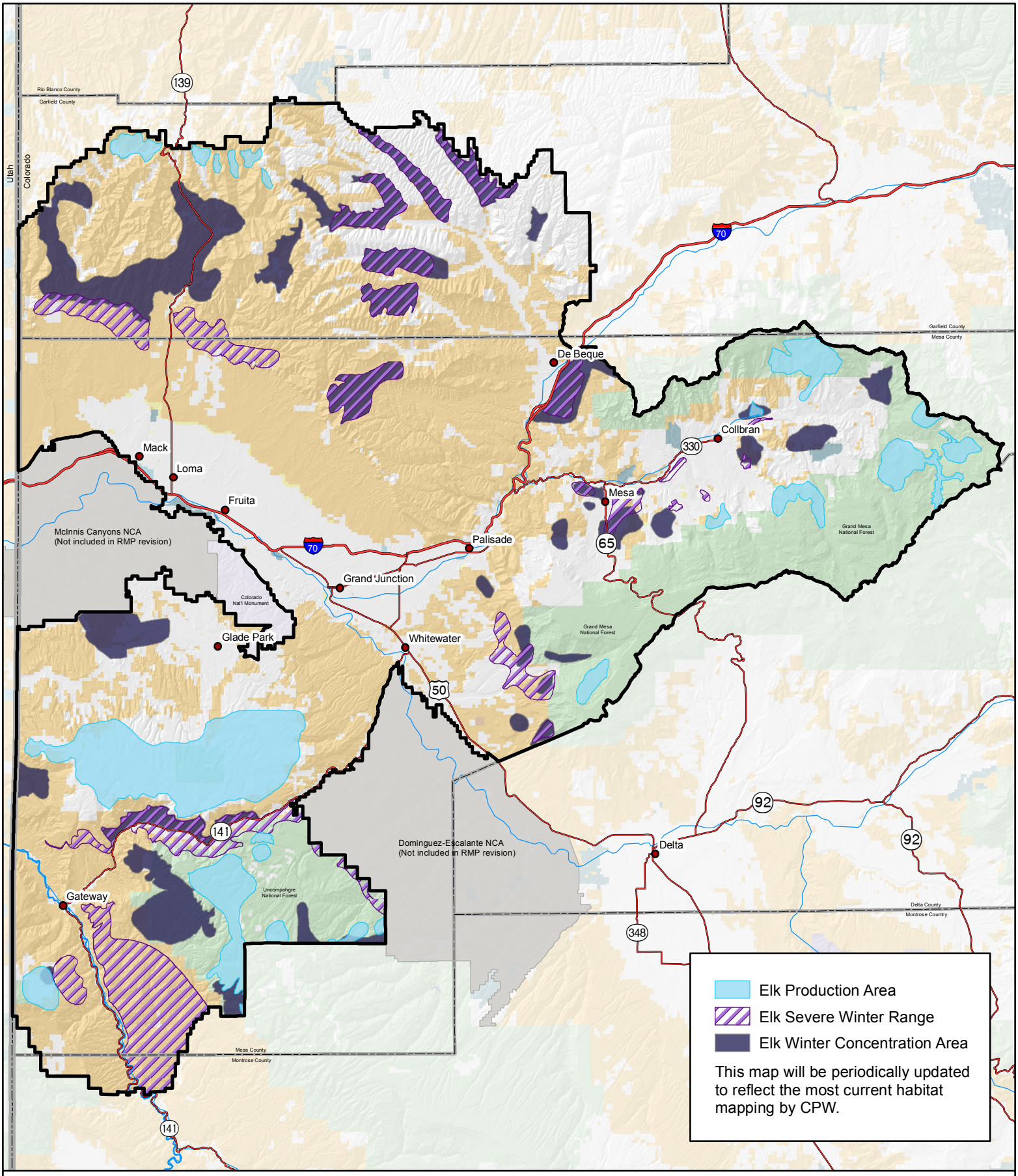
Figure A3-8

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Elk Range

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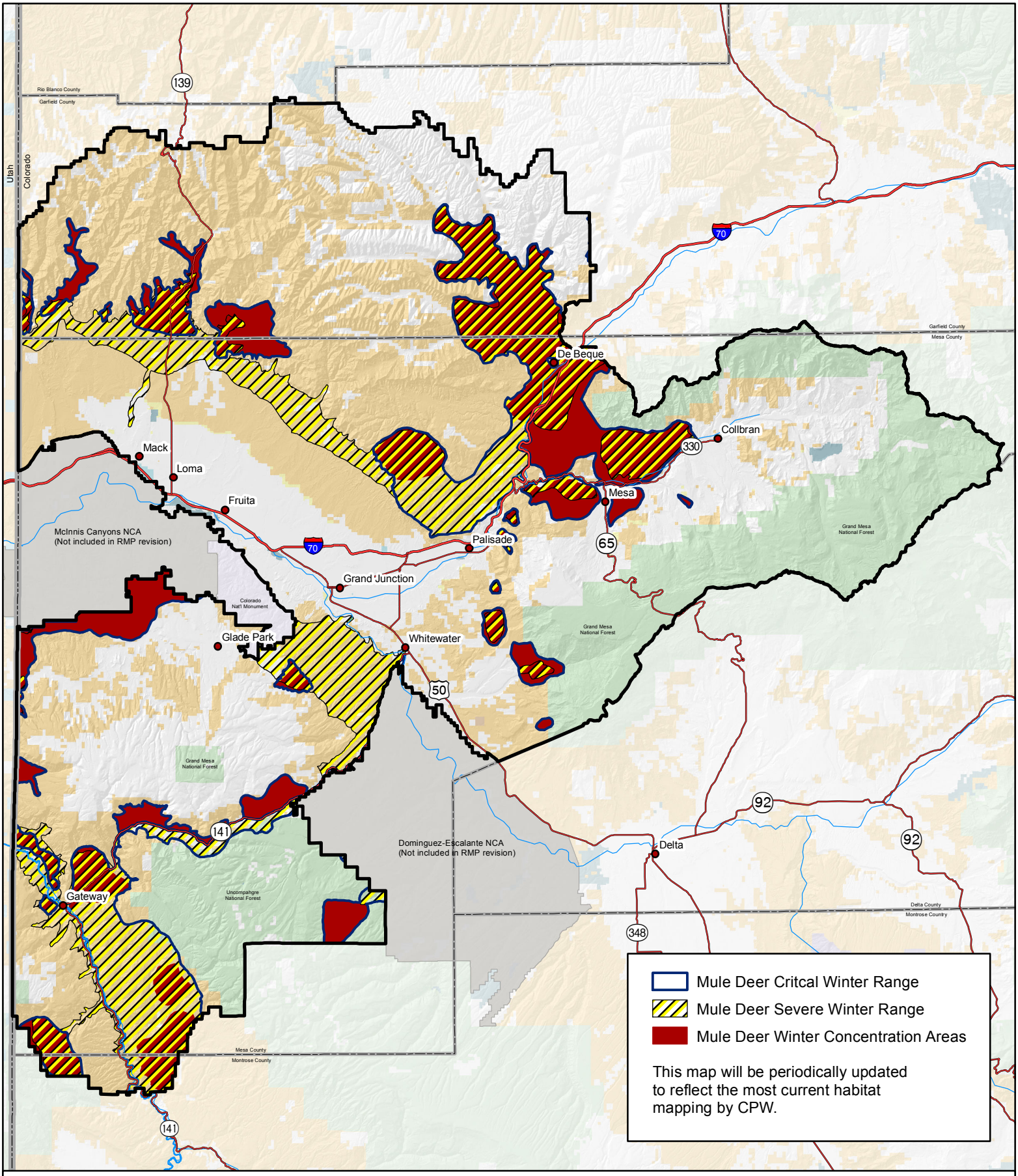
Figure A3-9



Source: BLM 2010a

Mule Deer Range

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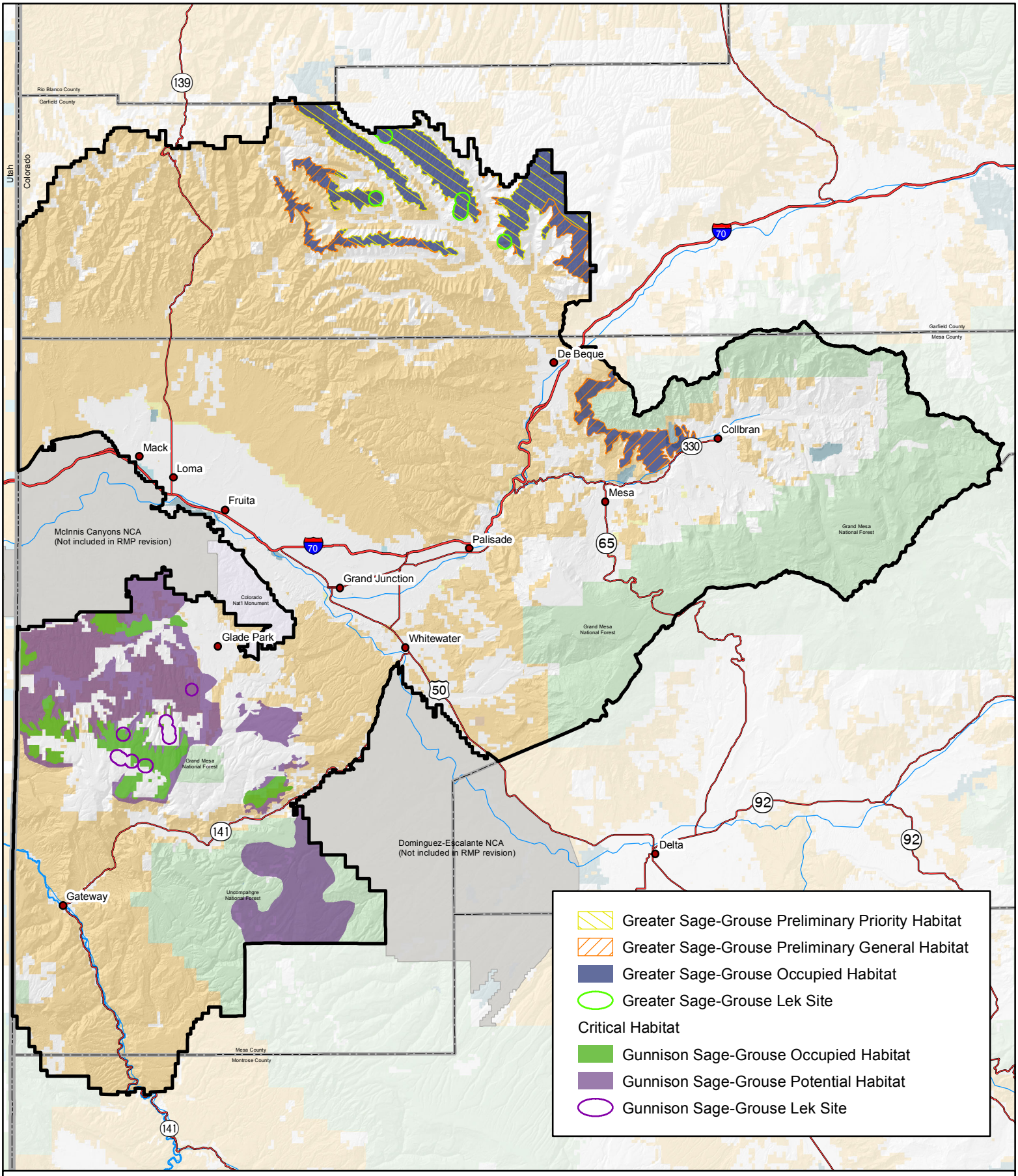

Source: BLM 2010a

Sage-Grouse Habitat

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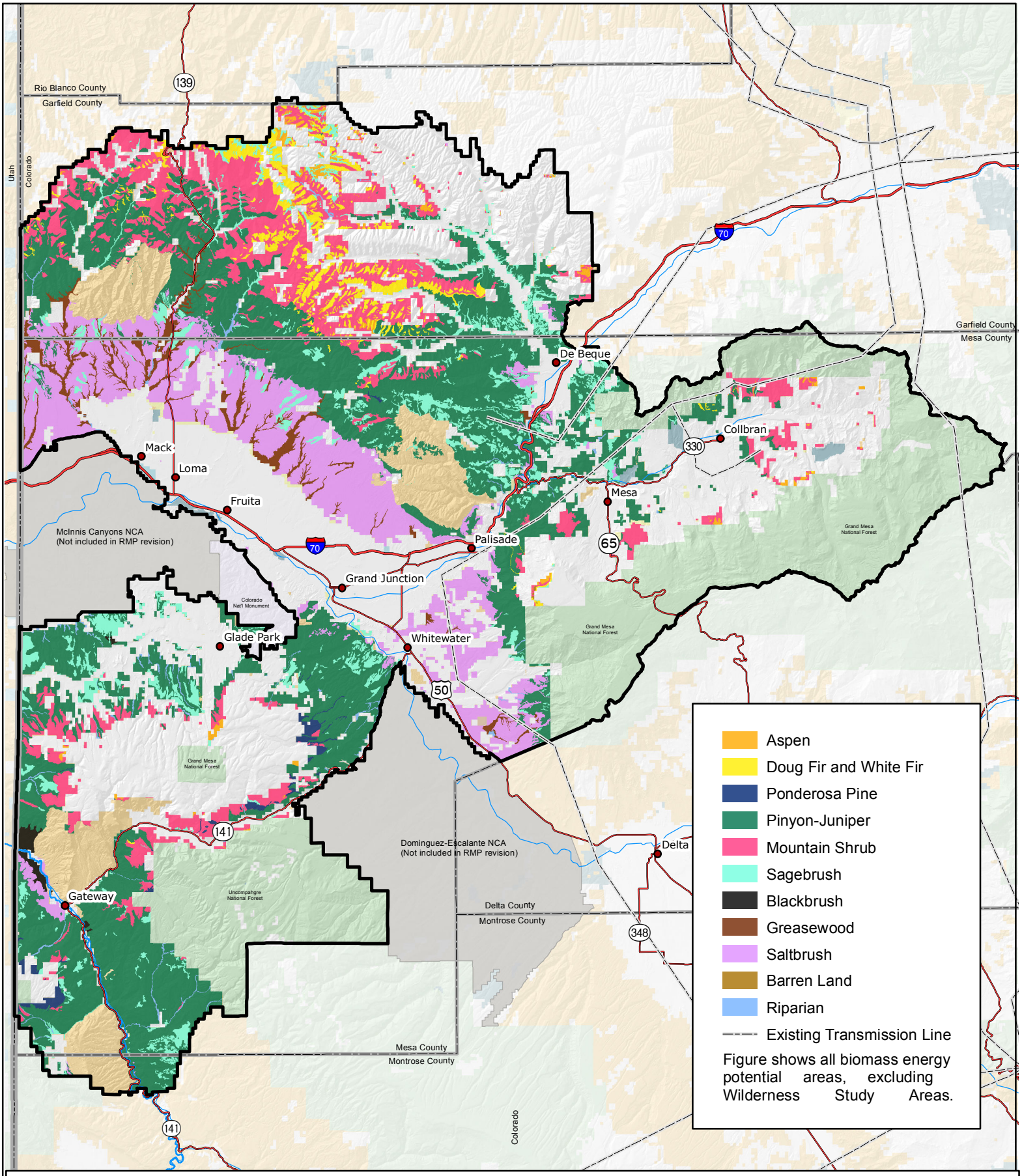
Figure A3-11

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Biomass Energy Potential

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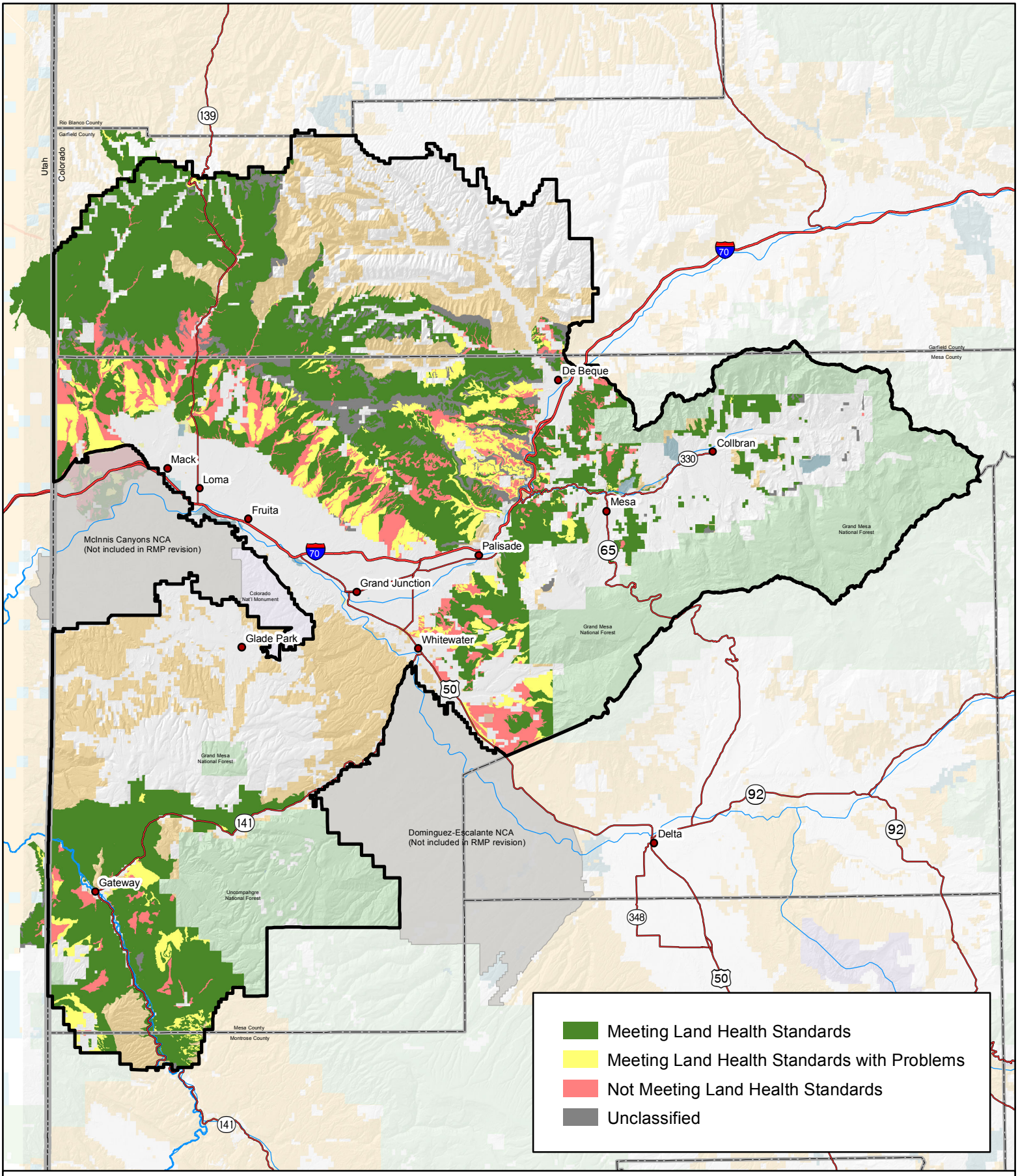
Figure A3-12

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

BLM Land Health Assessments

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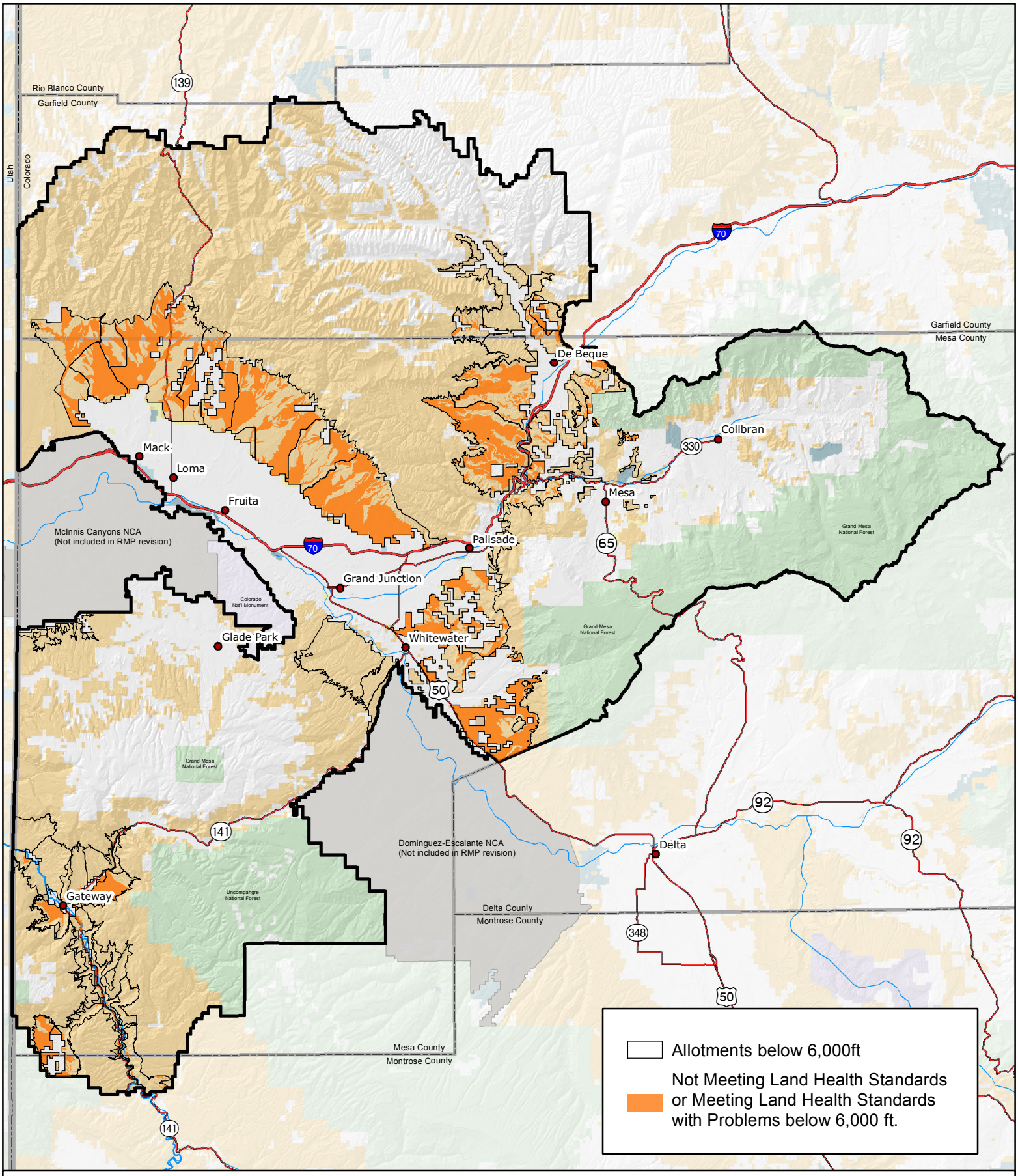

Source: BLM 2010a

Land Health Assessment Below 6,000 Feet

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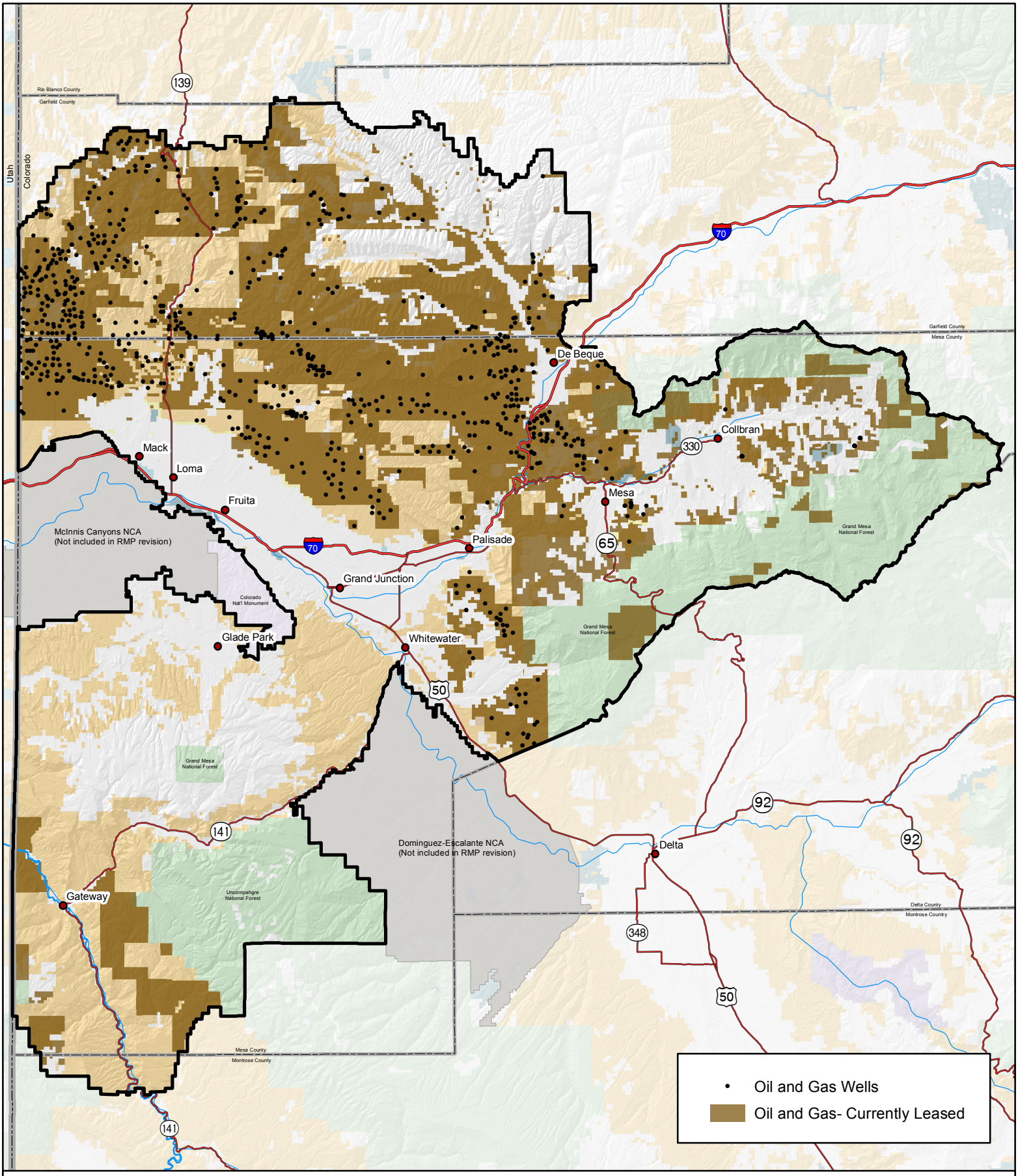
Figure A3-14

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Oil and Gas - Leases and Wells

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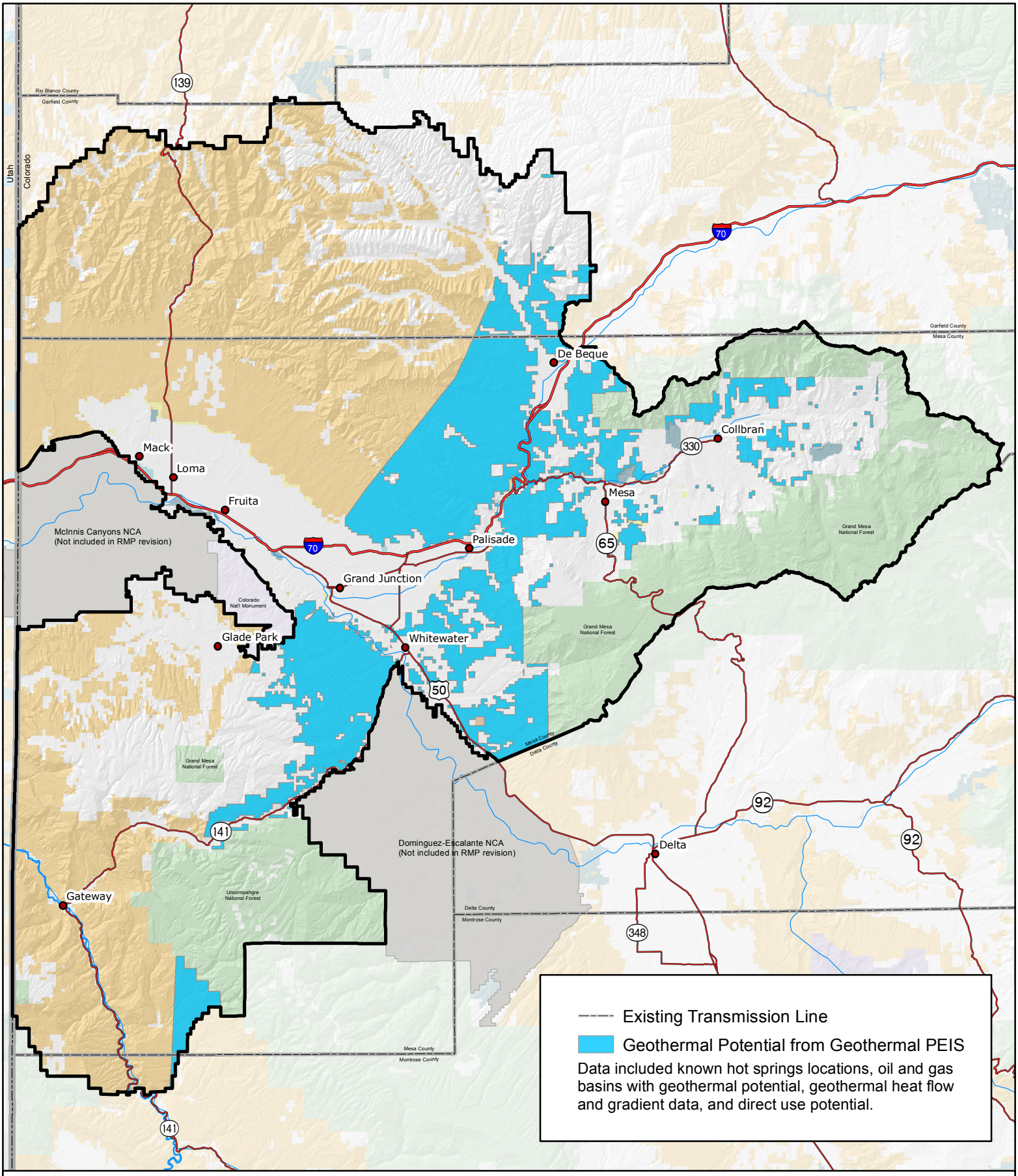

Source: BLM 2010a

Geothermal Energy Potential

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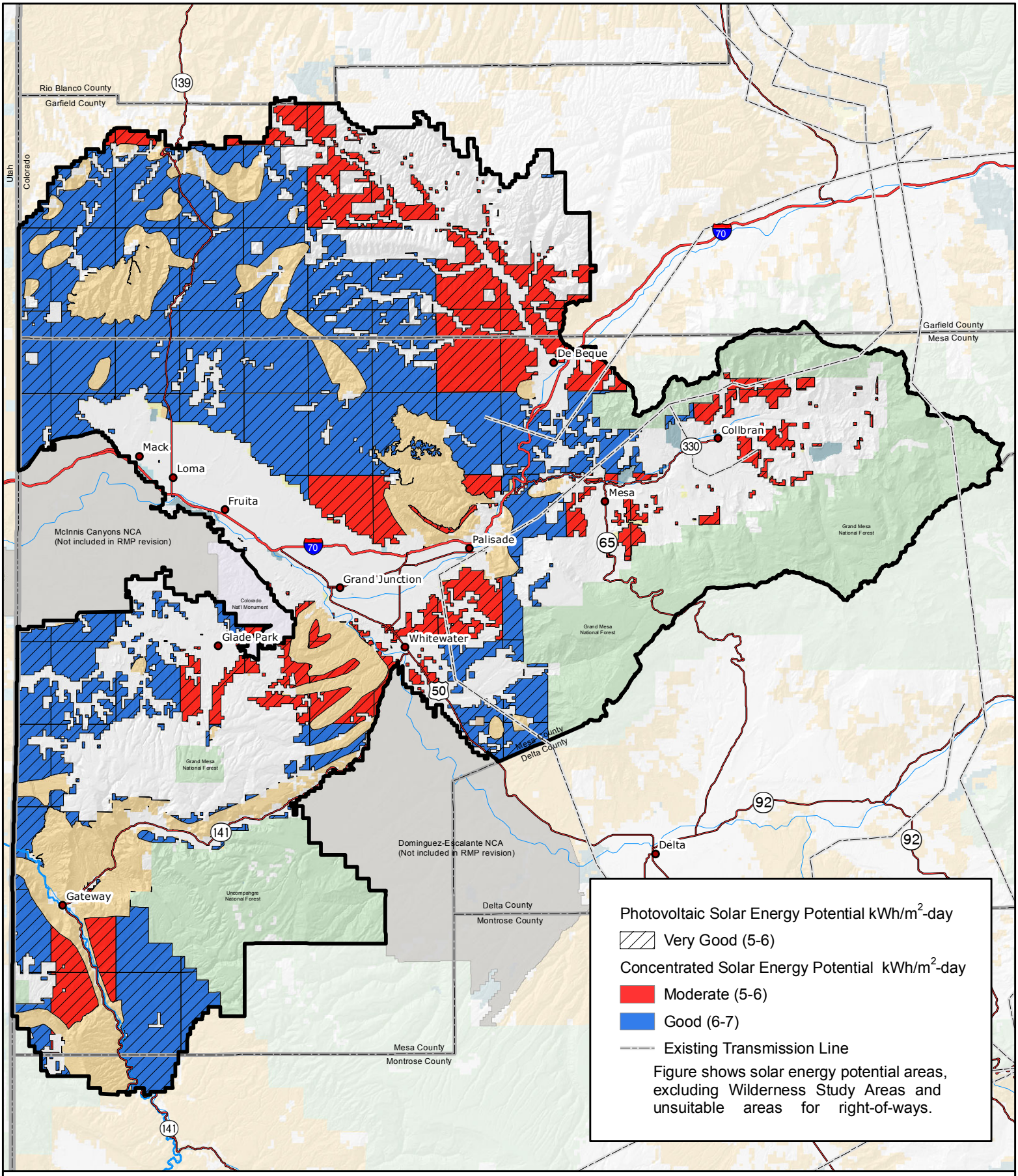
Figure A3-16



Source: BLM 2010a

Solar Energy Potential

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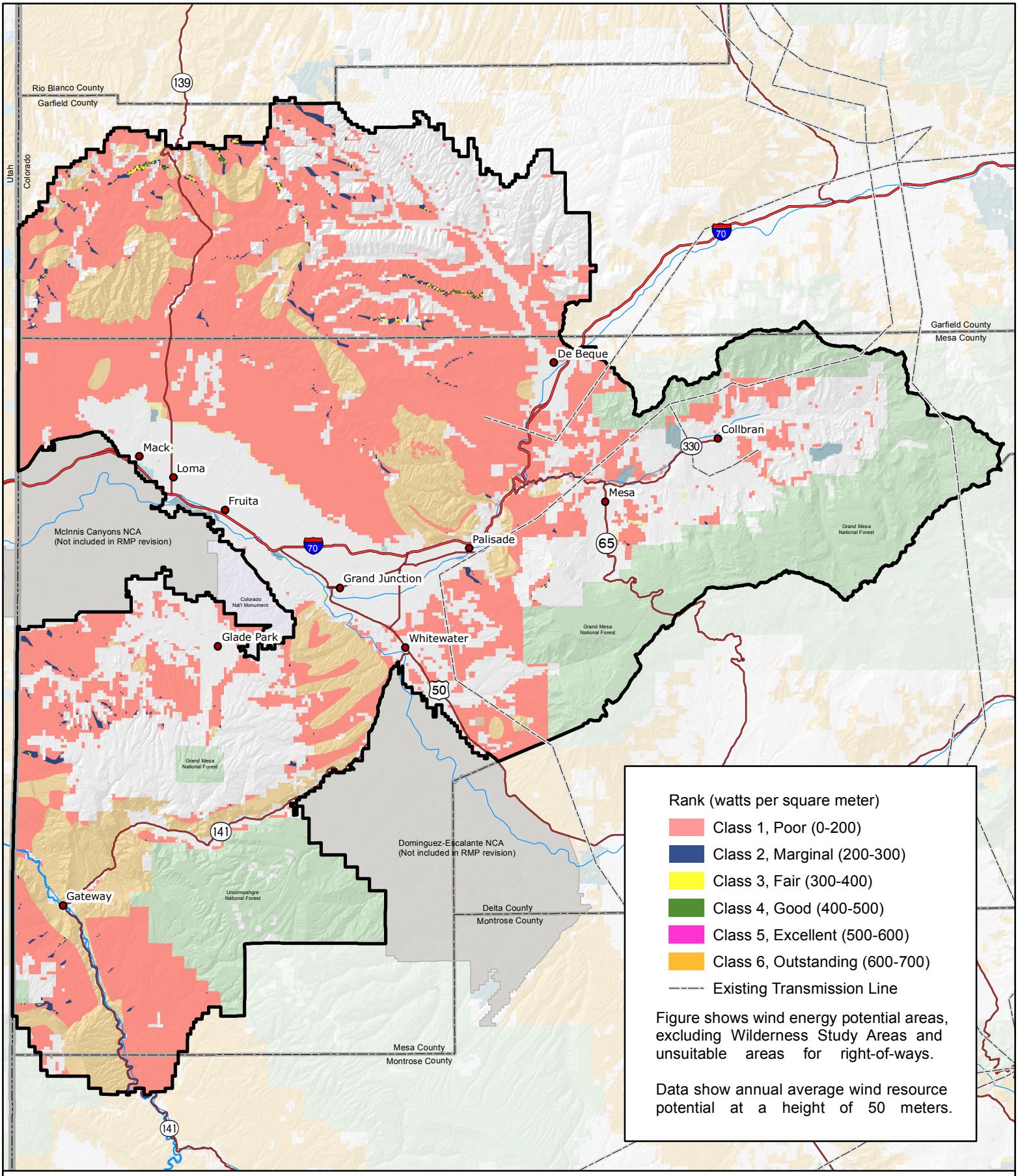

Source: BLM 2010a

Wind Energy Potential

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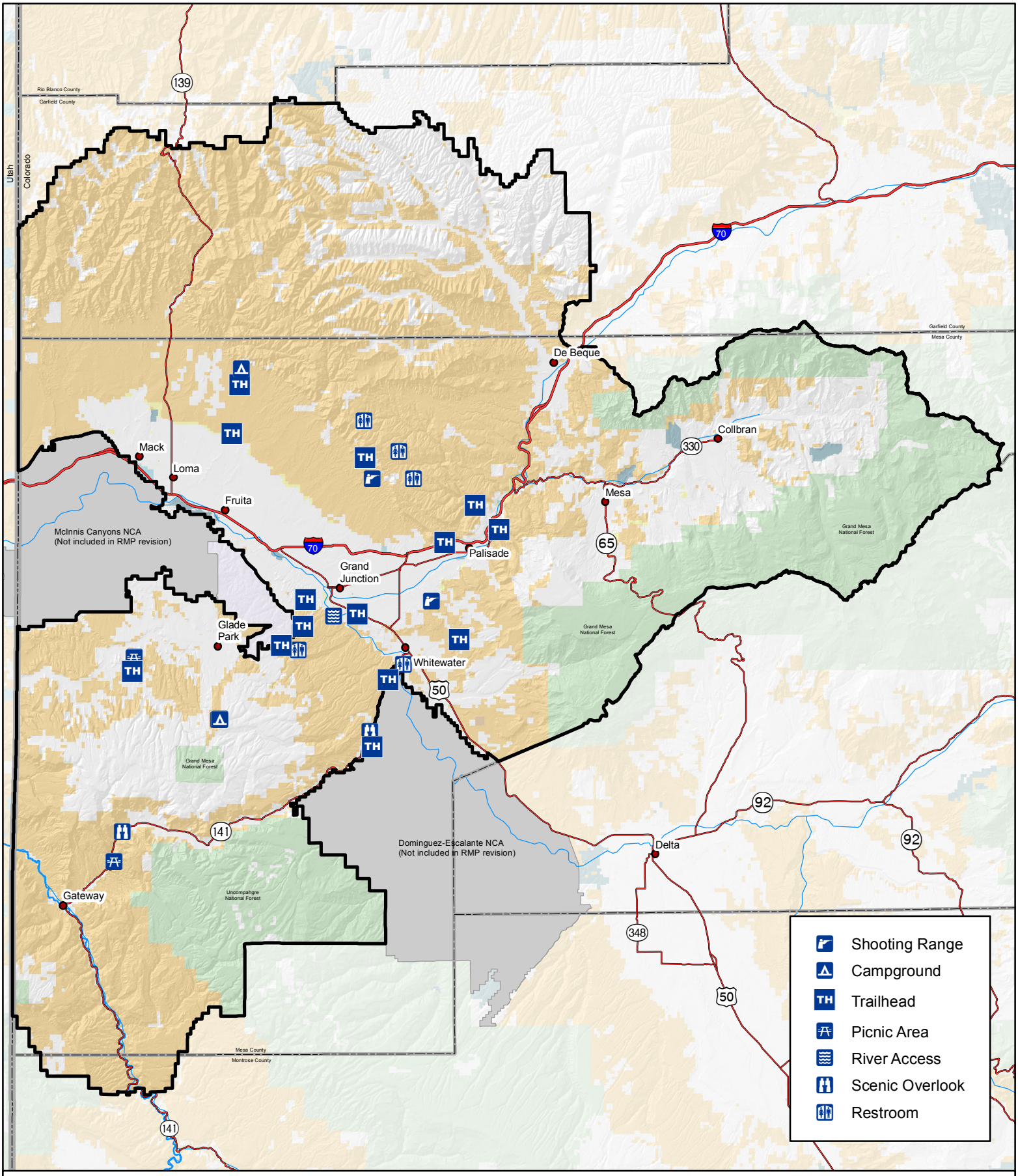
Figure A3-18

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Developed Recreation Sites

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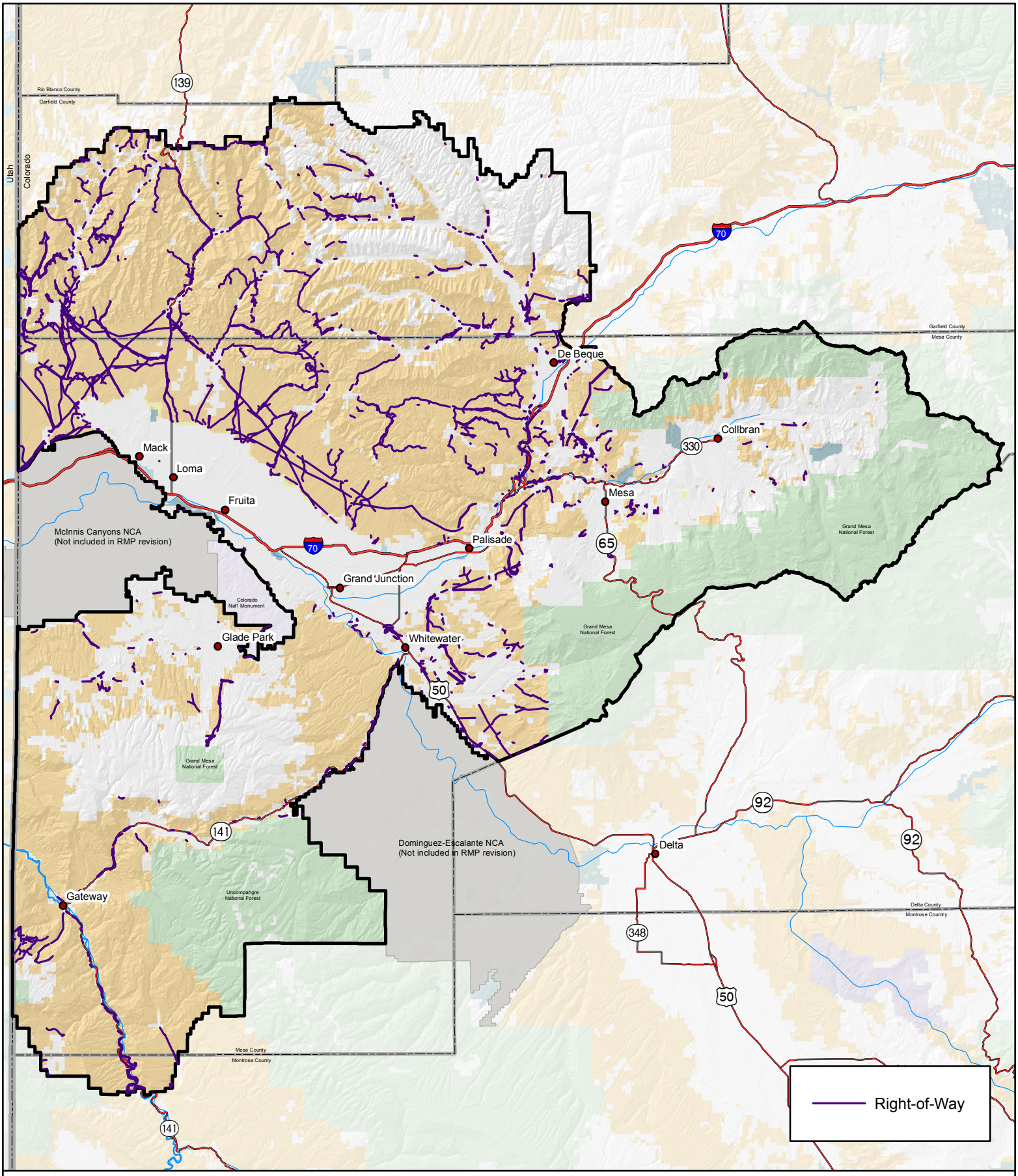
Figure A3-19

BLM Grand Junction Field Office Resource Management Plan



Source: BLM 2010a

Right-of-Way Locations

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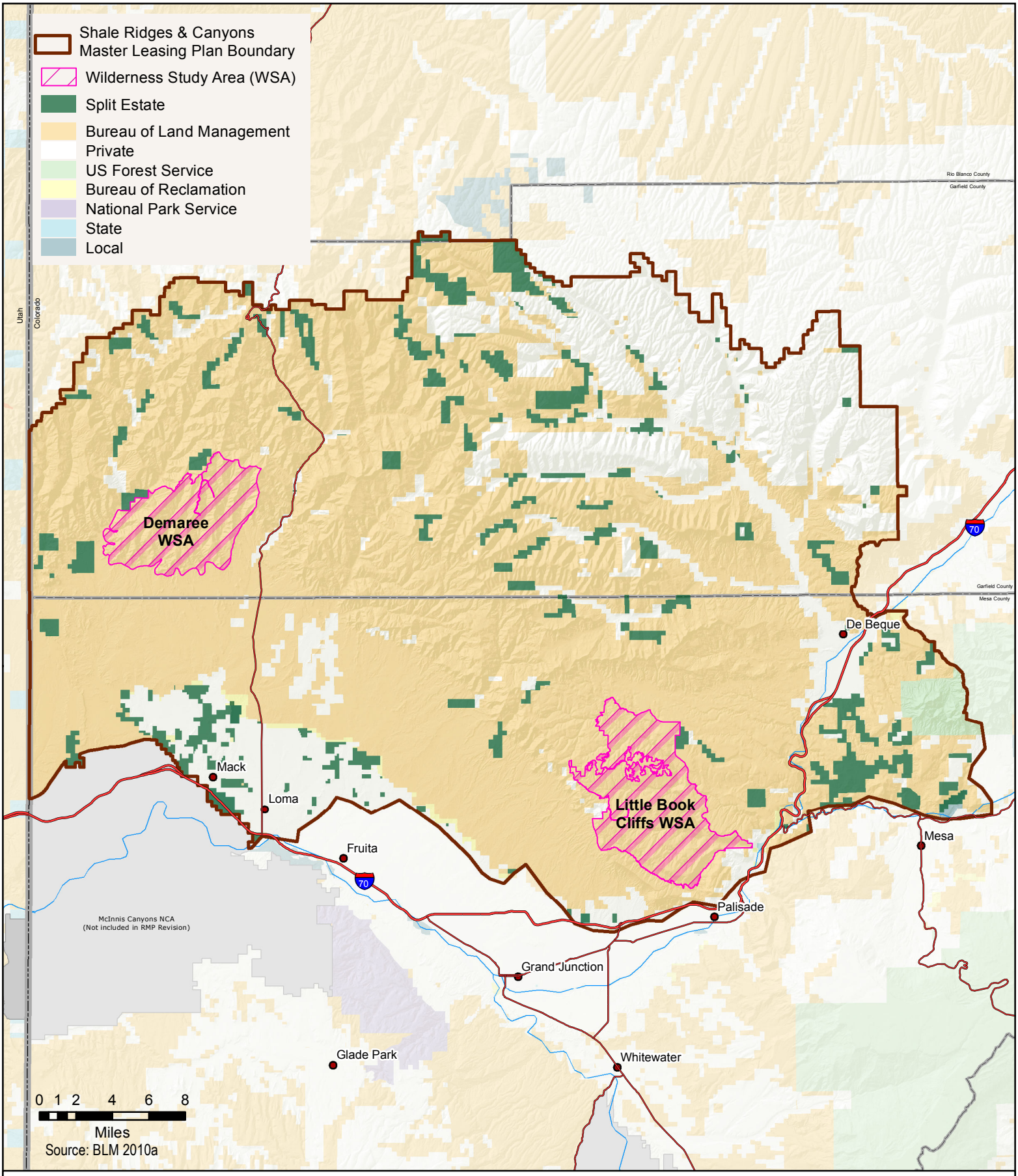
Figure A3-20

BLM Grand Junction Field Office Resource Management Plan



Master Leasing Plan Surface Management and Split Estate

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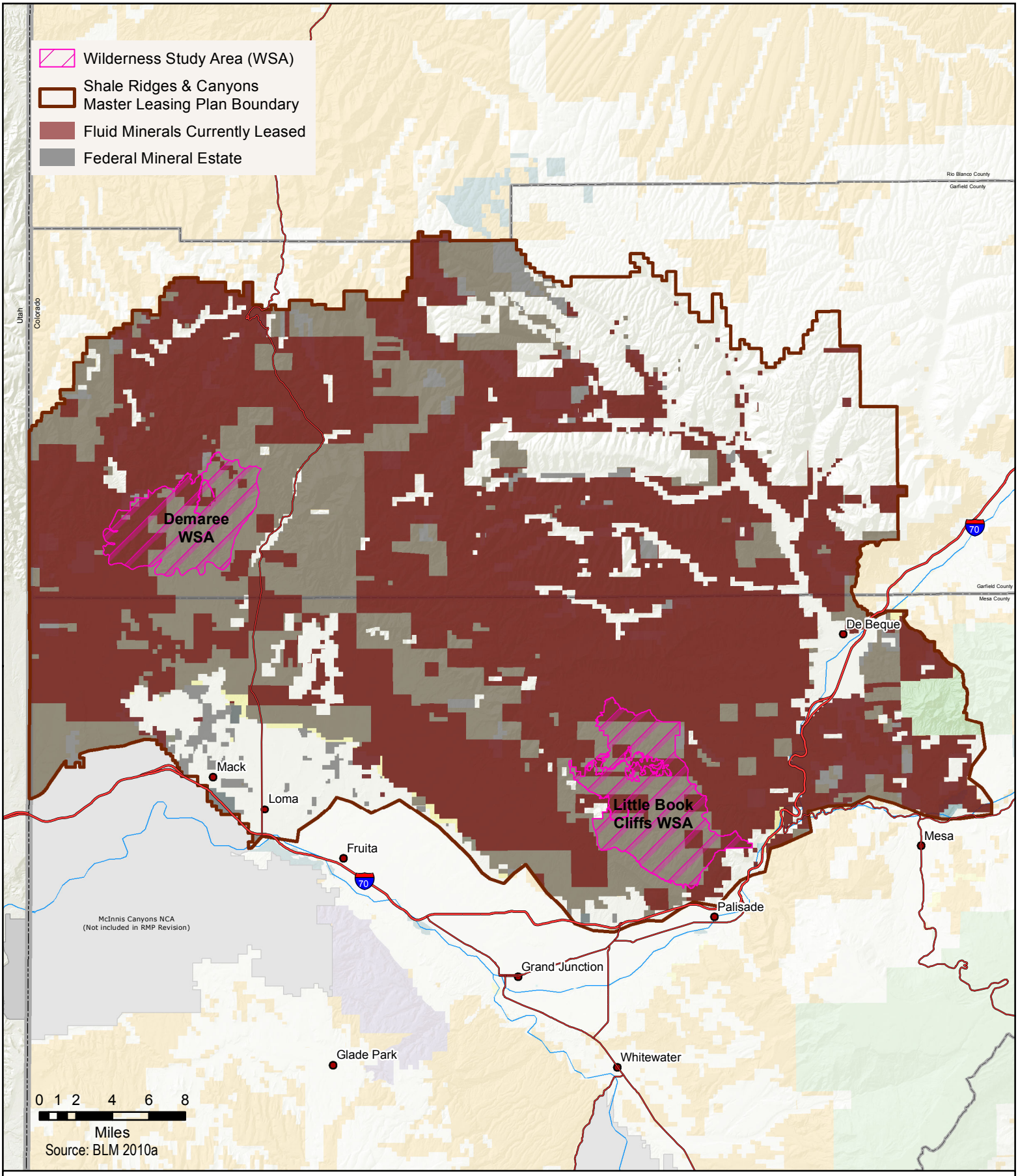
Figure A3-21



Master Leasing Plan Oil and Gas Leases

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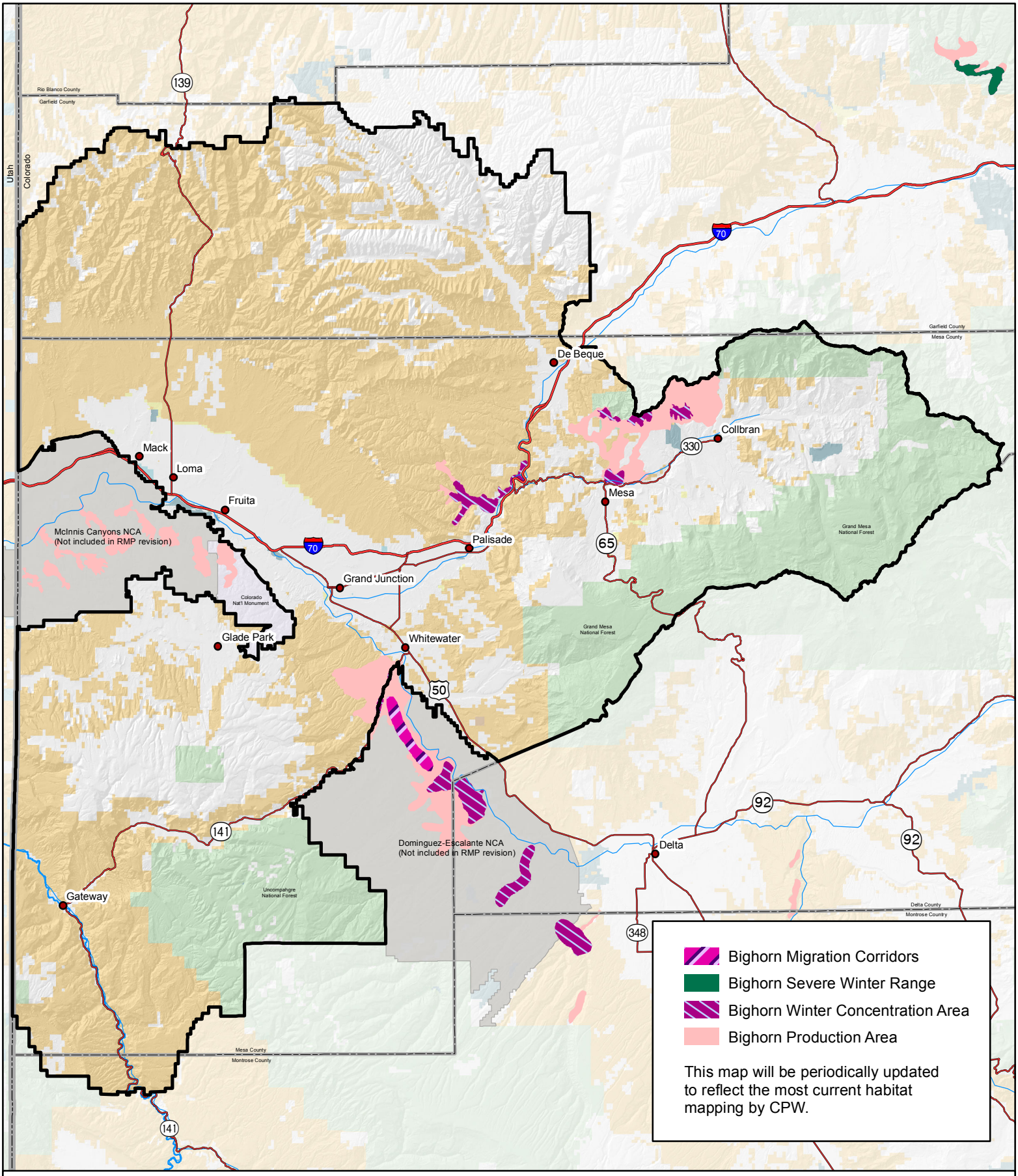
Figure A3-22



Source: BLM 2010a

Bighorn Sheep

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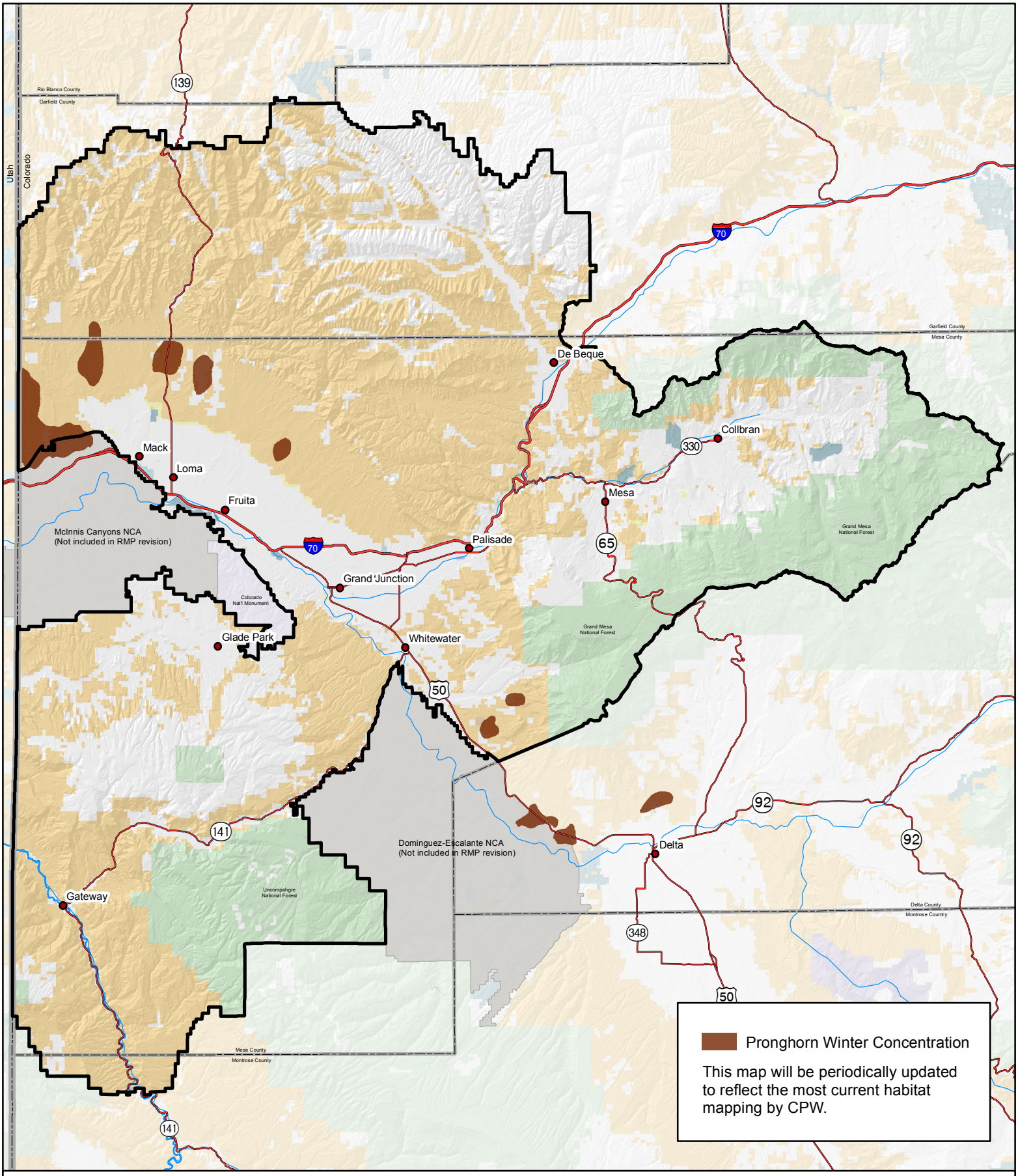
Figure A3-23



Source: BLM 2010a

Pronghorn Antelope

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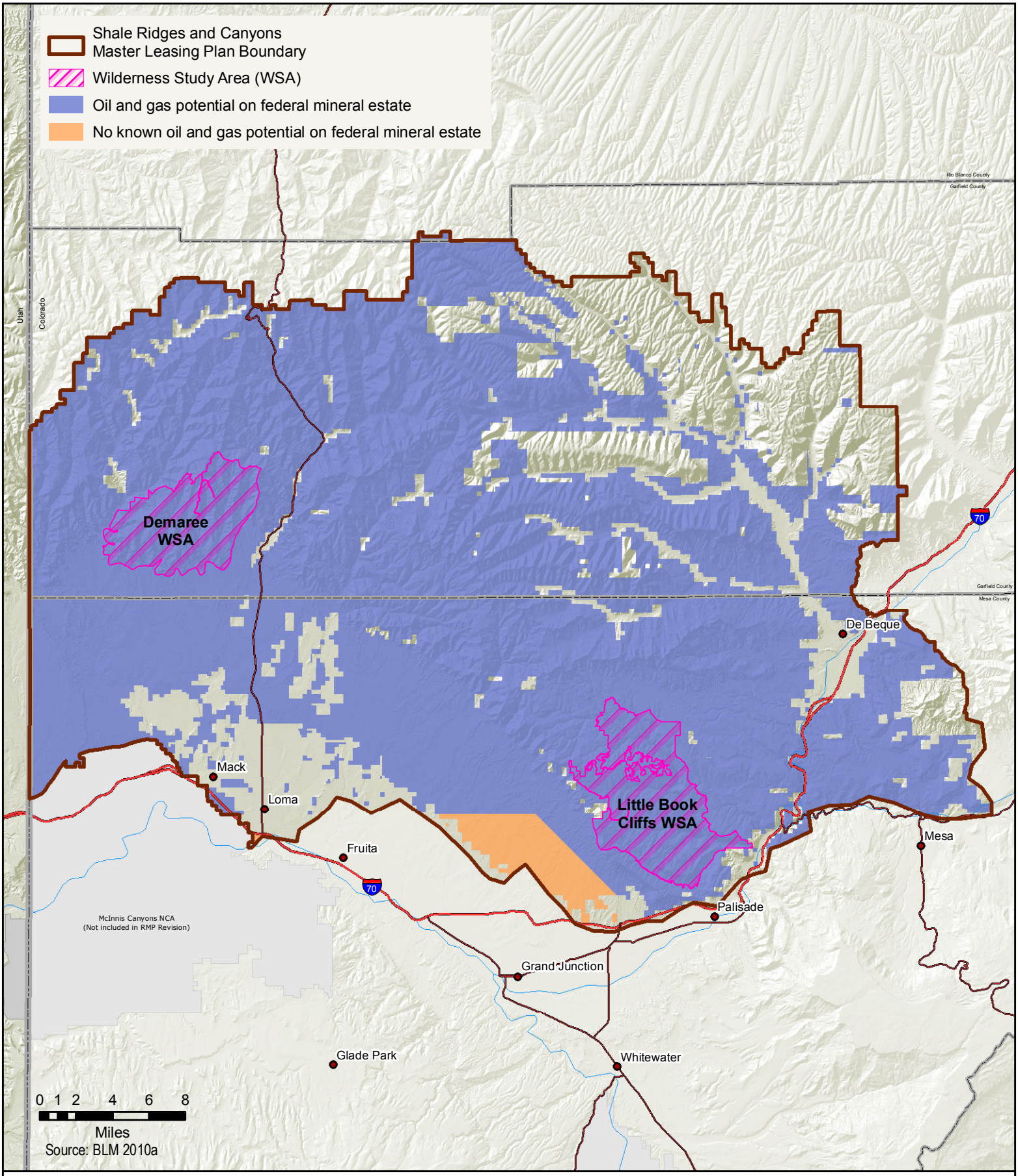
Figure A3-24



Master Leasing Plan Oil and Gas Potential

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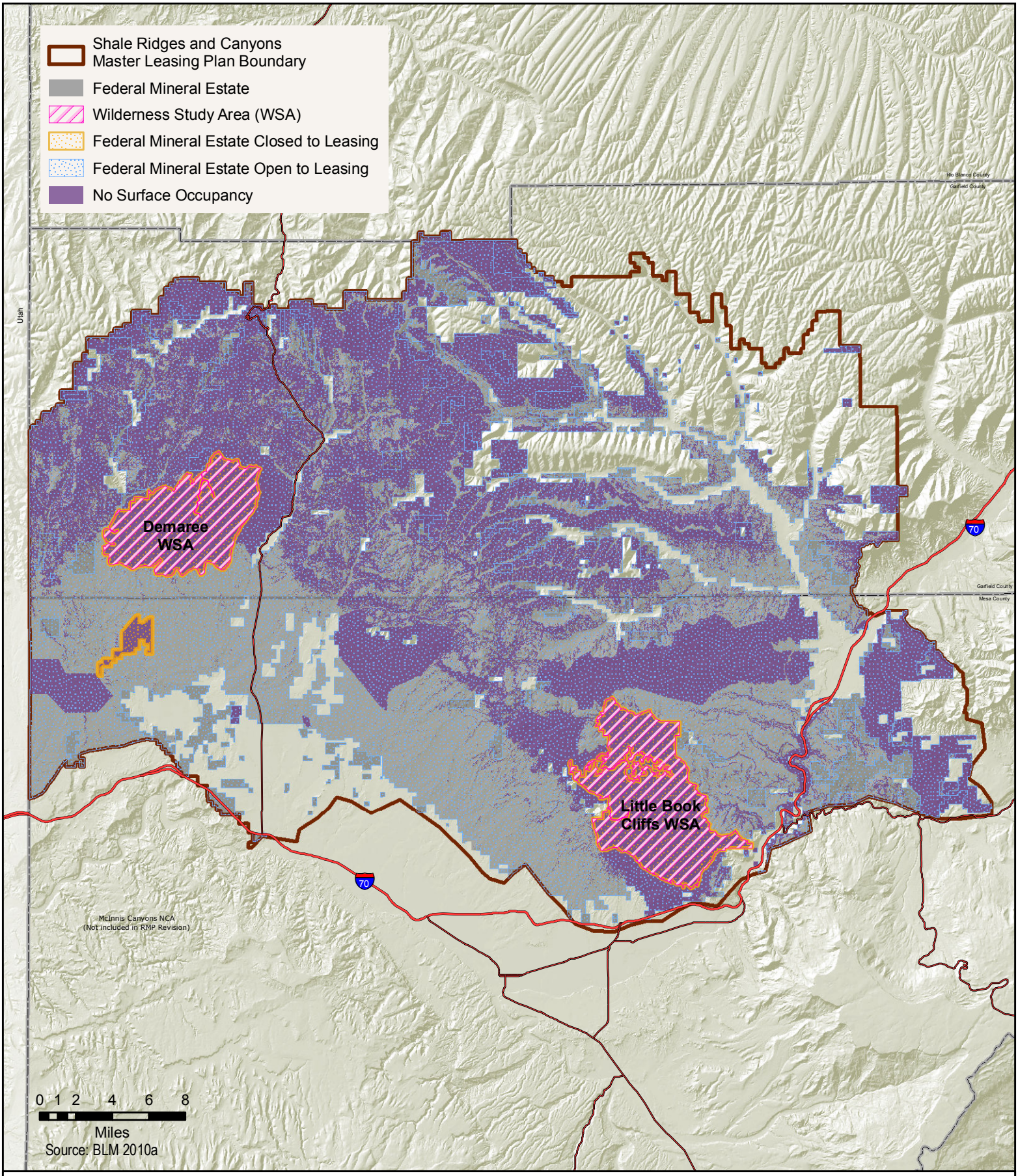
Figure A4-1



Master Leasing Plan No Surface Occupancy

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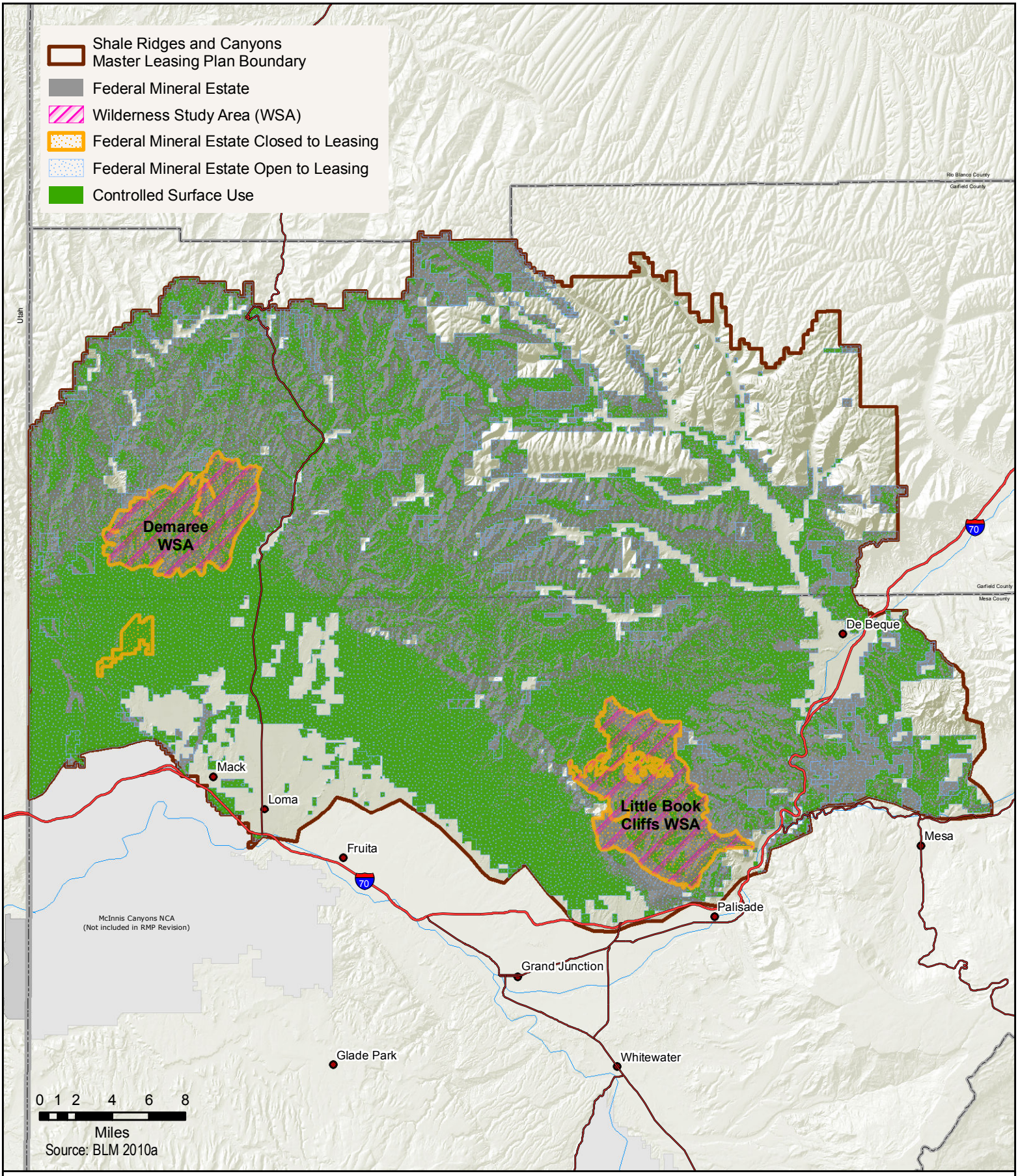
Figure A4-2



Master Leasing Plan Controlled Surface Use

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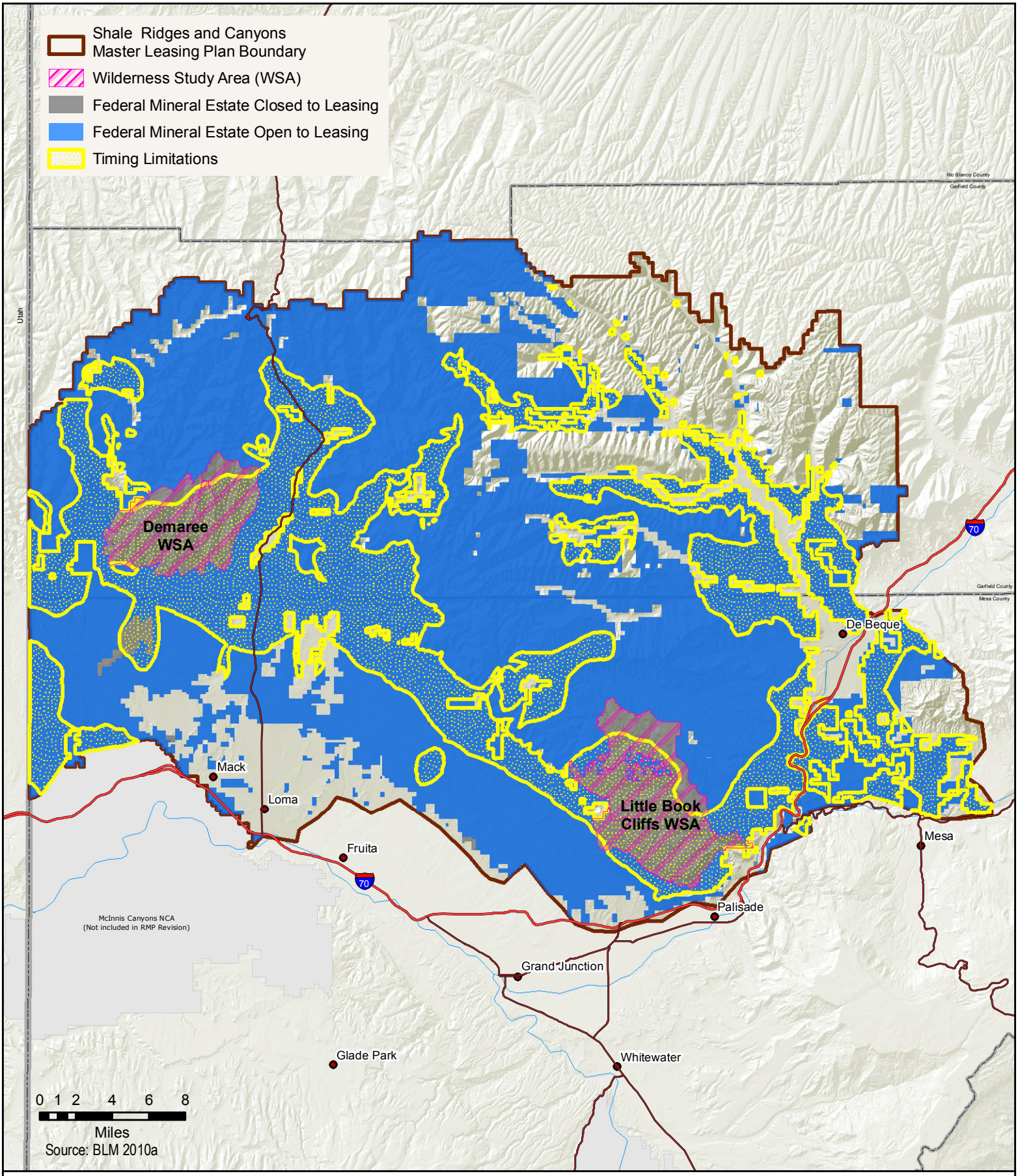
Figure A4-3



Master Leasing Plan Timing Limitations

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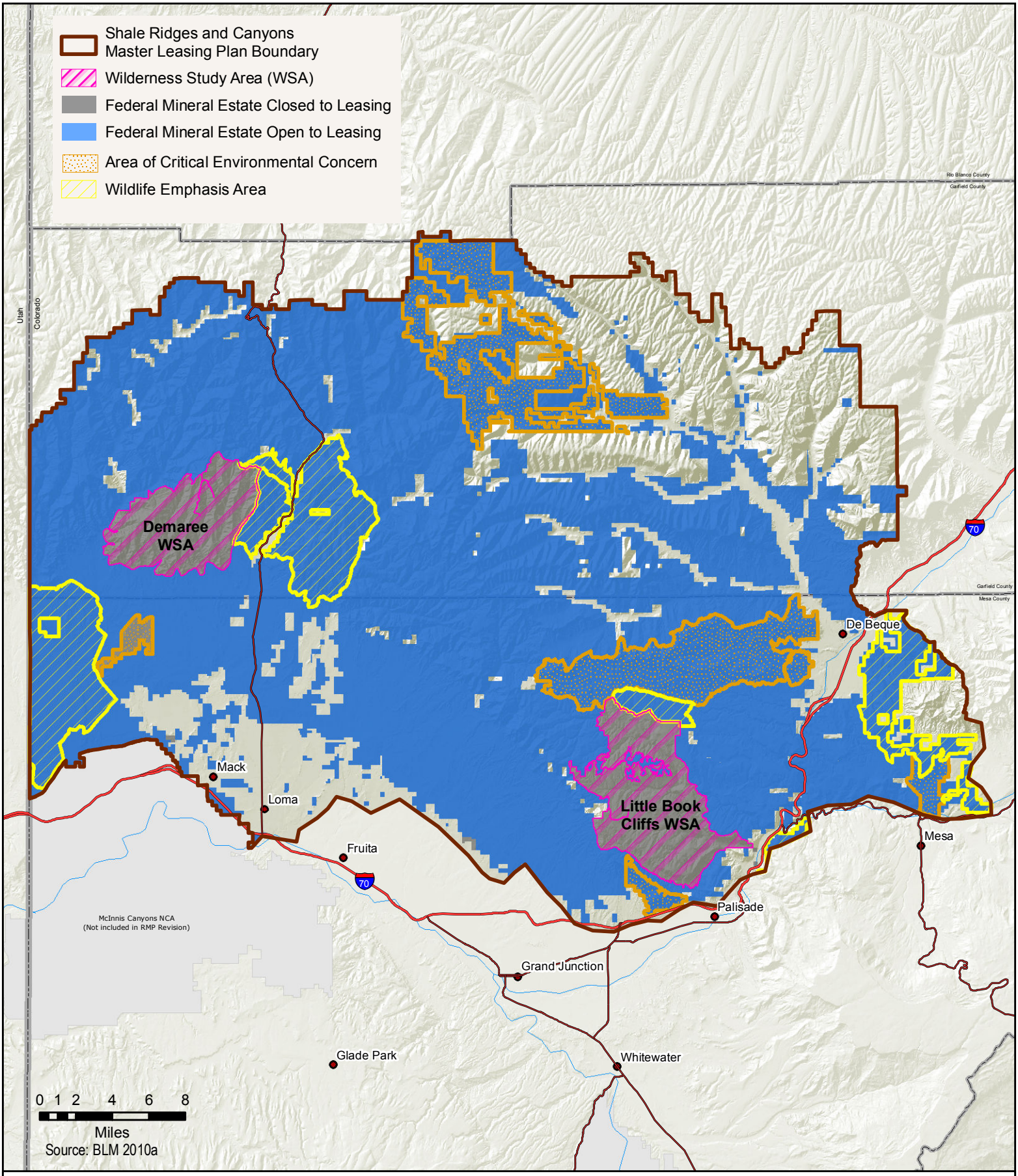
Figure A4-4

BLM Grand Junction Field Office Resource Management Plan



Master Leasing Plan ACECs and Wildlife Emphasis Areas

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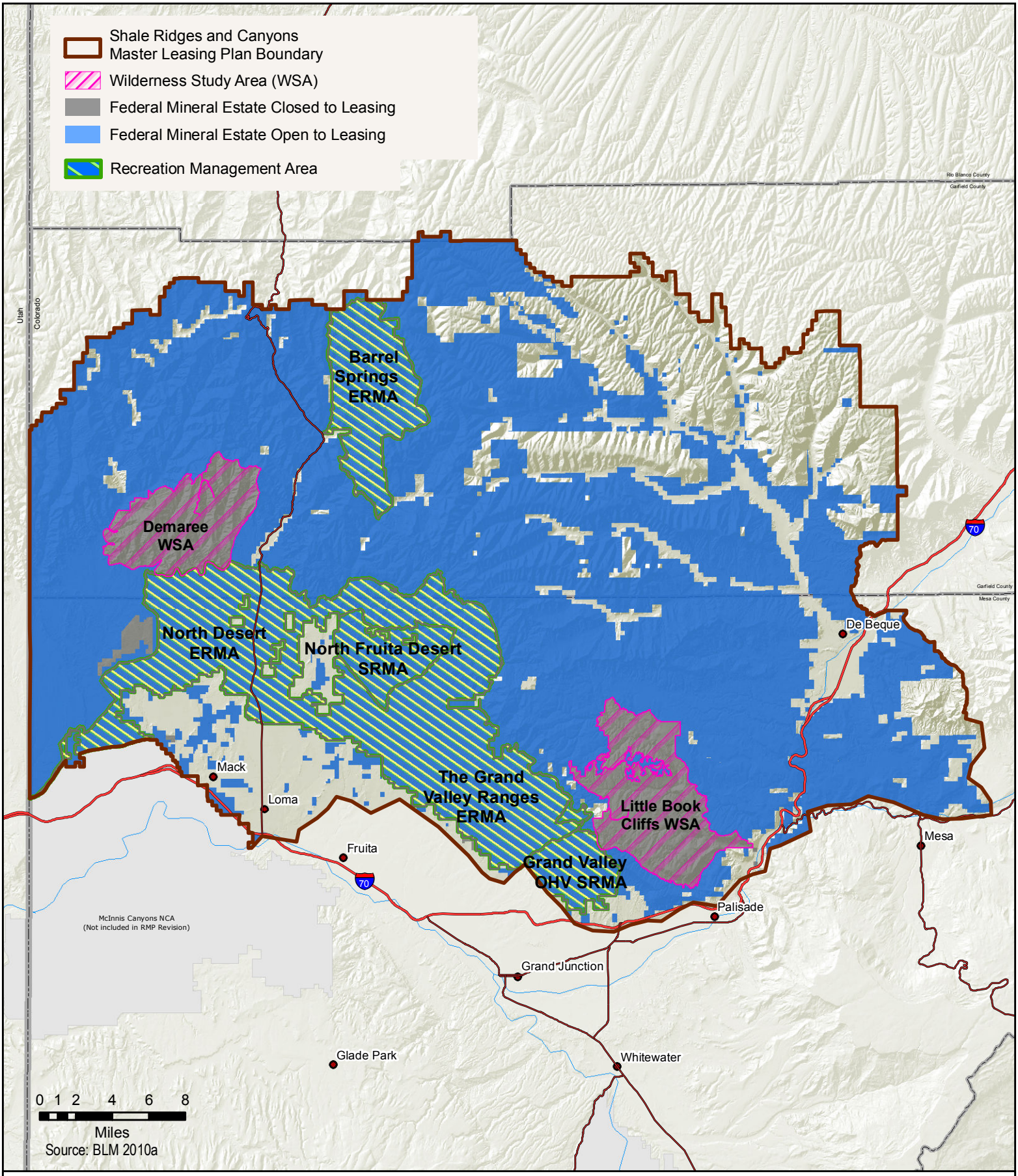
Figure A4-5



Master Leasing Plan Recreation Management Areas

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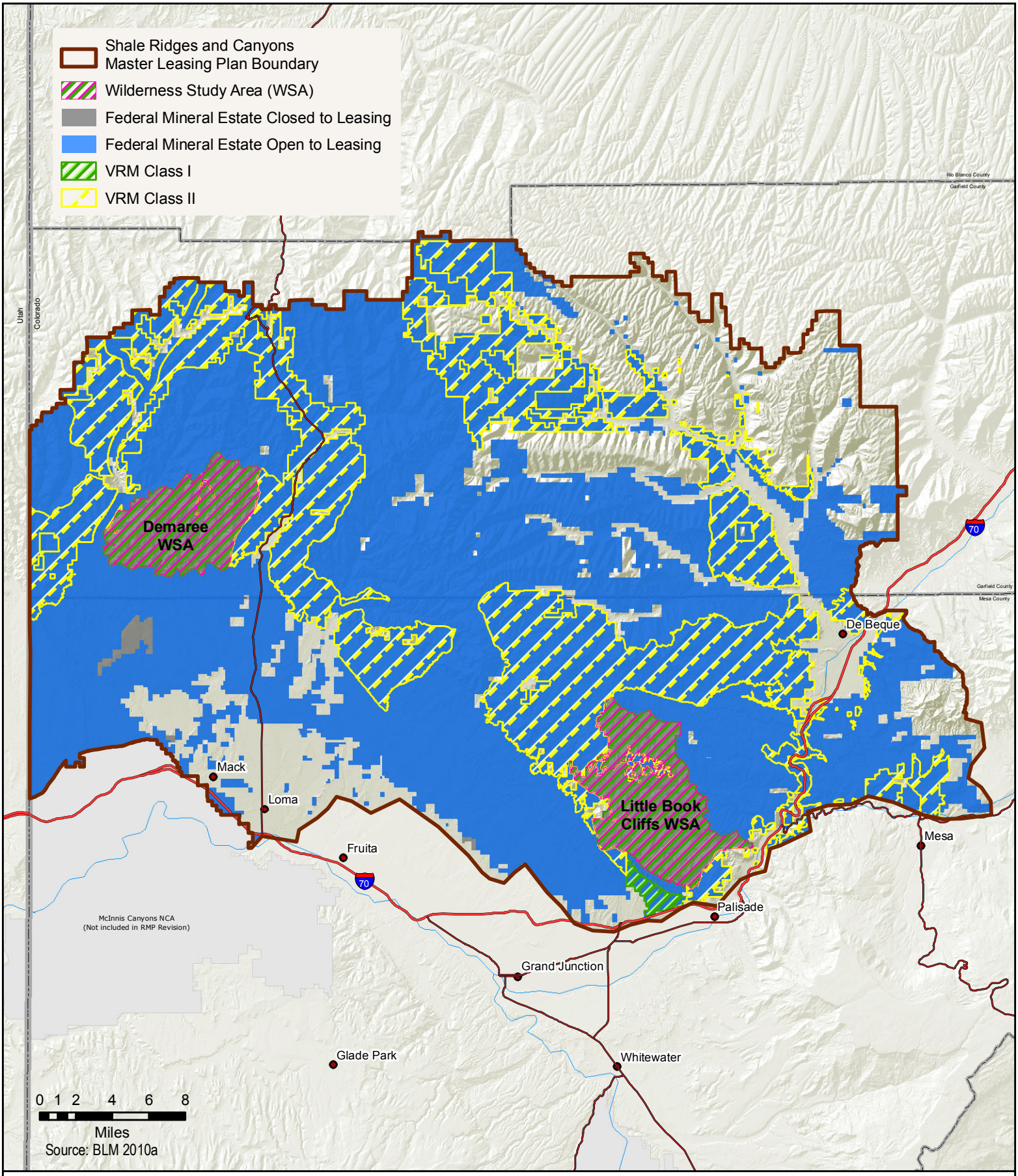
Figure A4-6



Master Leasing Plan VRM Classes

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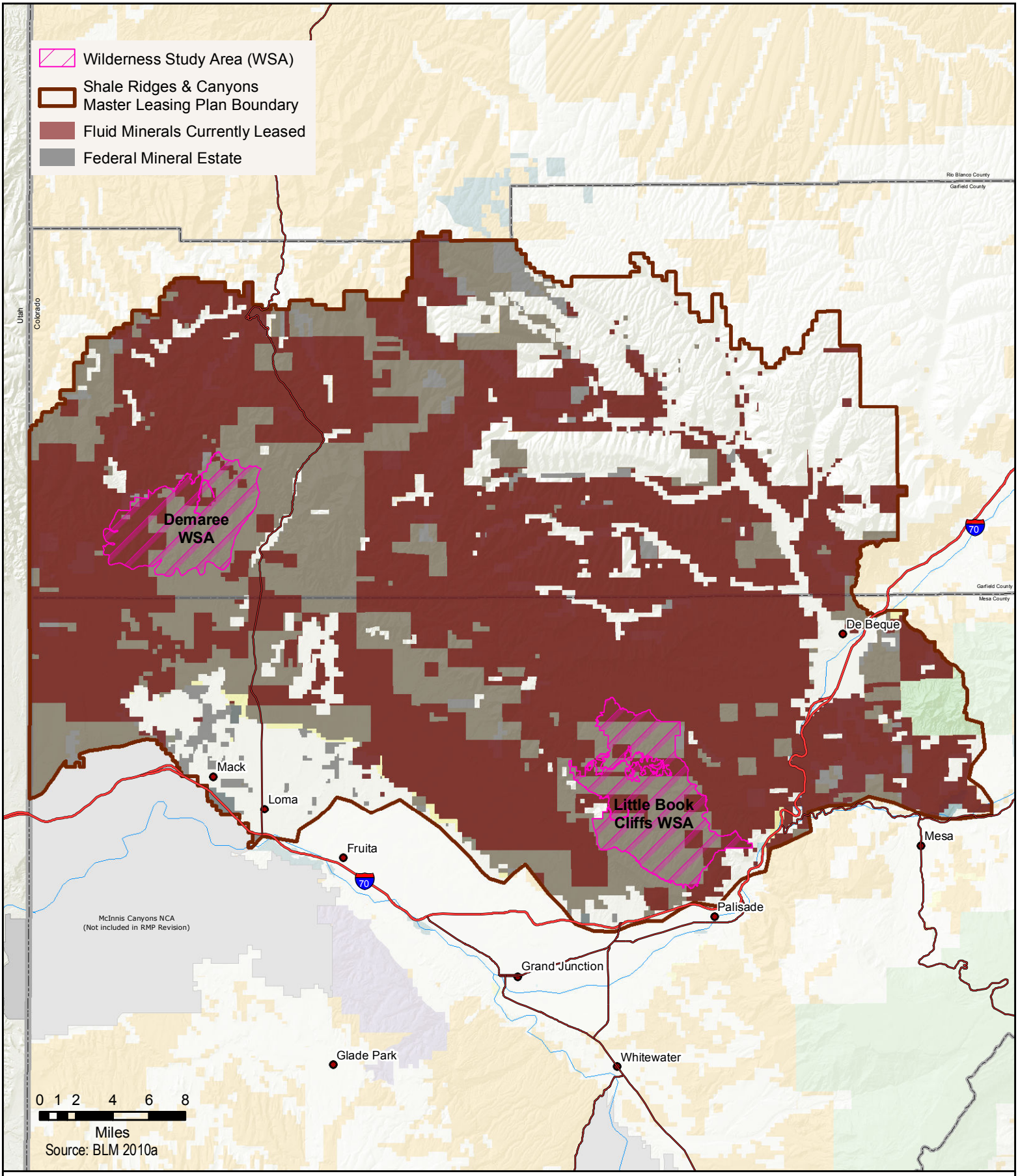
Figure A4-7



Current Oil and Gas Leases and Proposed Fluid Mineral Leasing

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Figure A4-8

Appendix B

Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

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APPENDIX B
STIPULATIONS APPLICABLE TO FLUID MINERAL LEASING AND OTHER SURFACE-DISTURBING ACTIVITIES

This appendix lists the stipulations for fluid mineral leasing (e.g., oil, gas, and geothermal) referred to throughout this Approved RMP. These stipulations will also apply, where appropriate, to all surface-disturbing activities (and occupancy) associated with land use authorizations, permits, and leases issued on BLM lands. The stipulations will not apply to activities and uses where they are contrary to laws, regulations, or specific program guidance. The intent of these stipulations is to consistently mitigate impacts by applying the same stipulation to all land use authorizations across the board. It is BLM's intent to incorporate the same level of restrictions, to the extent practicable, on agency proposed projects.

Stipulations also apply to fluid mineral leasing on lands overlying federal mineral estate, which includes federal mineral estate underlying BLM lands, privately owned lands, and state-owned lands. As such, federal mineral estate acres are greater than BLM surface acres. Within the planning area, the BLM administers 1,061,400 acres of surface estate and 169,800 acres of split-estate (i.e., where the surface rights are in private ownership and the rights to development of the mineral resources are publicly held and managed by the federal government [BLM]). The BLM will coordinate with the surface owner when applying stipulations on split-estate at the leasing phase. Other land management agencies may have their own surface management decisions for oil and gas development; the BLM will apply these decisions with consent and may add additional stipulations in cooperation with the surface-management agency. Acreages in this appendix reflect federal mineral estate overlain by BLM, private, and state-owned land. Acreages for stipulations are calculated based on current information and may be adjusted in the future through plan maintenance as conditions warrant.

Data from GIS was used in developing acreage calculations and for generating many of the figures in Appendix A. Calculations are dependent upon the quality and availability of data and most calculations in this RMP are rounded to the nearest one hundred acres. Given the scale of the analysis, the compatibility constraints between datasets, and lack of data for some resources, all calculations are approximate and serve for comparison and analytic purposes only. Likewise, the figures in Appendix A are provided for illustrative purposes and subject to the limitations discussed above. BLM may receive additional GIS data; therefore, acreages may be recalculated and revised at a later date.

Surface-disturbing activities are those that normally result in more than negligible (i.e., immeasurable, not readily noticeable) disturbance to vegetation and soils on public lands and accelerate the natural erosive process.

Surface disturbances could require reclamation and normally involve use and/or occupancy of the surface, causing disturbance to soils and vegetation. They include, but are not limited to: the use of mechanized earth-moving equipment; truck-mounted drilling and geophysical exploration equipment off designated routes; off-road vehicle travel in areas designated as limited or closed to off road vehicle use; construction of facilities such as oil and gas wells and/or pads; major recreation sites; new trail construction; and use of pyrotechnics and explosives. Surface disturbance is not normally caused by casual-use activities. Activities that are not normally considered surface disturbing include, but are not limited to: livestock grazing, cross country hiking, minimum impact filming, vehicular travel on designated routes, and minimum impact emergency response activities such as construction of fire line using hand tools as a tactic for suppression and management of unplanned fire. Even where stipulations prohibit surface disturbing activities, some surface disturbing activities may be allowed under exceptions from stipulations through the process described under **Section B.2.1**. (Example 1: A livestock fence proposed in an area covered by NSO-35 for Wildlife Emphasis Areas may be excepted from the stipulation if it can be shown that the project will have negligible impacts to wildlife through appropriate mitigation; or example 2: A natural gas well pad proposed in an area covered by CSU-8 for Old Growth Forests and Woodlands may be excepted from the stipulation if it can be shown that the project will have negligible impacts on old growth forests and woodlands through appropriate mitigation.)

The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by environmental analysis. All mitigation/conservation measures not already required as stipulations will be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations.

B.1 DESCRIPTION OF STIPULATIONS

Tables B-1 through **B-4** summarize the stipulations, and **Tables B-5** through **B-8** provide details of the stipulations and protected resources including exceptions, modifications, and waivers. Three types of stipulations could be applied to fluid mineral leasing or to land use authorizations, except for those authorized under the realty program: 1) NSO or other no surface-disturbing activities; 2) CSU; and 3) TL. ROW authorizations are governed by avoidance and exclusion area restrictions. ROW avoidance areas may have corresponding stipulations, as specifically noted in **Tables B-1** through **B-3** and **Tables B-5** through **B-7**. In these cases, denoted as NSO-X (ROWA), CSU-X (ROWA), or TL-X (ROWA), the surface area covered by the stipulation is considered a ROW avoidance area. Where stipulations are noted as *Partial ROWA*, only a portion of the area covered by the stipulation is a ROW avoidance area. See the glossary for descriptions of ROW avoidance and ROW exclusion.

Lease stipulations and lease notices will be applied to all new leases. On existing leases, the BLM will seek voluntary compliance or will develop Conditions of Approval for Applications for Permit to Drill to achieve resource objectives of the RMP (see BLM's Land Use Planning Handbook H-1601-1 at Appendix C, part H), when determined reasonable and consistent with valid existing rights.[1]

B.1.1 No Surface Occupancy (NSO) or Other Surface-disturbing Activities

Use or occupancy of the land surface for fluid mineral exploration or development and other surface-disturbing activities (as defined above) is prohibited to protect identified resource values. Acreages are provided in these tables for mapped stipulations.

The NSO/No Surface-disturbing Activities stipulation, a major constraint, includes stipulations that may have been worded as "No Surface Use/Occupancy," "No Surface Disturbance," "Conditional NSO," "ground-disturbing activity," and "Surface Disturbance or Surface Occupancy Restriction (by location)."

Areas identified as NSO/No Surface-disturbing Activities are open to fluid mineral leasing, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, waiver, or modification is granted (Section B.2). Access to fluid mineral deposits would require directional drilling from outside the boundaries of the NSO/No Surface-disturbing Activities areas.

An NSO/No Surface-disturbing Activities stipulation cannot be applied to operations conducted under the 1872 Mining Law unless the lands have been

[1] See also 43 CFR 1610.5-3(b): "…the Field Manager shall take appropriate measures, subject to valid existing rights, to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved plan or amendment within a reasonable period of time."

withdrawn from mineral entry and the operator has no valid and existing mining claims. A withdrawal is not considered a land use planning decision because it must be approved by the Secretary of Interior. Therefore, unless withdrawn from mineral entry with no pre-existing mining claims, areas identified as NSO/No Surface-disturbing Activities are open to operations conducted under the mining laws, and subject only to TL and CSU stipulations that are consistent with the rights granted under the mining laws. Where only an NSO stipulation exists, and no equivalent CSU or TL stipulations applies to operations conducted under the mining laws, the NSO stipulation will be applied as a CSU stipulation (i.e., the surface-disturbing activity could be shifted more than 200 meters [656 feet] to protect the specified resource or value if consistent with the rights granted under the mining laws).

An NSO/No Surface-disturbing Activities stipulation does not apply to existing facilities and the maintenance of existing facilities, such as, but not limited to, range improvements, oil and gas wells and/or pads, and major recreation sites.

B.1.2 Controlled Surface Use (CSU)

CSU is a category of moderate constraint stipulations that allows some use and occupancy of public land while protecting identified resources or values. A CSU stipulation allows the BLM to require special operational constraints, or the surface-disturbing activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value. Refer to **Tables B-2** and **B-6**. Acreages are provided in these tables for mapped stipulations.

B.1.3 Timing Limitations (TL)

Areas identified for TL, a moderate constraint, are closed to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified time frames. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, completions, and other operations considered to be intensive in nature are not allowed. Intensive maintenance and routine or scheduled workovers on wells is not permitted. Administrative activities are allowed at the discretion of the Authorized Officer. Refer to **Tables B-3** and **B-7**. Acreages are provided in these tables for mapped stipulations.

B.1.4 Lease Notice (LN)

A LN provides more-detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. A LN also addresses special items that lessees should consider when planning operations but does not impose additional restrictions. Lease Notices apply only to leasable minerals (e.g., oil, gas, and geothermal) and not to other types of leases, such as livestock grazing. Refer to **Tables B-4** and **B-8**.

B.1.5 Condition of Approval (COA)

Conditions of Approval are enforceable conditions or provisions (requirements) under which an Application for Permit to Drill is approved.

B.1.6 Mitigation and Monitoring

Stipulations are designed to provide resource-specific protections. Permit holders shall be responsible for the monitoring and reporting deemed necessary to document and maintain mandated protective measures. Also, the BLM retains the right to modify the operations of all surface and other disturbance activities caused by the presence of humans and to require additional specific or specialized mitigation following the submission of a detailed plan of development or other project proposal, a monitoring report, and an environmental analysis of such.

B.2 EXCEPTIONS, MODIFICATIONS, AND WAIVERS

Stipulations could be excepted, modified, or waived by the Authorized Officer. An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently exempts the surface stipulation. Any changes to stipulations will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of stipulations, see BLM Manuals 1624 and 3101.)

B.2.1 Exception, Modification, or Waiver Process

An exception, modification, or waiver may be granted at the discretion of the Authorized Officer if any of the standard exception, modification, or waiver criteria (**Section B.2.2**, **B.2.3**, **B.2.4**) are met; or if any of the exception, modification, or waiver criteria specific to the stipulation (**Tables B-5, B-6, B-7**) are met. In order to implement an action that will not normally be allowed because of a stipulation, the proponent must submit a request in writing for an exception, modification, or waiver. The request shall detail which exception, modification, or waiver criteria are met. When requested concurrently with an application, the exception, modification, or waiver is considered as part of the project proposal in RMP and NEPA compliance review. For separate requests, the request is considered as a unique action and is analyzed and documented individually for RMP and NEPA compliance. The Authorized Officer will make the final determination whether to grant an exception, modification, or waiver to stipulations. When use of heavy equipment is necessary for emergency response activities such as wildland fire suppression, management of unplanned fire, and emergency stabilization, the standard exception will be approved verbally by the BLM authorized officer as delegated (e.g., Incident Commander in coordination with Resource Advisor).

B.2.2 Standard Exception

The standard exception applies to all NSO/No Surface-disturbing Activities, CSUs, and TLs, even though the standard exception is not included in the "exception" portion of **Tables B-5** through **B-7**. In situations where a surface-disturbing activity is excepted, the activity could be subject to additional conditions of approval, reclamation measures, or BMPs. Measures required will be based on the nature and extent of resource values potentially affected by the surface-disturbing activity.

Fluid Minerals

An exception is a one-time exemption for a particular site within the leasehold. Exceptions are determined on a case-by-case basis. The stipulation continues to apply to all other sites within the leasehold. The Authorized Officer may grant an exception to a stipulation if it is determined that the factors leading to its inclusion in the lease have changed sufficiently such that:

1. the protection provided by the stipulation is no longer justified or necessary to meet resource objectives established in the RMP; or
2. proposed operations will not cause unacceptable impacts.

The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination.

All Programs Except Fluid Minerals

An exception may be granted by the Authorized Officer if it can be demonstrated that the surface-disturbing activity:

1. will not cause adverse impacts or will have negligible impacts to the resource or resource use that the stipulation was designated to protect; or
2. will improve the protected resource or resource use as defined by RMP objectives, standards, or conditions in the stipulation (e.g., fuels treatment that improves forbs in key wildlife habitat, or trail construction for resource protection in an ACEC or elsewhere);
3. is necessary to meet health and safety objectives such as fire suppression or fire emergency stabilization and rehabilitation; or
4. is necessary to protect federal mineral estate.

B.2.3 Standard Modification

A modification is a change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may or may not apply to all sites within the leasehold to which the restrictive criteria are applied.

In accordance with the provisions of 43 CFR 3101.1-4, the Authorized Officer may modify a stipulation or the area subject to the stipulation if it is determined that the factors leading to its inclusion in the lease have changed sufficiently. The Authorized Officer may modify a stipulation as a result of new information if:

1. the protection provided by the stipulation is no longer justified or necessary to meet resource objectives established in the RMP;
2. the protection provided by the stipulation is no longer sufficient to meet resource objectives established in the RMP; or
3. proposed operations will not cause unacceptable impacts.

The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination, and the modification may be subject to public review for at least a 30-day period.

B.2.4 Standard Waiver

A waiver is a permanent exemption from a lease stipulation. When a waiver is granted, the stipulation no longer applies anywhere within the leasehold.

In accordance with the provisions of 43 CFR 3101.1-4, the Authorized Officer may waive a stipulation if it is determined that the factors leading to its inclusion in the lease no longer exist. The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination. The waiver may be subject to public review for at least a 30-day period.

No permanent exemptions or waivers are authorized unless the areas mapped as possessing the attributes are field verified by BLM staff to lack those attributes.

B.3 Standard Terms and Conditions for Fluid Mineral Leasing

Oil and gas development is subject to standard terms and conditions of the lease. Onshore Oil and Gas Order No. 1 (Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations) regulations (43 CFR 3160) give the BLM the ability to relocate proposed operations up to 200 meters (656 feet) and prohibit surface-disturbing operations for a period not to exceed 60 days.

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
	Water Resources		
HYDROLOGY RIVER NSO CO	Hydrology River		✓
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		✓
NSO-4 *(ROWA)*	Lentic Riparian Areas (including springs, seeps, and fens)		✓
NSO-5	Palisade and Grand Junction Municipal Watersheds		✓
	Soils and Geology		
GEOLOGY SLOPE NSO CO	Geology Slope		✓
GEOLOGY SOIL NSO CO	Geology Soil		✓
	Vegetation		
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		✓
NSO-4 *(ROWA)*	Lentic Riparian Areas (including springs, seeps, and fens)		✓
	Special Status Species		
HYDROLOGY RIVER NSO CO	Hydrology River		✓
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		✓
NSO-12 *(Partial ROWA)*	ACECs		✓
NSO-13 *(ROWA)*	Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species		✓
NSO-23 *(ROWA)*	Golden Eagle Nest Sites		✓
NSO-24 *(ROWA)*	Bald Eagle Nest Sites		✓
NSO-25 *(ROWA)*	Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (6.4 kilometers [4 miles])		✓
NSO-26 *(ROWA)*	Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad (no buffer)		✓
WILDLIFE BAT	Wildlife Bat		✓

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
NSO CO			
NSO-30 *(ROWA)*	Occupied Prairie Dog Towns (no buffer)		✓
	Fish and Wildlife		
NSO-32 *(ROWA)*	Research Sites		✓
NSO-12 *(Partial ROWA)*	ACECs		✓
RECREATION PARKS NSO CO	Recreation Parks		✓
NSO-34 *(ROWA)*	Elk Production Area		✓
WILDLIFE HABITAT NSO CO	Wildlife Habitat		✓
	Wild Horses		
NSO-36 *(ROWA)*	Little Book Cliffs Wild Horse Range		✓
	Cultural Resources		
NSO-37 *(ROWA*	Allocation to Conservation Use Category		✓
NSO-38 *(ROWA*	Allocation to Traditional Use Category		✓
NSO-39 *(ROWA*	Cultural Resources (Indian Creek)		✓
	Visual Resources		
VISUAL CLASS I NSO CO	Visual Class I		✓
	Lands Managed for Wilderness Characteristics		
LANDS WITH WILDERNESS CHARACTER-ISTICS NSO CO	Lands with Wilderness Characteristics		✓
	Recreation and Visitor Services		
RECREATION SRMA NSO CO	Recreation SRMA		✓
RECREATION PARKS NSO CO	Recreation Parks		✓
	Fluid Minerals (Oil and Gas and Geothermal Resources)		
RECREATION PARKS NSO CO	Recreation Parks		✓
	ACECs		
NSO-12 *(Partial ROWA)*	ACECs		✓
	Wilderness Study Areas		
NSO-43	Wilderness Study Areas		✓
	National Trails		

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
NSO-45 *(ROWA)*	Old Spanish National Historic Trail (50 meters [164 feet])		✓

[1]Details of these stipulations are provided in Table B-5, No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.

Table B-2
Summary of Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
	Water Resources		
CSU-39	Roan and Carr Creeks ACEC		✓
CSU-3 *(ROWA)*	Definable Streams		✓
CSU-4 *(ROWA)*	Collbran and Mesa/Powderhorn Source Water Protection Areas, and Jerry Creek Watershed		✓
	Soils and Geology		
GEOLOGY SOIL CSU CO	Geology Soil		✓
	Vegetation		
PLANT COMMUNITY CSU CO	Plant Community		✓
	Special Status Species		
CSU-9 *(ROWA)*	BLM Sensitive Plant Species Occupied Habitat		✓
CSU-10 *(ROWA)*	Wildlife Habitat		✓
CSU-13 *(ROWA)*	Osprey Nest Sites		✓
CSU-14 *(ROWA)*	Ferruginous Hawk Nest Sites		✓
CSU-15 *(ROWA)*	Red-tailed Hawk Nest Sites		✓
CSU-16 *(ROWA)*	Swainson's Hawk Nest Sites		✓
CSU-17 *(ROWA)*	Peregrine Falcon Nest Sites		✓
CSU-18 *(ROWA)*	Prairie Falcon Nest Sites		✓
CSU-19 *(ROWA)*	Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls)		✓
CSU-22 *(ROWA)*	Kit Fox Dens		✓
CSU-23 *(ROWA)*	Occupied Prairie Dog Towns		✓
	Fish and Wildlife		
CSU-10 *(ROWA)*	Wildlife Habitat		✓
WILDLIFE HABITAT CSU CO	Wildlife Habitat		✓
CSU-24 *(ROWA)*	Deer and Elk Migration and Movement Corridors		✓
	Cultural Resources		
CSU-27 *(ROWA*	Allocation to Scientific Use Category		✓
CSU-28 *(ROWA*	Allocation to Public Use Category		✓
CSU-29 *(ROWA)*	Sub-surface Inventory		✓
	Visual Resources		
CSU-30 *(ROWA)*	VRM Class II		✓
	Recreation and Visitor Services		
CSU-31 *(ROWA)*	Recreation		✓

Table B-2
Summary of Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
CSU-32	Recreation Management Areas		✓
	Lands and Realty		
DISPOSAL CSU CO	Disposal		✓
	Coal		
COAL MINE CSU CO	Coal Mine	✓	
	ACEC		
CSU-39	Roan and Carr Creeks ACEC		✓
	National and BLM Byways		
CSU-37	Scenic Byways (805 meters [0.5-mile])		✓

[1]Details of these stipulations are provided in Table B-6, Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.

Table B-3
Summary of Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number	Protected Resource	Fluid Minerals Only	All Surface-disturbing Activities
	Special Status Species		
TL-1 *(ROWA)*	Salmonid and Native, Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace)		✓
TL-3 *(ROWA)*	Migratory Bird Habitat		✓
WILDLIFE RAPTOR NESTS TL CO	Raptor Nests		✓
WILDLIFE SENSITIVE RAPTOR NESTS TL CO	Sensitive Raptor Nests		✓
TL-13 *(ROWA)*	Golden Eagle Nest Sites		✓
TL-14 *(ROWA)*	Bald Eagle Nest Sites		✓
TL-15 *(ROWA)*	Bald Eagle Winter Roost		✓
TL-16 *(ROWA)*	Occupied Sage-grouse Winter Habitat		✓
TL-17 *(ROWA)*	Sage-grouse Leks (6.4 kilometers [4 miles])		✓
TL-19 *(ROWA)*	Occupied Prairie Dog Towns		✓
	Fish and Wildlife		
TL-1 *(ROWA)*	Salmonid and Native, Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace)		✓
TL-20 *(ROWA)*	Big Game Winter Range		✓
BIG GAME PRODUCTION TL CO	Big Game Production		✓
TL-22 *(ROWA)*	Pronghorn Wintering Habitat		✓
	Wild Horses		

[1]Details of these stipulations are provided in Table B-7, Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.

Table B-4
Summary of Lease Notices (LN)
Applicable to Fluid Mineral Leasing[1]

Stipulation Number	Protected Resource
	Air Resources
CO-56	Air Resources
	Water Resources
LN-1	Source Water Protection Areas
	Special Status Species
LN-3	Biological Inventories
LN-4	Threatened and Endangered Species / Colorado Hookless Cactus
	Fish and Wildlife
LN-3	Biological Inventories
LN-5	Working in Wildlife Habitat
	Paleontological Resources
LN-6	Class 4 and 5 Paleontological Areas
	Lands and Realty
LN-7	Powderhorn Ski Area

[1]Details of these stipulations are provided in Table B-8, Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Fluid Mineral Leasing.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Water Resources
HYDROLOGY RIVER NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major river: Colorado, Gunnison, and Dolores Rivers **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect rivers and adjacent aquatic habitat that provide: a) *special status* or *critical* fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: f) 100-year floodplain, and g) high scenic and recreation values of major rivers. Minimizing potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian Characteristics.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings. • For actions requiring individual permits through the USACE, require a Licensed Professional Engineer to approve and stamp project design, implementation, and reclamation plans. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone) transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish bearing streams in the GJFO.
NSO-4 *(ROWA)* **Lentic Riparian Areas (including springs, seeps, and fens).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 100 meters (328 feet) from the mapped extent of perennial, intermittent, and ephemeral streams; riparian areas, fens and/or wetlands; and water impoundments. For streams, the buffer will be measured from ordinary high-water mark (bank-full stage), whereas for wetland features, the buffer will be measured from the edge of the mapped extent. **PURPOSE:** To maintain the proper functioning condition, including the vegetation, hydrologic, and geomorphic functionality of wetland features. To protect water quality, riparian zones, fens, fish habitat, and aquatic habitat, and to provide a clean, reliable source of water for downstream users. Buffers are expected to indirectly benefit migratory birds, wildlife habitat, amphibians, and other species. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because surface disturbance within the minimum 100-meter (328-foot) buffer may impair proper function and condition of springs, seeps, and fens. Source areas (for springs, seeps, and fens) are delicate and susceptible to any alteration of natural flow patterns, soil infiltration rates, or drainages within the contributing watershed. Changes to these variables may dewater lentic riparian areas, greatly impairing the system's ability to properly function.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
NSO-5 **No Surface Occupancy (Palisade and Grand Junction Municipal Watersheds).** *BLM surface/ federal minerals:* 900 acres *Private or State surface/federal minerals:* 8,300 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and other surface-disturbing activities in the Palisade and Grand Junction municipal watersheds. **PURPOSE:** To protect municipal watersheds providing drinking water to local communities. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions will require professionally engineered design and construction for a 100-year flood event along strait and stable stream reaches. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce potential for groundwater contamination and/or dewatering of municipal sources.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Soils and Geology
GEOLOGY SOIL NSO CO *BLM surface/ federal minerals:* 54,500 acres *Private or state surface/federal minerals:* 3,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed on lands with soils, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, with the following special characteristics: Baxter/Douglas Pass Slump Area and the Plateau Creek Slump Area. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (e.g., from landslides and mass wasting). **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION: JUSTIFICATION:** This stipulation is necessary because accelerated erosion from fragile soils in the GJFO is a major contributor of nonpoint source pollution in rivers and streams. The 25-meter (82-foot) buffer is necessary to adequately protect fragile soils from stormwater runoff and other impacts associated with surface-disturbing actions.
GEOLOGY SLOPE NSO CO *BLM surface/ federal minerals:* 347,700 acres *Private or State surface/federal minerals*: 28,800 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use on lands with steep slopes greater than 40 percent. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (e.g., from landslides and mass wasting). **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because accelerated erosion from soils on steep slopes in the GJFO can be a major contributor of nonpoint source pollution in rivers and

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	streams.
	Vegetation
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian Characteristics.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone) transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish bearing streams in the GJFO.
NSO-4 *(ROWA)* **Lentic Riparian Areas (including springs, seeps, and fens).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because surface disturbance within the minimum 100-meter (328-foot) buffer may impair proper function and condition of springs,

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	seeps, and fens. Source areas (for springs, seeps, and fens) are delicate and susceptible to any alteration of natural flow patterns, soil infiltration rates, or drainages within the contributing watershed. Changes to these variables may dewater lentic riparian areas, greatly impairing the system's ability to properly function.
	Special Status Species
HYDROLOGY RIVER NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major river: Colorado, Gunnison, and Dolores Rivers **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect rivers and adjacent aquatic habitat that provide: a) *special status* or *critical* fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: f) 100-year floodplain, and g) high scenic and recreation values of major rivers. Minimizing potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian**	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Characteristics. ***All Surface-disturbing Activities***	riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone) transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish-bearing streams in the GJFO.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
NSO-12 *(Partial ROWA)* **ACECs.** 34,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive species: • Atwell Gulch (2,900 acres); • Badger Wash (2,200 acres); • Pyramid Rock (1,300 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). **PURPOSE:** • Atwell Gulch: To protect threatened and sensitive plants. • Badger Wash: To protect sensitive plants. • Plateau Creek: To protect sensitive fish species. • Pyramid Rock: To protect known threatened, proposed, and sensitive plants. • South Shale Ridge: To protect threatened, proposed, and sensitive plants. • Unaweep Seep: To protect sensitive plants and Great Basin Silverspot Butterfly habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** This stipulation may be modified to include species listed as threatened, endangered, proposed, candidate, or sensitive in the future. This stipulation may also be modified to account for the change in status of species protected in this stipulation. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect critical habitat for threatened, proposed, and sensitive plants.
NSO-13 *(ROWA)* **Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal**	**STIPULATION:** Prohibit certain surface uses, as specified below, to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred. **PURPOSE:** To protect threatened, endangered, proposed, and candidate species from indirect impacts or loss of immediately adjacent suitable habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO may be altered if

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Species. ***All Surface-disturbing Activities***	all of the following conditions are met: 1. Section 7 consultation with USFWS on threatened or endangered species has been completed; 2. Valid current surveys for protected species have been completed and submitted; 3. Mitigation has been applied to avoid adverse impacts to protected species and the proponent will submit monitoring reports; and 4. The proposed disturbance will occur in unsuitable habitat. Other surface-disturbing activities may be allowed in suitable habitat if conditions 1 through 3 above are met, and the purpose or the result of the activity will improve habitat conditions for the protected species. Allow occupancy within 200 meters (656 feet) when terrain and topography provide adequate protections **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER**: Standard waivers apply (Section B.2). **JUSTIFICATION**: This stipulation is necessary to protect threatened, endangered, proposed, and candidate species and ensure the preservation of their habitat (including plant pollinator habitat).
NSO-23 *(ROWA)* **Golden Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-mile) of active golden eagle nest sites and associated alternate nests. **PURPOSE:** To protect golden eagle nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect golden eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
NSO-24 *(ROWA)*	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Bald Eagle Nest Sites. ***All Surface-disturbing Activities***	mile) of active bald eagle nests. **PURPOSE:** To protect bald eagle nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect bald eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
NSO-25 *(ROWA)* **Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (4 miles).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 6.4 kilometers (4 miles) of an active lek or within sage-grouse nesting and early brood-rearing habitat. **PURPOSE:** To protect breeding, nesting, and brood-rearing habitat for the Gunnison and greater sage-grouse. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending upon the active status of the lek or the geographical relationship of topographical barriers and vegetation to the lek site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impacts on Greater and Gunnison Sage-Grouse. The four mile buffer is consistent with current scientific research recommendations (The Parachute-Piceance-Roan (PPR) Greater Sage-Grouse Work Group 2008).
NSO-26 *(ROWA)* **Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad (no buffer).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within all identified canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, long-nosed leopard lizard (*Gambelia wislizenii*), and boreal toad breeding and denning sites. **PURPOSE:** To protect breeding habitat for canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, long-nosed leopard lizard, and boreal toad. Note: no midget faded rattlesnake or boreal toad breeding locations are currently identified in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important breeding habitat for these species. The Northern Leopard Frog has been petitioned for listing under the Endangered Species Act of 1973.
WILDLIFE BAT NSO CO ***All Surface-disturbing***	**STIPULATION:** No surface occupancy or use is allowed within a 402 meter (0.25 mile) radius of the entrance of maternity roosts or hibernacula of BLM sensitive bat species, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Activities	<SPECIES> **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect sensitive bat species' maternity roosts and hibernacula. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impacts on important bat areas.
NSO-30 *(ROWA)* **Occupied Prairie Dog Towns (no buffer).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area) within active white-tailed prairie dog towns in the Prairie Canyon Wildlife Emphasis Area. **PURPOSE:** To maintain or improve white-tailed prairie dog habitat and distribution. **EXCEPTION:** Standard exceptions apply (Section B.2). Additional exception criteria include activities that avoid the center of active towns while maintaining the integrity of the town's social structure. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs, a keystone species whose population has been declining across the western US.
	Fish and Wildlife
NSO-32 *(ROWA)* **Research Sites.** 130 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities in approved research sites including, but not limited to, the Ant Research Area (16 Road) and the Owl Banding Station (south of DeBeque). **PURPOSE:** To maintain the integrity of ongoing research stations. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions will be granted for work to be done in the research areas consistent with the goals and objectives of the research being conducted on the site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	JUSTIFICATION: This stipulation is necessary to protect long-term, ongoing research sites within the GJFO. If research sites are impacted, they incur the potential for research findings to be negatively affected.
NSO-12 *(Partial ROWA)* **ACECs.** 74,800 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive species and habitat: • Atwell Gulch (2,900 acres); • Indian Creek (2,300 acres); • Palisade (32,200 acres); • Rough Canyon (2,800 acres); • Sinbad Valley (6,400 acres); and • South Shale Ridge (28,200 acres). **PURPOSE:** • Atwell Gulch: To protect wildlife habitat. • Colorado River Riparian: To protect fisheries values. • Glade Park-Pinyon Mesa: To protect Gunnison Sage-Grouse critical habitat. • Indian Creek: To protect wildlife values. • The Palisade: To protect special status wildlife. • Plateau Creek: To protect fisheries values. • Prairie Canyon: To protect wildlife habitat. • Roan and Carr Creeks: To protect core conservation populations of cutthroat trout. • Rough Canyon: To protect wildlife habitat. • Sinbad Valley: To protect wildlife resources. • South Shale Ridge: To protect wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** This stipulation may be modified to include species listed as threatened, endangered, proposed, candidate, or sensitive in the future. This stipulation may also be modified to account for the change in status of species protected in this stipulation. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect critical habitat for threatened, proposed, and sensitive plants.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
RECREATION PARKS NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units: • Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the state wildlife areas, where BLM manages the fluid mineral rights.
NSO-34 *(ROWA)* **Elk Production Area.** *BLM surface/ federal minerals:* 13,100 acres *Private or State surface/federal minerals*: 25,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in elk production areas year-round. **PURPOSE:** To protect elk production areas. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce surface disturbance and habitat fragmentation on BLM lands that CPW has identified as elk calving habitat.
WILDLIFE HABITAT	**STIPULATION:** No surface occupancy or use is allowed within the following wildlife emphasis or priority areas, as identified in the Resource Management Plan:

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
NSO CO ***All Surface-disturbing Activities***	• Blue Mesa (wintering habitat for mule deer and elk) (9,300 acres); • Bull Hill (wintering habitat for mule deer and elk) (4,800 acres); • A portion of East Salt Creek (wintering habitat for mule deer and elk) (4,500 acres); • A portion of Prairie Canyon (pronghorn antelope habitat) (5,600 acres); • Sunnyside (wintering and migratory habitat for bighorn sheep, mule deer, elk, and Greater Sage-Grouse) (14,500 acres); and • Timber Ridge (habitat for mule deer, elk, and Gunnison Sage-Grouse) (11,800 acres). **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect lands identified in the Resource Management Plan as unique and important wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse. Wildlife emphasis areas were identified in coordination with CPW biologists.
	Wild Horses
NSO-36 *(ROWA)* Little Book Cliffs Wild Horse Range. 35,200 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities on lands within the LBCWHR. **PURPOSE:** To reduce impacts on wild horses in the LBCWHR. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions will be granted for gather activities, vegetative treatments, water hauling or the development of springs, catchments, reservoirs, storage tanks, exclosures or fences designed to improve wild horse forage, distribution, containment, or overall management. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to mitigate impacts that could interfere with the protection and management of wild horses in the LBCWHR.
	Cultural Resources
NSO-37 *(ROWA)*	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities, including

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Allocation to Conservation Use Category. ***All Surface-disturbing Activities***	archaeological excavation, within 100 meters (328 feet) around eligible sites allocated to Conservation Use. **PURPOSE:** To protect unique scientific information in sites allocated to Conservation Use. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the design of the proposed action, and the characteristics of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve sites allocated to Conservation Use, where mitigation through data recovery is not an option. This stipulation allows the BLM to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1))*.
NSO-38 *(ROWA)* **Allocation to Traditional Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 200 meters (656 feet), from the boundary of the following known eligible or potentially eligible sites allocated to Traditional Use. In addition, consider visual impacts that projects may have on sites allocated to this use, and apply appropriate mitigation, which may include redesign. **PURPOSE:** To protect values that contribute to sites allocated to Traditional Use. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis after completion and documentation of Native American Consultation, taking into account topographical barriers, the design of the proposed action, and the characteristics of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to address indirect or secondary impacts that can occur to cultural resources that have been identified by the Ute Indian Tribe and Ute Mountain Ute Indian Tribe. This stipulation buffer has been established through consultation conducted with the Ute Indian Tribe for the Orchard GAP (shared CRVFO-GJFO MDP) and during the RMP Ute Ethnohistory project with the Ute Indian Tribe and the Ute Mountain Ute Tribe. Impacts to Traditional Use sites are typically not mitigated through data recovery. This stipulation allows the BLM to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1))*.

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
NSO-39 *(ROWA* **Cultural Resources (Indian Creek)**. 1,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following areas: • West Indian Creek (520 acres); and • East Indian Creek (1,200 acres). **PURPOSE:** To protect cultural resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because data recovery to mitigate adverse effects (for the purposes of compliance with Section 106 of the NHPA) is not an objective for these sites. This stipulation also preserves the site(s) within these areas for long term research projects.
	Visual Resources
VISUAL CLASS I NSO CO ***All Surface-Disturbing Activities*** 98,700 acres	**STIPULATION:** No surface occupancy or use is allowed in VRM Objective Class I areas, the Goblins, Highway 141 along the Dolores River (55,200 acres), and Unaweep Canyon ROW Corridor (54,000 acres) (Exhibit GJ-IGM). **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the quality of the scenic (visual) values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure the protection of vital visual features in the GJFO landscape.
	Lands Managed for Wilderness Characteristics
LANDS WITH WILDERNESS CHARACTER-ISTICS NSO CO.	**STIPULATION:** No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan: • Bangs Canyon (19,600 acres); • Maverick (17,800 acres); • Unaweep Canyon (6,700 acres)

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
44,100 acres ***All Surface-disturbing Activities***	**On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect inventoried wilderness characteristics and their locally, regionally, or nationally significant recreational, social, economic, and environmental values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure lands with identified wilderness characteristics remain in their current undeveloped state.
	Recreation and Visitor Services
RECREATION SRMA NSO CO ***All Surface-disturbing Activities*** 87,000 acres	**STIPULATION:** No surface occupancy or use is allowed within the following Special Recreation Management Areas (SRMAs) as identified in the Resource Management Plan: • Bangs; • Dolores River Canyon; • North Fruita Desert; and • Palisade Rim. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect specific recreation-tourism visitors and/or community customer markets to be served, and maintain the specific setting character and/or service delivery system conditions that are essential to achievement of the experiences and benefits identified in management objectives for the SRMA. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas important to recreation users which may also include large facility investments. Protection of RMZs is necessary to meet desired recreation outcomes.
RECREATION PARKS NSO CO	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units:

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
All Surface-disturbing Activities	• Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the state wildlife areas, where BLM manages the fluid mineral rights.
	Fluid Minerals (Oil and Gas and Geothermal Resources)
RECREATION PARKS NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units: • Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	state wildlife areas, where BLM manages the fluid mineral rights.
	ACECs
NSO-12 *(Partial ROWA)* **ACECs.** 89,800 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use (for fluid minerals only in Alternative A), and prohibit surface occupancy and use and surface-disturbing activities, within the following ACECs: • Atwell Gulch (2,900 acres); • Badger Wash (2,200 acres); • Dolores River Riparian (7,400 acres); • Indian Creek (2,300 acres); • Juanita Arch (1,600 acres); • Mt. Garfield (2,400 acres); • Palisade (32,200 acres); • Pyramid Rock (1,300 acres); • Rough Canyon (2,800 acres); • Sinbad Valley (6,400 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). **PURPOSE:** To protect and prevent irreparable damage to resources described in the relevance and importance criteria for which the ACEC was established. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change, or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease. **JUSTIFICATION:** This stipulation is necessary to protect areas that contain highly important resources requiring special protections.
	Wilderness Study Areas
NSO-43 **Wilderness Study Areas.**	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities in WSAs in accordance with BLM Manual 6330, Management of Wilderness Study Areas. • Demaree Canyon (22,700 acres); • Little Book Cliffs (29,300 acres);

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
96,500 acres ***All Surface-disturbing Activities***	• The Palisade (26,700 acres); • Sewemup Mesa (17,800 acres). **PURPOSE:** To preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined by BLM Manual 6330. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined by BLM Manual 6330.
	Wild and Scenic Rivers National Trails
NSO-45 *(ROWA)* **Old Spanish National Historic Trail (50 meters).** 1,000 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 50 meters (164 feet) either side of the center line of the congressionally designated Old Spanish National Historic Trail. **PURPOSE:** To protect the physical evidence of the trail, associated cultural and historic resources, and integrity of the viewshed associated with the Old Spanish National Historic Trail. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions will be granted for actions not resulting in long-term adverse impacts to the trail. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the cultural and historic resources along this congressionally designated historic trail.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Water Resources
CSU-39 **Roan and Carr Creeks ACEC.** 33,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required in the Roan and Carr Creeks ACEC (33,600 acres). **PURPOSE:** To protect and prevent irreparable damage to unique riparian habitats, genetically pure populations of cutthroat trout, and Greater Sage-Grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas that contain highly important resources requiring special protections.
CSU-3 *(ROWA)* **Definable Streams.** ***All Surface-disturbing Activities***	**STIPULATION:** Surface-disturbing actions within a minimum distance of 30 meters (98 feet) from the edge of the ordinary high-water mark (bank-full stage) shall be avoided to the greatest extent practicable and disturbances will be subject to site specific relocation at the discretion of the BLM. **PURPOSE:** To protect watershed resource values and reduce non-point source pollutant contributions to the Colorado River system. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2) **JUSTIFICATION:** This stipulation is necessary to carefully plan and appropriately mitigate disturbances near surface water drainages in order to reduce non-point source pollutant contributions from BLM lands to the Colorado River system.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
CSU-4 *(ROWA)* **Collbran and Mesa/ Powderhorn Source Water Protection Areas, and Jerry Creek Watershed.** *BLM surface/ federal minerals:* 148,200 acres *Private or State surface/federal minerals*: 30,300 acres ***All Surface-disturbing Activities***	**STIPULATION:** Require that all ground disturbances within source water protection areas and the Jerry Creek watershed avoid interference with watershed resource values. **PURPOSE:** To protect watershed resource values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2) **JUSTIFICATION:** This stipulation is necessary because land management actions can compromise both water quality and quantity if proper locations, mitigation and construction techniques are not utilized.
	Soils and Geology
GEOLOGY SOIL CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted on lands within mapped soils with the following special characteristics: Fragile soils and mapped Mancos shale and saline soils. Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit an engineering/reclamation plan to avoid, minimize and mitigate potential effects to soil productivity. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To improve reclamation potential, maintain soil stability and productivity of sensitive areas, minimize contributions of salinity, selenium and sediments likely to affect downstream water quality, fisheries and other downstream aquatic habitats. **EXCEPTION:** Standard exceptions apply (Section B.2).

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to decrease potential degradation to soil and watershed resources within the Greater Colorado River Basin. Land use decisions occurring on mapped areas of Mancos Shale (e.g., conversion of native vegetative communities to irrigated hay fields or golf courses) have been documented to mobilize selenium and contaminate ground and surface water resources. The Colorado River Basin Salinity Control Act of 1974 directed the BLM to manage the Colorado River's salinity, including salinity contributed from public lands.
	Vegetation
PLANT COMMUNITY CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted within occupied habitat that meets BLM's criteria, as established in the Resource Management Plan, for significant and/or relict plant communities: • all old growth forests and woodlands and • plant communities that meet BLM's criteria for significant plant communities Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit a plan of development that will demonstrate that habitat will be preserved to maintain the viability of significant or relict plant communities. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To conserve significant and/or relict plant communities (e.g., old growth forests and Blue Mountain Deciduous Browse/Aspen Communities and woodlands) that are not otherwise protected. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize the loss of old growth trees by adjusting the location of well pads, access roads, and other development; and to limit new disturbance within relic plant communities, thus reducing fragmentation, and the possibility of degradation or loss.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Special Status Species
CSU-9 *(ROWA)* **BLM Sensitive Plant Species Occupied Habitat.**	**STIPULATION:** For plant species listed as sensitive by BLM, special design, construction, and implementation measures within a 100-meter (328 feet) buffer from the edge of occupied habitat may be required. In addition, relocation of operations by more than 200 meters (656 feet) may be required. **PURPOSE:** To protect BLM sensitive plant species from direct and indirect impacts, including loss of habitat. The protection buffer reduces dust transport, weed invasion, chemical and produced-water spills and those effects on BLM sensitive plant populations. It also reduces impacts to important pollinators and their habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce direct impacts to sensitive status species by placing disturbances outside of occupied habitat.
CSU-10 *(ROWA)* **Wildlife Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures will be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs. **PURPOSE:** To reduce impacts of surface disturbing activities and related actions on wildlife and wildlife habitat within high-value or crucial wildlife habitat including, but not limited to, big game winter range and Gunnison and greater sage grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to remain in compliance with current BLM sage grouse direction and allow for protection of essential habitat for wildlife species.
CSU-13 *(ROWA)* **Osprey Nest Sites.** ***All Surface-disturbing***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 402 meters (0.25-mile) of active osprey nest sites. **PURPOSE:** To protect osprey habitat and nest sites. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Activities	and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect osprey nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
CSU-14 *(ROWA)* **Ferruginous Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active ferruginous hawk nest sites, and associated alternate nests. **PURPOSE:** To protect ferruginous hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
CSU-15 *(ROWA)* **Red-tailed Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 531 meters (0.33-mile) of active red-tailed hawk nest sites, and associated alternate nests. **PURPOSE:** To protect red-tailed hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect red-tailed hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
CSU-16 *(ROWA)* **Swainson's Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 402 meters (0.25-mile) of active Swainson's hawk nest sites and associated alternate nests. **PURPOSE:** To protect ferruginous hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect Swainson's hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
CSU-17 *(ROWA)* **Peregrine Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active peregrine falcon nest sites. **PURPOSE:** To protect peregrine falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect peregrine falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
CSU-18 *(ROWA)* **Prairie Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active prairie falcon nest sites. **PURPOSE:** To protect prairie falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie falcon nesting habitat per

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
CSU-19 *(ROWA)* **Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls).** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 201 meters (0.125-mile) of an active nest site of all accipiters, falcons (except kestrel), buteos, and owls not listed in other CSU stipulations. Raptors that are listed and protected by the Endangered Species Act of 1973 and the Bald and Golden Eagle Protection Act are addressed separately. **PURPOSE:** To protect nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect raptor nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2002).
CSU-22 *(ROWA)* **Kit Fox Dens.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to, and require mitigation and minimization measures (as determined by the BLM biologist) of, surface occupancy and use and surface-disturbing activities within 200 meters (656 feet) of active kit fox dens. **PURPOSE:** To protect breeding kit fox. Note: there are currently no known breeding locations for kit fox in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect breeding kit fox, which have become increasingly rare in Colorado and appear to be significantly more susceptible to disturbance than other canids in the GJFO.
CSU-23 *(ROWA)* **Occupied Prairie Dog Towns.** ***All Surface-disturbing***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within white-tailed prairie dog towns. Locate permanent above-ground structures outside of prairie dog towns. **PURPOSE:** To maintain white-tailed prairie dog habitat and distribution. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending upon the type of activity and existing disturbance within or adjacent to white-tailed

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
Activities	prairie dog towns. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs, a keystone species whose population has been declining in the GJFO and across the western US. This stipulation will help to minimize total abandonment of towns by prairie dog colonies due to disturbance.
	Fish and Wildlife
CSU-10 *(ROWA)* **Wildlife Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or crucial wildlife habitat. Measures will be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs. **PURPOSE:** To reduce impacts of surface disturbing activities and related actions on wildlife and wildlife habitat within high-value or crucial wildlife habitat including, but not limited to, big game winter range and Gunnison and greater sage grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to remain in compliance with current BLM sage grouse direction and allow for protection of essential habitat for wildlife species.
WILDLIFE HABITAT CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted within the following wildlife emphasis or priority areas, as identified in the Resource Management Plan: • Beehive (habitat for mule deer and elk) (4,700 acres); • A portion of East Salt Creek (habitat for mule deer and elk) (20,500 acres); • Glade Park (habitat for Gunnison Sage-Grouse, mule deer, and elk) (27,200 acres); • A portion of Prairie Canyon (long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, and burrowing owl habitat) (16,500 acres); • A portion of Rapid Creek (wintering and migratory habitat for mule deer and elk) (26,900 acres); and • Winter Flats (deer and elk wintering grounds) (3,500 acres). Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. A plan of development may be required to

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	demonstrate how potential adverse impacts to wildlife habitat will be mitigated. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect lands identified in the Resource Management Plan as unique and important wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse, Wildlife emphasis areas were identified in coordination with CPW biologists.
CSU-24 *(ROWA)* **Deer and Elk Migration and Movement Corridors.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within migration and movement corridors for deer and elk. **PURPOSE:** To protect deer and elk migration and movement corridors. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure connectivity between summer and winter ranges for deer and elk. Fragmentation is an increasing problem in deer and elk habitat and this stipulation will help to maintain existing corridors on BLM lands.
	Wild Horses Cultural Resources
CSU-27*(ROWA)* **Allocation to Scientific Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to certain surface uses, as specified below, except archaeological documentation and excavation, within 100 meters (328 feet) around eligible or potentially eligible sites allocated to Scientific Use. **PURPOSE:** To protect unique scientific information in sites that may be damaged from inadvertent or unauthorized uses. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the nature of the proposed

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	action, and the nature of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to address indirect or secondary impacts that can occur to cultural resources. Indirect and secondary impacts are typically not mitigated through data recovery by the proponent. Managing properties by addressing only direct impacts can lead to adverse effect and the loss of the resource. This stipulation allows the BLM to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1)).*
CSU-28 *(ROWA)* **Allocation to Public Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to certain surface uses, as specified below, within 100 meters (328 feet) around sites allocated to Public Use. In addition, consider factors such as integrity of setting, recreation opportunity, or visual impacts that projects may have on sites allocated to this use. **PURPOSE:** To protect the values that contribute to sites allocated to Public Use. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the nature of the proposed action, and the nature of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect sites allocated to Public Use, including those that may not meet the criteria for the NRHP but are important for heritage tourism as a visual resource of a rural landscape.
CSU-29 *(ROWA)* **Sub-surface Inventory.** 53,500 acres ***All Surface-disturbing Activities***	**STIPULATION**: Require sub-surface inventory for deep sub-surface-disturbing activities and buried ROW in the following locations and in additional areas where high potential for subsurface resources may be identified in the future: • Grand Mesa Slopes (16,000 acres); • Indian Creek (20,200 acres); and • Sunnyside (17,300 acres). **PURPOSE:** To protect cultural resources.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	EXCEPTION: Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is needed to protect buried cultural resources within areas of high potential for sub-surface activities.
	Visual Resources
CSU-30 *(ROWA)* **VRM Class II.** 392,400 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within all areas designated as VRM Class II. Require that surface-disturbing activities meet the objectives of VRM Class II. **PURPOSE:** To protect visual resources. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, an exception could be granted for bond projects within scenic byways to ensure that visual and reclamation objectives are achieved. Facility design shall incorporate viewshed analysis and modeling to minimize impacts to visual resources. Special mitigation measures such as facility placement and color selection have been proposed to reduce impacts to visual resources. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is needed to maintain the visual integrity within designated Class II VRM areas. A CSU will allow placement of facilities and disturbances outside of the critical view sheds.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Recreation and Visitor Services
CSU-31 *(ROWA)* **Recreation.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface occupancy and use and surface-disturbing activities to minimize conflicts with developed (and future) recreation sites and to mapped (and future) national/regional trails, local system trails that connect communities, and trailheads and interpretive sites with exceptional recreation values or significant public interest. Apply this stipulation to the following sites that lie outside of designated RMAs: • Low Gap Recreation Site; • North Soda Recreation Site; • Miracle Rock Recreation Site; • Mud Springs Campground; and • West Creek Picnic Site. **PURPOSE:** To minimize conflicts with developed (and future) recreation sites and to mapped (and future) national/regional trails, local system trails that connect communities, and trailheads and interpretive sites with exceptional recreation values or significant public interest. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to assure significant public investment and desired recreation opportunities are protected from surface-disturbing occupancy.
CSU-32 **Recreation Management Areas.** 227,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions in the following RMAs: • Grand Valley OHV SRMA (9,700 acres) • Barrel Spring ERMA (24,700 acres) • Gateway ERMA (78,100 acres) • Grand Valley Shooting Ranges ERMA (750 acres) • Gunnison River Bluffs ERMA (800 acres) • Horse Mountain ERMA (5,100 acres) • North Desert ERMA (107,900 acres) **PURPOSE:** To protect recreation outcomes and setting prescriptions. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2).

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	WAIVER: Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas important to recreation users which may also include large facility investments. Protection of RMZs is necessary to meet desired recreation outcomes.
	Lands and Realty
DISPOSAL CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted due to lands identified for disposal in the Resource Management Plan. Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. **PURPOSE:** To preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal.
	Coal
COAL MINE CSU CO 9,000 acres ***Fluid Minerals Only***	**STIPULATION:** Surface occupancy or use (for fluid minerals only) may be restricted due to surface or underground coal mines. Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Operations proposed within the area of an approved surface or underground coal mine will be relocated outside the area to be mined or to accommodate room and pillar mining operations. **PURPOSE:** To protect surface or underground coal mines. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to allow underground coal operations within oil and gas leases while reducing safety concerns.

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	ACEC
CSU-39 **Roan and Carr Creeks ACEC.** 33,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required in the Roan and Carr Creeks ACEC (33,600 acres). **PURPOSE:** To protect and prevent irreparable damage to unique riparian habitats, genetically pure populations of cutthroat trout, and Greater Sage-Grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).
	Wild and Scenic Rivers National Trails
CSU-37 **Scenic Byways (0.5-mile).** 32,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within 805 meters (0.5-mile) of either side of centerline of the following scenic byways: • Dinosaur Diamond Prehistoric Highway (National Scenic Byway and All American Road) (14,300 acres); • Grand Mesa Scenic and Historic Byway (1,200 acres); and • Unaweep-Tabeguache Scenic and Historic Byway (17,000 acres). **PURPOSE:** To protect the quality of the scenic (visual) values of scenic, historic, or backcountry byways. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, an exception could be granted if: (a) a viewshed analysis indicates minimal impairment of the visual resources from the driving corridor; or (b) the action is determined to be consistent and compatible with protection or enhancement of the resource values, or the use will provide suitable opportunities for public enjoyment of these resources. An exception could also be granted for bond projects within scenic byways to ensure that visual and reclamation objectives are achieved. Facility design shall incorporate viewshed analysis and modeling to minimize impacts to visual resources. Special mitigation measures such as facility placement and color selection have been proposed to reduce impacts to visual resources. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to place surface-disturbing activities along scenic byways in areas that do not affect values associated with the identified scenic byway.

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Special Status Species
TL-1 *(ROWA)* **Salmonid and Native Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures; however, the following intervals generally apply in Colorado: • Cutthroat trout (various subspecies): May 1-September 1 • Rainbow trout: March 1-June 15 • Brown trout: October 1-May 1 • Brook trout: August 15-May 1 • Sculpin: May 1-July 31 • Bluehead sucker: May 1-July 15 • Flannelmouth sucker: April 1-July 1 • Roundtail chub: May 15-July 15 • Speckled dace: May 1-August 31 • Mountain whitefish: October 1-November 30 **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry of native fish populations. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this stipulation only applies to construction and drilling and does not apply to operations and maintenance. If competing species are involved, the BLM may select to implement species-specific dates for native fish versus nonnative species. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native and game fish breeding.
TL-3 *(ROWA)* **Migratory Bird Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities, including vegetation-removal projects, in migratory bird habitat during nesting season when nesting birds are present. May 15 to July 15 or as site-specific analysis dictates. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect migratory bird habitat and ensure compliance with the Migratory Bird Treaty Act (Information Bulletin No. 2010-110); BLM

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Memorandum of Understanding with US Fish and Wildlife Service).
WILDLIFE RAPTOR NESTS TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed within a 402 meter (0.25-mile) radius of active raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young: • Osprey nests: April 1 to August 31. • Red-tailed hawk nests, including any alternate nests: February 15 to July 15. • Swainson's hawk nests and associated alternate nests: April 1 to July 15. • Burrows or burrowing owl nest sites: March 1 to August 15. • Great horned owl nests: February 1 to August 15. • Other owls and raptors: March 1 to August 15. • Cooper's hawk, sharp shinned hawk, and northern harrier nests: April 1 to August 15. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To prevent disruption of reproductive activity of raptors during the production period. **EXCEPTION:** Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
WILDLIFE SENSITIVE RAPTOR NESTS TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed within an 805 meter (0.5-mile) radius of active or inactive raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young: • Ferruginous hawk nests, including any alternate nests: February 1 to July 15. • Goshawk nest sites: March 1 to September 30. • Peregrine and prairie falcon nest cliff(s): March 15 to July 31. **On the following lands:** <LEGAL_DESCRIPTION>

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	PURPOSE: To prevent disruption of reproductive activity of raptors during the production period. **EXCEPTION:** Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
TL-13 *(ROWA)* **Golden Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit human encroachment within an 805-meter (0.5-mile) radius of active golden eagle nests and associated alternate nests, as mapped in the RMP, BLM's GIS database, or other maps provided by local, state, federal, or tribal agencies that are analyzed and accepted by the BLM, during the following time period, or until fledging and dispersal of young: December 15 to July 15. **PURPOSE:** To prevent disruption of reproductive activity of golden eagles. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect golden eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
TL-14 *(ROWA)* **Bald Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit human encroachment within an 805-meter (0.5-mile) radius of active bald eagle nests from November 15 to July 31. **PURPOSE:** To prevent disruption of reproductive activity of bald eagles. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this stipulation only applies to construction and drilling, and does not apply to operations and maintenance. The TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	JUSTIFICATION: This stipulation is necessary to protect bald eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
TL-15 *(ROWA)* **Bald Eagle Winter Roost.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit activity within 402 meters (0.25-mile) of bald eagle winter roosts from November 15 to March 15. Additional restrictions may be necessary within 805 meters (0.5-mile) of active bald eagle winter roosts if there is a direct line of sight from the roost to the activities. **PURPOSE:** To protect bald eagles from human impacts that could affect winter survival. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the roost site or the geographical relationship of topographic barriers and vegetation screening to the roost site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect bald eagle winter roosts per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).
TL-16 *(ROWA)* **Occupied Sage-grouse Winter Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities in occupied sage-grouse winter habitat from December 1 to March 15. **PURPOSE:** To protect sage-grouse (Gunnison and greater) from human impacts that could affect winter survival. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect sage-grouse from disturbance in a time of year when the added stress from disturbance can lead to death.
TL-17 *(ROWA)* **Sage-grouse Leks (4**	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities within 6.4 kilometers (4 miles) of sage-grouse leks from March 1 to June 30. **PURPOSE:** To protect breeding and nesting sage-grouse (Gunnison and greater) from human

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
miles).	impacts that could affect nest success.
All Surface-disturbing Activities	**EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending upon the active status of the lek or the geographical relationship of topographical barriers and vegetation to the lek site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect breeding and nesting sage-grouse per current research recommendations (Parachute-Piceance-Roan Greater Sage-grouse Work Group 2008).
TL-19 *(ROWA)* **Occupied Prairie Dog Towns.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within active white-tailed prairie dog towns from April 1 to July 15. **PURPOSE:** To avoid impacts to white-tailed prairie dogs during the pupping season. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs during the breeding season to allow for distribution of young.
	Fish and Wildlife
TL-1 *(ROWA)* **Sport and Native Fish (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub;**	**STIPULATION:** Prohibit in-channel stream work in all occupied streams during appropriate spring and fall spawning periods. Rainbow and cutthroat trout, bluehead and flannelmouth sucker, roundtail chub, and Paiute and mottled sculpin (April 1 to August 1); brown and brook trout (October 1 to November 30). **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native and game fish

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
mountain whitefish; Paiute and mottled sculpin; and speckled dace). ***All Surface-disturbing Activities***	breeding.
TL-20 *(ROWA)* **Big Game Winter Range.** 474,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities from December 1 to May 1 to protect big game winter range as mapped by the CPW. Certain areas and/or routes within big game winter range may be closed to foot, horse, motorized, and/or mechanized travel from December 1 to May 1. **PURPOSE:** To reduce disruption of big game during the winter season. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g., producing wells) and range administration. An exception will be granted only when the proposed action will not cause unacceptable harm to big game based on the following factors: 1. Winter conditions (such as snow cover and crusting) at the project site and vicinity; 2. Predictable, short-term (1 week) storm forecasts for the project area; 3. Period of winter in which the exception is requested (e.g., after April 15, before December 15, or the heart of winter); 4. Project site location relative to the size and spatial configuration of delineated critical winter range, open roads and trails, and other background disturbance; 5. Length of time that activities will encroach on the period of the winter range stipulation; 6. Number of vehicle trips per day in and out of the work site; 7. Time of day that activity occurs (after dark generally prohibited); 8. Actual big game use of the area; 9. Cumulative impacts on big game (such as other activities in the area); and 10. Additional site-specific or general concerns, as appropriate. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect big game winter habitat from surface-disturbing and major human activities during the periods of the year when the habitat is occupied. This habitat is critical to the viability of big game herds. These areas will be managed

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	by BLM to reflect CPW most current big game winter range maps.
BIG GAME PRODUCTION TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed during the following time period(s) in big game production areas, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM: Prohibit activities, including motorized travel, in elk production areas from May 15 to June 15; in antelope production areas from April 15 to June 30; in Rocky Mountain bighorn sheep production areas from April 15 to June 30; in Moose production areas from April 15 to June 30; and in desert bighorn sheep production areas from February 1 to May 1. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To reduce disruption of big game during parturition and young rearing period. **EXCEPTION:** Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation provides for protection of big game production areas from disturbance and displacement by human activities during critical periods.
TL-22 *(ROWA)* **Pronghorn Wintering Habitat.** 23,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities in pronghorn wintering habitat from January 1 to March 31. **PURPOSE:** To improve pronghorn antelope habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g., producing wells) and range administration (Section B.1). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect pronghorn winter habitat from surface-disturbing and major human activities during the periods of the year when the habitat is occupied. This habitat is critical to the viability of pronghorn herds. These areas will be managed by BLM to reflect CPW most current pronghorn winter range maps.

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	Air Resources
CO-56 **Air Resources.**	Due to potential air quality concerns, supplementary air quality analysis may be required for any proposed development of this lease. This may include preparing a comprehensive emissions inventory, performing air quality modeling, and initiating interagency consultation with affected land managers and air quality regulators to determine potential mitigation options for any predicted significant impacts from the proposed development. Potential mitigation may include limiting the time, place, and pace of any proposed development, as well as providing for the best air quality control technology and/or management practices necessary to achieve area-wide air resource protection objectives. Mitigation measures will be analyzed through the appropriate level of NEPA analysis to determine effectiveness, and will be required or implemented as a permit condition of approval (COA). At a minimum, all projects and permitted uses implemented under this lease will comply with all applicable National Ambient Air Quality Standards and ensure Air Quality Related Values are protected in nearby Class I or Sensitive Class II areas that are afforded additional air quality protection under the Clean Air Act (CAA). On the lands described below: <LEGAL_DESCRIPTION>
	Water Resources
LN-1 **Source Water Protection Areas.**	The lease is within source water protection areas, and the lessee is required to implement special protective measures for water resources and to collaborate with municipalities and comply with applicable municipal watershed plans. **JUSTIFICATION:** This lease notification is necessary because leases within source water protection areas require extensive protection measures to ensure protection of water quality and human health.
	Special Status Species
LN-3 **Biological Inventories.**	The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, sage-grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy and use on that area is prohibited.

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	JUSTIFICATION: This lease notice is necessary to identify current plant and animal populations in order to reduce or avoid impacts to those species.
LN-4 **Threatened and Endangered Species**	***Threatened and Endangered Species*** This lease contains habitat for threatened and endangered species. Prior to undertaking any activity on the lease, including surveying and staking of well locations, the lessee may be required to perform botanical inventories on the lease. Special design and construction measures may also be required in order to minimize impacts to threatened and endangered species habitat from drilling and producing operations. This applies to the lands described below: <LEGAL_DESCRIPTIONS>. **EXCEPTION:** An exception may be granted depending on current usage of the site or on the geographical relationship to topographic barriers and vegetation screening. **MODIFICATION:** Changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.) **JUSTIFICATION:** This lease notice is necessary to identify current cactus populations and habitat in order to reduce or avoid impacts to cactus habitat.
	Fish and Wildlife
LN-3 **Biological Inventories.**	The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, sage-grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy and use on that area is prohibited. **JUSTIFICATION:** This lease notice is necessary to identify current plant and animal populations in order to reduce or avoid impacts to those species.
LN-5 **Working in Wildlife Habitat.**	Require operators to establish and submit to the GJFO a set of operating procedures for employees and contractors working in important wildlife habitats. Design such procedures to inform employees and contractors of ways to minimize the effect of their presence on wildlife and wildlife habitats. Procedures may address, but are not limited to, items such as working in bear or snake country, controlling dogs, and understanding and abiding by hunting and firearms

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number Protected Resource Acres/Miles Affected	Stipulation Description
	regulations.
	Paleontological Resources
LN-6 **Class 4 and 5 Paleontological Areas.**	Have a permitted paleontologist approved by the Authorized Officer perform an inventory of surface-disturbing activities in Class 4 and 5 paleontological areas per Instruction Memorandum No. 2008-009: Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. **JUSTIFICATION:** This lease notice is necessary to ensure an adequate paleontologist is present during surface disturbing activities to protect paleontological resources from direct impacts.
	Lands and Realty
LN-7 **Powderhorn Ski Area.**	If drilling operations are proposed, the lessee is hereby notified that there are concerns about ski lift structures, other facilities, and ski runs within the Powderhorn ski area. The lessee is hereby notified that special design, construction, and scheduling measures may be required in order to minimize the impacts of drilling and production operations. Proposed drilling and production facilities and operations will be relocated and rescheduled as needed to avoid physical interference with ski area facilities and recreation use. This can include relocations of more than 200 meters (656 feet) or seasonal closures of more than 60 days. This applies to the lands described below: <LEGAL_DESCRIPTIONS>. **JUSTIFICATION:** This lease notification is necessary to protect recreation facilities at Powderhorn Ski Area.

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Appendix C

Wild and Scenic Rivers Suitability Report

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
ACEC	area of critical environmental concern
BLM	United States Department of the Interior, Bureau of Land Management
cfs	cubic feet per second
CPW	Colorado Department of Natural Resources, Parks and Wildlife
CWCB	Colorado Water Conservation Board
EIS	environmental impact statement
ESA	Endangered Species Act
GJFO	Grand Junction Field Office
NCA	National Conservation Area
NWSRS	National Wild and Scenic Rivers System
ORV	outstandingly remarkable value
RMP	resource management plan
SRMA	special recreation management area
US	United States
USFWS	United States Department of the Interior, Fish and Wildlife Service
US BOR	United States Department of the Interior, Bureau of Reclamation
US Forest Service	United States Department of Agriculture, National Forest Service
VRM	visual resource management
WSA	wilderness study area
WSR	wild and scenic river
WSR Act	Wild and Scenic Rivers Act of 1968

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EXECUTIVE SUMMARY

In March 2009, the United States (US) Department of the Interior, Bureau of Land Management (BLM), Grand Junction Field Office (GJFO) completed the eligibility phase of a wild and scenic rivers (WSR) evaluation as part of the resource management plan (RMP) revision process (BLM 2009a). The eligibility study identified 20 segments within the GJFO as eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS).

On March 30, 2009, after the release of the eligibility findings, Congress designated the Dominguez-Escalante National Conservation Area (NCA), which includes the Dominguez Canyon Wilderness. All or portions of five segments identified as eligible fall within the Dominguez-Escalante NCA (Dominguez Creek, Big Dominguez Creek, Little Dominguez Creek Segments 1 and 2, and Gunnison River Segment 1). These segments will be considered for suitability during the development of the RMP for the Dominguez-Escalante NCA. Further, Little Dolores was removed from further consideration due to land status that was verified through an updated cadastral survey. This was addressed in an amendment to the Eligibility Report. As such, a total of 14 eligible segments are studied for suitability in this report.

The next step in the WSR process is evaluating eligible segments for suitability. The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the national system by considering tradeoffs between corridor development and river protection. This report describes the methodology, data considered, and determinations made during the suitability phase. All eligible segments were assessed for suitability.

Project Area

The project area for this suitability study includes all BLM-managed river segments that have been determined to meet the WSR eligibility criteria within the RMP decision area. The GJFO manages approximately 1.2 million acres of BLM lands in Delta, Mesa, Montrose, and Garfield counties in northwest Colorado. This WSR suitability study also includes the eligible segment of the Colorado River that passes through the McInnis Canyons NCA as the Colorado River is not considered part of the NCA. All other aspects of the McInnis Canyons NCA were evaluated in

the McInnis Canyons NCA (BLM 2004) RMP and are not considered as part of this RMP revision process.

Suitability Phase

The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS. The suitability analysis examines various approaches for maintaining the outstanding remarkable values (ORV) identified during the eligibility determination, and weighs protection of those values against other potential uses of the stream segment. The suitability evaluation does not result in actual designation but only a suitability determination for designation. The BLM cannot administratively designate a stream via a planning decision or other agency decision into the NWSRS, and no segment studied is designated or will be automatically designated as part of the NWSRS. Only Congress can designate a WSR. In some instances, the Secretary of the Interior may designate a WSR when the governor of a state, under certain conditions, petitions for a river to be designated. Members of Congress will ultimately choose the legislative language if any suitable segments are presented to them. Water-protection strategies and measures to meet the purposes of the Wild and Scenic Rivers Act of 1968 will be the responsibility of Congress in any legislation proposed. Rivers found not suitable by the managing agency conducting the suitability study would be dropped from further consideration and managed according to the objectives and specific management prescriptions outlined in the RMP.

Suitability Determinations

Table ES-1, Summary of Suitability Determinations, shows the suitability determination for each segment. Of the 14 stream segments determined to be eligible and studied for suitability in this report, the BLM determined that one portion of the Dolores River is suitable for WSR designation.

Table ES-1
Summary of Suitability Determinations

River or Creek	Segment	Total Segment Length (miles)	Length on BLM Land (miles)	Suitability Determination	Proposed Classification
Colorado River	Total of three segments	78.91 (total)	27.77 (total)		
	Segment 1	17.76	7.32	Not Suitable	Recreational
	Segment 2	40.24	1.31	Not Suitable	Recreational
	Segment 3	20.91	19.14	Not Suitable	Scenic
Dolores River Watershed	Total of three segments	45.42 (total)	30.75 (total)		
Dolores River	One segment	32.01	18.62		Recreational
			10.38	*Suitable*	
			8.24	*Not Suitable*	
North Fork Mesa Creek	One segment	2.05	2.05	Not Suitable	Scenic
Blue Creek	One segment	11.36	10.08	Not Suitable	Scenic
Gunnison River Segment 2	One Segment	16.63	3.85	Not Suitable	Recreational
Roan Creek	One segment	17.04	6.47	Not Suitable	Scenic
Carr Creek	One segment	15.10	5.06	Not Suitable	Scenic
Rough Canyon	One segment	4.21	4.21	Not Suitable	Scenic
Unaweep Canyon Complex	Total of four segments	56.50 (total)	21.39 (total)		
East Creek	One segment	20.26	8.96	Not Suitable	Recreational
West Creek	One segment	23.56	4.93	Not Suitable	Recreational
North Fork of West Creek	One segment	8.46	3.31	Not Suitable	Wild
Ute Creek	One segment	4.22	4.19	Not Suitable	Scenic

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1. INTRODUCTION

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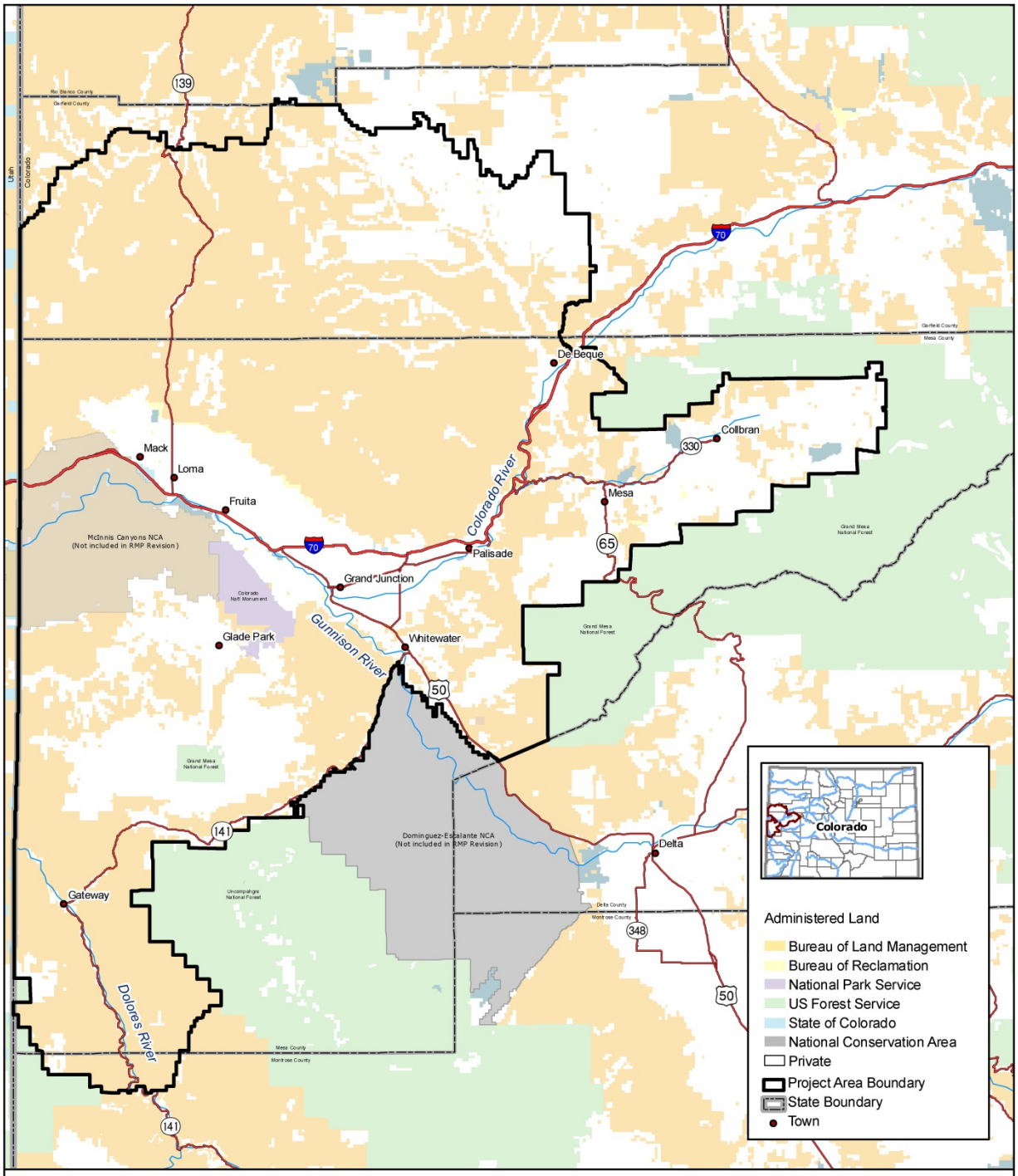
CHAPTER 1
INTRODUCTION

In March 2009, the United States (US) Department of the Interior, Bureau of Land Management (BLM), Grand Junction Field Office (GJFO) completed the eligibility phase of a wild and scenic rivers (WSR) evaluation as part of the resource management plan (RMP) revision process (BLM 2009a). The eligibility study identified 20 segments within the GJFO as eligible for inclusion in the National Wild and Scenic Rivers System (NWSRS).

The GJFO manages approximately 1.2 million acres of BLM lands in Delta, Mesa, Montrose, and Garfield counties in northwest Colorado (**Figure 1-1**, Project Area). A separate planning process was conducted for the McInnis Canyons National Conservation Area (NCA) (BLM 2004); therefore the GJFO RMP revision will not consider lands within the NCA boundary and will not determine the eligibility or suitability of watercourses within the NCA boundary. However, the Colorado River is not considered part of the NCA and was therefore included in the GJFO WSR eligibility study and will be considered for suitability.

On March 30, 2009, after the release of the eligibility findings, Congress designated the Dominguez-Escalante NCA, which includes the Dominguez Canyon Wilderness. All or portions of five segments identified as eligible fall within the Dominguez-Escalante NCA (Dominguez Creek, Big Dominguez Creek, Little Dominguez Creek Segments 1 and 2, and Gunnison River Segment 1). These segments will be considered for suitability during the development of the RMP for the Dominguez-Escalante NCA.

This report describes the outstandingly remarkable values (ORVs), suitability factors, and suitability determination data on each of the segments which have been determined to meet the WSR eligibility criteria. **Figure 1-2** (Eligible Segments within the GJFO) displays the 14 segments being studied as part of this WSR suitability analysis.



Source: BLM 2010a

Wild and Scenic Rivers Project Area

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This project was developed through digital means and may be updated without notice. Map produced by Grand Junction Field Office, Bureau of Land Management, Grand Junction, CO.

0 2.5 5 10 15 20
Miles

Figure 1-1

BLM Grand Junction Field Office Resource Management Plan

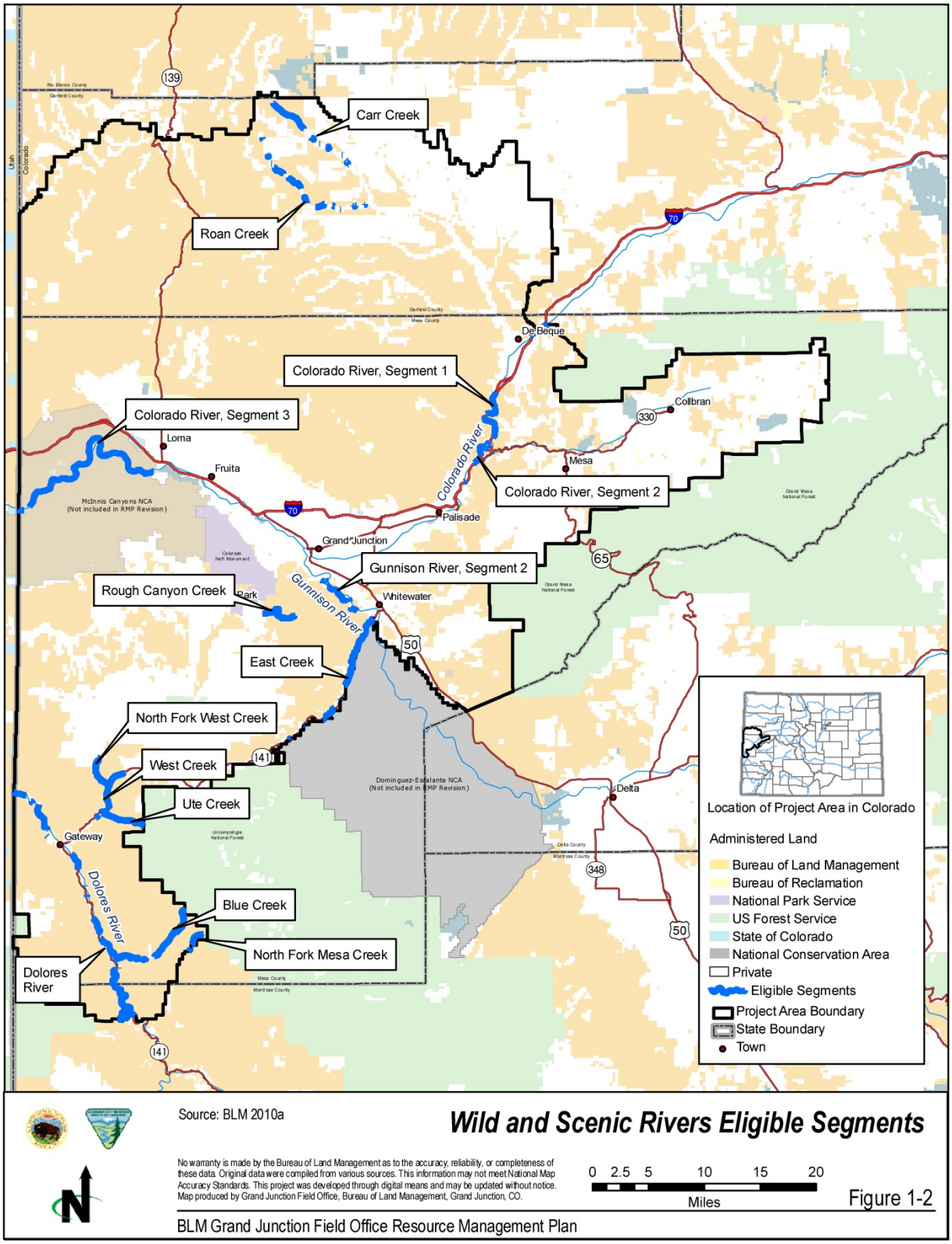

Carr Creek
Roan Creek
Colorado River, Segment 1
Colorado River, Segment 3
Colorado River, Segment 2
Colorado River
Gunnison River, Segment 2
Gunnison River
Rough Canyon Creek
East Creek
North Fork West Creek
West Creek
Ute Creek
Blue Creek
North Fork Mesa Creek
Dolores River
Dolores River
De Beque
Collbran
Mesa
Loma
Fruita
Palisade
Grand Junction
Whitewater
Gateway
Delta
McInnis Canyons NCA
(Not included in RMP Revision)
Dominguez-Escalante NCA
(Not included in RMP Revision)
Location of Project Area in Colorado
Administered Land
Bureau of Land Management
Bureau of Reclamation
National Park Service
US Forest Service
State of Colorado
National Conservation Area
Private
Eligible Segments
Project Area Boundary
State Boundary
Town
Source: BLM 2010a
Wild and Scenic Rivers Eligible Segments
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This project was developed through digital means and may be updated without notice. Map produced by Grand Junction Field Office, Bureau of Land Management, Grand Junction, CO.
0 2.5 5 10 15 20
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Figure 1-2
BLM Grand Junction Field Office Resource Management Plan

1.1 WILD AND SCENIC RIVERS STUDY PROCESS

A WSR study process is composed of two main components: the eligibility phase and the suitability phase. At this point, the GJFO has completed the eligibility phase and is completing the suitability phase. The eligibility and suitability phases were conducted in accordance with BLM Manual 8351, *Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management* (BLM 1992), *The Wild and Scenic River Study Process Technical Report* (Interagency Wild and Scenic Rivers Coordinating Council 1999), and with the Wild and Scenic Rivers Act of 1968 (WSR Act).

1.1.1 Eligibility Phase

The eligibility phase was completed for the GJFO in March 2009. A determination of eligibility includes identifying the river segment's ORVs, free-flowing nature, and preliminary classification. For a complete description of the segments analyzed and methodology used, see the *Wild and Scenic River Eligibility Report for Bureau of Land Management, Grand Junction Field Office* (BLM 2009a).

A summary of segments identified as eligible in the GJFO and that are evaluated for suitability in this report is provided in **Table 1-1**, Eligible Stream Segments Studied for Suitability.

1.1.2 Suitability Phase

The purpose of the suitability phase of the study process is to determine whether eligible segments would be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection. The suitability evaluation does not result in actual designation but only a suitability determination for designation. The BLM cannot administratively designate a stream via a planning decision or other agency decision into the NWSRS, and no segment studied is designated or will be automatically designated as part of the NWSRS. Only Congress can designate a WSR. In some instances, the Secretary of the Interior may designate a WSR when the governor of a state, under certain conditions, petitions for a river to be designated. Members of Congress will ultimately choose the legislative language if any suitable segments are presented to them. Water-protection strategies and measures to meet the purposes of the WSR Act will be the responsibility of Congress in any legislation proposed. Rivers found not suitable by the managing agency conducting the suitability study would be dropped from further consideration and managed according to the objectives and specific management prescriptions outlined in the land management plan. A summary of segments identified as eligible in the GJFO and that were evaluated for suitability in this report is provided in **Table 1-1**.

Table 1-1
Eligible Stream Segments Studied for Suitability

River or Creek	Segment	Total Segment Length (miles)	Length on BLM Land (miles)	Tentative Classification	Outstandingly Remarkable Values
Colorado River	Total of three segments	78.91 (total)	27.77 (total)		
	Segment 1	17.76	7.32	Recreational	Scenic, Fish, Wildlife
	Segment 2	40.24	1.31	Recreational	Fish
	Segment 3	20.91	19.14	Scenic	Scenic, Recreation, Fish, Wildlife, Geologic, Historic
Dolores River Watershed	Total of three segments	45.42 (total)	30.75 (total)		
Dolores River	One segment	32.01	18.62	Recreational	Scenic, Recreation, Geologic, Paleontological, Fish
North Fork Mesa Creek	One segment	2.05	2.05	Scenic	Vegetation
Blue Creek	One segment	11.36	10.08	Scenic	Scenic, Fish, Cultural
Gunnison River Segment 2	One Segment	16.63	3.85	Recreational	Fish, Historic
Roan Creek	One segment	17.04	6.47	Scenic	Fish
Carr Creek	One segment	15.10	5.06	Scenic	Fish
Rough Canyon	One segment	4.21	4.21	Scenic	Scenic, Wildlife, Geologic
Unaweep Canyon Complex	Total of four segments	56.50 (total)	21.39 (total)		
East Creek	One segment	20.26	8.96	Recreational	Geologic
West Creek	One segment	23.56	4.93	Recreational	Scenic, Wildlife, Geologic, Vegetation
North Fork of West Creek	One segment	8.46	3.31	Wild	Scenic
Ute Creek	One segment	4.22	4.19	Scenic	Scenic, Vegetation

Source: BLM 2009a

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2. METHODOLOGY

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CHAPTER 2
METHODOLOGY

This section describes the methodology implemented to evaluate eligible segments for suitability. The criteria used to evaluate eligible river and stream segments are those described in BLM Manual 8351, *Wild and Scenic Rivers—Policy and Program Direction for Identification, Evaluation, and Management* (BLM 1992) and recommendations from the Interagency Wild and Scenic Rivers Coordinating Council (1999).

2.1 SUITABILITY CRITERIA USED TO EVALUATE RIVER AND STREAM SEGMENTS

The purpose of the suitability phase of the study process is to determine whether eligible rivers would be appropriate additions to the NWSRS by considering tradeoffs between corridor development and river protection. Suitability considerations include the environment and economic consequences of designation and the manageability of a river if it were designated by Congress.

A suitability study is designed to answer these questions:

1. Should the river's free-flowing character, water quality, and ORVs be protected, or are one or more other uses important enough to warrant doing otherwise?
2. Will the river's free-flowing character, water quality, and ORVs be protected through designation? Is designation the best method for protecting the river corridor? In answering these questions, the benefits and impacts of WSR designation must be evaluated and alternative protection methods considered.
3. Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

With the above guidance from the Interagency Wild and Scenic Rivers Coordinating Council (1999) in mind, the following 11 suitability criteria factors, identified in BLM Manual Section 8351 (BLM 1992), were applied to each eligible river segment in the suitability study:

1. Characteristics which do or do not make the area a worthy addition to the NWSRS.

2. Status of land ownerhip, minerals (surface and subsurface), use in the area, including the amount of private land involved, and associated or incompatible uses. Jurisdictional consideration (administrative role and/or presence) must be taken into account to the extent that management would be affected. In situations where there is limited public lands (shoreline and adjacent lands) administered by the BLM within an identified river study area, it may be difficult to ensure those identified outstandingly remarkable values could be properly maintained and afforded adequate management protection over time. Accordingly, for those situations where the BLM is unable to protect or maintain any identified outstandingly remarkable values, or through other mechanisms (existing or potential), river segments may be determined suitable only if the entity with land use planning responsibility supports the finding and commits to assisting the BLM in protecting the identified river values. An alternative method to consider these segments is for state, local governments, or private citizens to initiate efforts for designation under Section 2(a)(iii), or a joint study under Section 5(c) of the WSR Act. In certain cases, there might be existing or future opportunities for the BLM to acquire river shoreline or where landowners are willing to donate, exchange, transfer, assign, sell, or sign an easement. Wherever appropriate, the BLM shall encourage the state, responsible federal agency or other entities to evaluate segments where the BLM lacks sufficient jurisdictional control and the BLM shall provide technical assistance concerning the WSR river studies, as well as information concerning public lands within the study corridor. The BLM shall continue to protect and, wherever possible, enhance any outstandingly remarkable values identified in the RMP process which are associated with lands under the BLM's jurisdiction.
3. Reasonably foreseeable potential uses of the land and related waters which would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and the values which could be foreclosed or diminished if the area is not protected as part of the NWSRS.
4. Federal, public, state, tribal, local, or other interests in designation or nondesignation of the river, including the extent to which the administration of the river, including the costs thereof, may be shared by state, local, or other agencies and individuals. Also, the federal agency that will administer the area should it be added to the National System.
5. Estimated cost, if necessary, of acquiring lands, interests in lands, and administering the area if it is added to the NWSRS. Section 6 of the WSR Act outlines policies and limitations of acquiring lands or interests in land by donation, exchange, consent of owners, easement, transfer, assignment of rights, or condemnation within and outside established river boundaries.
6. Ability of the agency to manage and/or protect the river area or segment as a WSR river, or other mechanisms (existing and potential) to protect identified values other than WSR designation.
7. Historical or existing rights which could be adversely affected. In determining suitability, consideration of any valid existing rights must be afforded under applicable laws (including the WSR Act), regulations, and policies.

8. Other issues and concerns, if any.

In addition to the criteria described above, three additional suitability factors were considered, as suggested by the Interagency Wild and Scenic Rivers Coordinating Council (1999):

1. Adequacy of local zoning and other land use controls in protecting the rivers ORVs by preventing incompatible development. This evaluation may result in a formal finding that the local zoning fulfills Section 6(c)'s requirements, which in turn preempts the federal government's ability to acquire land through eminent domain if the river is designated.
2. Consistency of designation with other agency plans, programs, or policies and in meeting regional objectives. Designation may help or impede the "goals" of other tribal, federal, state, or local agencies. For example, designation of a river may contribute to state or regional protection objectives for fish and wildlife resources. Similarly, adding a river which includes a limited recreation activity or setting to the National System may help meet statewide recreation goals. Designation might, however, limit irrigation and/or flood control measures in a manner inconsistent with regional socioeconomic goals.
3. Contribution to a river system watershed or basin integrity. This factor reflects the benefits of a "systems" approach (i.e., expanding the designated portion of a river in the National System or developing a legislative proposal for an entire river system [headwaters to mouth] or watershed). Numerous benefits are likely to result from managing an entire river or watershed, including the ability to design a holistic protection strategy in partnership with other agencies and the public.

In the suitability analysis, water resource development issues are generally considered under criterion three and seven from BLM Manual Section 8351 (BLM 1992).

2.2 Data Sources and Methodology

The BLM relied on several sources, including geographic information systems data, GJFO resource specialists, informational sources, other agencies, and public input. The result was a compilation of data applicable to the suitability criteria. This data was then used to determine the suitability of a particular segment.

2.2.1 Geographic Information Systems

The US Geological Survey National Hydrography Dataset was used to select all perennial stream segments for the eligibility study. Streams and stream sections were removed that did not fall within GJFO jurisdiction. In addition to US Geological Survey data, the BLM also used its corporate Geographic Information Systems data for all associated resources.

2.2.2 BLM Resource Interdisciplinary Team

The BLM interdisciplinary team consisted of resource specialists from the GJFO. The interdisciplinary team provided information pertaining to the suitability criteria factors and also reviewed data from additional sources, such as agency and public input, for accuracy. Once all available data were compiled, the team evaluated each segment and made a suitability determination.

2.2.3 Informational Sources

The BLM used a number of informational sources and publications to evaluate segments for suitability. These sources included:

- BLM Manual Section 6400;
- US Geological Survey Minerals Maps;
- US Geological Survey stream gage data;
- Land Status Maps;
- Agreements with other agencies;
- Other Agency management plans;
- Land use planning and zoning documents for local and county governments;
- Descriptions of current and proposed water projects provided by water management agencies;
- Published books;
- River guides;
- Tabulations of water rights; and
- Input from Cooperating Agencies and stakeholders.

2.2.4 Other Agencies

Additional information was gathered from other federal and state agencies from scoping letters, stakeholder outreach, and existing documents. The following other agencies were contacted in order to assess suitability:

- Colorado Department of Natural Resources, Parks and Wildlife (CPW) databases;
- US Department of Agriculture, National Forest Service [Forest Service], where segments originate or continue onto Forest Service land;
- Environmental organizations;
- Land owners;
- Water users;
- Municipalities;
- Counties; and
- State entities.

2.2.5 Public Input

Eligibility Phase

Public involvement for the GJFO WSR evaluation process began during the eligibility phase as part of initial scoping for the RMP from October 15, 2008 through January 9, 2009. Public outreach during the scoping period included: 1) a newsletter mailed to over 600 agency officials,

organizations, and members of the public; 2) three scoping open houses in December 2008 in Grand Junction and Collbran, Colorado, and in Moab, Utah; and 3) a public Web site, http://www.blm.gov/co/st/en/fo/gjfo/rmp, which provides access to materials distributed at scoping meetings, as well as information on the public involvement process. The BLM presented the results of its initial identification efforts, provided educational materials regarding the WSR process, and solicited comments from the public and government agencies.

The public was invited to submit comments via US mail, facsimile, and/ or electronic mail and comments were accepted until January 9, 2009. The BLM received 36 discreet comments in seven letters related to WSR during scoping. Comments were analyzed and incorporated as appropriate into the eligibility study. More detailed information on public involvement during the eligibility phase can be found in the *Wild and Scenic River Eligibility Report for Bureau of Land Management, Grand Junction Field Office* (BLM 2009a) and the *Resource Management Plan Revision Scoping Summary Report* (BLM 2009b).

Suitability Phase

In late-March of 2009 at the beginning of the suitability phase of the evaluation process Colorado River District convened a stakeholders group. Letters were mailed to potential stakeholders soliciting data on the segments being studied for suitability. Stakeholders were specifically asked to provide data related to the suitability criteria in **Section 2.1**. Letters to potential stakeholders were sent on March 31, 2009, and included a list of the suitability criteria, a question and answer on WSRs analysis and water rights/water projects overview, and a WSRs guide for riverfront property owners. Data received were analyzed and incorporated into the suitability evaluation.

During stakeholder outreach for suitability, the BLM received *23* comment letters. Comments pertained to a range of topics from the eligibility of certain segments to opinions on the suitability of eligible segments. As intended, the stakeholders provided valuable information related to the suitability criteria, which was incorporated into the evaluation when applicable.

A stakeholder group, named the Lower Colorado River Wild and Scenic Stakeholder Collaborative, formed independently of BLM's public outreach process. This stakeholder group included representatives from state government, local governments, conservation districts, water districts, organizations representing agricultural interests, and organizations representing environmental interests. The stakeholder group also included several private landowners. The objective adopted by the group was to provide collaboratively-developed management recommendations to the BLM that would support the identified ORVs on specific stream segments while also supporting stakeholder uses and values that exist along certain stream segments. At the request of the group, BLM provided information concerning the WSR Act, the BLM planning process, and stream-related natural resource values. The BLM did not participate in the group as a stakeholder, nor did BLM participate in decisions made by the group concerning management recommendations. The group sent a letter signed by all the parties conveying its recommendations to BLM. These letters are incorporated as part of the public comment record for the BLM planning effort. Stakeholder group recommendations are more fully discussed in the following sections on specific stream segments.

All comments received were considered and analyzed. Only those comments that pointed out errors or omissions in BLM's eligibility resulted in changes to the eligibility analysis. Those changes are explained in a March 2010 amendment to the eligibility report.

2.3 SUITABILITY DETERMINATIONS

Each of the 15 individual eligible segments was evaluated to assess whether or not it would be suitable for inclusion in the NWSRS. The determination was made based on the suitability criteria factors described previously. Based on the evaluation described in this report, one segment of the Dolores River has been determined suitable for designation into the National Wild and Scenic Rivers System.

2.4 INTERIM MANAGEMENT OF SUITABLE SEGMENTS

The WSR Act and BLM guidance require that interim management be developed and followed to protect the free-flowing nature, ORVs, and recommended tentative classification of suitable segments until congressional action regarding designation is taken. Interim protections for suitable segments are provided administratively by the management agency and are not legislative protection under the WSR Act. Legislative protection is provided only by formal designation by Congress. Guidelines for management of Section 5(d)(1) suitable rivers, as adapted by the Interagency Wild and Scenic Rivers Coordinating Council from the WSR Act, are included in **Table 2-1**. Once final determinations have been made, the BLM will draft protective management measures for each suitable segment.

Table 2-1
Interim Protection for Candidate Wild and Scenic Rivers

Issue	Management Prescription/Action
Study Boundary	Minimum of 0.25-mile from ordinary high-water mark Boundary may include adjacent areas needed to protect identified values
Preliminary Classification (Section 2(b) of WSR Act)	3 classes: wild, scenic, recreational (defined by statute) Criteria for tentative classification described in Interagency Guidelines Manage at recommended tentative classification
Study Report Review Procedures	Notice of study report/Draft EIS published in *Federal Register* Comments/response from federal, state, and local agencies, and the public included in the study report/Final EIS transmitted to the President and Congress
Private Land: • Administration • Acquisition	Affect private land uses through voluntary partnership with state/local governments and landowners No regulatory authority Typically an evaluation of the adequacy of local zoning and land use controls is a component of suitability determination[1] No ability to acquire interest in land under the Act's authority prior to designation

Table 2-1
Interim Protection for Candidate Wild and Scenic Rivers

Issue	Management Prescription/Action
Water Resources Project	River's free-flowing condition protected to the extent of other agency authorities; not protected under the WSR Act
Land Disposition	Agency discretion to retain lands within river corridor in federal ownership
Mining and Mineral Leasing	Protect free flow, water quality, and ORVs through other agency authorities
Actions of Other Agencies	Affect actions of other agencies through voluntary partnership.
Protect Outstandingly Remarkable Values	No regulatory authority conferred by the WSR Act; agency protects through other authorities Section 11(b)1: Limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources[2]

[1] For an agency-identified study river that includes private lands there is often the need to evaluate existing state and local land use controls and, if necessary, assess the willingness of state and local government to protect river values.

[2] Section 11(b)1 authorizes the Secretary of the Interior and secretary of Agriculture, or the head of any other federal agency, to provide for "limited financial or other assistance to encourage participation in the acquisition, protection, and management of river resources." This authority "applies within or outside a federally administered area and applies to rivers which are components of the National system and to other rivers." The recipients of federal assistance include states or their political subdivisions, landowners, private organizations, or individuals. Some examples of assistance under this section include, but are not limited to, riparian restoration, riparian fencing to protect water quality and riparian vegetation, of vegetative screening to enhance scenery/recreation experience.

Source: Interagency Wild and Scenic Rivers Coordinating Council 1999

2.5 APPROVED RMP MANAGEMENT FOR NON-SUITABLE SEGMENTS

Specific management actions are not proposed for segments not found suitable for inclusion in the NWSRS. However, ORVs for these segments would be afforded protection via management actions for other programs, including the following stipulations that overlap some or all of the stream segments:

Segment	Stipulation or ACEC Overlap
Blue Creek	• Closed to fluid mineral leasing (Maverick lands with wilderness characteristics unit) • LANDS WITH WILDERNESS CHARACTERISTICS NSO CO (Maverick lands with wilderness characteristics unit) • CSU-30: VRM Class II • CSU-32: Recreation Management Areas (Gateway ERMA) • NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics

Segment	Stipulation or ACEC Overlap
Carr Creek	• GEOLOGY SOIL CSU CO
	• CSU-30: VRM Class II
	• CSU-39: Roan and Carr Creeks ACEC
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Colorado River 1	• HYDROLOGY RIVER NSO CO
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Colorado River 2	• HYDROLOGY RIVER NSO CO
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Colorado River 3	• Closed to fluid mineral leasing (McInnis Canyon NCA)
	• HYDROLOGY RIVER NSO CO
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Dolores River	• Closed to fluid mineral leasing (Dolores River Canyon SRMA)
	• HYDROLOGY RIVER NSO CO
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
East Creek	• Highway 141
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Gunnison River 2	• HYDROLOGY RIVER NSO CO
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
North Fork Mesa Creek	• CSU-30: VRM Class II
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
North Fork West Creek	• Closed to fluid mineral leasing (The Palisade WSA)
	• NSO-43: Wilderness Study Area (The Palisade WSA)
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Roan Creek	• GEOLOGY SOIL CSU CO
	• CSU-30: VRM Class II
	• CSU-39: Roan and Carr Creeks ACEC
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
Rough Canyon Creek	• Closed to fluid mineral leasing (Bangs Canyon SRMA; Rough Canyon ACEC)
	• NSO-12: ACECs (Rough Canyon ACEC)
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics

Segment	Stipulation or ACEC Overlap
Ute Creek	• Closed to fluid mineral leasing (Unaweep Canyon lands with wilderness characteristics unit)
	• LANDS WITH WILDERNESS CHARACTERISTICS NSO CO (Unaweep Canyon lands with wilderness characteristics unit)
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics
West Creek	• Closed to fluid mineral leasing (Dolores River Canyon SRMA)
	• RECREATION SRMA NSO CO (Dolores River Canyon SRMA)
	• NSO-2: Streams/Springs Possessing Lotic Riparian Characteristics

These stipulations that overlap a stream segment would also protect ORVs by limiting or prohibiting fluid mineral development and/or all surface-disturbing activities. The total acreage of mapped stipulations that overlap nonsuitable stream segments is provided in Table 2-2, below. In addition, management actions such as those which support ACECs or other special designations would protect ORVs on stream segments that overlap the special designation (see **Table 2-2**, Select Overlapping Management for Nonsuitable Segments). One example is the Roan and Carr Creek ACEC that overlaps both streams and limits surface-disturbing activities, thereby protecting the Fish ORV on both stream segments. A second example is the overlap between Rough Canyon ACEC and Rough Canyon Creek that provides additional protection to the Scenic, Wildlife, and Geologic ORVs for that stream segment. Managing lands for wilderness characteristics can also provide supplemental protections for nonsuitable stream segments. The Proposed RMP would manage the Unaweep unit to protect its wilderness characteristics; the Scenic and Vegetation ORVs for Ute Creek, located within the Unaweep unit's boundaries, would be protected by the actions which protect wilderness characteristics. There would be similar protections for the Scenic, Fish, and Cultural ORVs along Blue Creek, which overlaps the Maverick lands with wilderness characteristics unit. Other actions, such as the management of VRM classifications, can limit activities that may diminish ORVs. Table 2-2, below, displays the acreages of each VRM class that overlap nonsuitable segments; a lower VRM class (i.e., VRM Class I and II) would be expected to better protect ORVs, especially Scenic ORVs. A more thorough discussion of these actions and their impacts is provided in Section 4.5.3.

Table 2-2
Select Overlapping Management for Nonsuitable Segments under in Approved RMP

Segment	ORVs	Stipulation (acres)			VRM Class (acres)				ROW		Closed to Fluid Mineral Leasing (acres)	Petitioned for Withdrawal from Locatable Mineral Entry (acres)
		NSO	CSU	TL	I	II	III	IV	Exclusion	Avoidance		
Nonsuitable												
Blue Creek	Scenic, Fish, Cultural	1,600	1,700	2,700	0	2,800	0	0	800	2,000	800	0
Carr Creek	Fish	1,100	600	100	0	0	1,700	0	0	1,700	0	0
Colorado River Segment 1	Scenic, Fish, Wildlife	2,200	1,200	1,600	0	2,000	0	200	0	2,100	0	0
Colorado River Segment 2	Fish	100	100	0	0	100	0	0	0	100	40	0
Dolores River	Scenic, Fish, Recreation, Geologic, Paleontological	2,700	2,100	2,700	100	2,600	0	0	2,400	300	2,700	1,200
East Creek	Geologic	1,900	1,500	1,900	0	0	1,900	0	0	1,900	100	0
Gunnison River Segment 2	Fish, Historic	1,000	500	500	0	600	400	0	400	500	900	0
North Fork Mesa Creek	Vegetation	300	400	300	0	700	0	0	0	700	0	0

Table 2-2
Select Overlapping Management for Nonsuitable Segments under in Approved RMP

Segment	ORVs	Stipulation (acres)			VRM Class (acres)				ROW		Closed to Fluid Mineral Leasing (acres)	Petitioned for Withdrawal from Locatable Mineral Entry (acres)
		NSO	CSU	TL	I	II	III	IV	Exclusion	Avoidance		
North Fork West Creek	Scenic	1,100	100	500	900	200	0	0	900	100	1,100	100
Roan Creek	Fish	500	1,400	1,700	0	0	1,900	0	0	2,000	0	0
Rough Canyon Creek	Scenic, Wildlife, Geologic	1,200	800	1,200	0	1,200	0	0	1,000	200	1,200	0
Ute Creek	Scenic, Vegetation	1,400	500	800	50	1,100	200	0	1,100	200	1,400	0
West Creek	Scenic, Wildlife, Geologic, Vegetation	1,700	600	1,700	600	100	1,000	0	600	1,100	1,700	300
Total		**20,000**	**13,200**	**18,100**	**2,600**	**13,500**	**7,500**	**200**	**9,500**	**13,800**	**12,900**	**1,600**

Source: BLM 2010a

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3. SUITABILITY CRITERIA-BASED DATA AND DETERMINATIONS

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CHAPTER 3
SUITABILITY CRITERIA-BASED DATA AND DETERMINATIONS

The purpose of the suitability phase is to determine whether eligible river segments are suitable or not suitable for inclusion in the NWSRS, per the criteria from the WSR Act. The suitability evaluation does not result in actual designation but only a suitability determination for designation. The BLM may or may not recommend a stream segment for designation into the NWSRS by transmitting its suitability determinations to Congress and the President. No stream segment studied is designated or will be automatically designated as part of the NWSRS. Only Congress can designate a WSR. In some instances, the Secretary of the Interior may designate a WSR when the governor of a state, under certain conditions, petitions for a river to be designated. Congress will ultimately choose the legislative language if any suitable segments are presented to them. Water protection strategies and measures to meet the purposes of the WSR Act will be the responsibility of Congress in any legislation proposed. Rivers found nonsuitable will be dropped from further consideration and managed according to the objectives outlined in the RMP.

Impacts that would occur from designating or not designating the suitable river segments will be analyzed in the EIS associated with the RMP. Public review and comment on suitability determinations included in the Draft RMP were considered before the BLM made final suitability determinations. Maps have been included only for those segments preliminarily determined suitable. Maps of all eligible segments were included in the *Wild and Scenic River Eligibility Report for Bureau of Land Management, Grand Junction Field Office* (BLM 2009a).

This section contains a discussion of 11 suitability factors in relation to each of the 15 river and stream segments within the RMP planning area determined to be eligible in the *Wild and Scenic River Eligibility Report for Bureau of Land Management, Grand Junction Field Office* (BLM 2009a). The criteria described in **Section 2.1** are presented as follows:

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.
3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.
4. Federal, state, tribal, local, public, or other interest in designating or not designating the river.
5. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.
6. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.
7. Historical or existing rights that could be adversely affected with designation.
8. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.
9. Consistency of designation with other agency plans, programs, or policies.
10. Contribution to a river system watershed or basin integrity.
11. Other issues and concerns, if any.

3.1 COLORADO RIVER

3.1.1 Colorado River Segment 1

Description:	From the eastern boundary of the planning area northeast of De Beque to the Grand Valley Diversion Dam, northeast of Palisade.		
Total Segment Length:	17.76 miles	**Total Segment Area:**	5,635.55 acres
Length on BLM Land :	7.32 miles	**Area on BLM Land:**	2,587.82 acres
Tentative Classification:	Recreational		
ORVs:	Scenic, Fish, Wildlife		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.
This segment has outstandingly remarkable scenic, fish, and wildlife values, which would make the segment a worthy addition to the NWSRS if designated. On the other hand, this segment has other characteristics that detract from its value as an addition to the NWSRS. The tentative classification for this segment is recreational due to Interstate 70 and railroad, both of which run parallel to and are readily apparent from the river.

This segment has outstandingly remarkable scenic values. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery,

scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). This segment flows through De Beque Canyon: a wide, relatively gentle sloped canyon through the Mesa Verde formation, formed by the down cutting of the Colorado River. The majestic views from and along the river are composed of stair-stepped brownish sandstone cliffs intermixed with lightly vegetated slopes of the canyon in sharp contrast to the riparian vegetation and varied colors near the river. The river drops several hundred feet through the canyon, with extensive views at the upper end of the canyon before opening up again at the bottom to views of the Grand Valley near Palisade.

This segment also has outstandingly remarkable fish values. The entire segment is designated critical habitat by the US Department of the Interior, Fish and Wildlife Service (USFWS) for the federally endangered Colorado pikeminnow (*Ptychocheilus lucius*) and the Razorback sucker (*Xyrauchen texanus*) (59 Fed. Reg. 13,374). Critical habitat is the specific area or areas that possess physical or biological features that are essential to the conservation of the species and that may require special management considerations or protections. The Colorado pikeminnow is the largest minnow in North America and one of the largest in the world. At one time, individuals may have lived more than fifty years, growing to nearly six feet in length and weighing up to 80 pounds. The razorback sucker is one of the largest suckers in North America. Individuals can live for more than forty years and can grow to up to thirteen pounds in weight and to three feet in length. These species were once widespread throughout most of the Colorado River Basin from Wyoming to Mexico.

Lastly, this segment has outstandingly remarkable wildlife values. Specifically, the segment contains important winter habitat for bald eagles *(Haliaeetus leucocephalus)*, a State Threatened Species in Colorado (CPW 2008). The USFWS also recently discovered a nesting site along this segment. Bald eagles no longer receive protection under the Endangered Species Act (ESA). The USFWS delisted bald eagles in June 2007 because their populations have recovered sufficiently. Nevertheless, bald eagles still receive protection under the Bald and Golden Eagle Protection Act.

There are also characteristics that are unrelated to ORVs that affect the suitability of this segment. Numerous water diversions exist along this segment, including several conditional water rights. If made absolute, these water rights could result in additional depletions and additional water development and diversion structures along the private land in the corridor. A portion of this segment overlaps the city limits of De Beque. Future population growth and expansion of De Beque and associated development, particularly along the riverfront, have the potential to change the setting found in this segment. Interstate 70 runs adjacent to the segment but gives drivers the opportunity to view the scenic landscape. A railroad and power lines are visible throughout the segment as well. Future expansion of the interstate, railroad, and transmission lines also have the potential to change the setting found in this segment. These characteristics somewhat detract from the value of the segment as an addition to the NWSRS.

2. <u>The status of land ownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.</u>

Land ownership for this 17.76-mile segment is a combination of federal (BLM and US Department of the Interior, Bureau of Reclamation [US BOR]) and private. The BLM manages

shoreline along 7.32 miles (41.2 percent) of the segment. Within the 5,635.55-acre segment corridor, the BLM manages 2,587.82 acres (45.9 percent). Another 3,016.15 acres (53.5 percent) are privately owned. The US BOR manages the remaining land within the study corridor (31.58 acres; less than one percent).

The area is leased for oil and gas exploration and there are four active wells within the study corridor. Nearly all of the BLM-managed lands within the segment corridor are under lease for oil and gas development. The BLM-managed lands in the segment corridor northeast of De Beque have high oil and gas potential; while the remaining BLM-managed lands in the segment corridor generally have low oil and gas potential. There are no mining claims within the segment.

The BLM does not have authority over maintenance, operation, and construction activities associated with the highway and railroad. Activities associated with the highway and railroad are not likely to adversely impact the ORVs. The Department of Transportation, pursuant to the Federal-Aid Highway Act and section 4(f) of the Department of Transportation Act of 1966, must consult with the Department of the Interior so that its plans and programs include measures to maintain or enhance the natural beauty of the lands traversed. These statutes also permit the Department of Transportation to approve a program or project using public park and recreation lands, wildlife and waterfowl refuges, or historic sites only if there is no feasible and prudent alternative and it has used all possible planning to minimize harm to these lands.

3. <u>Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.</u>

WSR designation has the potential to impact future water development along this segment. With designation, BLM would obtain authority to place terms and conditions on or deny approval for any proposed projects on BLM lands that would be incompatible or potentially degrade to ORVs for this segment. Other federal agencies that consider proposed projects that require federal permits, licenses, or funds would be required to evaluate the potential effects on the segment's ORVs, and prevent significant impacts to ORVs, free-flowing nature, or water quality. However, the Colorado Statewide Water Supply Initiative concluded that Mesa County would be able to meet estimated demand for water in the Colorado River basin through 2030 by utilizing existing supplies, agricultural transfers, Ruedi and Wolford Reservoir contracts, and Jerry Creek Reservoir. (Colorado Water Conservation Board, Statewide Water Supply Initiative Reports, 2004)

Several conditional storage water rights have the potential to impact values along this segment. A conditional water right is a water right where the water has not been placed to a beneficial use. It gives the holder time to complete a project, provided that the holder pursues its completion with due diligence. Once the holder has put the water to beneficial use, the conditional right will be decreed as an absolute water right. Some of these conditional storage rights have priority dates senior to existing absolute junior rights and therefore could affect junior water right holders if made absolute. These conditional storage rights could result in additional depletions and change the flow regime along this segment. The combined volume of conditional storage rights in the Colorado River basin in Colorado totals almost 3 million acre-

feet. Water District 70 alone (Roan Creek Basin) has approximately 560,000 acre-feet of conditional storage rights. The majority of which have priority dates ranging from 1960-1980, with some as early as 1940-1960 (SWSI). The development of conditional water rights both along the segment and upstream from the segment has the potential to impact the fish values along this segment.

Presently, there are no state-based instream flow water rights in this reach to ensure sufficient flow to preserve the natural environment to a reasonable degree. Rather, flows derive from required deliveries to downstream senior water rights, contractual water deliveries from Green Mountain, Ruedi, and Wolford Mountain Reservoirs, and by water deliveries that are made as part of the Upper Colorado River Endangered Fish Recovery Program (see Criteria 9). The USFWS has developed flow recommendations for the Colorado River to benefit endangered fish. Flow recommendations are not absolute values and may be revised from time to time to include the results of research. The goal of the recommendations is to provide the flow patterns to enhance populations of the endangered fishes and to allow Colorado the full ability to develop its compact entitlements. The flow recommendations consist of peak flow recommendations and base flow recommendations. Peak flow recommendations are based on historical river flows during spring runoff to provide spawning cues and to restore and maintain in-channel and flood plain habitats. Base flow recommendations are designed to allow fish movement among river segments and to provide maximum amounts of warm, quiet-water habitats to enhance growth and survival of young fish. Although there is no instream-flow right along this segment, USFWS flow recommendations provide a layer of protection for the ORVs.

The scenic and wildlife values along this segment likely would not be diminished or foreclosed if the segment was not designated. Other management requirements and tools (discussed under Criterion 6) provide a layer of protection for these values. These mechanisms will apply regardless of whether the segment receives WSR designation by Congress.

The Colorado River Recovery Program functions to insure that adequate flow regimes exist to support the four threatened and endangered fish species in the Colorado River as further water development proceeds. In addition, the program implements programs to improve fish habitat and reduce competition from non-native species. These measures are likely to maintain the fish ORV. Designation of this reach into the NWSRS, which would include a federal reserved water right, is unlikely to provide greater protection. The federal reserved water right would be very junior, and could not be used to prevent the exercise of previously decreed conditional or absolute water rights.

4. <u>Federal, state, tribal, local, public, or other interest in designating or not designating the river.</u>

The State of Colorado, water districts, user groups, and individuals have expressed concern about the impact of designating this segment on current and future upstream and downstream water projects. However, they also recognize that this segment supports a high number of ORVs and that some special management provisions are warranted to protect and support these values. Mesa County Board of Commissioners recommends that no river or stream segment in Mesa County be found suitable.

5. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

Designation of the segment would not likely increase the cost of administering the segment for the protection of the ORVs. There is some potential for cost to increase due to the need for additional facilities to accommodate increased visitation. However as discussed below, the fish and wildlife ORVs already require special management practices pursuant to other federal statutes. The cost of administering this area pursuant to the WSRA is likely to be similar to the cost of administering these other management practices.

The BLM would not pursue land acquisition from willing sellers. Because the majority of the land within the segment corridor is privately owned, it would be difficult for the BLM to acquire enough additional land to affect the manageability of the segment. No detailed cost analysis or estimate was prepared as part of this study.

6. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM's land management authorities can adequately protect the federal lands in the river corridor, but BLM does not have the authority to protect ORVs on private lands in the corridor, nor does it have authority to protect the stream flows necessary to support the ORVs. Designation would provide a comprehensive framework for working with local governments to protect against land uses that are incompatible with the ORVs, and designation would also provide a federal water right that would assist with flow protection.

The makeup of this segment hinders the BLM's ability to manage it effectively as a WSR. First, the BLM-managed portions of the segment are somewhat fragmented. The BLM manages roughly a quarter-mile portion at the upstream end of the segment and another roughly quarter-mile portion after the river flows through a little over a mile of private lands. Then, the river flows another six miles through private lands before reaching the lower half of the segment, where the majority of the segment corridor is BLM-managed. Second, the majority of the shoreline and the segment corridor fall under private ownership. The BLM does not control uses or activities on private lands, making effective management of this segment difficult.

Mechanisms and management tools other than WSR designation can protect the segment's ORVs. The BLM's RMP revision process addresses protection of scenic values. The BLM also must comply with federal statutes, other than the WSRA, that address protection of the fish and wildlife values.

The BLM manages approximately 2,048 acres within the segment corridor as Visual Resource Management (VRM) Class II (De Beque Canyon). The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape. This management prescription protects the scenic values along this segment.

Mechanisms are already in place that will adequately protect the wildlife values (bald eagles) in this segment. In 2007, the USFWS removed the bald eagle from the endangered species list

because its populations had recovered sufficiently. Nevertheless, the bald eagle still receives federal protection under the Bald and Golden Eagle Protection Act. Regulations issued under this Act establish a permit system to limit "take" of bald eagles, similar to the ESA. These regulations provide that take will only be authorized where it is compatible with the preservation of either of the eagle species—where take is consistent with the goal of stable or increasing breeding populations—or where take cannot be practicably avoided. Further, the Colorado Division of Wildlife recommends buffer zones and seasonal restrictions that apply to management actions occurring near bald eagle habitat. These include: (1) a year-round closure to surface occupancy within a quarter-mile radius of a nest; (2) a restriction on human encroachment from November 15 through July 31 within a half-mile radius of a nest; and (3) a restriction on activity within a quarter-mile radius of winter roosts between November 15 and March 15. The combination of these measures will prevent the foreclosure or diminishment of the wildlife values present in this segment.

The ESA provides protection for the fish values present along this segment. This entire segment is designated critical habitat for the Colorado pikeminnow and the razorback sucker. Areas designated as critical habitat receive protection under Section 7 of the ESA with regard to actions carried out, funded, or authorized by a Federal agency that are likely to adversely modify or destroy critical habitat. Section 7 requires Federal agencies to consult on and insure that such actions are not likely to destroy or adversely modify critical habitat. These fish species also receive special management as part of the Upper Colorado River Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. Program partners cooperatively manage water resources in accordance with the ESA, state water law, individual water rights, and interstate compacts. Program partners utilize a variety of management tools: leases and contracts for water supplies; coordinated water releases from upstream reservoirs; participation in reservoir enlargements, efficiency improvements to irrigation systems to reduce water diversions; and re-operation of federal dams and reservoirs. These mechanisms will protect the fish values along this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in Section 2.2.5 (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should continue to rely on the provisions of the Colorado Endangered Fish Recovery Program to protect the Fish ORV.
2. BLM should continue to rely upon the special recreation management area (SRMA) designation to protect the scenic ORV. In addition, BLM should adopt VRM Level 2 restriction to protect the scenic ORV in the revised RMP.
3. BLM should use its authority to control land development along the river corridor to protect the wildlife ORV.

Based on these recommendations, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

7. Historical or existing rights that could be adversely affected with designation.

This segment is downstream from current water projects and diversions that are designed to provide water for the State of Colorado. The ability to change existing projects and construct new projects upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs. Numerous absolute water rights exist along the Colorado River. Historical operation, maintenance, and access practices would be allowed to continue. While these rights would not be affected by designation of the segment, the development of new water projects as described in sections 7(b) and 7(c) of the WSR Act would be permitted only if they did not have a direct and adverse effect on the values for which the river segment was designated. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

8. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. A small portion of the segment is within the Planned Unit Development district. The Planned Unit Development district is intended to encourage innovative land planning and site design concepts that implement and are consistent with the Mesa County Master Plan (Mesa County 2008). The majority of the area on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008).

The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

9. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

10. Consistency of designation with other agency plans, programs, or policies.

The Colorado pikeminnow and razorback sucker are part of the Upper Colorado River Endangered Fish Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery plans and goals have been issued by the USFWS (USFWS 2002a and USFWS 2002b).

The Colorado River Valley and Kremmling Field Offices (Colorado) have found the Colorado River from the gauging station near the mouth of Gore Canyon within the Kremmling Field

Office to approximately one mile east of No Name Creek within the Colorado River Valley Field Office to be preliminary suitable for inclusion in the NWSRS in its draft plan and EIS.

In coordination with the Colorado River Valley Field Office, the White River National Forest has found two segments in Glenwood Canyon to be suitable for inclusion in the NWSRS in its draft plans and EIS.

The Moab Field Office (Utah) found the segment of the Colorado River from the Colorado/Utah border to Westwater Canyon not-suitable for inclusion in the NWSRS. However, it found the Colorado River from Westwater Canyon to the Boundary of Canyonlands National Park (approximately 91 river miles, 65.5 on BLM land) to be suitable for inclusion in the NWSRS (BLM 2008).

Designation of this segment would be consistent with the goals of the recovery plan and with the suitable segments listed above.

Other Protections for Segment

Colorado River Segment 1	
Outstandingly Remarkable Values	**Protections**
Scenic, Fish, Wildlife	NSO (2,200 acres), CSU (1,200 acres), TL (1,600 acres), VRM Class II (2,000 acres), ROW Avoidance (2,100 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. The majority of lands in this segment corridor are privately owned, and the BLM has no control over activities on private lands. Further, the BLM-managed lands are fragmented within the segment. Mesa County zoning does not prevent development that is incompatible with WSR designation. The Agricultural, Forestry, Transitional district allows extractive uses (either as of right or conditionally) that have the potential to change the landscape and setting found along this segment. The city limits of De Beque also lie within the segment corridor. As the city expands, the possibility of development along this part of the corridor increases. The fish ORV in this segment appears to be sufficiently protected by the provisions of the ESA and by the Colorado River Recovery Program. The wildlife ORV appears to be sufficiently protected by the Bald and Golden Eagle Protection Act. The BLM concludes that this segment is not readily manageable as a Wild and Scenic River because of the land ownership pattern and county zoning. In addition, the ORVs are sufficiently protected by existing law.

3.1.2 Colorado River Segment 2

Description:	BLM sections of the Colorado River downstream from the Grand Valley Diversion Dam to the Loma Boat Launch.		
Total Segment Length:	40.24 miles	**Total Segment Area:**	12,897.11 acres
Length on BLM Land :	1.31 miles	**Area on BLM Land:**	533.25 acres
Tentative Classification:	Recreational		
ORVs:	Fish		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment has outstandingly remarkable fish values, which would make the segment a worthy addition to the NWSRS if designated. On the other hand, this segment has other characteristics that detract from its value as an addition to the NWSRS. The tentative classification for this segment is recreational due to Interstate 70 and a railroad, both of which run parallel to and are readily apparent from the river.

This segment has outstandingly remarkable fish values. The entire segment is USFWS-designated critical habitat for the federally endangered Colorado pikeminnow *(Ptychocheilus lucius)* and the Razorback sucker *(Xyrauchen texanus)* (59 Fed. Reg. 13,374). Critical habitat is the specific area or areas that possess physical or biological features that are essential to the conservation of the species and that may require special management considerations or protections. The Colorado pikeminnow is largest minnow in North America and one of the largest in the world. At one time, individuals may have lived more than fifty years, growing to nearly six feet in length and weighing up to 80 pounds. The razorback sucker is one of the largest suckers in North America. Individuals can live for more than forty years and can grow to up to thirteen pounds in weight and to three feet in length. These species were once widespread throughout most of the Colorado River Basin from Wyoming to Mexico.

The James M. Robb Colorado River State Park is within the segment. Even though recreation was not determined to be an ORV within this segment, the park provides multiple opportunities for recreation, including camping, fishing, hiking, biking, and swimming.

The Grand Valley Project Diversion Dam forms the upstream terminus of the segment and diverts water from the Colorado River to irrigate approximately 33,368 acres of land in the Grand Valley (US BOR, no date). In addition to irrigation, project water is used for the generation of power. The Orchard Mesa Power Plant has produced power from its two 3,000 k/w generators since 1933, and the Cameo Power Plant, built by Public Service Company in the late 1950s, has used project water for cooling since it was constructed.

There are also characteristics that are unrelated to ORVs that affect the suitability of this segment. Numerous water diversions exist along this segment, including several conditional water rights. If made absolute, these water rights could result in additional depletions and additional water development and diversion structures along the private land in the corridor. Portions of the study area for this segment overlap the city limits of Palisade, Grand Junction,

and Fruita. The future population growth, expansion, and associated development of these communities, particularly along the riverfront, have the potential to change the setting found in this segment. Interstate 70 runs adjacent to the segment, and a railroad and power lines also are visible throughout the segment. Future expansion of the interstate, railroad, and transmission lines also have the potential to change the setting found in this segment. These characteristics somewhat detract from the value of the segment as an addition to the NWSRS.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 40.24-mile segment is a combination of federal (BLM), state, and private. The BLM manages shoreline along 1.31 miles (3.3 percent) of the segment. Within the 12,897.11-acre study corridor, the BLM manages 533.25 acres (4.1 percent). Another 11,052.63 acres (53.8 percent) are privately owned. The State of Colorado manages the remaining 1311.23 acres within the segment corridor. The Colorado Division of State Parks manages the James M. Robb Colorado River State Park. The Colorado Division of Wildlife manages various state wildlife areas (Horsethief, Tillman Bishop, and Walker).

Most of the BLM-managed lands in the study area are leased for oil and gas exploration, but there are no active wells within the study corridor. The mineral potential in this segment corridor is low to very low. There are no active mining claims in this segment corridor.

The BLM does not have authority over maintenance, operation, and construction activities associated with the highway and railroad. Activities associated with the highway and railroad are not likely to adversely impact the ORVs. The Department of Transportation, pursuant to the Federal-Aid Highway Act and section 4(f) of the Department of Transportation Act of 1966, must consult with the Department of the Interior so that its plans and programs include measures to maintain or enhance the natural beauty of the lands traversed. These statutes also permit the Department of Transportation to approve a program or project using public park and recreation lands, wildlife and waterfowl refuges, or historic sites only if there is no feasible and prudent alternative and it has used all possible planning to minimize harm to these lands.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to impact future water development along this segment. With designation, BLM would obtain authority to place terms and conditions on or deny approval for any proposed projects on BLM lands that would be incompatible or potentially degrade to ORVs for this segment. Other federal agencies that consider proposed projects that require federal permits, licenses, or funds would be required to evaluate the potential effects on the segment's ORVs, and prevent significant impacts to ORVs, free-flowing nature, or water quality. However, the Colorado Statewide Water Supply Initiative concluded that Mesa County would be able to meet estimated demand for water in the Colorado River basin through 2030 by utilizing existing supplies, agricultural transfers, Ruedi and Wolford Reservoir contracts, and Jerry Creek Reservoir. (Colorado Water Conservation Board, Statewide Water Supply Initiative Reports, 2004)

Several conditional storage water rights have the potential to impact values along this segment. A conditional water right is a water right where the water has not been placed to a beneficial use. It gives the holder time to complete a project, provided that the holder pursues its completion with due diligence. Once the holder has put the water to beneficial use, the conditional right will be decreed as an absolute water right. Some of these conditional storage rights have priority dates senior to existing absolute junior rights and therefore could affect junior water right holders if made absolute. These conditional storage rights could result in additional depletions and change the flow regime along this segment. The combined volume of conditional storage rights in the Colorado River basin in Colorado totals almost 3 million acre-feet. Water District 70 alone (Roan Creek Basin) has approximately 560,000 acre-feet of conditional storage rights. The majority of which have priority dates ranging from 1960-1980, with some as early as 1940-1960 (SWSI). The development of conditional water rights both along the segment and upstream from the segment has the potential to impact the fish values along this segment.

Presently, there are no state-based instream flow water rights in this reach to ensure sufficient flow to preserve the natural environment to a reasonable degree. Rather, flows derive from required deliveries to downstream senior water rights, contractual water deliveries from Green Mountain, Ruedi, and Wolford Mountain Reservoirs, and by water deliveries that are made as part of the Upper Colorado River Endangered Fish Recovery Program (see Criteria 9). The USFWS has developed flow recommendations for the Colorado River to benefit endangered fish. Flow recommendations are not absolute values and may be revised from time to time to include the results of research. The goal of the recommendations is to provide the flow patterns to enhance populations of the endangered fishes and to allow Colorado the full ability to develop its compact entitlements. The flow recommendations consist of peak flow recommendations and base flow recommendations. Peak flow recommendations are based on historical river flows during spring runoff to provide spawning cues and to restore and maintain in-channel and flood plain habitats. Base flow recommendations are designed to allow fish movement among river segments and to provide maximum amounts of warm, quiet-water habitats to enhance growth and survival of young fish. Although there is no instream-flow right along this segment, USFWS flow recommendations provide a layer of protection for the ORVs.

The Colorado River Recovery Program functions to insure that adequate flow regimes exist to support the four threatened and endangered fish species in the Colorado River as further water development proceeds. In addition, the program implements programs to improve fish habitat and reduce competition from non-native species. These measures are likely to maintain the fish ORV. Designation of this reach into the NWSRS, which would include a federal reserved water right, is unlikely to provide greater protection. The federal reserved water right would be very junior, and could not be used to prevent the exercise of previously decreed conditional or absolute water rights.

4. Federal, state, tribal, local, public, or other interest in designating or not designating the river.

The State of Colorado, water districts, user groups, and individuals have expressed concern about the impact of designating this segment on current and future upstream and downstream water projects. However, they also recognize that this segment supports a high number of

ORVs and that some special management provisions are warranted to protect and support these values. Mesa County has not made a formal indication to the BLM as to whether it is interested in supporting designation.

5. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The vast majority of land in this segment is privately owned. The BLM would not pursue land acquisition from willing sellers, as it is not feasible to acquire enough land to affect its ability to manage the segment. Designation of the segment would not likely increase the cost of administering the segment for the protection of the ORV. The cost of administering the area pursuant to the WSRA would likely be similar to the current cost of administering the area under the ESA for the endangered fish species. No detailed cost analysis or estimate was prepared as part of this study.

6. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM's land management authorities can adequately protect the federal lands in the river corridor, but the BLM does not have the authority to protect ORVs on private lands in the corridor, nor does it have authority to protect the stream flows necessary to support the ORVs. Designation would provide a comprehensive framework for working with local governments to protect against land uses that are incompatible with the ORVs. Designation also would provide a federal water right that would assist with flow protection.

The makeup of this segment hinders the BLM's ability to manage it effectively as a WSR. As stated above, the BLM manages a very small percentage of the shoreline along this segment (3.3 percent) and a very small percentage of the land in the segment corridor (4.1 percent). The BLM-managed lands in the segment corridor are extremely scattered as well. Some are located are the upstream end of the segment, and the remainder are located at the downstream end of the segment, with the urban corridor of Palisade, Grand Junction, and Fruita in between. The scattered nature and small proportion of BLM-managed lands in this segment corridor make it difficult for the BLM to exercise effective management control over this segment.

The ESA provides protection for the fish values present along this segment. This entire segment is designated critical habitat for the Colorado pikeminnow and the razorback sucker. Areas designated as critical habitat receive protection under section 7 of the ESA with regard to actions carried out, funded, or authorized by a Federal agency that are likely to adversely modify or destroy critical habitat. Section 7 requires Federal agencies to consult on and insure that such actions are not likely to destroy or adversely modify critical habitat. These fish species also receive special management as part of the Upper Colorado River Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. Program partners cooperatively manage water resources in accordance with the ESA, state water law, individual water rights, and interstate compacts. Program partners utilize a variety of management tools: leases and contracts for water supplies; coordinated water releases from upstream reservoirs; participation in reservoir

enlargements, efficiency improvements to irrigation systems to reduce water diversions; and re-operation of federal dams and reservoirs. These mechanisms will protect the fish values along this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in Section 2.2.5 (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should continue to rely on the provisions of the Colorado Endangered Fish Recovery Program to protect the Fish ORV.

Based on this recommendation, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

7. Historical or existing rights that could be adversely affected with designation.

This segment is downstream from current water projects and diversions that are designed to provide water for the State of Colorado. The ability to change existing projects and construct new projects upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs. Numerous absolute water rights exist along the Colorado River. Historical operation, maintenance, and access practices would be allowed to continue. While these rights would not be affected by designation of the segment, the development of new water projects as described in sections 7(b) and 7(c) of the WSR Act would be permitted only if they did not have a direct and adverse effect on the values for which the river segment was designated. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

8. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. The majority of the area on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORV.

9. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4

10. Consistency of designation with other agency plans, programs, or policies.
The Colorado pikeminnow and razorback sucker are part of the Upper Colorado River Endangered Fish Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery plans and goals have been issued by the USFWS (USFWS 2002a and USFWS 2002b).

The Colorado River Valley and Kremmling Field Offices (Colorado) have found the Colorado River from the gauging station near the mouth of Gore Canyon within the Kremmling Field Office to approximately one mile east of No Name Creek within the Colorado River Valley Field Office to be preliminarily suitable for inclusion in the NWSRS in the Draft Plan and EIS.

In coordination with the Colorado River Valley Field Office, the White River National Forest has found two segments in Glenwood Canyon to be preliminarily suitable for inclusion in the NWSRS.

The Moab Field Office (Utah) found the segment of the Colorado River from the Colorado/Utah border to Westwater Canyon not-suitable for inclusion in the NWSRS. However, it found the Colorado River from Westwater Canyon to the Boundary of Canyonlands National Park (approximately 91 river miles, 65.5 on BLM land) to be suitable for inclusion in the NWSRS (BLM 2008).

Designation of this segment would be consistent with the goals of the recovery plan and with the suitable segments listed above.

Other Protections for Segment

Colorado River Segment 2	
Outstandingly Remarkable Values	**Protections**
Fish	NSO (100 acres), CSU (100 acres), VRM Class II (100 acres), ROW Avoidance (100 acres)

Suitability Determination
The suitability determination for this segment is **not suitable**. The vast majority of lands in this segment corridor are not managed by the BLM (over 90 percent), and the BLM has no control over activities on private lands. With management control over such small portion of the lands in this segment corridor, it would be difficult for the BLM to effectively manage this segment as a WSR. For example, Mesa County zoning does not prevent development that is incompatible with WSR designation. The Agricultural, Forestry, Transitional district allows extractive uses (either as of right or conditionally) that have the potential to change the landscape and setting found along this segment. This segment flows through the growing urban corridor of the Grand Valley. The city limits of Palisade, Grand Junction, and Fruita overlap the segment corridor. As these cities continue to grow, the potential for incompatible development in the segment corridor will correspondingly increase. There are also numerous diversions along this segment. Designation of this segment could affect the ability of water users to make changes to existing

water rights.. The fish ORV in this segment appears to be sufficiently protected by the provisions of the ESA and by the Colorado River Recovery Program. The BLM concludes that this segment is not readily manageable as a Wild and Scenic River because of the land ownership pattern and county zoning. In addition, the ORVs are sufficiently protected by existing law.

3.1.3 Colorado River Segment 3

Description:	BLM sections of the Colorado River from the Loma Boat Launch to the Colorado/Utah border.		
Total Segment Length:	20.91 miles	**Total Segment Area:**	6,798.10 acres
Length on BLM Land :	19.14 miles	**Area on BLM Land:**	5,771.92 acres
Tentative Classification:	Scenic		
ORVs:	Scenic, Recreation, Fish, Wildlife, Geologic, Historic		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment has outstanding scenic, recreational (floatboating and biking), fish, wildlife, geologic, and historical values. This combination of values is similar to other major rivers segments in the western US that have been designated into the NWSRS. Each of these values is discussed below. The tentative classification of this segment is scenic. There are a few private in-holdings with developments, several access points to the river via dirt roads, and a mostly inconspicuous stretch of railroad runs through Ruby Canyon.

This segment has outstandingly remarkable scenic values. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). The Colorado River provides remarkable views of the shear walls of Ruby and Horsethief Canyons and the many side canyons, alcoves, pinnacles, amphitheaters, and other unique sandstone formations formed by the erosional forces of the river. The many different exposed layers show a wealth of geologic history and offer a variety of different colors and textures throughout the canyons. The segment also offers opportunities to view rare species and examine petroglyphs.

This segment has outstandingly remarkable recreational values. The stretch of river is popular for overnight flat-water boating and attracts rafters, kayakers, and canoeists from across Colorado and from nearby states. Water levels are sufficient to permit water recreation throughout the year, an uncommonly long season for watercourses in this region. This segment also contains a trailhead for Kokopelli's Trail, a popular mountain bike route that runs to Moab, Utah. This trail runs above the Colorado River along the top of the wall that forms the inner part of Horsethief Canyon. It recognized worldwide for its spectacular views of the river and surrounding areas. The Mack Ridge mountain bike area contains additional trails with sections running above the canyon walls and immediately above the river.

This segment has a history of significant use by sportsmen and sportswomen who utilize this area. The Loma Boat Ramp, which provides primary access to this segment, is a CPW facility. Power boats have been in use on this segment prior to rafting becoming a popular sport. PUC permits were issued in the 50s and 60's specifically for tourist transport and hunting by motorboat on this water way. This water way is a navigable waterway for motorized traffic and has historically been so.

This segment also has outstandingly remarkable fish values. The entire segment is USFWS-designated critical habitat for the federally endangered Colorado pikeminnow *(Ptychocheilus lucius)* and the Razorback sucker *(Xyrauchen texanus)* (59 Fed. Reg. 13,374). The section from Black Rocks to the Colorado/Utah border is also designated critical habitat for humpback chub *(Gila cypha)* and bonytail chub *(Gila elegans)*, also federally endangered species (59 Federal Register 54 [21 March 1994], pp. 13374-13399). Critical habitat is the specific area or areas that possess physical or biological features that are essential to the conservation of the species and that may require special management considerations or protections. The Colorado pikeminnow is largest minnow in North America and one of the largest in the world. At one time, individuals may have lived more than fifty years, growing to nearly six feet in length and weighing up to 80 pounds. A site near the Colorado/Utah border has been identified as a spawning site for this species. The razorback sucker is one of the largest suckers in North America. Individuals can live for more than forty years and can grow to up to thirteen pounds in weight and to three feet in length. These species were once widespread throughout most of the Colorado River Basin from Wyoming to Mexico. The humpback chub owes its name and striking, unusual appearance to a pronounced hump located behind its head. It historically inhabited the canyons of the Colorado River, can live for more than thirty years, and can grow up to nearly twenty inches. The bonytail chub is the rarest of the endangered fish species in the Colorado River. They can grow to twenty-two inches or more and can live for nearly fifty years. The Black Rock section of the river is a spawning ground for both species of chub and is an important study site where the USFWS have recorded both species.

This segment has outstandingly remarkable wildlife values. Specifically, the segment contains important winter habitat and nests for several pairs of bald eagles *(Haliaeetus leucocephalus)*, a State Threatened Species in Colorado (CPW 2008). Bald eagles no longer receive protection under the ESA. The USFWS delisted bald eagles in June 2007 because their populations have recovered sufficiently. Nevertheless, bald eagles still receive some protection under the Bald and Golden Eagle Protection Act. River otters *(Lontra Canadensis)*, a state threatened species in Colorado, are also frequently observed along this segment.

This segment has outstandingly remarkable historical values as well. The Denver and Rio Grande Railroad (now part of Union Pacific) runs parallel to the segment. This came as a result of the rerouting the Grand Junction to Salt Lake City line and the replacement of a southern route from Denver to Salt Lake City through Montrose. The importance of the railroad in developing the West makes this site eligible for inclusion in the National Register of Historic Places and a site of national, regional, and local significance.

Lastly, this segment is outstandingly remarkable for its geological values. The steep and deep canyons along this segment expose an unusually extensive series of rocks from the recent

Mancos Shale to the extremely old Precambrian formations (overlaid by the Chinle formation as an unconformity). There are also several examples of faults that are free of vegetation that allow visitors to clearly view evidence of geologic processes.

Although the river is not located within the boundaries of the McInnis Canyons NCA (formerly known as the Colorado Canyons NCA), the NCA is located on both sides of the river above the line of the 100-year floodplain. In addition, the Black Ridge Canyons Wilderness is visible from the south bank of the river. Congress designated the NCA in 2000 "to conserve, protect, and enhance for the benefit and enjoyment of present and future generations the unique and nationally important values … including geological, cultural, paleontological, natural, scientific, recreational, environmental, biological, wilderness, wildlife education, and scenic resources of such public lands." The legislation also directed BLM to manage the river in a manner consistent with the protecting the values recognized by Congress for lands within the NCA.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 20.91-mile segment is a combination of federal (BLM), CPW, and private. The BLM manages shoreline along 19.14 miles (91.5 percent) of the segment. Within the 6,798.10-acre study corridor, the BLM manages 5,771.92 acres (84.9 percent). Another 792.96 acres (11.7 percent) are privately owned. CPW manages the remaining land within the study corridor as part of the Horsethief State Wildlife Area (168.12 acres; 2.5 percent).

The Colorado Canyons National Conservation Area and Black Ridge Canyons Wilderness Act of 2000 (Public Law 106-353 [October 24, 2000]) formally withdrew all BLM lands within the segment study area from location, entry, and patent under the mining laws, and operation of the mineral leasing, mineral materials, and geothermal leasing laws. The withdrawal recognizes valid existing rights (those leases or operations existing prior to October 24, 2000). There are no known valid existing rights related to mining in the segment corridor.

Livestock grazing occurs on the private parcels within the segment corridor, as well as on some BLM parcels. Grazing appears to be commensurate with the protection of the ORVs.

The BLM does not have authority over maintenance, operation, and construction activities associated with the highway and railroad. Activities associated with the highway and railroad are not likely to adversely impact the ORVs. The Department of Transportation, pursuant to the Federal-Aid Highway Act and section 4(f) of the Department of Transportation Act of 1966, must consult with the Department of the Interior so that its plans and programs include measures to maintain or enhance the natural beauty of the lands traversed. These statutes also permit the Department of Transportation to approve a program or project using public park and recreation lands, wildlife and waterfowl refuges, or historic sites only if there is no feasible and prudent alternative and it has used all possible planning to minimize harm to these lands.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

This segment flows through McInnis Canyons NCA and borders Black Ridge Canyon Wilderness. Designation of this segment would provide permanent protection and management

direction for BLM lands along the river corridor that are not presently within the NCA. Congress designated the NCA to conserve, protect, and enhance its geological, recreational, biological, wilderness, and scenic values, among others. These values parallel the ORVs found in this segment: scenic, recreation, fish, wildlife, geologic, and historic. Designation of this segment would provide complementary protective management.

WSR designation has the potential to foreclose or curtail future water development along this segment. With designation, BLM would obtain authority to deny or place terms and conditions on proposed projects located on BLM lands that would be incompatible or would potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the designated river segments.

This segment contains undeveloped conditional water rights, including some large water rights for industrial and commercial uses, but there are no known conditional water rights for municipal water supply or agricultural water supply purposes. The Colorado Statewide Water Supply Initiative concluded that Mesa County would be able to meet estimated demand for water in the Colorado River basin through 2030 by utilizing existing supplies, agricultural transfers, Ruedi and Wolford Reservoir contracts, and Jerry Creek Reservoir (Colorado Water Conservation Board, Statewide Water Supply Initiative Reports, 2004).

Conditional storage water rights upstream from this segment have the potential to affect the flow rates that support the ORVs in this segment. A conditional water right is a water right where the water has not been placed to a beneficial use. It gives the holder time to complete a project, provided that the holder pursues its completion with due diligence. Once the holder has put the water to beneficial use, the conditional right will be decreed as an absolute water right. Some of these conditional storage rights have priority dates senior to existing absolute junior rights and therefore could affect junior water right holders if made absolute. These conditional storage rights could result in additional depletions and change the flow regime along this segment. The combined volume of conditional storage rights in the Colorado River basin in Colorado totals almost 3 million acre-feet. Water District 70 alone (Roan Creek Basin) has approximately 560,000 acre-feet of conditional storage rights, the majority of which have priority dates ranging from 1960-1980, with some as early as 1940-1960 (SWSI).

Interstate compacts place limitations on water use in Colorado. The Colorado River Compact of 1922 divides the Colorado River Basin into the Lower Basin and the Upper Basin. Colorado lies in the Upper Basin; the water available to the Upper Basin is further allocated among Colorado, Utah, Wyoming, and New Mexico by the Upper Colorado River Compact of 1948. The State of Colorado's right to consumptive use of water under the Compacts ranges from 3.079 million AF to 3.855 million AF. Colorado currently consumes an average of 2.3 million AFY with facilities in place to use up to 2.6 million AFY (SWSI 4-4). A draft water availability study conducted by the Colorado Water Conservation Board (CWCB) includes estimates that the volume of water remaining for future development within Colorado from the Colorado River system ranges from 0 acre feet to 1 million acre feet annually, depending upon future climatic conditions (CWCB 2010). However, this study does not allocate or estimate the specific volume available for future development on the Colorado River, as opposed to other

Colorado River tributaries, such as the Yampa River or White River. Accordingly, it reasonable to expect that substantial water deliveries to downstream states will continue through this segment, but it is not possible to accurately estimate the long-term flow rates that can be expected.

This segment lies immediately upstream of the Colorado/Utah border. It is downstream from the majority of senior water rights in the state. Because of these two circumstances, it represents an opportunity to develop and divert unused water allocated to Colorado under the Compacts before it leaves the state. For example, Phase II of the Statewide Water Supply Initiative analyzed the concept and feasibility of such a major diversion, calling it the Colorado River Return Project (CRRP). The CRRP would consist of a diversion from the Colorado River near the Utah state line downstream of Grand Junction for delivery to multiple basins in Colorado (areas in the headwater of the Colorado River and the Front Range). The water would be diverted under a new water appropriation. The CRRP identified and evaluated three levels of water diversion: 250,000, 500,000, and 750,000 AFY. The CRRP identified two potential diversion areas, both of which lie within this segment corridor: (1) at the confluence of the Colorado River and Salt Creek in Horsethief Canyon and (2) at the upstream end of Horsethief Canyon near the existing Loma Boat Launch. The CRRP was only a reconnaissance-level investigation, and as such, it not assumed to be a reasonably foreseeable potential use of the land at this time. Nevertheless, the CRRP serves as an example of the potential for additional future depletions of water from this segment. While any similar project would have to comply with the requirements of the ESA and similar statutory requirements, there is still the potential for reduced flow and impacts on this segment's ORVs. This type of project likely would be curtailed or foreclosed if the segment was designated.

Presently, there are no state-based instream flow water rights in this segment to ensure sufficient flow to preserve the natural environment to a reasonable degree. Rather, flow rates are the result of required deliveries to senior irrigation water rights located in the Grand Valley and the substantial return flows that accrue to this stream segment from those irrigation systems. Flow rates are also influenced by contractual water deliveries from Green Mountain, Ruedi, and Wolford Mountain Reservoirs to water users in this segment, and by water deliveries that are made as part of the Upper Colorado River Endangered Fish Recovery Program (see Criteria 9).

The USFWS has developed flow recommendations for the Colorado River to benefit endangered fish, and these recommendations provide a substantial layer of protection for the ORVs in this segment. The flow recommendations are administered at the US Geological Survey gage near the Utah-Colorado border, which is located within this segment. The flow recommendations are not absolute values and may be revised from time to time to include the results of research. The goal of the recommendations is to provide the flow patterns to enhance populations of the endangered fishes and to allow Colorado the full ability to develop its compact entitlements. The flow recommendations consist of peak flow recommendations and base flow recommendations. Peak flow recommendations are based on historical river flows during spring runoff to provide spawning cues and to restore and maintain in-channel and flood plain habitats. Base flow recommendations are designed to allow fish movement among river segments and to provide maximum amounts of warm, quiet-water habitats to enhance growth

and survival of young fish. Any proposed water development project within the segment that would require a federal permit, such as land use authorization from BLM and/or a dredge and fill permit from the US Army Corps of Engineers, would be required to go through an ESA Section 7 consultation with the USFWS. The USFWS consultation process would insure that the proposed project would not significantly impact the State of Colorado's ability to meet the flow recommendations for this stream reach.

4. Federal, state, tribal, local, public, or other interest in designating or not designating the river.

The State of Colorado, water districts, user groups, and individuals have expressed concern about the impact of designating this segment on current and future upstream water projects. However, they also recognize that this segment supports a number of ORVs and that some special management provisions are warranted to protect and support these values. Mesa County has not made a formal indication to the BLM as to whether it is interested in supporting designation.

5. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The cost of administering the area if designated would not likely increase above current levels because the management, and thus the associated costs, of administering the area pursuant to the NWSRS would be similar to the current administration of the area. For example, recreational use of the segment is already high. The BLM already conducts regular ranger patrols and maintains campsites within this segment to accommodate the level of usage. The cost of maintaining and administering these facilities would continue regardless of designation.

The BLM would pursue land acquisition only from willing sellers as funds and opportunities arise in order to better manage the area for the protection of the ORVs. Designation of the segment would likely enhance the BLM's ability to obtain funding for such acquisitions, and acquisitions would enhance the BLM's ability to manage the segment. No detailed cost analysis or estimate was prepared as part of this study.

6. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM's land management authorities can adequately protect the federal lands in the river corridor, but BLM does not have the authority to protect ORVs on private lands in the corridor, nor does it have authority to protect the stream flows necessary to support the ORVs. However, the BLM is the majority landowner for this segment (9.15 percent of the shoreline and 84.9 percent of land in the segment corridor, which would facilitate effective and cohesive management of the segment if designated. Designation would provide a comprehensive framework for working with local governments agencies, state agencies, and other federal government agencies to protect against proposed land use and project that are incompatible with the ORVs. Designation would provide a federal water right that would assist with flow protection, but the water right would be an extremely junior water right. Accordingly, the water right would have limited effectiveness in insuring that flow rates through the segment are sufficient for the ORVs, but it would provide the BLM with an opportunity to object to new

water rights and changes in water rights that would substantially impact the flow rates available to protect the ORVs.

This segment runs through the McInnis Canyons NCA and Black Ridge Canyons Wilderness and management of the NCA and Wilderness is commensurate with protection of the ORVs. BLM wilderness areas are managed according to BLM Manual 8560, *Management of Designated Wilderness Areas* (BLM 1983). Wilderness areas allow for continued use of valid existing rights (i.e., rights or activities that existed when the area became a wilderness study area [WSA]).

The BLMs VRM system provides a mechanism to protect the scenic values along this segment. The BLM manages the river corridor VRM Class I on the south side of the river and VRM Class II on the north side of the river (BLM 2004). The objective of VRM Class I is to preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape. This management prescription protects the scenic values along this segment and also provides some indirect protection of the geologic values.

Historical values associated with the river segment are protected and regulated by a number of laws, regulations, executive orders, programmatic agreements, and other requirements. The principal federal law addressing cultural resources is the NHPA, and it's implementing regulations (36 CFR 800). These regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for project proponents consulting with appropriate agencies to avoid, reduce, or minimize adverse effects.

Mechanisms are already in place that will adequately protect the wildlife values (bald eagles) in this segment. In 2007, the USFWS removed the bald eagle from the endangered species list because its populations had recovered sufficiently. Nevertheless, the bald eagle still receives federal protection under the Bald and Golden Eagle Protection Act. Regulations issued under this Act establish a permit system to limit "take" of bald eagles, similar to the ESA. These regulations provide that take will only be authorized where it is compatible with the preservation of either of the eagle species—where take is consistent with the goal of stable or increasing breeding populations—or where take cannot be practicably avoided. Further, the Colorado Division of Wildlife recommends buffer zones and seasonal restrictions that apply to management actions occurring near bald eagle habitat. These include: (1) a year-round closure to surface occupancy within a quarter-mile radius of a nest; (2) a restriction on human encroachment from November 15 through July 31 within a half-mile radius of a nest; and (3) a restriction on activity within a quarter-mile radius of winter roosts between November 15 and March 15. The combination of these measures will prevent the foreclosure or diminishment of the wildlife values present in this segment.

The ESA provides protection for the fish values present along this segment. This entire segment is designated critical habitat for the Colorado pikeminnow, razorback sucker, bonytail chub, and

humpback chub. Areas designated as critical habitat receive protection under section 7 of the ESA with regard to actions carried out, funded, or authorized by a Federal agency that are likely to adversely modify or destroy critical habitat. Section 7 requires Federal agencies to consult on and insure that such actions are not likely to destroy or adversely modify critical habitat. These fish species also receive special management as part of the Upper Colorado River Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. Program partners cooperatively manage water resources in accordance with the ESA, state water law, individual water rights, and interstate compacts. Program partners utilize a variety of management tools: leases and contracts for water supplies; coordinated water releases from upstream reservoirs; participation in reservoir enlargements, efficiency improvements to irrigation systems to reduce water diversions; and re-operation of federal dams and reservoirs. These mechanisms will protect the fish values along this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in Section 2.2.5 (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. Congress should implement amendments to the existing legislation that created the McInnis Canyons NCA, so that the legislation better protects ORVs associated with the Colorado River. The legislation should specifically address boundary adjustments that are needed to better manage the river corridor for recreation and administrative access. The legislation should also permanently release this segment from future consideration under the WSR Act.
2. Retain the current mineral withdrawal associated with the NCA, and implement VRM Level I restrictions in the revised RMP to protect the scenic ORV and geological ORV.
3. Implement recreational permitting and enforcement, along with limiting recreation travel to designated roads and trails, to protect the recreational ORV.
4. Continue to work with the Upper Colorado River Endangered Fish Recovery Program to protect the fish ORV.
5. Continue to use the National Historic Preservation Act to protect the historical ORV.

The McInnis Canyons NCA boundary changes proposed by the stakeholder group have not yet been implemented.

Based on these recommendations, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

7. <u>Historical or existing rights that could be adversely affected with designation.</u>

This segment is downstream from current water projects and diversions that are designed to provide water for the State of Colorado. The ability to change existing projects and construct

new projects upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs. Numerous senior, absolute water rights exist along the Colorado River. While these rights would not be affected by designation of the segment, the development of new water projects as described in sections 7(b) and 7(c) of the WSR Act would be permitted only if they did not have a direct and adverse effect on the values for which the river segment was designated. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

8. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. The majority of the area on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

9. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

10. Consistency of designation with other agency plans, programs, or policies.

The Colorado pikeminnow, razorback sucker, humpback chub, and bonytail chub are part of the Upper Colorado River Endangered Fish Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery plans and goals have been issued by the USFWS (USFWS 2002a and USFWS 2002b).

The Colorado River Valley and Kremmling Field Offices (Colorado) have found the Colorado River from the gauging station near the mouth of Gore Canyon within the Kremmling Field Office to approximately one mile east of No Name Creek within the Colorado River Valley Field Office to be preliminarily suitable for inclusion in the NWSRS, as part of the draft RMP (BLM 2011).

In coordination with the Colorado River Valley Field Office, the White River National Forest has found two segments in Glenwood Canyon to be preliminarily suitable for inclusion in the NWSRS (U.S. Forest Service 2011).

The Moab Field Office (Utah) found the segment of the Colorado River from the Colorado/Utah border to Westwater Canyon not-suitable for inclusion in the NWSRS. However, it found the Colorado River from Westwater Canyon to the Boundary of Canyonlands National Park (approximately 91 river miles, 65.5 on BLM land) to be suitable for inclusion in the NWSRS (BLM 2008).

Designation of this segment would be consistent with the goals of the recovery plan and with the suitable segments listed above.

Other Protections for Segment

Colorado River Segment 3	
Outstandingly Remarkable Values	**Protections**
Scenic, Recreation, Fish, Geological, Wildlife, Historic	VRM Class I and II, Withdrawn from Mineral Entry, Wilderness, NCA Management

Suitability Determination

The determination for this segment is **not suitable**. Only about 11 percent of the land in the segment corridor is privately owned, so there is limited potential for development that would be incompatible with the ORVs. Flows receive substantial protection from the Colorado River Recovery Program despite the lack of a state-based instream flow water right. Despite the existence of conditional water rights in the segment, the land use plan management prescriptions for BLM lands both within and outside McInnis Canyons NCA would prohibit BLM from authorizing water development projects that would dam the segment or export major volumes of water from the segment. The presence of the McInnis Canyons NCA along both sides of the river provides substantial protection to the ORVs that are reliant upon lands adjacent to the river, such as scenic and recreation. For lands along this river corridor that are not presently within the NCA boundaries, proposed management prescriptions in the RMP revision would be sufficient to protect the geological, scenic, recreation, and historical ORVs. The Fish ORV can be successfully managed by continued cooperation and compliance with the Colorado River Endangered Fish Recovery Program. The BLM concludes that land management prescriptions in this RMP revision, combined with land management prescriptions in the McInnis Canyons NCA approved RMP, are sufficient to protect the ORVs that occur in the river corridor. In addition, the BLM concludes that flows in this segment, along with the fish ORV, are already protected by the Endangered Species, working through the Colorado River Recovery Program.

3.2 DOLORES RIVER WATERSHED

3.2.1 Dolores River

Description:	Sections of the Dolores River on BLM land from where the river enters the GJFO at the southwest border and then running parallel to Highway 141, through Gateway, until the river reaches the Colorado/Utah border.		
Total Segment Length:	32.01 miles	**Total Segment Area:**	9,918.91 acres
Length on BLM Land :	18.62 miles	**Area on BLM Land:**	7,041.19 acres
Tentative Classification:	Recreational		
ORVs:	Scenic, Fish, Recreation, Geologic, Paleontological		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

The Dolores River has outstandingly remarkable scenic, recreational, geological, and paleontological values. Each of these ORVs are discussed in detail below. The tentative classification for this segment is recreational because Highway 141 parallels the river and is fairly obvious along stretches of the river corridor.

This segment has outstandingly remarkable scenic value. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). The Dolores River has formed a spectacular canyon, with cliffs sometimes up to 2000 feet higher than the river, with many geologic layers exposed. The variety of different colors including deep reds, purples, and lighter earth tones are in stark contrast to the green riparian vegetation along the river. The cottonwoods along the river and the river itself change color seasonally adding to the scenic beauty. Portions of the segment adjacent to the Sewemup Mesa Wilderness Study Area and The Palisade Wilderness Study are heavily influenced by the stunning uplift of canyon walls and cliffs from the river corridor.

This segment has outstandingly remarkable recreational value. The scenic and geologic values readily visible from the river make this segment of the Dolores a popular boating destination. During the spring runoff and the summer, the segment is popular with canoeists, kayakers, and rafters. This segment parallels Highway 141, part of the Unaweep-Tabequache Scenic and Historic Byway, offering opportunities for vehicular recreation, picnicking, camping, and viewing of the wildlife and geologic features of the river canyon. Though the Dolores River receives less use than the Gunnison River and Colorado River Segment 3, the segment is seeing an increase in recreational use. The segment offers challenging whitewater rapids between late April and early June during high water years. Flows are affected by releases from the McPhee Reservoir and are sometimes unpredictable. There are no official boat launches along the segment on BLM land, though on unofficial boat launch is located at the county highway property on Highway 141

near Gateway. The launch is suitable for trailer and raft use, although the most traffic is by kayak or canoe.

This segment also has outstandingly remarkable geologic value. The Dolores River has exposed and extensive sequence of rocks including additional layers not found farther north along the Colorado River. Additional Permian and Triassic layers including the Cutler and Moenkopi formations are found between the Precambrian bedrock (not exposed) and the Chinle formation. This wide range allows one to examine many of the important layers for the Colorado Plateau.

This segment has outstandingly remarkable paleontological value. Along this segment of the Dolores River are rock slabs containing dinosaur and ancient mammal footprints. Although full surveys have not been completed, there are hundreds of fossilized footprints and track ways, and there likely may be more than 1000 tracks along the river.

The segment has outstandingly remarkable fishery value. Colorado Division of Wildlife (currently Colorado Parks and Wildlife) provided the BLM with additional data following the completion of the Eligibility Study that the Dolores River supports a native fish population that meets the guidelines for evaluating ORVs as described in the BLM Manual 8351.

Overall, this segment is unique and exemplary among streams in the Colorado Plateau region because it supports a high number of outstandingly remarkable values. Wild and Scenic River designation is a framework that can be effectively used to management multiple ORVs in a comprehensive and integrated manner, and it provides comprehensive standards for preventing degradation to the ORVs.

This segment also possesses characteristics in addition to its ORVs that would add to its value as a component of the NWSRS, if designated by Congress. The river segment generally borders, and the study area, which extends 0.25-mile on either side of the river, includes portions of two WSAs: The Palisade (170.66 acres) and Sewemup Mesa (930.99 acres). The segment study area also includes a portion of two areas of critical environmental concern (ACECs): The Palisade Outstanding Natural Area/ACEC (70.02 acres) and the Dolores River Riparian ACEC (3170 acres). The BLM has proposed to expand The Palisade outstanding natural area and ACEC to provide special management attention for its vegetation (rare plant species), wildlife (peregrine falcon), and scenic values. The BLM has proposed the Dolores River Riparian ACEC to provide special management attention to its fish (bluehead sucker), wildlife (peregrine falcon), scenic, and riparian habitat values.

2. <u>The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.</u>

Land ownership for this 32.01-mile segment is a combination of federal (BLM) and private. The BLM manages shoreline along 18.62 miles (58.1 percent) of the segment. Within the 9,918.91-acre study corridor, the BLM manages 7,041.19 acres (70.1 percent). The remaining 2,877.72 acres (29.9 percent) are privately owned.

The percentage of lands under federal ownership is the highest in the portions of the river segment that are adjacent to the Sewemup Mesa WSA (9% private, 91% BLM) and The Palisade

WSA (26% private, 74% BLM). In these portions of the segment, the river corridor is characterized by a low level of development and largely natural conditions, with the exception of roads and highways along the river.

In the middle of the segment, from approximately the confluence with Cottonwood Canyon to 2.5 miles northwest of Gateway, the percentage of private land ownership exceeds 75% (55% private, 45% BLM). In this portion of the segment, land use is dominated by low intensity agriculture, low-density residential development, and the small community of Gateway. Under the Mesa County zoning for these private lands, development can occur that may be incompatible with maintenance of the outstandingly remarkable values. See Factor #7 for a full discussion of county zoning.

The BLM-managed lands west of The Palisade WSA are leased for oil and gas development. There are no active wells in the segment corridor. There is no oil and gas potential on the BLM-managed lands in the segment corridor. There are several active mining claims in the segment corridor.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or to impose terms and conditions on any proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the segments values. Water diversion and conveyance structures that are already in existence on BLM lands could continue to operate historical operation, maintenance, and access practices. Increased water demands in this segment, such as demand associated with the expansion of Gateway Canyons resort, appear to be small in volume relative to the volume of water available in the river. It is unknown whether future water supply projects associated with Gateway Canyons would require BLM land use authorization or federal permits.

Recreational uses within the segment are not likely to be affected by designation under a tentative "recreational" classification. The tentative "recreational" classification would allow development on BLM lands within the corridor that is consistent with the recreation ORV, such as trails, boat ramps, campgrounds, and interpretive kiosks.

Agricultural uses on private lands within the river are not likely to be significantly affected by designation. Designation would not give BLM authority to manage agricultural and other land use practices on private lands, because such as authority would remain under local government control. If agricultural users require a federal permit to implement a project on private lands, such as a dredge and fill permit from the US Army Corps of Engineers, the project would have to be compatible with the ORVs identified for this segment. Since the tentative classification of the segment is "recreational," a broad variety of development projects could be considered as compatible with the ORVs.

If designated, valid mining claims and mineral leases would remain in effect. Because the segment is preliminarily classified as recreational, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

As discussed below, existing mechanisms and management tools would reduce the potential for adverse effects on the ORVs in this segment if it were not designated.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

There is likely to be some increased cost of administering the area if designated. Currently, there are no recreation facilities designed to meet the needs of users. Additional infrastructure and maintenance resources would be required to accommodate the increased visitation that would likely result from designation. Facilities that may be required on BLM lands include boat ramps, campgrounds, interpretation sites, trailheads, and trails. However, increased usage that is already occurring within the river corridor will require BLM to expend resources to provide facilities and manage use to minimize impacts on resources. Given that increased visibility for the Gateway area has already increased visitation, it is impossible to accurately predict the volume and timing of increased visitation. However, it is likely that designation would result in additional funding to address current and future recreation demands.

The BLM would pursue land acquisition from willing sellers as funds and opportunities arise in order to better manage the area for the protection of the ORVs. Designation of the segment would enhance the BLM's ability to obtain funding for such acquisitions, and acquisitions would enhance the BLM's ability to manage the segment. At this time, BLM does not consider any land acquisitions as essential for the management of a designated river corridor, so no detailed cost analysis or estimate was prepared as part of this study.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

Two of the identified ORVs, recreation and fish, are highly dependent on adequate flow rates for the continued existence and quality of the ORVs. Flow rates in this river segment are driven primarily by water operations on two upstream river segments. The segment receives flows from the San Miguel River, which is largely unregulated and has a natural flow regime. During much of the year, flows from the San Miguel River provide the majority of the flow within this segment. Flows in this segment are also affected by releases from McPhee Reservoir, located on the upper Dolores River near Cortez, Colorado. This project diverts approximately two thirds of the flow of the upper Dolores River out of the basin. The upper Dolores River contributes significantly to flows in this segment when spills occur, typically during snowmelt runoff, but it contributes only small percentages of flow, typically ranging from 20 to 78 cubic feet per second (cfs), when the reservoir is releasing water from its conservation pool.

At the present time, there is no state-based instream flow protection for this river segment. However, in March 2014, the Colorado Water Conservation Board (CWCB) voted to make an appropriation of an instream flow water right, based upon flow rate recommendations developed by the BLM and Colorado Parks and Wildlife. In January 2015, after an extended public comment period, the CWCB is scheduled to vote on whether to finalize this

appropriation and direct the Colorado Attorney General to file a water right application with the Colorado water court system for an instream flow right.

If the water court decrees the timing, flow rates, and locations appropriated by the CWCB at its March 2014 board meeting, the BLM would have assurance that the flow rates needed for continued existence of the fishery values would continue. In addition, the BLM has determined that the appropriated flow rates are sufficient to continue to support the recreational ORV, even though the appropriated flow rates were based upon flow needs for fish populations. Finally, the 2015 priority date associated with the CWCB appropriation is likely to be more senior than a federal reserved water right associated with a designated segment. The CWCB right would be more senior because the federal reserved water right would not be created until Congress designates the segment into the National Wild and Scenic River System, which may not occur or may not occur for many years.

Recreation management is challenging, because there are no facilities designed to meet the activity demands of the users. Additional infrastructure and maintenance resources would be required to meet the additional recreation demand created by residents and travelers. Designation of the river corridor would assist BLM in competing for funds to manage the presently high level or recreational usage and additional recreational use that could occur with designation.

The high percentage of BLM-managed land in the portions of the segment adjacent to Sewemup WSA and The Palisade WSA would facilitate recreational management of the segment as a WSR, because there is unlikely to be conflicts with private landowners associated with access to the river and adjacent lands. However, the middle section of the segment, between Cottonwood Canyon and 2.5 miles northwest of Gateway, would present more challenges for access management because of the intermix of private and public lands. In the middle section, there is potential for cooperation between private and public land owners to manage increased recreational use, but there is no guarantee that all private landowners would be interested in cooperative management measures. As mentioned above, designation of the river segment would likely provide additional resources to the BLM to create designated access points and to provide information to users about avoiding trespass on private lands.

Paleontological values associated with the river segment are protected and regulated by the BLM primarily under the Paleontological Resources Preservation Act, the Federal Land Policy and Management Act of 1976, the National Environmental Policy Act of 1969, other federal regulations, and BLM orders. Pursuant to the Federal Land Policy and Management Act of 1976, the BLM has issued regulations that provide additional protection. Section 8365.1-5 of Title 43 of the CFR prohibits removing any scientific resource or natural object without authorization. There are exceptions to this prohibition for small quantities of common invertebrate fossils and petrified wood. The BLM manages paleontological resources for their scientific, educational, and recreational values and to ensure that any impacts are mitigated. The primary objective of managing paleontological resources is scientific research. Paleontological resources may only be disturbed or removed in conjunction with scientific research and only upon the issuance of prior written authorization of the disturbance or removal activity. BLM Manual Section 8270, *Paleontological Resource Management* (BLM 1998), provides specific guidance.

The portion of the segment corridor upstream from Gateway overlaps the Dolores River Riparian ACEC. Also, the portion of the segment corridor downstream from Gateway overlaps the Palisade ACEC. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes. Management actions of the Dolores River Riparian ACEC include: (1) manage as VRM Class II; (2) only allow vegetation treatments for the benefit of the identified relevant and important values (riparian, hydrology, scenic, paleontological, and special status species); (3) designate as ROW avoidance area; and (4) open to livestock grazing. Management actions of the Palisade ACEC include: (1) no allowable timber harvest; (2) designate as a ROW avoidance area (including renewable energy sites such as solar, wind, hydro, and biomass development); (3) open to livestock grazing; (4) withdraw from mineral entry, close to mineral material sales, and classify as unsuitable for coal leasing; and (5) withdraw from mineral location, close to mineral material sales, and classify as unsuitable for coal leasing. These ACECs would provide some protection for the ORVs on this segment if it were not designated.

The administrative designations along this segment would provide some limited protection for the ORVs if the segment was not designated. Portions of this segment overlap two WSAs. The uppermost thirteen miles (approximate) of this segment flows along the boundary of Sewemup Mesa WSA. About five miles of the segment near its downstream terminus also flows along the Palisade WSA. The BLM manages WSAs according to BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012). The goal of this policy is to manage WSAs to not impair their suitability for preservation as wilderness, until Congress designates them as wilderness, or until they are released from further wilderness consideration. This "non-impairment" management standard is more stringent than the BLM's management direction for Recreational WSRs. But if the area is not designated as wilderness and the WSA designation is removed, protection of the area would be limited to RMP management measures.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in Section 2.2.5 (Public Input) of this report, provided management recommendations for this stream segment. The management recommendations did not include any specific recommendations to the BLM regarding whether the segment should be determined as suitable or nonsuitable for designation. Specifically, the stakeholder collaborative recommended:

1. A large stakeholder group should be convened, comprised of representatives from throughout the entire Dolores River watershed, to discuss suitability, flow management, and other issues associated with river management. The CWCB should convene the larger stakeholder group. In early 2014, the Colorado Water Conservation Board and Colorado River Water Conservation District convened a meeting of stakeholders from throughout the entire Dolores River watershed. Since that meeting occurred, the BLM has not received any consensus recommendations from the large stakeholder group regarding suitability, flow management, or other issues associated with river management.
2. Implement VRM Class II prescriptions along the river corridor to protect scenic and geological ORVs.

3. Implement ACECs to protect fish, scenic, geological, and paleontological ORVs.
4. Establish controlled surface use or no surface occupancy stipulations to proposed land uses to protect all ORVs within ¼ mile of the river, and establish controlled surface use restrictions to protect the scenic ORVs within the viewshed of the scenic byway.
5. Establish an SRMA to protect the recreation ORV.
6. Work with the CWCB to establish and instream flow water right to maintain seasonal variability of flow for protection of the fish ORV and work to encourage voluntary flow management in support of the fish ORV.

Based on these considerations, the stakeholder collaborative did not make any recommendation concerning a suitability determination for this stream segment. Instead, the stakeholder collaborative suggested suitability issues should be addressed on a larger scale by stakeholder group with representatives from the entire watershed.

6. Historical or existing rights that could be adversely affected with designation.

This segment is downstream from current water projects and diversions that are designed to provide water for the State of Colorado. The ability to change existing projects and construct new projects upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, the amount and timing of water to support the ORVs would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system. New projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs. No significant new water supply or water storage projects have been proposed for this stream segment, but additional storage and diversion projects are under consideration for portions of the San Miguel River located upstream from this segment.

Numerous absolute water rights exist along this segment of the Dolores River. While these rights would not be affected by designation of the segment, the development of new water projects on BLM lands, as described in sections 7(b) and 7(c) of the WSR Act, would be permitted only if they did not have a direct and adverse effect on the values for which the river segment was designated.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa and Montrose Counties. A small portion of the segment corridor in Mesa County is within the Planned Unit Development district. The Planned Unit Development district is intended to encourage innovative land planning and site design concepts that implement and are consistent with the Mesa County Master Plan (Mesa County 2008). The majority of the area on private land in the segment corridor in Mesa County is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008).

The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

Zoning does not represent a significant issue in Montrose County as only a small portion of the segment (0.31 acres) is on private land.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Local governments, state governments, and other interested parties participated in the Lower Colorado River Wild and Scenic River Stakeholder Collaborative. This group did not provide specific recommendations regarding suitability to BLM, but did provide a variety of other management recommendations. Refer to Criterion 5 for details.

9. Consistency of designation with other agency plans, programs, or policies.

The Dolores River flows through lands managed by four separate BLM offices, and each of those offices has either completed or in the process of completing Wild and Scenic Rivers analysis.

The upper part of the river, downstream to approximately Bedrock, is managed by the San Juan Public Lands Center. The Draft Land Management Plan and Draft EIS for the San Juan Public lands Center identified 109.02 miles of the Dolores River from McPhee to Bedrock to be suitable for inclusion in the NWSRS (BLM and US Forest Service 2007). The final decision on suitability will be made in the record of decision.

The segment of the river from approximately Bedrock to Roc Creek is managed by BLM's Uncompahgre Field Office. The Uncompahgre Field Office found 11.5 miles of the Dolores River eligible for inclusion in the NWSRS. In addition, the Uncompahgre Field Office found 17.2 miles of the San Miguel River, immediately upstream from its confluence with the Dolores River, as eligible for inclusion in the NWSRS. In its Draft Suitability Report, the Uncompahgre Field Office has found 14.0 miles of the Dolores River as suitable for designation (This mileage includes 5.3 miles downstream from Bedrock and 8.7 miles upstream from Bedrock that formerly had been analyzed by the San Juan Public Center. The Uncompahgre Field Office also found that 2.1 miles of the San Miguel River, immediately upstream from its confluence with the Dolores River, is suitable for designation.

The segment of the river from Roc Creek to the Utah-Colorado boundary is within the GJFO planning area and is the subject of this suitability report.

The BLM Moab Field Office found 35.73 miles of the Dolores River on BLM land from the Colorado/Utah border to the confluence with the Colorado River to be suitable for inclusion in the NWSRS (BLM 2008).

In 1979, the U.S. Department of Interior, acting through the National Park Service and Bureau of Outdoor Recreation, completed a Wild and Scenic Rivers Study of the Dolores River, pursuant to 1975 amendment to the Wild and Scenic Rivers Act. That study recommended that the portion of the Dolores River from Gateway to the Utah border be designated into the National Wild and Scenic Rivers system. Although more than 30 years have elapsed since this study, BLM finds that conditions along the portion of the river corridor between Gateway and the Utah border have not changed substantially.

10. Contribution to a river system watershed or basin integrity.
This segment of the Dolores River provides a critical connection between numerous aquatic habitats that are important for sensitive fish, including the flannelmouth sucker, bluehead sucker, and roundtail chub. These fish are year-round residents throughout the study segment and in the San Miguel River immediately upstream from the study segment. In addition, the sensitive species also utilize tributaries of the Dolores River for spawning purposes, including Mesa Creek, Roc Creek, and Blue Creek. Together with these tributaries, the lower Dolores River provides one of the few places in Colorado with largely natural flow regime timing at low elevations. The lower Dolores River, along with these tributaries, provides a very important interconnected aquatic habitat that insures the continued viability and genetic diversity of these populations.

Other Protections for Segment

Dolores River	
Outstandingly Remarkable Values	**Protections**
Scenic, Recreational, Fish, Geological, Paleontological	*(10.38 miles suitable for inclusion in the NWSRS)* NSO (3,200 acres), TL (2,400 acres), CSU (1,700 acres), VRM Class I (900 acres), VRM Class II (2,000 acres), ROW Exclusion (2,300 acres), ROW Avoidance (900 acres), Closed to Fluid Mineral Leasing

Suitability Determination
The BLM determines that one portion of the Dolores River within the Grand Junction Field Office is **suitable** for designation into the National Wild and Scenic Rivers System. This segment is described as follows:

- From point on the river closest to the southern boundary of the Sewemup Mesa Wilderness Study Area to the BLM-private land boundary in Section 24, T50N R19W, New Mexico P.M. a distance of approximately 10.38 miles.

The tentative classification for the suitable segment is **recreational.**

The BLM determines that the following portions of the Dolores River within the Grand Junction Field Office are **not suitable** for designation into the National Wild and Scenic River System:

BLM-private boundary in Section 24, T. 50 N., R.19 W., New Mexico P.M. to the Colorado-Utah border, a distance of 8.24 miles.The rationale for the BLM suitability determination is as follows:

- Consistency with State Law, Regulations, Policies, and Programs - In its comments, the State of Colorado expressed significant concern about having a suitable segment on the Dolores River located at the Utah-Colorado border (Sections 17 and 18, T. 15 S., R. 104 W., 6th P.M.). If this river segment at the state boundary were to be designated into the National Wild and Scenic Rivers System, the designation would include a federal reserved water right. The federal reserved water right would entail certain flow rate requirements to maintain the outstandingly remarkable values identified by the BLM. The State of Colorado expressed concern that the federal reserved water right requirements at the state boundary could conflict with the state's water obligation deliveries to downstream states pursuant to the Colorado River Compact, and could conflict with the state's ability to fully develop its water entitlement under the compact. The BLM concluded that this potential conflict with state plans and objectives was significant enough to warrant a change from "suitable" to "not suitable." To maintain the river-related values identified for the state boundary segment, the BLM intends to manage this segment under an Area of Critical Environmental Concern designation and under Special Recreation Management Area designation. The BLM has crafted the ACEC and SRMA designations to have similar management objectives as the management standards that are associated with a "suitable" determination.
- Optimal Management for ORVs Under Partnership Approach – The BLM determined that the Dolores River segment adjacent to the Sewemup Mesa Wilderness Study Area is suitable because a "suitable" provides for optimal management of the ORVs. The BLM believes that the strict land management standards associated with a suitability determination, combined with a state-based instream flow water right to support flow-dependent values, will assure long-term maintenance of the ORVs. To support this long-term partnership approach, BLM's suitable determination includes the following finding: If the Colorado water court system decrees an instream flow water right for the lower Dolores River in the locations, flow rates, and timing appropriated by the CWCB at its March 2014 board meeting, and if the instream flow right is vigorously enforced by the CWCB, the BLM does not believe it would be necessary to quantify, assert, or adjudicate a federal reserved water right if this segment is ultimately designated into the National Wild and Scenic Rivers system.
- Consistency – The lands found suitable for designation share similar qualities with portions of the river found suitable in neighboring BLM field offices. These qualities include five or more ORVs, a high percentage of federal land ownership, minimal conflicts with competing land uses, significant and growing recreational use, and conditions little changed from the previous Wild and Scenic Rivers analysis performed in 1979.
- Management Opportunities – Designation would provide BLM with additional resources to manage recreational use that is already growing. Designation would

provide a permanent standard for managing growing public use in a manner that does not degrade the ORVs.

- Minimize Conflicts With Private Lands – By determining that the middle portion of the reach, from Cottonwood Canyon to 2.5 miles northwest of Gateway, is **not suitable**, BLM minimizes potential conflicts between private landowners and the protective provisions of the Wild and Scenic Rivers Act. Specifically, the need to analyze projects proposed on private lands for potential impacts to Wild and Scenic River values would be minimized. Such consultation occurs when a private landowner seek a federal permit or funding from other federal agencies, such as Army Corps of Engineers or National Resource Conservation Service. The need for consultation would be limited to projects on private land where the impacts of the proposed project stretch to upstream or downstream locations on federal lands. Projects with impacts limited strictly to private lands would not require detailed analysis for impacts to Wild and Scenic River values. Projects on private lands that do not require a federal permit or federal agency funding would be exempt from any consultation requirements.

3.2.2 North Fork Mesa Creek

Description:	BLM sections of North Fork Mesa Creek from the GJFO boundary with the Uncompahgre National Forest on the east, and flowing southwest to the boundary with the BLM, Uncompahgre Field Office.		
Total Segment Length:	2.05 miles	**Total Segment Area:**	699.96 acres
Length on BLM Land :	2.05 miles	**Area on BLM Land:**	699.96 acres
Tentative Classification:	Scenic		
ORVs:	Vegetation		

Suitability Factor Assessment

1. <u>Characteristics that do or do not make the river a worthy addition to the NWSRS.</u>
North Fork Mesa Creek is outstandingly remarkable for its vegetation. The tentative classification for this segment is scenic because there is an inconspicuous dirt road with multiple access points running parallel to the lower sections of the creek.

This segment contains sections of a type of Narrowleaf Cottonwood Riparian Forest *(Populus angustifolia/salix ligulfolia-Shepherdia argentea* woodland). This community is classified as critically imperiled globally (G1) and vulnerable statewide (S3) by the Colorado Natural Heritage Program (Colorado Natural Heritage Program 2009). A G1 conservation status rank indicates that a species or community is at very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors. Likewise, an S3 conservation status rank indicates that a species or community is imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state. The rarity and conservation value of this plant community would make this segment a worthy addition to the NWSRS.

There are only two active diversions along North Fork Mesa Creek from its headwaters to its confluence with the Dolores River. Both of these diversions are for irrigation purposes and have the potential to provide return flows. The CWCB also holds an instream flow right along this segment for the purpose of preserving the natural environment to a reasonable degree.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

The entire segment corridor flows through and is on BLM land; approximately 150 acres of the segment corridor at the downstream end of the segment are within the Uncompahgre Field Office planning area. In the past, uranium mining took place in the surrounding area, but most operations are closed or temporarily suspended as uranium mining is not currently as economically viable as other energy materials. The entire area is leased for oil and gas exploration, but there are no active wells. There is no oil and gas potential in the segment corridor. Two active mining claims overlap the segment corridor.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to foreclose or curtail future water development along this segment. With designation, BLM would obtain conditioning authority to control any proposed projects that would be incompatible or potentially degrading to the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds to evaluate the potential effects on the segment's values.

If designated, valid mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

If this segment is not designated, there is the potential for its vegetation values to diminish. The BLM does not have any management measures in place to protect the rare plant community found along this segment. Additional depletions of water from the creek could also diminish these values.

4. Federal, state, tribal, local, public, or other interest in designating or not designating the river.

Neither support for nor has opposition to designation of this segment been expressed.

5. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The BLM manages all lands within this segment; acquisition of additional lands is not necessary. It is unlikely that the BLM would incur additional costs to manage the area if designated, partially due to the remote location of the segment. Nevertheless, designation of the segment would enhance the BLM's ability to obtain funding for the management of the segment. No detailed cost analysis or estimate was prepared as part of this study.

6. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM manages the entire segment corridor and could effectively manage this segment as a WSR. Additionally, the CWCB holds an instream flow right along this segment from Long Canyon to Cedar Tree Ditch. There are varying levels of instream flow appropriations throughout the year for the entire segment. Between April 1 and May 31, the appropriated instream flow is 2.75 cfs. It drops to 0.5 cfs between June 1 and February 29, and rises to 1.9cfs between March 1 and March 31. The instream flow right provides some additional protection for the vegetation values along this segment.

7. Historical or existing rights that could be adversely affected with designation.

There are current water diversions along this segment. The ability to change existing diversions and to appropriate new diversion of water could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new diversions and changes to existing diversions would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORV. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

8. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

The entire segment corridor is managed by the BLM.

9. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

10. Consistency of designation with other agency plans, programs, or policies.

The BLM Uncompahgre Field Office manages North Fork Mesa Creek downstream from this segment until it reaches the Dolores River. The Uncompahgre Field Office found North Fork Mesa Creek eligible with a vegetation ORV.

The Uncompahgre National Forest found the portion of North Fork Mesa Creek upstream of the BLM segment not eligible for inclusion in the NWSRS during the eligibility study for the Grand Mesa, Uncompahgre, and Gunnison National Forests land management plan revision process (US Forest Service 2006). The Uncompahgre National Forest manages the area surrounding North Fork Mesa Creek for livestock grazing and according to the following general principles: improve rangeland through vegetation and soil restoration practices, improved livestock management, and regulation of other resource activities; provide semi-primitive non-motorized, semi-primitive motorized, and roaded natural recreation opportunities; and use vegetation treatments to enhance plant and animal diversity. These management guidelines are generally consistent with BLM management that would occur with designation.

The Uncompahgre National Forest's 2007 proposed forest plan would manage this area as "backcountry—motorized trails." This management would be relatively passive and emphasize natural features of landscapes. Resource management activities would occur, but natural ecological processes and patterns would normally predominate. This management prescription

allows water development as a suitable use. (US Forest Service 2007) However, the proposed forest plan is not final and has been suspended because of litigation over the US Forest Service's 2005 planning rule. Management by the US Forest Service as backcountry—motorized trails has the potential to be inconsistent with designation (if the 2007 proposed plan becomes final) to the extent that future water development reduces stream flow or adversely affects the cottonwood communities downstream.

11. Contribution to a river system watershed or basin integrity.
North Fork Mesa Creek is a tributary to the Dolores River.

Other Protections for Segment

North Fork Mesa Creek	
Outstandingly Remarkable Values	**Protections**
Vegetation	NSO (300 acres), CSU (400 acres), TL (300 acres), VRM Class II (700 acres), ROW Avoidance (700 acres)

Suitability Determination
BLM determined that this segment is **not suitable**, because stipulations and land use prescriptions in the Proposed RMP, along with an existing instream flow water right held by the CWCB, are adequate to protect the ORVs.

3.2.3 Blue Creek

Description:	BLM sections of Blue Creek from the GJFO boundary with the Uncompahgre National Forest on the east, and flowing west to the confluence with the Dolores River.		
Total Segment Length:	11.36 miles	**Total Segment Area:**	3,335.98 acres
Length on BLM Land :	10.08 miles	**Area on BLM Land:**	2,975.48 acres
Tentative Classification:	Scenic		
ORVs:	Scenic, Fish, Cultural		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.
Blue Creek has outstandingly remarkable scenic, fish, and cultural values that would make it a worthy addition to the NWSRS, if designated by Congress. The tentative classification for this segment is scenic. There is an inconspicuous dirt road with multiple access points running parallel to the creek, in addition to some development and grazing in the creek corridor.

This segment has outstandingly remarkable scenic values. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery,

scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). Blue Creek drops steeply off the Uncompahgre Plateau carving a canyon through the deep red sandstone of the area. This spectacular drop has formed a remarkable canyon with spectacular views of the Uncompahgre Plateau and Dolores River Canyon. The canyon as a whole is distinctive and rare in the region.

This segment also has remarkably outstanding fish values. Water flow in the segment is sufficient to maintain fish populations such as the bluehead sucker *(Catostomus discobolus)*. The bluehead sucker is a BLM sensitive species (BLM 2000). The management objective for BLM sensitive species that are not federally listed as endangered or threatened is to initiate protective conservation measures that reduce or eliminate threats to minimize the likelihood of and need for listing of these species under the ESA. The CPW has also identified the bluehead sucker as a species of greatest conservation need in its Comprehensive Wildlife Conservation Strategy (CPW 2006).

This segment also has remarkably outstanding cultural values. Blue Creek contains important Native American sites from the formative period of cultures in this region and is important for current Native American concerns. Research from these sites has the potential to yield additional discoveries about the development of agriculture in the area. This creek canyon is a known transportation corridor with game trails used by Ute Tribes, later used as a pack trail to the Uranium mines, and as an early stock driveway that is still in use today.

The lower 3 miles lie within the Gateway SRMA. The lower 1.5 miles lie within the Dolores River Riparian ACEC. The BLM has proposed the Dolores River Riparian ACEC to provide special management attention to its fish (bluehead sucker), wildlife (peregrine falcon), scenic, and riparian habitat values.

2. <u>The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.</u>

Land ownership for this 11.36-mile segment is a combination of federal (BLM and US Forest Service) and private. The BLM manages shoreline along 10.08 miles (89.9 percent) of the segment. Within the 3,335.98-acre study corridor, the BLM manages 2,975.48 acres (89.2 percent). The remaining 293.55 acres (8.8 percent) are privately owned. The US Forest Service manages the remaining land in the segment corridor (66.9 acres; 2 percent).

Most of the segment corridor upstream from Calamity Creek is leased for oil and gas development but there are no active wells. There is no oil and gas potential in this area. Active mining claims overlap a small portion of the segment corridor.

3. <u>Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.</u>

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or place terms and condition on any proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the segment's values.

If designated, valid mining claims and mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, the BLM may allow new mining claims or mineral leases, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The cost of administering the area for protection of the ORVs would be minimal. The segment is comprised mostly of BLM lands, and BLM is pursuing the acquisition of the private parcel along this segment at this time through a land exchange. Since the creek is small and many portions of the creek are not easily accessible, BLM would not expect visitation to the creek to increase dramatically. Designation of the segment would enhance the BLM's ability to obtain funding for management of this segment.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

Under the Approved RMP, BLM will manage the stream corridor under VRM Class II, which will provide vigorous protection for the Scenic ORV. In addition, the lower portions of the stream corridor would fall within the Dolores River Riparian ACEC and within the Maverick Lands with Wilderness Characteristics area. These two designations would provide further protection of the scenic ORV by prohibiting development that would be inconsistent with riparian values and wilderness characteristics.

The CWCB holds an instream flow right on two different reaches of Blue Creek: from Massey Branch to Calamity Creek and from Calamity Creek to Tom Watkins Ditch. The purpose of an instream flow right is to preserve the natural environment to a reasonable degree. As such, instream flow rights provide a measure of flow protection that supports the ORVs (especially fish) found on this segment. The decreed flow levels vary seasonally. Between the upper end of the segment and the confluence with Calamity Creek on private land (roughly 5.5 miles), the amounts are as follows: 5.5 cfs (April 15 to May 14); 2.1 cfs (March 15 to April 14 and (May 15 and June 14); and 0.5 cfs (June 15 to March 14). From the confluence with Calamity Creek on private land to the headgate of Tom Watkins Ditch (3.0 miles), the amounts are 3.5 cfs (April 15 to May 14), 1.0 cfs (March 15 to April 14 and May 15 to June 14), and 0.5 cfs (June 15 to March 14).

Cultural resources and historic values associated with the river segment are protected and regulated by a number of laws, regulations, executive orders, programmatic agreements, and other requirements. The principal federal law addressing cultural resources is the NHPA, and its implementing regulations (36 CFR 800). These regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for project proponents consulting with appropriate agencies to avoid, reduce, or minimize adverse effects.

The primary objective of managing cultural resources is the protection of the resource from damage or destruction. To the extent consistent with protection, the BLM also manages cultural resources for scientific research, public education and enjoyment. Any interpretation of these sites for public benefit must be compatible with the protection of cultural resources.

Management of the river to protect identified ORVs would include direct and indirect protection of cultural resources in the river corridor.

BLM is a signatory to the Rangewide Conservation Agreement for Roundtail Chub, Bluehead Sucker, and Flannelmouth Sucker (Utah Department of Natural Resources, 2006). The strategy outlines conservation guidelines for habitat maintenance and protection, non-native fish control, population viability, and conservation genetics. This agreement and strategy will provide a layer of protection for the fish values along this segment even if it is not designated.

The bluehead sucker is also a BLM sensitive species and receives special management attention as a result. The BLM manages sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat. The BLM achieves this through a variety of measures, including (1) ensuring that BLM activities are carried out consistently with species management objectives, (2) monitoring populations and habitats to determine whether species management objectives are being met, (3) working with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies, (4) prioritizing Bureau sensitive species and their habitats for conservation action, and others.

6. Historical or existing rights that could be adversely affected with designation.

There are only two active water diversions on Blue Creek and one active diversion on Calamity Creek (a tributary to Blue Creek); all divert water for irrigation purposes and have the potential to provide return flows. The ability to make changes to these water rights and to appropriate new water rights upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. The area on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. Mineral and extractive uses require 100-foot setback from the 100-year floodway. Nevertheless, these industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.
The Uncompahgre National Forest found the portion of Blue Creek upstream of the BLM segment not eligible for inclusion in the NWSRS during the eligibility study for the Grand Mesa, Uncompahgre, and Gunnison National Forests land management plan revision process (US Forest Service 2006). The Uncompahgre National Forest manages the area surrounding Blue Creek as "big game winter range in non-forest areas" and according to the following general prescriptions: (1) provide semi-primitive non-motorized, semi-primitive motorized, and roaded natural recreation opportunities; (2) manage motorized recreation prevent unacceptable stress on big game animals during primary big game use season; use vegetation treatments to enhance plant and animal diversity; and (3) manage livestock grazing to favor wildlife habitat.

The Uncompahgre National Forest's 2007 proposed forest plan would manage this area as backcountry. However, the proposed forest plan is not final and has been suspended because of litigation over the US Forest Service's 2005 planning rule. If the area was managed as backcountry, management would be relatively passive and emphasize natural features of landscapes. Resource management activities would occur, but natural ecological processes and patterns would normally predominate (US Forest Service 2007). Management by the US Forest Service either to provide big game habitat or as backcountry is unlikely to have an adverse effect on this segment's ORVs and is generally consistent with BLM management that would occur with designation.

The Colorado Division of Wildlife is a party to a multi-state conservation agreement specific to the bluehead sucker and two other fish species (Utah Department of Natural Resources, 2006). The purpose of this agreement is to expedite implementation of conservation measures to ensure the persistence of bluehead sucker populations throughout its range. Designation of this segment is generally consistent with this agreement.

10. Contribution to a river system watershed or basin integrity.
Blue Creek is a tributary to the Dolores River.

Other Protections for Segment

Blue Creek	
Outstandingly Remarkable Values	**Protections**
Scenic, Fish, Cultural	NSO (1,600 acres), CSU (1,700 acres), TL (2,700 acres), VRM Class II (2,800 acres), ROW Exclusion (800 acres), ROW Avoidance (2,000 acres), Closed to Fluid Mineral Leasing (800 acres), ACEC overlap (100 acres), lands with wilderness characteristics overlap (800 acres)

Suitability Determination
The suitability determination for this segment is **not suitable.** The fish ORV is protected by an existing instream flow water right, by BLM's commitment to manage for this sensitive species under multi-state conservation agreement, and by the appearance of the fish species on BLM

sensitive species list, which restricts management actions that could harm the species. The cultural ORV is protected by the provisions of the National Historic Preservation Act. The Scenic ORV will be protected by the proposed VRM Class II and by the Maverick Lands with Wilderness Characteristics prescription.

3.2.4 Gunnison River Segment 2

Description:	Sections of the Gunnison River west of Highway 50 on BLM land from Whitewater to the Redlands Dam, south of Grand Junction and the Gunnison Rivers' confluence with the Colorado River.		
Total Segment Length:	16.63 miles	**Total Segment Area:**	5,273.45 acres
Length on BLM Land :	3.85 miles	**Area on BLM Land:**	1,375.21 acres
Tentative Classification:	Recreational		
ORVs:	Fish, Historic		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment contains outstandingly remarkable fish and historical values. The tentative classification of this segment is recreational because of a railroad and development above the canyon walls that are readily apparent from the river.

This segment has outstandingly remarkable fish values. The entire segment is USFWS-designated critical habitat for the federally endangered Colorado pikeminnow *(Ptychocheilus lucius)* and the Razorback sucker *(Xyrauchen texanus)* (59 Fed. Reg. 13,374). Critical habitat is the specific area or areas that possess physical or biological features that are essential to the conservation of the species and that may require special management considerations or protections. The Colorado pikeminnow is largest minnow in North America and one of the largest in the world. At one time, individuals may have lived more than fifty years, growing to nearly six feet in length and weighing up to 80 pounds. The razorback sucker is one of the largest suckers in North America. Individuals can live for more than forty years and can grow to up to thirteen pounds in weight and to three feet in length. These species were once widespread throughout most of the Colorado River Basin from Wyoming to Mexico.

This segment also has outstandingly remarkable historical values. The Denver and Rio Grande Railroad (now part of Union Pacific) runs parallel to the segment and was the first line connecting Denver to Grand Junction, reaching the Grand Valley in 1882. The line then connected to Salt Lake City forming a narrow gauge transcontinental railroad link. The importance of the railroad in developing the West makes this site eligible for inclusion in the National Register of Historic Places. The BLM-managed portions of the segment study area lie within the Bangs Canyon SRMA.

This segment also has characteristics that may create significant management issues, if the segment were to be designated as part of the NWSRS. There are many upstream diversions along the Gunnison River and numerous diversions within this segment (roughly fifteen). The

diversions within this segment are generally for irrigation, industrial, commercial, and municipal purposes. Several of the diversions within this segment have conditional water rights. If made absolute, these water rights could result in additional depletions and additional water development and diversion structures along the river corridor. The community of Whitewater lies along this segment of the river and portions of the segment corridor overlap the Grand Junction city limits. Future population growth, expansion, and the associated development of these communities, particularly along the riverfront, have the potential to change the setting found in this segment.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

The BLM manages 1,375.21 acres (26.1 percent) of the land within the 5,273.45-acre study corridor and 3.85 miles (23.2 percent) of the segment shoreline. The remaining land status consists of 3,899.24 acres (73.9 percent) in private ownership. The segment corridor is not leased for oil and gas development. There is no oil and gas potential for the BLM-managed lands in the segment corridor, and there are no active mining claims in the segment corridor.

The BLM does not have authority over maintenance, operation, and construction activities associated with the railroad, though activities associated with it are not likely to impact the ORVs. The Department of Transportation, pursuant to the Department of Transportation Act of 1966, must consult with the Department of the Interior so that its plans and programs include measures to maintain or enhance the natural beauty of the lands traversed. These statutes also permit the Department of Transportation to approve a program or project using public park and recreation lands, wildlife and waterfowl refuges, or historic sites only if there is no feasible and prudent alternative and it has used all possible planning to minimize harm to these lands.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or to impose terms and conditions on proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other agencies to evaluate the potential effects on the segment's values.

BLM is not aware of any major proposed water supply projects within this segment. The Colorado Statewide Water Supply Initiative concluded that Delta and Mesa Counties would be able to meet nearly all of the estimated demand for water in the Gunnison River basin through 2030 by utilizing Tri-County Water Conservancy District water rights, existing supplies, agricultural transfers, and an Uncompahgre Project Water Right. (Colorado Water Conservation Board, Statewide Water Supply Initiative Reports, 2004)

Several conditional storage water rights along and upstream from this segment have the potential to affect the identified ORVs. A conditional water right is a water right where the water has not been placed to a beneficial use. It gives the holder time to complete a project, provided that the holder pursues its completion with due diligence. Once the holder has put the

water to beneficial use, the conditional right will be decreed as an absolute water right. Some of these conditional storage rights have priority dates senior to existing absolute junior rights and therefore could affect junior water right holders if made absolute. These conditional storage rights could result in additional depletions and change the flow regime along this segment. The volume of conditional storage rights in the Gunnison River Basin totals over 2 million acre-feet. Water District 40 (North Fork Gunnison/Gunnison Rivers) accounts for approximately 290,000 acre-feet of conditional storage rights. The majority of these rights which have priority dates ranging from 1960-1980, with some as early as 1900-1920 (SWSI). The development of conditional water rights both along the segment and upstream from the segment has the potential to affect the fish values along this segment.

Presently, there are no state-based instream flow water rights in this reach to ensure sufficient flow to preserve the natural environment to a reasonable degree. Rather, flows rates are the result of required deliveries to senior water rights within and downstream from this segment, water releases from US BOR's Aspinall Unit Reservoirs (Blue Mesa, Morrow Point, and Crystal) and Ridgeway Reservoirs, and by water deliveries that are made as part of the Upper Colorado River Endangered Fish Recovery Program (see Criteria 9).

The USFWS has developed flow recommendations for the Gunnison River to benefit endangered fish. In addition, the US BOR is currently undergoing an EIS process regarding reoperation of the Aspinall Unit, in which flow regimes would be modified to support threatened and endangered fish species. Flow recommendations are not absolute values and may be revised from time to time to include the results of research. The goal of the recommendations is to provide the flow patterns to enhance populations of the endangered fishes and to allow Colorado the full ability to develop its compact entitlements. The flow recommendations consist of peak flow recommendations and base flow recommendations. Peak flow recommendations are based on historical river flows during spring runoff to provide spawning cues and to restore and maintain in-channel and flood plain habitats. Base flow recommendations are designed to allow fish movement among river segments and to provide maximum amounts of warm, quiet-water habitats to enhance growth and survival of young fish. Although there is no instream-flow right along this segment, USFWS flow recommendations provide a layer of protection for the ORVs.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The majority of land in this segment is privately owned. The BLM would not pursue land acquisition, as it is not feasible to acquire enough land to affect its ability to manage the segment. The cost of administering this area (protecting and enhancing the ORVs) would likely remain roughly the same if designated. The BLM already incurs costs associated with the protection of the ORVs through its administration of other statutory requirements (the ESA and the National Historic Preservation Act).

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM's land management authorities can adequately protect the federal lands in the river corridor. However, the BLM does not have authority over private lands in the corridor, nor

does it have authority to protect the stream flows necessary to support the ORVs. Designation would provide a comprehensive framework for cooperating with local governments to encourage land uses that are compatible with the ORVs, and designation would provide a federal water right that would assist with flow protection.

The makeup of this segment hinders the BLM's ability to manage it effectively as a WSR. The majority of the shoreline and the segment corridor falls under private ownership. The BLM only manages roughly a quarter of the lands within the segment corridor. The BLM does not control uses or activities on private lands, making effective management of this segment difficult. Further, the downstream end of the segment overlaps the Grand Junction city limits, and the upstream end of the segment neighbors the community of Whitewater. As these communities continue to grow, it will become increasingly difficult to manage this segment as a WSR and to prevent incompatible development on private lands.

The ESA provides protection for the fish values present along this segment. This entire segment is designated critical habitat for the Colorado pikeminnow, Razorback sucker, bonytail chub, and humpback chub. Areas designated as critical habitat receive protection under section 7 of the ESA with regard to actions carried out, funded, or authorized by a Federal agency that are likely to adversely modify or destroy critical habitat. Section 7 requires Federal agencies to consult on and insure that such actions are not likely to destroy or adversely modify critical habitat. These fish species also receive special management as part of the Upper Colorado River Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery strategies include conducting research, improving river habitat, providing adequate stream flows, managing non-native fish, and raising endangered fish in hatcheries for stocking. Program partners cooperatively manage water resources in accordance with the ESA, state water law, individual water rights, and interstate compacts. Program partners utilize a variety of management tools: leases and contracts for water supplies; coordinated water releases from upstream reservoirs; participation in reservoir enlargements, efficiency improvements to irrigation systems to reduce water diversions; and re-operation of federal dams and reservoirs. These mechanisms will protect the fish values along this segment.

Historical values associated with the river segment are protected and regulated by a number of laws, regulations, executive orders, programmatic agreements, and other requirements. The principal federal law addressing cultural resources is the NHPA, and its implementing regulations (36 CFR 800). These regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for project proponents consulting with appropriate agencies to avoid, reduce, or minimize adverse effects.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should continue to rely on the provisions of the Colorado Endangered Fish Recovery Program. Including the designation of critical habitat along this stream reach, to protect the Fish ORV.

2. The railroad right-of-way that forms the basis for the historical ORV is not at risk.

Based on these recommendations, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

6. Historical or existing rights that could be adversely affected with designation.

This segment is downstream from current water projects and diversions that are designed to provide water for the State of Colorado. The ability to change existing projects and construct new projects upstream could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new projects and changes to existing projects would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORVs.

Numerous absolute water rights exist along this segment of the Gunnison River. Under designation, historical operation, maintenance, and access activities on federal lands can continue. While these historical rights would not be affected by designation of the segment, changes to these water rights and the development of new water projects as described in sections 7(b) and 7(c) of the WSR Act would be permitted only if they did not have a direct and adverse effect on the values for which the river segment was designated. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. The majority of the area on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area. The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs.

A small portion of the study area is within the Residential-Single-Family (RSF-4) district. This district is primarily intended to accommodate medium density, single family residential development (Mesa County 2008). Because such a small portion of the study area is within the RSF-4 district, it is unlikely that the zoning would adversely impact the ORVs.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.
The Colorado pikeminnow and razorback sucker are part of the Upper Colorado River Endangered Fish Recovery Program, a partnership of private and public organizations working to conserve a collection of fish species while maintaining water development. Recovery plans and goals have been issued by the USFWS (USFWS 2002a and USFWS 2002b). Designation would be consistent with this program.

The National Park Service determined that a 12-mile segment of the Gunnison River (as it flows through the Black Canyon of the Gunnison National Park) is suitable for inclusion in the NWSRS. The tentative classification for this segment is a combination of Wild and Scenic. Designation of this segment would be consistent with the previous National Park Service determination.

The BLM Uncompahgre Field Office determined that a 16–mile segment of the Gunnison River (as it flows through the Gunnison Gorge NCA) is suitable for inclusion in the NWSRS. The tentative classification for this segment is a combination of Wild and Recreational (Record of Decision, Gunnison Gorge National Conservation Area Resource Management Plan and Final Environmental Impact Statement, 2004). The Uncompahgre Field Office also determined two other segments of the Gunnison River as eligible. These include a 17.48-mile segment immediately upstream from the Grand Junction planning area boundary and a 0.41-mile segment on BLM-managed lands northeast of Delta. The BLM will make suitability determinations on these segments as part of the Uncompahgre RMP revision and the Dominguez-Escalante NCA planning process. Designation would be consistent with the determinations of the Uncompahgre Field Office; it is not known at this time whether the eligible segments of the Gunnison River upstream from the GJFO will be determined suitable.

10. Contribution to a river system watershed or basin integrity.
The Gunnison River is a tributary of the Colorado River.

Other Protections for Segment

Gunnison River Segment 2	
Outstandingly Remarkable Values	**Protections**
Fish, Historic	NSO (1,000 acres), CSU (500 acres), TL (500 acres), VRM Class II (600 acres), ROW Exclusion (400 acres), ROW Avoidance (500 acres), Closed to Fluid Mineral Leasing (900 acres), lands with wilderness characteristics overlap (400 acres)

Suitability Determination
The suitability determination for this segment is **not suitable.** The Colorado River Recovery Program, designation of critical habitat by the USFWS, and the USFWS flow recommendations for the Gunnison River flow provide sufficient for the fish ORV. Current federal laws and authorities provide sufficient protection for the historical ORV.

The makeup of this segment would make effective management as a WSR challenging. The BLM only manages about a quarter of the shoreline and lands in the segment corridor. Mesa County zoning does not prevent development that is incompatible with WSR designation. The Agricultural, Forestry, Transitional district allows extractive uses (either as of right or conditionally) that have the potential to change the landscape and setting found along this segment. Also, this segment overlaps the city limits of Grand Junction and the community of Whitewater. As these communities continue to grow, the potential for incompatible development in the segment corridor will correspondingly increase.

3.3 ROAN CREEK

Description:	From the headwaters in the northern part of the GJFO to the confluence with Carr Creek.		
Total Segment Length:	17.04 miles	**Total Segment Area:**	4,960.38 acres
Length on BLM Land :	6.47 miles	**Area on BLM Land:**	2,563.97 acres
Tentative Classification:	Scenic		
ORVs:	Fish		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment contains outstandingly remarkable fish values. The tentative classification for this segment is scenic due to access via a dirt road.

The creek contains a core conservation population of Colorado River cutthroat trout *(Oncorhynchus clarki pleuriticus)* (CRCT Conservation Team 2006), a BLM sensitive species (BLM 2000) and a Colorado species of special concern (CPW 2007). However, recent genetic work suggests that this population is more closely related to greenback cutthroat trout *(Oncorhynchus clarki stomias)*, a federally threatened species. Although Carr Creek is outside of what is considered the "native range" of greenback cutthroat, the USFWS considers this population greenback cutthroat for the purposes of the ESA.

The cutthroat trout is the most diverse trout species in North America, and its historical distribution covers the broadest range of any stream-dwelling trout in the Western Hemisphere. Today, they exist in only about 5 percent of their original range. Their numbers have declined due to over-fishing, stocking of rainbow, brook, brown, and Yellowstone cutthroat trout in their habitat, and loss of high-quality trout stream habitat due to logging, livestock over-grazing, water diversions and municipal and industrial pollution.

In a 2004 landscape health assessment, Roan Creek was rated as functioning-at-risk because of insufficient stream bank vegetation resulting from heavy livestock use. Road encroachment and crossings are keeping banks unstable. Current beaver ponds are unstable because of the lack of large-diameter materials.

Grazing is permitted throughout the study corridor and occurs on both BLM and private land. Overgrazing and poor management practices are disrupting the riparian ecosystem.

The Roan and Carr Creeks ACEC in the Approved RMP overlaps with nearly all of the BLM-managed lands in this study area. The public and the BLM have proposed this ACEC to provide special management attention to the area's riparian habitat, fish, wildlife, and plant values.

There are five active water diversions within the segment study area and several more diversions outside the study area that affect flows in Roan Creek. Diversions are primarily for irrigation purposes and have the potential to provide return flows to Roan Creek.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 17.04-mile segment is a combination of federal (BLM) and private. The BLM manages shoreline along 6.47 miles (38.0 percent) of the segment. Within the 4,960.38-acre study corridor, the BLM manages 2,563.97 acres (51.7 percent). The remaining 2,396.41 acres in the segment corridor (48.3 percent) are in private ownership.

Nearly all of the BLM-managed lands in the segment corridor are leased for oil and gas exploration, and there are eight active wells within the segment corridor. Additionally, there are several active wells outside of the study corridor on both BLM and private land. There are no active mining claims in the segment corridor.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or impose terms and conditions on proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the segment's values.

If designated, valid mining claims and mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

As discussed below, existing mechanisms and management tools would reduce the potential for adverse effects on the fish values in this segment if it were not designated.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

If designated, it is possible that the cost of administering the area to protect and enhance the cutthroat trout would increase because of the mandate to do such. The BLM would/would not pursue land acquisition along this segment at this time. A detailed cost analysis was not done as part of this study.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM only manages 38.0 percent of the shoreline of this segment and about half of the land in the segment corridor. The BLM's limited ownership of the shoreline would make management of this segment as a WSR challenging. However, other mechanisms are in place that will protect the fish values on this segment.

The greenback cutthroat trout receives protection under the ESA, while the Colorado River cutthroat trout receives protection by virtue of appearing on the BLM's official sensitive species list. The USFWS has advised the BLM to treat the fish population as though it were threatened greenback cutthroat trout, despite the current genetic uncertainty surrounding this population. Accordingly, the BLM will determine the effects on these fish from any actions it funds, authorizes, or undertakes. The BLM will initiate ESA consultation if it determines that an action may affect these fish. If the fish population turns out be Colorado River cutthroat trout, the BLM sensitive species manual guidance specifies that the population should be managed in a fashion similar to species that are listed under the ESA.

The "Greenback Cutthroat Trout Recovery Plan" (USFWS 1998) provides a framework for maintaining and enhancing current known populations of greenback cutthroat trout and for creating new populations of the species where feasible. Involved parties include the BLM, US Forest Service, USFWS, National Park Service, and CPW. The BLM, consistent with the position of the USFWS, intends to manage this segment in accordance with the conservation agreement.

The BLM is capable of managing for the protection of the cutthroat trout through incorporation of protective measures in its RMP. For example, the BLM will manage the area as an ACEC to protect the greenback cutthroat trout. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes. Management actions of this ACEC include: (1) only allow vegetation treatments for the benefit of the identified relevant and important values (i.e., fish); (2) classify as closed to unauthorized motorized travel activities, including over-the-snow travel; (3) issue no special recreation permits for special or competitive events; and (4) close to mineral material sales and withdraw from coal leasing.

The CWCB holds an instream flow right on Roan Creek. There are varying levels of instream flow appropriations throughout the year for the entire segment. Between April 1 and October 31, the appropriated instream flow is 1.75 cfs. For the remainder of the year, the appropriated instream flow is 1.25 cfs. The purpose of an instream flow right is to preserve the natural environment to a reasonable degree. As such, this instream flow right provides a measure of flow protection that supports the ORV found on this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should continue to rely upon the appearance of cutthroat trout species on its sensitive species list as mechanism to insure that fish needs are considered in BLM plans and actions.
2. BLM should continue to rely upon the existence of an instream right held by the CWCB to protect the fish ORV.
3. BLM should continue to rely upon the inaccessibility of the creek as a method to protect the Fish ORV.

Based on these recommendations, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

6. Historical or existing rights that could be adversely affected with designation.

There are current water diversions along this segment. The ability to change existing diversions and to appropriate new diversion of water could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new diversions and changes to existing diversions would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORV. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

Roan Creek is in Garfield County and is zoned as Resource Lands. The Resource Lands zone has limited potential to prevent development that is incompatible with protection of the ORV. Land types and uses within the Resource Lands zone include irrigated agriculture, grazing, farm and ranch residences, meadow hay land, and waste land (Garfield County 2008). Also, conditional uses in the Resources Lands zone include mineral extraction, forestry, mineral waste disposal, oil and gas drilling, and utility lines. The allowable uses along this segment include numerous forms of industrial development and resource extraction. These uses may result in development that is incompatible with the protection of this segment's ORV.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

In order for the greenback cutthroat trout to be considered recovered and delisted from the federally threatened and endangered species list, populations meeting a certain criteria must be documented in its native range, which is Arkansas and South Platte drainages on the Colorado Front Range (USFWS 1998). Thus, while designation for the protection of the greenback cutthroat trout would support the recovery of the species, it would not contribute to its delisting.

10. Contribution to a river system watershed or basin integrity.

Roan Creek is a tributary to the Colorado River.

Other Protections for Segment

Roan Creek	
Outstandingly Remarkable Values	**Protections**
Fish	NSO (500 acres), CSU (1,400 acres), TL (1,700 acres), VRM Class III, ACEC overlap (1,900 acres), ROW Avoidance (2,000 acres), closed to mineral material sales (1,900 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. The ORV for this segment is for greenback cutthroat trout that are present. Mechanisms other than WSR designation can adequately protect these fish. The Roan and Carr Creeks ACEC, if chosen, would provide special management attention, limit allowable uses, and direct management actions to protect this fish population. The cutthroat trout are protected as special status species regardless of designation.

Other factors would make management of this segment in the NWSRS challenging and not the most effective use of the BLM's limited funds and management resources. The BLM manages only about a third of the shoreline and just over half of the land in the segment corridor. A cohesive and comprehensive management approach to this segment is difficult because the makeup of the segment is scattered and fragmented. In several places, the BLM manages only one side of the shoreline. The longest contiguous section of land in this segment where the BLM manages both sides of the shoreline is only two miles. As stated above, an ACEC overlaps some of the segment (roughly uppermost three-quarters), but this special management does not apply to the private lands in that section or to the remainder of the segment.

Additionally, there are oil and gas leases on nearly all of the BLM land in the corridor, and there are eight active wells in the corridor. BLM's permits for authorization to drill wells contain stipulations designed to protect the cutthroat trout population. Finally, the CWCB holds an instream flow water right on this creek that is designed to provide flow rates that support the fish population. This water right is a viable alternative to the federal reserved water right that would come with designation as a Wild and Scenic River.

3.4 CARR CREEK

Description:	From the headwaters in the northern part of the GJFO to the confluence with Roan Creek.		
Total Segment Length:	15.10 miles	**Total Segment Area:**	4,916.51 acres
Length on BLM Land :	5.06 miles	**Area on BLM Land:**	2,289.73 acres
Tentative Classification:	Scenic		
ORVs:	Fish		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment contains outstandingly remarkable fish values. The tentative classification for this segment is scenic due to access via a dirt road.

The creek contains a core conservation population of Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) (CRCT Conservation Team 2006), a BLM sensitive species (BLM 2000) and a Colorado species of special concern (CPW 2007). However, recent genetic work suggests that this population is more closely related to greenback cutthroat trout *(Oncorhynchus clarki stomias)*, a federally threatened species. (Colorado Parks and Wildlife, 2011, "Native cutthroat trout populations displaying the lineage GB genotype identified west of the Continental Divide.") Although Carr Creek is outside of what is considered the "native range" of greenback cutthroat, the USFWS considers this population greenback cutthroat for the purposes of the ESA.

The cutthroat trout is the most diverse trout species in North America, and its historical distribution covers the broadest range of any stream-dwelling trout in the Western Hemisphere. Today, they exist in only about five percent of their original range. Their numbers have declined due to over-fishing, stocking of rainbow, brook, brown, and Yellowstone cutthroat trout in their habitat, and loss of high-quality trout stream habitat due to logging, livestock over-grazing, water diversions and municipal and industrial pollution.

The area is permitted for livestock grazing though the permittee does not graze the land. A locked gate on private land downstream of the segment prevents public access to the segment.

The Roan and Carr Creeks ACEC overlaps roughly four miles of the uppermost portion this segment. The public and the BLM have proposed this ACEC to provide special management attention to the area's riparian habitat, fish, wildlife, and plant values.

There are approximately a dozen active water diversions along this segment and several more diversions lie outside the study area but have the potential to affect flows in the creek. Diversions in this area are primarily for irrigation purposes and have the potential to provide return flows to the creek.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 15.10-mile segment is a combination of federal (BLM) and private. The BLM manages shoreline along 5.06 miles (33.5 percent) of the segment. Within the 4,916.51-acre study corridor, the BLM manages 2,289.73 acres (46.6 percent). The remaining land status is composed of 2,626.78 acres (53.4 percent) in private ownership.

The segment corridor is leased for oil and gas exploration along roughly the downstream most 3.5 miles. There are 6 active wells within the study corridor (all on private land). The oil and gas potential on BLM lands is low along roughly the upstream most 5 miles of the segment. The oil and gas potential is moderate along the remaining BLM lands in the segment corridor. There are no active mining claims in the segment corridor.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or impose terms and conditions on proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the segment's values.

If designated, valid mining claims and mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

As discussed below, existing mechanisms and management tools would reduce the potential for adverse effects on the fish values in this segment if it were not designated.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The cost of administering the area would not likely increase over current levels because public access to the segment is limited. The majority of land in this segment corridor is privately owned. The BLM would not pursue land acquisition, as it is not feasible to acquire enough land to affect its ability to manage the segment.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The Greenback Cutthroat Trout receives protection under the ESA, while the Colorado River Cutthroat Trout receives protection by virtue of appearing on the BLM's official sensitive species list. The USFWS has advised the BLM to treat the fish population as though it were threatened greenback cutthroat trout, despite the current genetic uncertainty surrounding this population. Accordingly, the BLM will determine the effects on these fish from any actions it funds, authorizes, or undertakes. The BLM will initiate ESA consultation if it determines that an action may affect these fish. If the fish population turns out be Colorado River Cutthroat Trout, the BLM sensitive species manual guidance specifies that the population should be managed in a fashion similar to species that are listed under the ESA.

The "Greenback Cutthroat Trout Recovery Plan" (USFWS 1998) provides a framework for maintaining and enhancing current known populations of greenback cutthroat trout and for creating new populations of the species where feasible. Involved parties include the BLM, US Forest Service, USFWS, National Park Service, and CPW. The BLM, consistent with the position of the USFWS, intends to manage this segment in accordance with the conservation agreement.

The BLM is capable of managing for the protection of the cutthroat trout through incorporation of protective measures in its RMP. For example, the BLM will manage the upper portion of the area as an ACEC to protect cutthroat trout. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural

systems or processes. Management actions of this ACEC include: (1) only allow vegetation treatments for the benefit of the identified relevant and important values (i.e., fish); (2) classify as closed to unauthorized motorized travel activities, including over-the-snow travel; (3) issue no special recreation permits for special or competitive events; and (4) close to mineral material sales and withdraw from coal leasing.

The CWCB holds an instream flow right on Carr Creek. There are varying levels of instream flow appropriations throughout the year for the entire segment. Between April 1 and August 31, the appropriated instream flow is 2.0 cfs. It drops to 1.0 cfs between September 1 and October 31, and again to 0.5 cfs between November 1 and March 31. The purpose of an instream flow right is to preserve the natural environment to a reasonable degree. As such, this instream flow right provides a measure of flow protection that supports the ORV found on this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should continue to rely upon the appearance of cutthroat trout species on its sensitive species list as mechanism to insure that fish needs are considered in BLM plans and actions.
2. BLM should continue to rely upon the existence of an instream right held by the CWCB to protect the fish ORV.
3. BLM should continue to rely upon the inaccessibility of the creek as a method to protect the Fish ORV.

Based on these recommendations, the stakeholder collaborative also recommended that BLM determine that this stream segment is not suitable for designation under the WSR Act.

6. <u>Historical or existing rights that could be adversely affected with designation.</u>

There are current water diversions along this segment. The ability to change existing diversions and to appropriate new diversion of water could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new diversions and changes to existing diversions would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORV. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

7. <u>Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.</u>

Carr Creek is in Garfield County and is zoned as Resource Lands. The Resource Lands zone has limited potential to prevent development that is incompatible with protection of the ORV. Land types and uses within the Resource Lands zone include irrigated agriculture, grazing, farm and ranch residences, meadow hay land, and waste land (Garfield County 2008). Also, conditional uses in the Resources Lands zone include mineral extraction, forestry, mineral waste disposal, oil and gas drilling, and utility lines. The allowable uses along this segment include numerous

forms of industrial development and resource extraction. These uses may result in development that is incompatible with the protection of this segment's ORV.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

In order for the greenback cutthroat trout to be considered recovered and delisted from the federally threatened and endangered species list, populations meeting a certain criteria must be document in its native range, which is Arkansas and South Platte drainages on the Colorado Front Range (USFWS 1998). Thus, while designation for the protection of cutthroat trout may support the recovery of the species, it would not contribute to delisting.

10. Contribution to a river system watershed or basin integrity.

Carr Creek is a tributary to Roan Creek, which flows into the Colorado River near De Beque.

Other Protections for Segment

Carr Creek	
Outstandingly Remarkable Values	**Protections**
Fish	NSO (1,100 acres), CSU (600 acres), TL (100 acres), ROW Avoidance (1,700 acres), ACEC overlap (1,700 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. The ORV for this segment is for greenback cutthroat trout that are present. Mechanisms other than WSR designation can adequately protect these fish. The Roan and Carr Creeks ACEC will provide special management attention, limit allowable uses, and direct management actions to protect this fish population. The cutthroat trout are protected as special status species regardless of designation.

Other factors would make management of this segment in the NWSRS challenging and not the most effective use of the BLM's limited funds and management resources. The BLM is a minority landowner on this segment. It only manages a third of the shoreline and less than half of land in the segment corridor. As stated above, an ACEC overlaps the upper portion of the segment (roughly uppermost four miles) where the BLM manages the entire shoreline and all of the surrounding land in the corridor. However, the special management afforded by the ACEC does not apply to the remainder of the segment where land ownership is fragmented.

Additionally, there are oil and gas leases on nearly all of the BLM land in the corridor, and there are eight active wells in the corridor. BLM's permits for authorization to drill wells contain stipulations designed to protect the cutthroat trout population. Finally, the CWCB holds an instream flow water right on this creek that is designed to provide flow rates that support the

fish population. This water right is a viable alternative to the federal reserved water right that would come with designation as a Wild and Scenic River.

3.5 ROUGH CANYON CREEK

Description:	Sections of Rough Canyon Creek on BLM land located south of Grand Junction in the Bangs Canyon SRMA.		
Total Segment Length:	4.21 miles	**Total Segment Area:**	1,356.52 acres
Length on BLM Land :	4.21 miles	**Area on BLM Land:**	1,248.06 acres
Tentative Classification:	Scenic		
ORVs:	Scenic, Wildlife, Geologic		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

Rough Canyon Creek is an intermittent stream and contains outstandingly remarkable scenic, geologic, and wildlife values. The tentative classification of this segment is scenic due to an inconspicuous dirt road that runs parallel to the creek for most of its extent.

This segment has outstandingly remarkable scenic value. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). Deep canyons exposing multiple layers of rock as old as the Precambrian create outstandingly remarkable scenery. A classic faulted monocline next to the creek adds to the unusual and spectacular scenery.

This segment has outstandingly remarkable geologic value. The faulted monocline within Rough Canyon is readily visible from the creek and provides a textbook example of the feature. The exposed fault has provided evidence of the formation of the Uncompahgre Plateau.

This segment has outstandingly remarkable wildlife value. Rough Canyon Creek is an important Canyon Tree Frog *(Hyla arenicolor)* breeding area with many breeding pools found in surveys of this area. The Canyon Tree Frog is a BLM sensitive species (BLM 2000). The management objective for BLM sensitive species that are not federally listed as endangered or threatened is to initiate protective conservation measures that reduce or eliminate threats to minimize the likelihood of and need for listing of these species under the ESA. The CPW identified the Canyon Tree Frog as a species of greatest conservation need in its Comprehensive Wildlife Conservation Strategy (CPW 2006).

This segment has characteristics in addition to its ORVs that add to its value as a potential addition to the NWSRS. The majority of the study area (4.09 miles, 874.61 acres) is within the Rough Canyon research natural area and ACEC. The BLM has proposed to expand this existing ACEC to provide special management attention to its plant, fish and wildlife, scenic, cultural, and geologic values. The study corridor is also within the Bangs Canyon SRMA. While the SRMA is available for a wide-range of activities, Rough Canyon is protected from surface-disturbing

activities and the canyon floor is open to foot and equestrian traffic only. The Tabeguache Trail follows the eastern rim of the canyon and is a motorized trail. Lastly, there are no active diversions along Rough Canyon Creek.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

The shoreline for this 4.21-mile segment is entirely managed by BLM. Within the 1,356.52-acre study corridor, the BLM manages 1,248.06 acres (92.0 percent), and the remaining 108.46 acres (8.0 percent) are privately owned. The segment corridor is not leased for oil and gas development; there are no active wells in the corridor; and the oil and gas potential is very low.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect water development along this segment. However, the potential for future water development is very low due to the intermittent nature of the creek and its remote location. If designated, it is expected that management practices would be similar to existing management practices. Hiking in the canyon could increase with designation and threaten the ORVs, particularly the canyon treefrog habitat. The values along this segment likely would not diminish if the segment was not designated because other management tools provide adequate protection, as discussed below.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The cost of administering this area is not likely to increase substantially if designated. The BLM already devotes funding to this area for its management of the Bangs Canyon SRMA and the Rough Canyon ACEC.

The acquisition of private lands is not essential for management for the protection of the ORVs because the BLM manages nearly all of the lands within the segment corridor. Nevertheless, the BLM would pursue acquisition of private parcels from willing sellers. No detailed cost estimate was prepared as part of this study.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM could manage this segment effectively as a WSR. The BLM manages all of the shoreline along this segment and 92 percent of the acres in the segment corridor. Other means also exist to protect the identified values other than WSR designation.

The BLM currently manages the segment corridor as part of the Rough Canyon research natural area and ACEC. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes. This provides a layer of protection for the scenic, wildlife, and geologic ORVs.

The BLM also manages the segment corridor as part of the Bangs Canyon SRMA. Braided routes on the canyon floor and a lack of interpretive educational efforts put the identified ORVs,

specifically the canyon treefrog, at risk. However, increased efforts by the BLM to educate users and close trails would minimize adverse impacts.

The BLM's VRM system provides some protection for the scenic values of this segment. The segment corridor is managed as VRM Class II. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape. Class II protection also provides some protection against visual disturbance which could indirectly protect the geologic value by minimizing the possibility of significant development in the area.

6. Historical or existing rights that could be adversely affected with designation.

No historical or existing rights have been identified for this segment.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

This segment is within Mesa County. There are parcels of private land within the watershed but not directly located on the creek. The private lands are within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

The Mesa Land Trust holds a conservation easement on a very small portion of the private land at the upstream end of the segment corridor (about 20 acres). Conservation easements are voluntary, perpetually binding documents that restrict development of a property. Conservation easements have the general purposes of conserving agricultural productivity, open space character, wildlife habitat, and scenic qualities, and for preventing any uses that will impair or interfere with the conservation values of the property (such as industrial uses). With regard to water use, conservation easements allow the maintenance of existing water systems and the development of new water sources, provided that such maintenance or development does not substantially diminish the conservation values of the property.

In sum, even though Mesa County zoning may allow incompatible development, the private lands in the segment corridor make up such a small percentage (8 percent) that adverse effects to ORVs from incompatible development is unlikely.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

Designation to protect the canyon treefrog would be consistent with the CPW initiative to protect the species.

10. Contribution to a river system watershed or basin integrity.

Because the creek is intermittent, the Gunnison River does not rely upon a contribution from Rough Canyon Creek to meet average flow levels.

11. Other issues and concerns, if any.

None.

Other Protections for Segment

Rough Canyon Creek	
Outstandingly Remarkable Values	**Protections**
Scenic, Wildlife, Geological	NSO and TL (1,200 acres), CSU (800 acres), VRM Class II (1,200 acres), ROW Exclusion (1,000 acres), ROW Avoidance (200 acres), Closed to Fluid Mineral Leasing (1,200 acres), ACEC overlap (900 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. The BLM can adequately protect the ORVs along this segment with other administrative protections. The increased visitation that would likely accompany designation has the potential to have an adverse effect on the wildlife (canyon tree frog habitat) value of the segment. As such, the BLM will protect the ORVs of this segment utilizing existing means other than designation. For example, the BLM's VRM system provides a layer of protection for the scenic and geologic values. The BLM manages this area as VRM Class II. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape.

The Rough Canyon ACEC also provides special management attention to values in this area (geologic, wildlife habitat, archaeological, and plants) that parallel the ORVs of this segment. For these reasons, the BLM determines that this segment is not suitable for inclusion in the NWSRS.

3.6 UNAWEEP CANYON COMPLEX

3.6.1 East Creek

Description:	Sections of East Creek on BLM land running parallel to Highway 141 from the Unaweep Divide to East Creek's confluence with the Gunnison River near Whitewater.		
Total Segment Length:	20.26 miles	**Total Segment Area:**	6,220.63 acres
Length on BLM Land :	8.96 miles	**Area on BLM Land:**	3,601.84 acres
Tentative Classification:	Recreational		
ORVs:	Geologic		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

This segment has outstanding geologic value. The tentative classification for this segment is recreational because Highway 141 runs parallel to the creek. Frequent traffic and transmission lines are readily apparent. With regard to its geologic value, East Creek flows east from the Unaweep Divide, through Unaweep Canyon, to the Gunnison River. West Creek flows west from Unaweep Divide and into the Dolores River. These creeks originate in the canyon and do not have a source large enough to create a canyon of such magnitude. It is hypothesized that Unaweep Canyon was carved by one or both of the modern day Gunnison or Colorado Rivers. The second uplift of the Uncompahgre Plateau probably rerouted one or both of these rivers. This has led to the exposure of multiple layers of rock, including the Precambrian basement layer of the Uncompahgre Plateau, and high canyon walls of up to 1000 feet. The divide located in the middle of the canyon separating East and West Creeks is rare (Foutz 1994) and Unaweep Canyon is the only known canyon in the world with a divide in the middle and a creek flowing out of each end (Ikenberry 2002). Approximately one-third of the study area (1,929.99 acres) is within the Bangs Canyon SRMA. Also, a small portion of the study area lies within the Dominguez-Escalante NCA. Congress designated the Dominguez-Escalante NCA to:

> "[C]onserve and protect for the benefit and enjoyment of present and future generations--(1) the unique and important resources and values of the land, including the geological, cultural, archaeological, paleontological, natural, scientific, recreational, wilderness, wildlife, riparian, historical, educational, and scenic resources of the public land; and (2) the water resources of area streams, based on seasonally available flows, that are necessary to support aquatic, riparian, and terrestrial species and communities." (Public Law No. 111-11).

In a 2007 landscape health assessment, East Creek was rated as functioning-at-risk because of insufficient bank vegetation and streambed disturbance related to recreational use along the banks and off-highway vehicle use.

There are seven active diversions within the study area. These diversions are primarily for irrigation purposes and have the potential to provide return flows to the creek.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 20.26-mile segment is a combination of federal (BLM) and private. The BLM manages shoreline along 8.96 miles (44.2 percent) of the segment. Within the 6,220.63-

acre segment corridor, the BLM manages 3,601.84 acres (57.9 percent). The remaining land status is composed of 4,014.64 acres (42.1 percent) in private ownership.

The BLM-managed lands in the segment corridor to the southeast of Highway 141 lie within the Dominguez-Escalante NCA (approximately 25 percent of this study area for this segment). The Omnibus Public Land Management Act of 2009 withdrew all BLM-managed lands in the Dominguez-Escalante NCA from "location, entry, and patent under the mining laws; and operation of the mineral leasing, mineral materials, and geothermal leasing laws." (Public Law No. 111-11) There is very low oil and gas potential on the remaining BLM lands in the segment corridor. There are no active oil and gas wells, oil and gas leases, or mining claims in this area.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or impose terms and conditions on proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other federal agencies to evaluate the potential effects on the segment's values.

The geologic value of this segment likely would not be foreclosed or diminished if the segment was not designated. As discussed above, Unaweep Canyon is thought to have been formed by either the Gunnison or Colorado Rivers. Then, the second uplift of the Uncompahgre Plateau rerouted one or both of these rivers. This value does not depend directly on flows in East Creek, and administrative provisions in the BLM land use plan will prevent outstanding expressions of the geologic value from being inappropriately developed.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

If designated, it is unlikely that the cost of administering the area would increase dramatically over the current level, as the area already sees a moderate amount of activity from scenic drivers and because the highway serves as a corridor to the Gateway area and Southwest Colorado. BLM has already developed turnouts, signage, and other recreational infrastructure along the segment to accommodate the existing use. Further, the protection of this segment's geologic value does not require the active management that an ecosystem-based ORV, such as wildlife or fish, would. The BLM would not pursue land acquisition along this segment at this time.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM manages less than half of the shoreline of this segment and only 57.1 percent of the lands in the segment corridor, making effective management of the segment as a WSR challenging.

Other administrative management tools provide some protection for this segment's ORV. Almost half of the study area (2,748.66 acres) is managed as VRM Class II. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to

the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape. Class II protection provides some protection against visual disturbance which could indirectly protect the geologic value by minimizing the possibility of substantial development in the area. This segment flows along the boundary of the Dominguez-Escalante NCA which was designated to conserve and protect, among other resources, its geological values. Nearly 25 percent of the study area (1,438.97 acres) is protected by the NCA.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should establish a geological ACEC to protect the geological ORV.
2. BLM should carefully manage access routes and recreational use areas to prevent damage to the geological ORV.
3. BLM should continue to rely upon the inaccessibility of the creek as a method to protect the Fish ORV.

The stakeholder collaborative was unable to reach consensus on whether this stream segment should be determined suitable or not suitable by BLM for designation under the WSR Act.

6. <u>Historical or existing rights that could be adversely affected with designation.</u>

There are current water diversions along this segment. The ability to change existing diversions and to appropriate new diversion of water could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new diversions and changes to existing diversions on BLM lands would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORV. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

7. <u>Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.</u>

The segment is in Mesa County and the small portion of land within the segment study corridor on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORV.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

No other agency plans, programs, or policies were identified for this segment.

10. Contribution to a river system watershed or basin integrity.

East Creek is a tributary to the Gunnison River.

Other Protections for Segment

East Creek	
Outstandingly Remarkable Values	**Protections**
Geological	NSO (1,900 acres), CSU (1,500 acres), TL (1,900 acres), VRM Class II (1,900 acres), ROW Avoidance (1,900 acres), lands with wilderness characteristics overlap (400 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. The ORV for this segment is its unique geologic value. The BLM's VRM system provides a layer of protection for this value. VRM Class II protection provides protection against visual disturbance, and could indirectly protect the geologic value by minimizing the possibility of substantial development in the area.

Since there is a large percentage of private land in this segment, management as a Wild and Scenic River could be challenging and resource-intensive. Current zoning in the area could allow developments that could detract from the visual observation and interpretation of the geologic values.

Creation of a federal reserved water right with designation does not appear essential for managing the geologic ORV. Maintenance of the geologic ORV is not highly flow-dependent. In addition, the Colorado Water Conservation appropriated an instream flow water right for this stream this reach during 2014, based upon a recommendation from the BLM.

Because of the factors discussed above, management of this segment as suitable for inclusion in the NWSRS is not the most effective use of the BLM's limited funds and management resources.

3.6.2 West Creek

Description:	Sections of West Creek on BLM land running parallel to Highway 141 from the Unaweep Divide to West Creek's confluence with the Dolores River near Gateway.		
Total Segment Length:	23.56 miles	**Total Segment Area:**	6,926.06 acres

Length on BLM Land :	4.93 miles	**Area on BLM Land:**	2,490.99 acres
Tentative Classification:	Recreational		
ORVs:	Scenic, Wildlife, Geologic, Vegetation		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.
West Creek contains outstandingly remarkable scenic, geologic, wildlife, and vegetative values. The tentative classification for this segment is recreational as Highway 141 runs parallel to the creek and its traffic is readily apparent from the creek.

This segment has outstandingly remarkable scenic value. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). Colorado State Highway 141, running through Unaweep Canyon and paralleling West Creek, is part of the Unaweep-Tabeguache Scenic and Historic Byway designated by Congress in 1980. The steep canyon walls formed by a rerouted ancient river have resulted in cliffs up to 1000 feet high in a magnificent canyon. Cottonwoods abound along the watercourse and provide a striking contrast to the variety of different colors of the multitude of rock layers exposed on the canyon walls. Sections of the canyon are very narrow and intimate while others are very wide and open up to provide fantastic views.

This segment has outstandingly remarkable geologic value. East Creek flows east from the Unaweep Divide, through Unaweep Canyon, to the Gunnison River. West Creek flows west from Unaweep Divide and into the Dolores River. These creeks originate in the canyon and do not have a source large enough to create a canyon of such magnitude. It is hypothesized that Unaweep Canyon was carved by one or both of the modern day Gunnison or Colorado Rivers. The second uplift of the Uncompahgre Plateau probably rerouted one or both of these rivers. This has led to the exposure of multiple layers of rock, including the Precambrian basement layer of the Uncompahgre Plateau, and high canyon walls of up to 1000 feet. The divide located in the middle of the canyon separating East and West Creeks is rare (Foutz 1994) and Unaweep Canyon is the only known canyon in the world with a divide in the middle and a creek flowing out of each end (Ikenberry 2002). This segment has outstandingly remarkable wildlife and vegetation values. The study area contains nearly all of Unaweep Seep ACEC/research natural area, designated to protect the area's outstanding biologic diversity. The BLM is carrying forward this existing ACEC its fish and wildlife, plant, riparian habitat and hydrologic values. This area contains around twenty seeps in a contiguous area harboring an unusually high species diversity and density. The Great Basin silverspot butterfly (*Speyeria n. Nokomis*), a BLM sensitive species, is also found here. The management objective for BLM sensitive species that are not federally listed as endangered or threatened is to initiate protective conservation measures that reduce or eliminate threats to minimize the likelihood of and need for listing of these species under the ESA. Unaweep Seep is also a designated Important Bird Area (Audubon 2008). The Unaweep Seep ACEC is also among the highest in the GJFO in terms of plant diversity. Included in this assemblage is the helleborine orchid *(Epipactis gigantea)*, ranked by CNHP as S2 (state

imperiled). An S2 rank indicates that the species is imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.

The study area for this segment is partially within the Palisade outstanding natural area and ACEC (2.18 miles, 625.77 acres). The BLM has proposed to expand the existing Palisade outstanding natural area and ACEC to provide special management attention to its vegetation (rare plant species), wildlife (peregrine falcon), and scenic values. A small portion of this segment and study area overlaps The Palisade WSA (0.03 miles, 561.54 acres).

There are numerous active water diversions along West Creek (approximately two dozen). These diversions are primarily for irrigation purposes, which have the potential to provide return flows to the creek. Some diversions are for stock and domestic purposes. The CWCB holds an instream flow right for 15 cfs on West Creek from its headwaters to its confluence with the Dolores River.

2. <u>The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.</u>

Land ownership for this 20.26-mile segment is a combination of federal (BLM) and private. The BLM manages shoreline along 4.93 miles (20.9 percent) of the segment. Within the 6,926.06-acre study corridor, the BLM manages 2,490.99 acres (36.0 percent). The remaining land status is composed of 4,435.07 acres (64.0 percent) in private ownership.

A small portion of the segment corridor downstream from the confluence of Ute Creek is leased for oil and gas exploration but there are no active wells in the area. There is an active mining claim in the segment corridor where West Creek flows into the Dolores River. There is no oil and gas potential in this area.

3. <u>Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.</u>

WSR designation has the potential to affect future water development along this segment. With designation, BLM would obtain authority to deny or impose terms and conditions on proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds to evaluate the potential effects on the segment's values.

If designated, valid mining claims and mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment.

The geologic value of this segment likely would not be foreclosed or diminished if the segment was not designated. As discussed above, Unaweep Canyon is thought to have been formed by either the Gunnison or Colorado Rivers. Then, the second uplift of the Uncompahgre Plateau rerouted one or both of these rivers. This value does not depend on flows in East Creek or require protective management by the BLM.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

If designated, it is unlikely that the cost of administering the area would increase over the current level. The area already sees a moderate amount of activity from scenic drivers, and the highway serves as a corridor to the Gateway area and southwest Colorado. Further, the BLM already devotes funding to its management of particular areas within this segment, such as the Unaweep Seep and the Palisade ACECs.

The BLM would not pursue land acquisition along this segment at this time. The majority of land in this segment is privately owned. It is not feasible for the BLM to acquire enough land to appreciably affect its ability to manage the segment.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM manages only 20.9 percent of the shoreline of this segment and only 36.0 percent of the lands in the segment corridor, making effective management of the segment as a WSR challenging.

A portion of this segment flows through the Palisade WSA. The Palisade WSA is managed according to BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012). The goal of this policy is to manage WSAs to not impair their suitability for preservation as wilderness, until Congress designates them as wilderness, or until they are released from further wilderness consideration. This "non-impairment" management standard is more stringent than the BLM's management direction for Recreational WSRs. But if the area is not designated as wilderness and the WSA designation is removed, protection of the area would be limited to RMP management measures.

Portions of the study area are also currently managed as part of the Palisade outstanding natural area and ACEC and the Unaweep Seep ACEC. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes. The Unaweep Seep ACEC has been successful at protecting the Great Basin silverspot butterfly as well as the plant diversity of the area. Continuation of these ACECs would help protect the ORVs.

Management actions for the Unaweep Seep ACEC include: (1) classify as closed to unauthorized motorized travel activities, including over-the-snow travel; (2) closed to mechanized travel, wood collecting, fossil collecting and camping; (3) designate as ROW exclusion area; and (4) withdraw from mineral location, close to mineral material sales, and classify as unsuitable for coal leasing.

The BLM's VRM system provides some protection for the scenic values of this segment. The segment corridor is managed as VRM Class II. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape. Class II protection also

provides some protection against visual disturbance which could indirectly protect the geologic value by minimizing the possibility of significant development in the area.

The CWCB holds an instream flow right on West Creek for 15 cfs year-round from its headwaters to its confluence with the Dolores River. The purpose of an instream flow right is to preserve the natural environment to a reasonable degree. As such, this instream flow right provides a measure of flow protection that supports the ORVs found on this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should utilize protections associated with existing WSAs and protections associated with the proposed lands with wilderness characteristics management prescription to protect the ORVs.
2. BLM should rely upon the existing instream flow water right held by the CWCB to assist in protecting the scenic, wildlife, and vegetation ORVs.

The stakeholder collaborative was unable to reach consensus on whether this stream segment should be determined suitable or not suitable by BLM for designation under the WSR Act.

6. Historical or existing rights that could be adversely affected with designation.

There are current water diversions along this segment. The ability to change existing diversions and to appropriate new diversion of water could be affected if the segment were designated and included a federal reserved water right. With a federally reserved water right in place, new diversions and changes to existing diversions would be allowed to the extent that sufficient flow remains in the river segment to support the identified ORV. The amount and timing of water to support the ORVs in the federal reserved water right would be established by scientific studies completed by the BLM and confirmed by the Colorado water court system.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

The segment is in Mesa County and the small portion of land within the segment study corridor on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

The Mesa Land Trust holds conservation easements on private lands at the upstream end of the segment corridor (approximately 500 acres). In large part, these conservation easements will protect the river's ORVs and prevent incompatible development. Conservation easements are voluntary, perpetually binding documents that restrict development of a property. Conservation easements have the general purposes of conserving agricultural productivity, open space character, wildlife habitat, and scenic qualities, and for preventing any uses that will impair or interfere with the conservation values of the property (such as industrial uses). With regard to water use, conservation easements allow the maintenance of existing water systems and the development of new water sources, provided that such maintenance or development does not substantially diminish the conservation values of the property.

In sum, even though Mesa County zoning may allow incompatible development, conservation easements on private lands in the segment corridor provide more stringent land use controls and generally will prevent incompatible development.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

The Uncompahgre National Forest issued a proposed Forest Plan Revision in conjunction with the Gunnison National Forest in March 2007. The US Forest Service deferred its determination on West Creek as it flows through Unaweep Canyon (called Unaweep Creek in the US Forest Service document) until the BLM completed its eligibility determination (US Forest Service 2006). However, the proposed forest plan is not final and has been suspended because of litigation over the US Forest Service's 2005 planning rule.

10. Contribution to a river system watershed or basin integrity.

West Creek is a tributary of the Dolores River.

Other Protections for Segment

West Creek	
Outstandingly Remarkable Values	**Protections**
Scenic, Wildlife, Geological, Vegetation	NSO and TL (1,700 acres), CSU (600 acres), VRM Class I (600 acres), ROW Exclusion (600 acres), ROW Avoidance (1,100 acres), Closed to Fluid Mineral Leasing (1,700 acres), Petition for Withdrawal from Mineral Entry (300 acres), ACEC overlap (900 acres)

Suitability Determination

The suitability determination for this segment is **not suitable**. Management of this segment as a WSR would be challenging based on the amount of private land and, therefore, not the most effective use of the BLM's limited funds and management resources. The BLM manages only about a third of the land in the segment corridor and only about twenty percent of the

shoreline. The CWCB holds an instream flow right along West Creek, and this water right appears to be supporting the ORVs in this segment. Other administrative mechanisms can protect the ORVs along this segment without designation. As discussed above, the BLM's VRM system provides a layer of protection for the segment's scenic and geologic values. The Unaweep Seep ACEC provides special management attention to the wildlife and vegetation values of the area. For these reasons, the BLM determines that this segment is not suitable.

3.6.3 North Fork of West Creek

Description:	Sections of the North Fork of West Creek on BLM land from Pinon Mesa running through the Palisade WSA to the confluence with West Creek east of Gateway along Highway 141.		
Total Segment Length:	8.46 miles	**Total Segment Area:**	2,751.86 acres
Length on BLM Land :	3.31 miles	**Area on BLM Land:**	1,080.11 acres
Tentative Classification:	Wild		
ORVs:	Scenic		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

The North Fork of West Creek has outstandingly remarkable scenic value. The tentative classification for this segment is Wild because the segment flows through the Palisade WSA and there is little development along the stream corridor. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). The North Fork of West Creek drops steeply from Pinon Mesa and forms a rugged narrow canyon through the Palisade WSA. In this area, the dark grey Precambrian bedrock is overlaid with deep red sandstone. Therefore, the canyon possesses mostly dark grey cliffs with upper cliff bands of dark red. In addition, the more mesic environment along the creek allows Ponderosa Pines and other higher elevation species to exist the entire length of the creek down to the confluence with West Creek. These features, in combination with the relatively high perennial stream flow and remote environment make the North Fork of West an outstandingly remarkable scenic area.

Grazing occurs within the segment study corridor but does not detract from the scenic nature of the area.

A portion of the segment and study area study area is within the Palisade WSA (2.85 miles, 916.46 acres) and the Palisade outstanding natural area and ACEC (2.96 miles, 917.00 acres). The BLM has proposed to expand The Palisade outstanding natural area and ACEC to provide special management attention for its vegetation (rare plant species), wildlife (peregrine falcon), and scenic values.

The study area for the portion of this segment on BLM-managed lands lies within the Gateway SRMA.

There are no active diversions along the North Fork of West Creek. The CWCB holds an instream flow right from Y Gulch to its confluence with West Creek.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Within this 8.46-mile segment, the BLM manages the shoreline along 3.31 miles (39.1 percent). Within the 2,751.86-acre study corridor, the BLM manages 1,080.11 acres (39.3 percent). The northern portion of the study area 1671.75 acres (60.7 percent) is on private land. There are no active mining claims, no oil and gas leases, and no oil and gas wells in the segment corridor. There is no oil and gas potential in the area.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

WSR designation has the potential to affect future water development along this segment and in areas located upstream from this segment. With designation, BLM would obtain authority to deny or place terms and conditions on any proposed projects on BLM lands that would be incompatible or potentially degrade the ORVs for this segment. The BLM would review proposed projects that require federal permits, licenses, or funds from other agencies to evaluate the potential effects on the segment's values.

The scenic values likely would not diminish if the segment were not designated. The segment flows through the Palisade WSA, which is subject to stringent protective management, as discussed below.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

Any additional cost of administering the area for protection of its ORVs if designated would be minimal. First, public access to the area is limited. Second, the BLM already incurs some costs specific to this area in order to manage the area according to its Interim Management Policy for Lands Under Wilderness Review. The BLM also already devotes some funds to the area in order to manage the Palisade ACEC. The BLM would not pursue land acquisition along this segment at this time. Because the BLM-managed lands in the segment corridor form a contiguous block along the downstream end of the canyon, the BLM can effectively protect the scenic value of this segment without acquiring additional lands.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM can effectively manage this segment as a WSR. Minimal management is currently required to protect the scenic nature of the area as access is challenging due to dense vegetation and the steep slopes of the canyon walls. However, other means can protect the ORVs in the absence of WSR designation.

A portion of this segment flows through the Palisade WSA. The Palisade WSA is managed according to BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012). The goal of this policy is to manage WSAs in such a manner to not impair their suitability for preservation as wilderness, until Congress designates them as wilderness, or until they are released from further wilderness consideration. This "non-impairment" management standard is similar to the BLM's management direction for Wild WSRs. But if the area is not designated as wilderness and the WSA designation is removed, protection of the area would be limited to RMP management measures.

Portions of the study area are also currently managed as part of the Palisade outstanding natural area and ACEC. An ACEC is an administrative designation that the BLM uses to provide special management attention is to protect and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes. Continuation of this ACEC would help protect the scenic ORV.

The BLM manages the WSA and ACEC as VRM Class I, which also provides protection for the scenic ORV. The goal of VRM Class I is to preserve the existing character of the landscape. It requires the level of change to the characteristic landscape to be very low and to not attract attention.

The CWCB holds an instream flow right on the North Fork of West Creek from Y Gulch to its confluence with West Creek. There are varying levels of instream flow appropriations throughout the year for the segment, the most being between April 1 and June 30 for 3.7 cfs. The appropriation drops to between 0.4 and 0.8 cfs for the remainder of the year. The purpose of an instream flow right is to preserve the natural environment to a reasonable degree. As such, this instream flow right provides a measure of flow protection that supports the ORVs found on this segment.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should utilize protections associated with existing WSAs and protections associated with the proposed lands with wilderness characteristics management prescription to protect the ORV.
2. BLM should rely upon the existing instream flow water right held by the CWCB to assist in protecting the scenic ORV.

The stakeholder collaborative was unable to reach consensus on whether this stream segment should be determined suitable or not suitable by BLM for designation under the WSR Act.

6. <u>Historical or existing rights that could be adversely affected with designation.</u>

There are a limited number of private water rights located with and upstream from this segment. Designation would not affect the ability to operate these rights as they have been historically operated. However, if the owners desire to change those water rights, the changes

would be subject to the federal reserved water right that would be associated with the designated segment.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

The segment is in Mesa County and the small portion of land within the segment study corridor on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). The Agricultural, Forestry, Transitional district has limited potential to prevent development that is incompatible with protection of the ORVs. The allowable uses along this segment include various forms of industrial development and resource extraction. For example, the Agricultural, Forestry, Transitional district allows oil and gas drilling and commercial forestry as of right. The Agricultural, Forestry, Transitional district also allows some conditional uses that could have an adverse effect on ORVs, such as sand and gravel storage or excavation, waste transfer, solid waste disposal and other mining. These industrial uses may result in development that is incompatible with the protection of this segment's ORVs, particularly its scenic values.

The Mesa Land Trust holds a conservation easement on some of the private lands in the upstream end of the segment corridor (approximately 300 acres). This conservation easement will protect the river's ORV and prevent incompatible development. Conservation easements are voluntary, perpetually binding documents that restrict development of a property. Conservation easements have the general purposes of conserving agricultural productivity, open space character, wildlife habitat, and scenic qualities, and for preventing any uses that will impair or interfere with the conservation values of the property (such as industrial uses). With regard to water use, conservation easements allow the maintenance of existing water systems and the development of new water sources, provided that such maintenance or development does not substantially diminish the conservation values of the property.

In sum, even though Mesa County zoning may allow incompatible development. Only private lands with conservation easements (and thus more stringent land use controls) in the segment corridor will prevent incompatible development.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

No other agency plans, programs, or policies were identified for this segment.

10. Contribution to a river system watershed or basin integrity.

North Fork of West Creek is a tributary of West Creek, which contributes to the Dolores River.

11. Other issues and concerns, if any.

None.

Other Protections for Segment

North Fork of West Creek	
Outstandingly Remarkable Values	**Protections**
Scenic	NSO (1,100 acres), TL (500 acres), VRM Class I (900 acres), VRM Class II (200 acres), ROW Exclusion (900 acres), ROW Avoidance (100 acres), Closed to Fluid Mineral Leasing (1,100 acres)

Suitability Determination

The suitability determination for this segment is **not suitable.** The upstream five miles and uppermost sixty percent of the segment corridor are on private land. Existing management of the BLM lands in the corridor can adequately protect the scenic value and tentative classification of this segment. However, protection of the ORVs on the upper part of the segment, which consists primarily of private lands, would be challenging. Management of this segment as suitable for inclusion in the NWSRS is not the most effective use of the BLM's limited funds and management resources.

The portion of the segment on BLM land flows through a WSA. The BLM manages WSAs to not impair their suitability for preservation as wilderness. This will protect the tentative Wild classification of the segment as it flows through BLM land. Pursuant to this management objective, WSAs are managed as VRM Class I. The goal of VRM Class I is to preserve the existing character of the landscape, which will protect the scenic value of the segment as it flows through BLM land.

Neither of these protections discussed above apply to private lands. Only about 300 acres of the segment corridor are conserved under a conservation easement with the Mesa Land Trust. The remaining private lands in the corridor are only subject to the restrictions of the Mesa County Agricultural, Forestry, Transitional zoning district. As discussed above, this zoning district has the potential to allow development that is incompatible with this segment's scenic value and tentative Wild classification (i.e., a road within the corridor).

3.6.4 Ute Creek

Description:	From North Berg Mesa near the northern extent of the Uncompahgre Plateau to the confluence with West Creek east of Gateway.		
Total Segment Length:	4.22 miles	**Total Segment Area:**	1,441.12 acres
Length on BLM Land :	4.19 miles	**Area on BLM Land:**	1,362.63 acres
Tentative Classification:	Scenic		
ORVs:	Scenic, Vegetation		

Suitability Factor Assessment

1. Characteristics that do or do not make the river a worthy addition to the NWSRS.

Ute Creek has outstandingly remarkable scenic and vegetative values. The tentative classification for this segment is Scenic due to limited access via a dirt road along this segment.

This segment has outstandingly remarkable scenic value. Scenic quality is a measure of the visual appeal of a tract of land. The BLM uses a scenic quality rating process to assign public lands an A, B, or C rating based on seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. In a recent visual resources inventory, this area was determined to have a scenic quality rating of A (BLM 2009c). Ute Creek has formed a narrow canyon that rarely opens up to create a wider canyon bottom. The narrow, steep canyon walls form interesting overhangs and features, and the addition of a healthy cottonwood community provides for a unique, pristine watercourse in a region where riparian areas are frequently impacted by humans. When the canyon does open up, it reveals spectacular views of the Dolores River valley and the Palisade.

This segment also has outstandingly remarkable vegetative value. The cottonwood communities along the segment contain a gallery forest with cottonwoods of all age classes, composing one of the best examples of a "potentially natural community" in the GJFO (BLM 1993). A small portion of the segment and study area lies within the Palisade WSA (46.12 acres) and the Palisade outstanding natural area and ACEC (0.07 miles, 84.06 acres). The BLM has proposed to expand The Palisade outstanding natural area and ACEC to provide special management attention for its vegetation (rare plant species), wildlife (peregrine falcon), and scenic values.

The segment area is almost entirely within the Gateway SRMA.

There are no active diversions from Ute Creek. However, there are a series (about five) of developed stock ponds on US Forest Service land upstream.

2. The status of landownership, minerals (surface and subsurface) use in the area, including the amount of private land involved and associated or incompatible uses.

Land ownership for this 4.22-mile segment is primarily federal (BLM and US Forest Service) with a small area of private ownership. The BLM manages shoreline along 4.19 miles (99.5 percent) of the segment. Within the 1,441.12-acre study corridor, the BLM manages 1,362.63 acres (94.6 percent). The US Forest Service manages 68.54 acres (4.1 percent) at the upstream end of the segment corridor. The remaining land status consists of 18.59 acres (along Highway 141; 1.3 percent) in private ownership.

There is no oil and gas potential in this area, and there are no active wells in this area. However, roughly 165 acres of the segment corridor near Ute Creek's confluence with West Creek is leased for oil and gas exploration. There are no active mining claims in the segment corridor.

3. Reasonably foreseeable potential uses of the land and related waters that would be enhanced, foreclosed, or curtailed if the area were included in the NWSRS, and values that would be foreclosed or diminished if the area were not designated.

While WSR designation has the potential to affect future water development along this segment, there currently are no active water diversions along Ute Creek, and additional water development is not anticipated.

If designated, valid mineral leases would remain in effect. Because the segment is preliminarily classified as Scenic, new mining claims or mineral leases may be allowed, subject to reasonable access and stipulations that minimize surface disturbance, water sedimentation, pollution, and visual impairment. As discussed below, the ORVs in this segment are not likely to diminish if the segment is not designated.

Grazing use of this segment, including the use of the trail along the segment to move livestock, would likely not be affected by designation. The tentative scenic classification would allow for continued use and maintenance of the trail, and the existing livestock use is not expected to significantly impact the scenic and vegetation ORVs.

4. Estimated cost of acquiring necessary lands, interests in lands, and administering the area if designated.

The cost of administering the area for protection of the ORVs would be minimal as public access to the area is limited. Regardless, designation of the segment would enhance the BLM's ability to obtain funding for the management of the area.

The acquisition of private lands is not essential for management for the protection of the ORVs because the BLM manages nearly all of the lands within the segment corridor. Nevertheless, the BLM would pursue acquisition from of private parcels from willing sellers. No detailed cost estimate was prepared as part of this study.

5. Ability of the agency to manage and protect the river area or segment as a WSR, or other means to protect the identified values other than WSR designation.

The BLM could effectively manage this segment as a WSR because it manages nearly all of the lands in the segment corridor (94.6 percent). Because of the limited access, the BLM is able to protect the vegetation ORV with minimal management. The scenic ORV is largely dependent upon management actions related to potential mineral extraction and related development in the vicinity. Again, because the corridor itself is difficult to access, it is unlikely that the corridor would be developed for mineral extraction.

The BLM's VRM system also provides some protection for the scenic values of this segment. The BLM manages the segment corridor as VRM Class II. The objective of VRM Class II is to retain existing landscape character. This class permits only low levels of change to the characteristic landscape. It provides that management activities may be seen but should not attract a casual observer's attention. Any changes must repeat the basic elements of line, form, color, and texture found in the predominant natural features of the characteristic landscape.

The Lower Colorado River Wild and Scenic River Stakeholder Collaborative, described in **Section 2.2.5** (Public Input) of this report, provided management recommendations for this stream segment. Specifically, the stakeholder collaborative recommended:

1. BLM should utilize protections associated with the proposed lands with wilderness characteristics management prescription to protect the ORVs.
2. BLM should establish a riparian ACEC, combined with surface use stipulations, to protect to the scenic and vegetation ORVs.

The stakeholder collaborative was unable to reach consensus on whether this stream segment should be determined suitable or not suitable by BLM for designation under the WSR Act.

6. Historical or existing rights that could be adversely affected with designation.

No historical or existing rights have been identified for this segment.

7. Adequacy of local zoning and other land use controls in protecting the river's ORVs by preventing incompatible development.

The segment is in Mesa County and the small portion of land within the segment study corridor on private land is within the Agricultural, Forestry, Transitional district. The Agricultural, Forestry, Transitional district is primarily intended to accommodate agricultural operations and very low-density single-family residential development within the rural planning area (Mesa County 2008). Local zoning is not a major concern for this segment as private lands constitute only one percent of the segment corridor.

8. Support or opposition of local governments, state governments, and stakeholders to designation under the WSRA.

Refer to criterion #4.

9. Consistency of designation with other agency plans, programs, or policies.

The Uncompahgre National Forest found the portion of Ute Creek upstream of the BLM segment not eligible for inclusion in the NWSRS during the eligibility study for the Grand Mesa, Uncompahgre, and Gunnison National Forests land management plan revision process (US Forest Service 2006). The portion of Ute Creek in the National Forest serves as the boundary between two management areas: big game winter range in non-forest areas and big game winter range in forested areas. The US Forest Service manages these areas according to the following general prescriptions: (1) provide semi-primitive non-motorized, semi-primitive motorized, and roaded natural recreation opportunities; (2) manage motorized recreation prevent unacceptable stress on big game animals during primary big game use season; use vegetation treatments to enhance plant and animal diversity; (3) manage livestock grazing to favor wildlife habitat; and (4) (in forested areas only) use timber harvest to improve winter range. Management by the US Forest Service to provide big game habitat is unlikely to have an adverse effect on this segment's ORVs, with the exception of some types of timber harvest (such as clearcutting). Nevertheless, management by the US Forest Service as to provide big game habitat is generally consistent with BLM management that would occur with designation.

The Uncompahgre National Forest's 2007 proposed forest plan would manage this area as recommended wilderness. The US Forest Service would manage the area to protect its wilderness characteristics until Congressional action is taken. (US Forest Service 2007) Natural processes with little or no human intervention would influence ecosystems. However, the proposed forest plan is not final and has been suspended because of litigation over the US Forest Service's 2005 planning rule. Management by the US Forest Service as recommended wilderness is generally consistent with BLM management that would occur with designation.

10. Contribution to a river system watershed or basin integrity.
The segment is a tributary of West Creek, which contributes to the Dolores River.

11. Other issues and concerns, if any.
None.

Other Protections for Segment

Ute Creek	
Outstandingly Remarkable Values	**Protections**
Scenic, Vegetation	NSO (1,400 acres), CSU (500 acres), TL (800 acres), VRM Class I (50 acres), VRM Class II (1,100 acres), ROW Exclusion (1,100 acres), ROW Avoidance (200 acres), Closed to Fluid Mineral Leasing (1,400 acres), lands with wilderness characteristics overlap (1,100 acres)

Suitability Determination
The suitability determination for this segment is **not suitable,** BLM has proposed managing lands along the creek corridor, within the Ute Creek watershed, and within the viewshed of the creek, as lands with wilderness characteristics. This is a highly restrictive management prescription that would prevent actions that could degrade the scenic and vegetation ORVs. In addition, the Colorado Water Conservation Board appropriated an instream flow water right on Ute Creek during 2014, based upon a recommendation from the BLM.

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4. LIST OF PREPARERS

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5. REFERENCES

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Appendix D

Summary of Areas of Critical Environmental Concern Report on the Application of Relevance and Importance Criteria

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APPENDIX D
SUMMARY OF AREAS OF CRITICAL ENVIRONMENTAL CONCERN REPORT ON THE APPLICATION OF RELEVANCE AND IMPORTANCE CRITERIA

This appendix provides summary information about the Areas of Critical Environmental Concern (ACEC) evaluation process. The Areas of Critical Environmental Concern Report on the Application of the Relevance and Importance Criteria (BLM 2010) provides more detail on the process. As part of the process for developing the Grand Junction Resource Management Plan (RMP) revision, the Grand Junction Field Office (GJFO) Interdisciplinary Team reviewed all BLM-managed lands in the planning areas to determine whether any areas should be considered for designation as ACECs. ACECs are defined in the Federal Land Policy and Management Act Section 103(a) (43 United States Code 1702) and in 43 Code of Federal Regulations 1601.0-5(a) as "areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards." The areas found to meet both the relevance and importance criteria as defined below will be identified as potential ACECs and will be fully considered for designation and management in the RMP (BLM Manual 1613.2.21 [BLM 1988]).

D.1 RELEVANCE

There shall be present a significant historic, cultural, or scenic value, a fish or wildlife resource or other natural system or process, or natural hazard. An area meets the relevance criterion if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archaeological resources and religious or cultural resources important to Native Americans).
2. A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species or habitat essential for maintaining species diversity).
3. A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features).
4. Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action might meet the relevance criterion if it is determined, through the resource management planning process, to have become part of a natural process.

D.2 IMPORTANCE

An area meets the importance criterion if it meets one or more of the following:

1. Has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
2. Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
3. Has been recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of FLPMA.
4. Has qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare.
5. Poses a significant threat to human life and safety or to property.

D.3 EVALUATION PROCESS

In compiling a list of areas to be analyzed, the BLM interdisciplinary teams followed the guidance set forth in BLM Manual 1613, Areas of Critical Environmental Concern (BLM 1988), and considered:

1. Existing ACECs;
2. Areas recommended for ACEC consideration (external and internal nominations);

3. Areas identified through inventory and monitoring; and
4. Adjacent designations of other federal and state agencies.

ACECs may be nominated by BLM staff, other agencies, or members of the public at any time. During the RMP revision scoping process, the GJFO solicited nominations and comments from the public and other agencies. A map of special designation areas was distributed at the scoping meetings and made available on the RMP website: *http://www.blm.gov/co/st/en/fo/gjfo/rmp.html*.

As part of the formal outreach process, the BLM received nominations from the Colorado Natural Heritage Program (CNHP) and the Center for Native Ecosystems. The BLM staff also reviewed information from BLM inventories, Colorado Parks and Wildlife (CPW) species of concern data, and other reports to ensure that all potentially relevant and important values with in the planning areas were considered.

D.4 FINDINGS

The Interdisciplinary Team analyzed 52 ACECs (existing, internally, and externally proposed) and found that 24 met the relevance and importance criteria, for a total of 167,369 acres (**Table D-1**, Proposed ACECs Found to Meet the Relevance and Importance Criteria).

Maps of ACECs recommended for analysis in the Draft RMP and additional information are included in The Areas of Critical Environmental Concern Report on the Application of the Relevance and Importance Criteria (BLM 2010). The size and management prescriptions for each ACEC may vary by alternative to reflect a balance between the goals and objectives of the alternative and values being protected (BLM Manual 1613.2.22.B.1-2). **Table D-2**, Relevance and Importance Criteria Evaluation for existing and new ACECs, summarizes the Approved ACECs evaluated, the values assessed, and whether the criteria were met (including supporting information).

Table D-1
ACECs Found to Meet the
Relevance and Importance Criteria

ACEC	Acres
Atwell Gulch (staff and public proposed)	6,135
Badger Wash ACEC (existing)	1,891
Badger Wash ACEC Alternative (staff proposed)	*355*
Colorado River Riparian (staff proposed)	879
Coon Creek (staff and public proposed)	110
Coon Hollow/South Shale Ridge (staff and public proposed)	27,345
Dolores River Riparian (staff proposed)	7,433
Glade Park-Piñon Mesa (public proposed)	27,056
Gunnison River Riparian (staff proposed)	457
Hawxhurst Creek (staff and public proposed)	864
Indian Creek (staff proposed)	1,746
John Brown Canyon (public proposed)	1,416
Juanita Arch (staff and public proposed)	1,624
Mt. Garfield (staff proposed)	5,695
Nine-mile Hill Boulders (staff proposed)	87
The Palisade ACEC/Outstanding Natural Area (ONA) (existing)	26,951
The Palisade ACEC/ONA Expansion (staff proposed)	*5,330*
Plateau Creek (staff proposed)	223
Prairie Canyon (public proposed)	6,866
Pyramid Rock ACEC/Research Natural Area (RNA) (existing)	551
Pyramid Rock ACEC/RNA Expansion (staff proposed)	*706*
Reeder Mesa (staff and public proposed)	474
Roan and Carr Creeks (staff and public proposed)	33,694
Rough Canyon ACEC/RNA (existing)	2,737
Rough Canyon ACEC/RNA Expansion (staff proposed)	*41*
Sinbad Valley (public proposed)	6,399
Unaweep Seep ACEC/RNA (existing)	78
Unaweep Seep ACEC/RNA Expansion (public proposed)	*6*
Total	**167,149**

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
4A Ridge *Public Proposed*	Riparian Habitat	3	2	No	Included in staff proposed Roan and Carr Creeks boundary. Areas to the south and west appear to contain an even greater amount of the Piceance bladderpod *(Lesquerella parviflora)*.	0	19,082	*See Roan and Carr Creeks ACEC.*
	Plants	3	2					
	Wildlife	2	None					
	Plants	3	None					
Atwell Gulch *Staff and Public Proposed*	Wildlife	2	2	**Yes** *with modified boundaries*	Meets the relevance criteria for Cultural and scenic values, fish and wildlife resources, and a natural system supporting rare plants. The importance criteria for more than locally significant qualities for plants and has qualities that make it sensitive, rare and vulnerable to adverse change. BLM sensitive and federally listed rare plant species: Colorado hookless cactus, DeBeque milkvetch, and Naturita milkvetch. Four different monitoring sites are established for DeBeque milkvetch and Colorado hookless cactus. Atwell Gulch contains the largest known concentration of DeBeque milkvetch in the GJFO. This area provides year-round range and an important migratory corridor for a significant portion	0	26,450	(6,135) 2,900
	Plants	3	1 and 2					
	Scenic	1	2					
	Cultural	1	1 and 2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					of the native bighorn sheep *(Ovis canadensis)* in the area. Additionally, it is also winter range and severe winter range for mule deer *(Odocoileus hemionus)*. This area has the presence of significant cultural resources and the potential for additional sites to be identified, especially those associated with the Ute period, is high. The ACEC lies between two historic trails/roads, the DeBeque Cutoff Road and the Sunnyside Road and surveys have demonstrated a high density of cultural resources. This area has the potential to contain a regionally important trail.			
Badger Wash ACEC *Existing Staff Proposed*	Hydrological	3	2	**Yes**	Meets the relevance criteria for a natural system and importance criteria for sensitive plants and to satisfy national priority concerns. The revised boundary creates improved management for the ACEC. The ACEC meets the relevance and importance criteria for a natural system that supports sensitive plants and ongoing hydrologic research. Rare plants include grand buckwheat *(Eriogonum contortum)* and	1,700	2,848	(2,200) 2,200
	Plants	3	1 and 2					
	Wildlife	2 and 3	2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Ferron's milkvetch *(Astragalus musiniensis)*. Also contains rare plant species cliffdweller's cryptantha *(Cryptantha elata)* and Gardner's saltbrush/salina wildrye *(Atriplex gardneri/Elymus slaina)*. Also contains the Great Basin silverspot butterfly *(Speyeria nokomis)*. The Badger Wash watershed was withdrawn for experimental purposes, scientific research, and studies by Executive Order 10355 in 1952. The Badger Wash ACEC was put in place to protect these values, particularly the hydrologic studies examining the effects of grazing on runoff, sediment, and salinity on this Mancos Shale landscape prevalent in western Colorado and Utah. Studies have occurred since 1953 and published reports are available. Cooperative hydrologic studies are ongoing, supported by the BLM, US Geological Survey, and US Bureau of Reclamation. Meets the relevance criteria for a natural system and importance criteria for sensitive plants and to satisfy national priority concerns.			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Badger Wash Potential *Public Proposed*	Fish	None	None	No	Meets the relevance criteria for rare plants in isolated areas and wildlife supporting habitat for burrowing owls. As proposed the site did not meet the importance criteria because it is overly broad and all areas contained within the proposal are not considered unique compared to other habitat within the range of the species. A portion of this site (355 acres) was carried forward in the Badger Wash ACEC expansion. The area contains designated release sites for the Mesa County Prairie Dog Relocation project; however these sites do not meet the relevance and importance criteria. The area does not meet the relevance or importance criteria for fish bearing streams or bald eagles *(Haliaeetus leucocephalus)* as the areas do not contain fish bearing streams or bald eagle habitat.			
Bangs Canyon and Dominguez North *Public Proposed*	Cultural	I	None	No	The area as originally proposed is now split by the Dominguez – Escalante NCA, forming two small polygons on the west side of Highway 141 along East Creek.			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					It is within Area 6 of the Bangs Canyon Special Recreation Management Area (SRMA). Meets the relevance criteria for the presence of significant cultural resources. Does not meet importance criteria because these resources do not have more than locally significant qualities. Sites that are culturally affiliated with the Ute within this area may best be managed for Traditional or Public Use with a management goal of long term protection and interpretation.			
Buzzard Creek Potential *Public Proposed*	Fish	2	None	No	Meets the relevance criteria for fish and wildlife resource providing habitat for lynx *(Lynx Canadensis)* and boreal toad *(Bufo boreas)* as well as fish bearing streams. In addition, the area may meet the relevance criteria by providing habitat for the foothills riparian shrubland, and narrowleaf cottonwood riparian forest plant communities. Does not meet importance criteria because the area consists of several very small parcels of BLM-managed land that do not significantly contribute to the	0	2,520	0
	Wildlife	2	None					
	Plants	3	None					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					conservation of the species and are therefore not regionally significant.			
Cactus Park *Public Proposed*	Paleontological	N/A	N/A	N/A	ACEC is within the Dominguez-Escalante NCA; therefore it is beyond the scope of this planning effort.	0	139	0
	Plants	N/A	N/A					
Colorado River Riparian (Palisade to DeBeque)	Fish	2 and 3	2	**Yes**	Meets the relevance criteria for scenic, threatened, and endangered fish resources and a natural system. The importance criteria for qualities that is sensitive and vulnerable to adverse change for riparian habitat supporting stream bank stability and designated critical habitat for threatened and endangered fish species. The area was surveyed by CNHP and found to contain Global Rank G2 Rio Grande cottonwood/ skunkbrush *(Populus deltoides ssp. wislizeni/Rhus trilobata)* riparian forest and Global Rank G3 roundtail chub. The US Fish and Wildlife Service designated the Colorado River up to its 100 year floodplain as critical habitat for the Colorado pikeminnow *(Ptychocheilus lucius)* (federally endangered, state	0	1,195	(879) 0
	Wildlife	2 and 3	2					
	Scenic	1	2					
	Riparian Habitat	3	1 and 2					
	Plants	3	None					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					threatened), razorback sucker *(Xyrauchen texanus)* (federally and state endangered), bonytail chub *(Gila elegans)* (federally and state endangered), and humpback chub *(Gila cypha)* (federally endangered, state threatened). Native, non-listed fish species sympatric with the listed fish species include the flannelmouth sucker *(Catostomas latipinnis)*, bluehead sucker *(Catostomus discobolus)*, roundtail chub (designated a state Species of Special Concern), and speckled dace *(Rhinichthys osculus)*. The Colorado River is designated critical habitat for threatened and endangered fish species and roost/nesting habitat for bald eagles and great blue herons *(Ardea herodias)*. Peregrine Falcons probably won't nest in the riparian area, they are attracted to riparian areas for their productivity of prey and prefer nesting close to them. While the proposed ACEC contains significant cottonwood/willow communities that are extremely important to wildlife and riparian values, the			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					ACEC is not known to contain any rare plant species.			
Coon Creek *Staff Proposed*	Fish	1	1, 2	**Yes**	Meets the relevance criteria for fish. Meets the importance criteria for having more than locally significant qualities and qualities that make it fragile, sensitive, rare, exemplary, and vulnerable to adverse change. The creek contains a population of rare native cutthroat trout *(Oncorhynchus clarkii)*.	0	110	(110) 0
Coon Hollow/South Shale Ridge *Staff and Public Proposed*	Plants	3	1 and 2	**Yes**	Meets the relevance criteria for wildlife resources, natural system supporting plants, and significant scenic values. Meets the importance criteria for more than locally significant importance to plants and has qualities that make it fragile, sensitive, irreplaceable, threatened, and vulnerable to adverse change. The area has known populations of Colorado hookless cactus, Naturita milkvetch, adobe thistle, and DeBeque phacelia, as well as critical winter range for deer and elk.	0	59,701	(28,200) 27,800
	Scenic	1	2					
	Wildlife	2	1					
Cow Ridge	Wildlife	2	None	No	Meets the relevance criteria for	0	25,777	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Potential *Public Proposed*	Rare Plants	3	None		natural processes or systems because it supports multiple A-ranked (excellent quality) occurrences of two BLM sensitive plants, Piceance bladderpod and Roan Cliffs blazingstar *(Mentzelia rhizomata)* and provides potential habitat for Greater Sage-Grouse *(Centrocercus urophasianus)*, a BLM sensitive species. Does not meet the importance criteria because it is not unique when compared to other sage-grouse habitat located within the Parachute-Piceance-Roan population. While approximately 4 of the 50+ isolated parcels that compose the ACEC contain A-ranked (CNHP) occurrences of bladderpod and blazingstar, the proposed ACEC in its entirety does not meet the importance criteria.			
Dolores River Canyon-Sewemup Mesa Potential ACEC *Public Proposed*	Fish	2 and 3	1 and 2	No	Meets the relevance criteria for wildlife resource and a natural system. Meets the importance criteria having potential for more than locally significant wildlife qualities making the area sensitive for rare plants and are vulnerable to adverse change.	0	33,308	*See Dolores River Riparian, Sinbad Valley, and Juanita Arch ACECs*
	Wildlife	2 and 3	1 and 2					
	Plants	3	1 and 2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Area does not meet the relevance and importance criteria since it does not contain lynx habitat, though it may provide a movement corridor into the forests of Utah although there is no evidence supporting use of the area by lynx. Several peregrine falcon *(Falco peregrinus)* eyries occur along the Dolores River with densities of eyries suggesting the area is more than locally significant. The area along the Dolores River meets the relevance and importance criteria for the peregrine falcon; however these areas are more accurately covered by the Dolores River riparian proposal. Multiple BLM sensitive plants (Kachina daisy *[Erigeron kachinensis]*, Eastwood's monkeyflower *[Mimulus eastwoodiae]*, San Rafael milkvetch, Dolores River skeleton plant, horseshoe milkvetch, Grand Junction milkvetch, and Gypsum cateye) occur in the area. Most areas containing sensitive plants are covered in the Dolores River Riparian and Sinbad Valley			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					ACECs.			
Dolores River Riparian *Staff Proposed*	Fish	2 and 3	2	**Yes**	The area meets the relevance and importance criteria for wildlife because CDOW considers the bluehead sucker population within this stretch of river outstanding on a regional scale. Several peregrine falcon eyries occur along the Dolores River the density of eyries suggests the area is more than locally significant. Multiple BLM sensitive plants (Kachina daisy, Eastwood's monkeyflower, San Rafael milkvetch, Dolores River skeleton plant, horseshoe milkvetch, Grand Junction milkvetch, and Gypsum cateye) occur in the area. Rare plant communities, including the Rio Grande cottonwood riparian forest community, Foothills riparian shrubland community, and the New Mexico privet community.	0	3,635	(7,400) 7,400
	Wildlife	2 and 3	1 and 2					
	Scenic	1	2					
	Riparian Habitat	3	1 and 2					
	Plants	3	1 and 2					
Dominguez North-Bangs Canyon ONA *Public Proposed*	Cultural	1	None	No	Does not meet the relevance and importance criteria for ACEC designation since part of the area is not within the planning area. This area is within both the	0	109,975	*See existing Rough Canyon ACEC and expansion*
	Recreation	None	None					
	Wildlife	2	1 and 2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Dominguez–Escalante NCA and Bangs Canyon SRMA. Recreational values identified will be analyzed in the Recreation section of the Draft Environmental Impact Statement. The areas' most critical to wildlife and cultural are included in the Rough Canyon ACEC and expansion.			
East Salt Creek Potential ACEC *Public Proposed*	Fish	2	2	No	The areas within this proposal that meet the relevance and importance criteria are included in the Roan and Carr Creeks. Meets the relevance criteria for a natural process or system which supports the BLM sensitive plant species Piceance bladderpod. The area contains A-ranked (excellent quality) occurrences of the bladderpod. In addition to the bladderpod, the site also contains hanging garden sullivantia *(Sullivantia hapemanii var. pupusii)* and narrowleaf cottonwood/skunkbrush *(Populus angustifolia/Rhus trilobata)* communities. Meets the importance criteria because the bladderpod is vulnerable to	0	21,046	*See Roan and Carr Creeks and Sinbad Valley ACECs*
	Wildlife	2	1 and 2					
	Plants	3	1					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					adverse change. Meets the relevance criteria for wildlife resource (sage-grouse) because it contains occupied, potential, and vacant/unknown Greater Sage-Grouse habitat. Does not meet importance criteria because these areas are small portions of the currently occupied range of the Parachute-Piceance-Roan population of the Greater Sage-Grouse and are not locally significant. The proposed ACEC does not contain lynx habitat. Upper Roan and Carr creeks meet the relevance and importance criteria for rare native cutthroat trout because they contain populations of the species. However, these areas are included in the Roan and Carr Creeks ACEC.			
Fruita Paleontological Site ACEC/RNA *From 1987 RMP Public proposed*	Geologic	N/A	N/A	N/A	Former ACEC is within the McInnis Canyon NCA; therefore it is beyond the scope of this planning effort.	280	280	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Gateway *Public Proposed*	Plants	3	1 and 2	No	Meets the relevance criteria for fish and wildlife and a natural system. Meets the importance criteria having qualities that are more than locally significant and vulnerable to adverse change. Wildlife values are analyzed in proposed John Brown Canyon, Palisade ONA Expansion, and Dolores River Riparian ACECs. Plant values are analyzed in Palisade ACEC/ONA expansion.	0	11,675	*See Palisade ONA Expansion, and Dolores River Riparian ACECs*
	Fish	2	1 and 2					
	Wildlife	2	2					
Glade Park-Piñon Mesa *Public Proposed*	Fish	None	None	**Yes** *with modified boundaries*	Meets the relevance criteria for wildlife resource (Gunnison Sage-Grouse). Meets the importance criteria for sensitive and vulnerable to adverse change. The proposed ACEC does not contain lynx or bald eagle habitat. Contains a significant portion of occupied and potential habitat for the Piñon Mesa population of the Gunnison Sage-Grouse. The proposed ACEC is not known to contain any rare plants.	0	19,942	(27,200) 0
	Wildlife	2 and 3	2					
	Plants	None	None					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Granite Creek *Public Proposed*	None	None	None	No	There were no specific values associated with this ACEC proposal, but was recommended for ACEC designation as: *Granite Creek is definitely worthy of immediate protection and oversight, as subtle incursions into that area portend an impending loss of natural values.*	0	8,147	0
Greater Demaree SRMA *Proposed by public as a Special Recreation Management Area (SRMA). Proposal did not include any information regarding relevant and important values for ACEC designation*	Recreation	None	None	No	Does not meet the relevance and importance criteria for ACEC designation. Does not meet the criteria for SRMA designation (recreation demand and issues, recreation setting characteristics, resolving use/user conflicts, compatibility with other resource uses and resource protection needs). Portions of the area contain wilderness characteristics (Spring Canyon, Spink Canyon, East Demareee units).	0	81,512	0
Greater Granite Creek SRMA *Proposed by public as a*	Recreation	None	None	No	Does not meet the relevance and importance criteria for ACEC designation. Does not meet the criteria for SRMA designation (recreation demand and issues,	0	42,673	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Special Recreation Management Area (SRMA). Proposal did not include any information regarding relevant and important values for ACEC designation					recreation setting characteristics, resolving use/user conflicts, compatibility with other resource uses and resource protection needs). Portions of the area are included in other areas that do meet the criteria for ACEC designation (The Palisade, Glade Park-Pinyon Mesa proposed ACECs); for SRMA designation (Dolores River Canyon SRMA/ERMA); or contain wilderness characteristics (Lumsden Canyon unit).			
Gunnison Gravels ACEC/RNA *Existing*	Geologic	N/A	N/A	N/A	ACEC is within the Dominguez-Escalante NCA; therefore it is beyond the scope of this planning effort.	40	40	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Gunnison River Potential ACEC *Public Proposed*	Fish	2 and 3	2	No	Meets the relevance criteria for threatened and endangered fish and wildlife resources and a natural system. The importance criteria for qualities that is sensitive and vulnerable to adverse change for riparian habitat supporting stream bank stability and designated critical habitat for threatened and endangered fish species. The areas of this proposal that meet the relevance and importance criteria for listed fish are covered by the staff proposed Gunnison River Riparian ACEC.	0	42,066	*(See proposed Gunnison River Riparian ACEC) 0*
	Wildlife	2	2					
	Plants	3	2					
Gunnison River Riparian *Staff Proposed*	Fish	2 and 3	1 and 2	**Yes**	Meets the relevance criteria for threatened and endangered fish and wildlife resources and a natural system. The importance criteria for qualities that is sensitive and vulnerable to adverse change for riparian habitat supporting stream bank stability and designated critical habitat for threatened and endangered fish species. Part of the ACEC is within the Dominguez-Escalante NCA, which is beyond the scope of this planning effort..	0	1,962	(457) 0
	Riparian Habitat	3	2					
	Plants	3	2					
	Wildlife	2	2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					The Colorado hookless cactus (federally threatened) is known to inhabit the alluvial benches of the Gunnison River. Results from a rare plant inventory (which is currently in progress), will determine the importance of this area. The CDOW manages the lower Gunnison and Colorado Rivers within the planning area for native, listed, and non-listed aquatic species. The area contains roundtail chub, which has a CNHP Global Rank of G3. The US Fish and Wildlife Service designates this segment of the Gunnison River as critical habitat for the Colorado pikeminnow (federally endangered, state threatened), razorback sucker (federally and state endangered), bonytail chub (federally and state endangered), and humpback chub (federally endangered, state threatened). Native and non-listed fish species sympatric with the listed fish species include the flannelmouth sucker, bluehead sucker, roundtail chub (designated a state Species of			

Table D-2
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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Special Concern), and speckled dace. The area provides roosting habitat and connectivity to river habitats upstream for bald eagles and blue herons.			
Hawxhurst Creek *Staff Proposed*	Fish	1	1, 2	**Yes**	Meets the relevance criteria for fish. Meets the importance criteria for having more than locally significant qualities and qualities that make it fragile, sensitive, rare, exemplary, and vulnerable to adverse change. The creek contains a population of rare native cutthroat trout *(Oncorhynchus clarkii)*	0	864	(864) 0
Indian Creek *Staff Proposed*	Cultural	1 and 3	1 and 2	**Yes**	Meets the relevance criteria for the presence of significant cultural resource values and the presence of a natural process or system. The importance criteria for more than locally significant qualities and qualities that make it fragile, sensitive, unique, and vulnerable to adverse change. This area straddles approximately three miles of Indian Creek, a tributary to the Gunnison River that has both significant preservation of Holocene to Late	0	1,747	(2,300) 2,300

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Pleistocene deposits that have yielded Paleoindian artifacts and an accessible yet relatively undisturbed area that provides a unique geomorphological research area. These are eligible for nomination to the National Register of Historic Places under criterion "d," as sites that have yielded and should continue to yield significant information on the prehistory and history of the area. Distinct stratified deposits representing the full range of human occupation are present with an emphasis on Late Paleoindian, Middle Archaic, and Ute cultures, and climate research (paleoenvironmental) indicates that these deposits correspond to regional periods of increased moisture. Kit fox inhabit the area.			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
John Brown Canyon *Public Proposed*	Wildlife	2	1	**Yes**	Meets the relevance criteria for fish and wildlife resource. Meets the importance criteria for qualities that are sensitive. Ponderosa pine *(Pinus ponderosa)* stands (located at the head of John Brown Canyon and extending somewhat north and south from there) constitute the northern most range of the Grace's warbler *(Dendroica graciae)*. Habitat for this warbler is scarce within the planning area.	0	1,417	(1,416) 0
Juanita Arch *Staff and Public Proposed*	Geologic	3	2	**Yes**	Meets the relevance criteria for geologic and plants for a natural process. Meets the importance criteria for having more than locally significant qualities and qualities that make it rare, irreplaceable, exemplary, and unique. Juanita arch is classified as the only natural bridge in the state of Colorado, thus making this a unique geologic feature to the region. The rare plants, Grand Junction milkvetch and San Rafael milkvetch, also occur in this area.	0	1,950	(1,600)1,600
	Plants	3	1					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Knight/Owens Hadrosaurid Locality *Staff Proposed*	Paleontological	No	No	No	Does not meet the relevance criteria for a natural process or system, and does not have significant paleontological values. Does not meet the importance criteria for more than locally significant qualities as a World Class Paleontological Research and publicly interpreted visitation location. A disarticulated juvenile Hadrosaur was collected and studied in the late 1980s. There were also fossilized remains of a Pliosaur and Mosasaurs as well as Pyritized inverts and large concretions nearby this site. However, a BLM survey was conducted recently and no fossils were found.	0	40	0
Logan Wash *Public Proposed*	Fish	2 and 3	None	No	Meets the relevance criteria for a natural system containing sensitive habitat for plants. Meets the importance criteria for having more than locally significant qualities and qualities of sensitive and rare plants. The area does not contain lynx habitat. The southern tip of the proposed ACEC contains a portion of the	0	14,514	*(See proposed Colorado River Riparian ACEC) 0*
	Wildlife	2 and 3	None					
	Plants	3	1 and 2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					critical habitat designated for the four listed fish species on the Colorado River; however this area is small and surrounded by private land and not carried forward for further analysis. The proposed ACEC is adjacent to Roan Creek, a fish bearing stream, however BLM segments are small and do not meet the relevance and importance criteria. The proposed ACEC contains some potential and occupied Greater Sage-Grouse habitat; however the amount of occupied habitat included in the proposed ACEC is not significant for the Parachute-Piceance-Roan population and therefore does not meet the importance criteria. The area meets the criteria for both relevance and importance by containing numerous BLM sensitive plants, one federally threatened plant, and possibly two federal candidate species. The rare plant species found within this landscape include, but are not limited to: DeBeque milkvetch, adobe thistle, Naturita milkvetch, Roan Cliffs blazingstar,			

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Colorado hookless cactus (threatened), Parachute penstemon *(Penstemon debilis)* (candidate), and DeBeque phacelia (candidate). The majority of the known plants are vulnerable to adverse change. The proposed ACEC area is heavily fragmented by energy development infrastructure.			
Mt. Garfield *Staff Proposed*	Scenic	1	1 and 2	**Yes**	Meets the relevance criteria for scenic and importance criteria as irreplaceable (locally significant qualities/meaning). Meets the importance criteria for having more than locally significant qualities and fragile qualities. Mt. Garfield is an iconic land feature within the Grand Valley region of the field office, often used as a symbolic feature of Grand Junction. The Mt. Garfield area was designated in the 1987 RMP as VRM Class 1.	0	5,695	(5,695) 2,400
Nine-mile Hill Boulders *Staff Proposed*	Paleontological	3	2	**Yes**	Meets the relevance criteria for a natural process or system, and has significant paleontological values. Meets the importance criteria for qualities sensitive and exemplary as a World Class Paleontological Research and	0	87	(87) 0

Table D-2
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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					publicly interpreted visitation location. Pull-off areas between guard railings have a well-preserved theropod femur mold and other bone molds from the Burro Canyon Formation. There are also petrified wood stumps and impressions of other dinosaur bones nearby.			
North Desert *Public Proposed*	Wildlife Plants	2 3	None None	No	Meets the relevance criteria for wildlife resources and a natural system. Does not meet importance criteria because wildlife habitat is not regionally significant. These areas provide habitat for the burrowing owl; however they are not regionally significant. The boundary proposed was fragmented into four distinct areas, making management difficult. Meets the relevance criteria, but does not meet the importance criteria for rare plants. While the BLM special status plant species grand buckwheat may occur in the proposed ACEC, records indicate that very little buckwheat	0	2,407	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					has been recorded in this area.			
The Palisade ACEC/ONA and Expansion *Existing* *Staff Proposed*	Plants	3	1 and 2	**Yes**	Meets the relevance criteria for scenic values and a natural system supporting rare plants. Meets the importance criteria for more than locally significant qualities and has qualities that make it fragile, irreplaceable, and vulnerable to adverse change. Recent plant inventories completed by CNHP have recorded rare plants around the base of the Palisade, and across the Dolores River. A larger area is needed to cover newly discovered plants, and to provide protection should the Wilderness Study Area designation change. Plants known to occur around the base of the Palisade, and across the Dolores River include: Dolores River skeleton plant *(Lygodesmia doloresensis)*, San Rafael milkvetch *(Astragalus rafaelensis)*, horseshoe milkvetch *(Astragalus equisolensis)*, Fisher Tower's milkvetch *(Astragalus piscator)*, tufted green gentian *(Frasera paniculata)*, and osterhouts catseye *(Cryptantha osterhoutii)*.	26,951	32,334	(32,200) 32,200
	Wildlife	2	2					
	Scenic	1	2					

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					Expanded area would protect nesting areas for peregrine falcons.			
Persigo Wash Potential *Public Proposed*	Fish	None	None	No	The criteria for relevance have not been met for cultural resources, fish and wildlife resources and a natural system. The criteria for importance have not been met, since the habitat within the proposed ACEC area is not of regional significance or has qualities of sensitivity. Previous cultural surveys have not indicated the presence of significant historic or cultural values nor are there cultural resources present of significant quality compared to similar resources in GJFO. The area does not contain any fish bearing streams. The area contains artificial kit fox structures and includes the area with the last known den for kit fox in the field office, however these areas do not meet the importance criteria because kit fox have not been documented using the artificial structures nor have they been documented in	0	5,532	0
	Wildlife	None	None					
	Plants	None	None					
	Cultural	None	None					

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					the area in the past 10 years. Prairie dog release sites for the Mesa County Prairie Dog Relocation group occur in the area but they are not regionally significant for the species and therefore do not meet the importance criteria. While some grand buckwheat is known to occur in the Mancos shale 'badlands' north to the town of Fruita, this area does not represent an outstanding occurrence, in size or quality.			
Plateau Creek *Staff Proposed*	Fish	2	1, 2, 3	Yes	Meets Relevance and Importance Criteria for BLM sensitive fish species. Protection would help implement the Range-Wide Conservation Agreement and Strategy to avoid federal listing under Endangered Species Act.	N/A	223	(223) 0
Prairie and South Canyons *Public Proposed*	Wildlife	None	None	No	The proposed ACEC does not contain lynx habitat. The area contains several fragmented pieces, which makes potential management difficult.	0	6,081	0
Prairie Canyon (renamed from Baxter Ridge) *Public Proposed*	Wildlife	2 and 3	2	**Yes** *with modified boundaries*	Meets the relevance criteria for wildlife resources and a natural system supporting breeding habitat for a variety of species and core wildlife habitat that is also	0	19,853	(6,866) 0
	Plants	3	1					

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					included in the Prairie Canyon Wildlife Emphasis Area. Meets the importance criteria for supporting a unique assemblage of species that is of more than local significance and qualities that make it fragile and vulnerable to adverse change to rare plants. The area provides a breeding habitat for the burrowing owl *(Athene cunicularia)*, long-billed curlew *(Numenius americanus)*, sage sparrow *(Amphispiza belli)*, kit fox *(Vulpes macrotis)*, long-eared owl *(Asio otus)*, Scott's oriole *(Icterus parisorum)*, and white-tailed prairie dog *(Cynomys leucums)*. The proposed boundary was very large and has been modified to include only core habitat for the species. The entire area could be considered for wildlife emphasis management. The area contains habitat for grand buckwheat, a rare plant within the planning area.			
Pyramid Rock	Plants	3	1 and 2	**Yes**	Meets the relevance criteria for	551	1,265	(1,300) 1,300

Table D-2
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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
ACEC/RNA *Existing* *Staff Proposed*	Cultural	1	1 and 2		the presence of significant cultural resource values that are important to Native Americans and the presence of a natural process or system that protects these resources. Meets the importance criteria because it has more than locally significant qualities compared to other resources in the planning area and these resources are rare, exemplary, unique, and vulnerable to adverse change. The expansion makes the boundary of the existing ACEC more clearly defined by using existing roads or natural landform features. It also increases the area to accommodate better management and adequately protect sensitive plants and cultural resources. Rare plants known to occur within the existing ACEC are: Colorado hookless cactus (formerly Uinta Basin hookless cactus) (*Sclerocactus glaucus)*, DeBeque phacelia (*Phacelia scopulina* var. *submutica)*, DeBeque milkvetch *(Astragalus debequaeus)*, Naturita milkvetch *(Astragalus*			

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					naturitensis), adobe thistle *(Cirsium perplexans)*, and aromatic Indian breadroot. The existing ACEC is a research site for Denver Botanic Gardens.			
Rabbit Valley-Rattlesnake Canyon Potential ACEC *Public Proposed*	Fish	N/A	N/A	N/A	ACEC is within the McInnis Canyon NCA; therefore it is beyond the scope of this planning effort.	0	18,276	0
	Wildlife	N/A	N/A					
	Plants	N/A	N/A					
Rapid Creek (renamed from Orchard Mesa Potential ACEC) *Public Proposed*	Fish	2 and 3	1 and 2	No	During BLM's initial review of the area, it was believed that the portion of the proposed ACEC that includes Rapid Creek contained rainbow trout *(Oncorhynchus mykiss)*, cutthroat trout *(Oncorhynchus clarki)*, and roundtail chub *(Gila robusta)*. The boundary was modified to encompass Rapid Creek without the other outlying areas of the original proposal. Upon further analysis and sampling it was determined that Rapid Creek does not contain these species. Therefore the proposed ACEC does not meet the relevance or importance criteria for fish. A portion of the proposed ACEC near Vincent Reservoir contains a small portion of potential lynx	0	13,392	(220) 0
	Wildlife	None	None					
	Plants	3	None					

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					habitat, however these parcels are not significant for the species and therefore do not meet the importance criteria. While Horse Mountain, and the Orchard Mesa Potential Conservation Area contain recorded cacti locations, so few have been recorded in this area that it is not considered significant for the Colorado hookless cactus, and thus does not meet the importance criteria. The BLM special status plant species, narrowstem gilia *(Gilia stenothysra)*, is also known to occur at the base of the Bookcliffs; however the known population size in this area is not considered significant.			
Rattlesnake Canyon *Public Proposed*	Plants	N/A	N/A	N/A	ACEC is within the McInnis Canyon NCA; therefore it is beyond the scope of this planning effort.	0	4,628	0
Reeder Mesa *Staff and Public Proposed*	Plants	3	2	**Yes**	The portion of the proposed ACEC which includes Reeder Mesa contains a Colorado hookless cactus study site. The cactus is thought to have crossed	0	474	(474) 0

Table D-2
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					with smallfower fishhook cactus *(Sclerocactus parviflorus)* resulting in a hooked central spine. Genetic studies are ongoing. This area of the proposed ACEC meets the importance criteria.			
Roan and Carr Creeks	Riparian Habitat	3	2	**Yes**	Meets the relevance criteria for fish and wildlife resource and a natural system. Meets the importance criteria for having more than locally significant qualities and qualities that make it fragile, sensitive, rare, exemplary, and vulnerable to adverse change. CDOW manages and designates portions of Roan and Carr Creek drainages for genetically pure native cutthroat trout. Therefore the area meets the relevance and importance criteria for fish. CDOW performs successful spawn-take operations in these drainages, utilizing such to develop hatchery broodstock. Successful rearing of these fish in the hatchery results in stocking pure cutthroat trout in other waters in Colorado. BLM sensitive plant Piceance bladderpod and the sun-loving meadowrue *(Thalictrum*	0	40,722	(33,600) 33,600
Staff and Public Proposed	Fish	2 and 3	1 and 2					
	Wildlife	None	None					
	Plants	2	None					

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					heliophilum) occur with the area; however, the proposed ACEC boundary does not contain the largest, nor most robust, bladderpod populations in the planning area.			
Rough Canyon ACEC/RNA *Existing Staff Proposed*	Plants	3	1	**Yes**	Meets the relevance criteria for the presence of significant cultural resources and resources important to Native Americans, wildlife resources, a natural system, and natural hazards. Meets the importance criteria for more than locally significant with cultural resources that are unique and vulnerable to adverse change. Expansion makes the boundary of this ACEC clearly defined by existing roads or natural landform features, increases area to accommodate better management of Gunnison Sage-Grouse *(Centrocercus minimus)* and adequately protect cultural resources. BLM sensitive Grand Junction milkvetch *(Astragalus linifolius)* are found within the area (Grand Junction milkvetch). The rare plant Eastwood's desertparsley *(Lomatium eastwoodiae)* also	2,737	2,778	(2,800) 2,800
	Wildlife	2	1 and 2					
	Scenic	1	None					
	Cultural	1	1 and 2					
	Geologic	1	1 and 2					

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					occurs in the area. This area has some of the highest cultural densities in the planning area. The expansion would complement the management of cultural resources in the existing Rough Canyon ACEC. The area has unique and complex geologic structure displaying a large monocline and fault zones.			
Sinbad Valley *Staff and Public Proposed*	Geologic	3	2	**Yes**	Meets the relevance criteria for significant cultural values, historic landscape values and a natural system supporting rare plants. Meets the importance criteria for more than locally significant qualities and qualities that are sensitive, rare, and unique. Portions of Sinbad Valley that occur on BLM property contain a broad oval depression that is the exposed core of a breached anticline. As the salt (halite) layer in the center of the anticline was exposed to weathering and quickly dissolved, the entire structure collapsed on itself, leaving a valley floor ringed by faults and inward-facing	0	7,184	(6,399)6,399
	Scenic	1	None					
	Cultural	1	2					
	Plants	3	1 and 2					

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					escarpments on the valley rim. Rocks exposed in Sinbad Valley range in age from Pennsylvanian in the lower slopes and valley floor, to Lower Cretaceous in the upper part of the outer rim. The rim includes dramatic exposures of Wingate and Entrada sandstones. Recent rare plant surveys have mapped populations of the newly described and extremely rare Gypsum cateye *(Cryptantha gypsophila)*. This area meets the relevance criteria for the presence of significant cultural resources, historic landscape values, and resources important to Native Americans. Cultural Resource surveys within Sinbad Valley have resulted in recording sites important to the Ute Tribe, including wickiup camps and trails. Alignment and local historical accounts make it likely that the Ute trail, unique because of distinctive travois tread, continues into the proposed ACEC. Plant resources important to the Ute are also present in a high density that may			

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Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					be attributable to historic cultural practices. Traditional use and heritage resources are more than locally significant and give this area special meaning to the Native Americans who traditionally used the area. Ute trails are exemplary to connecting modern visitors to this historic landscape.			
Sinbad Valley SRMA *Proposed by public as a Special Recreation Management Area (SRMA). Proposal did not include any information regarding relevant and important values for ACEC designation*	Recreation	None	None	No	Does not meet the relevance and importance criteria for ACEC designation. Does not meet the criteria for SRMA designation (recreation demand and issues, recreation setting characteristics, resolving use/user conflicts, compatibility with other resource uses and resource protection needs). Portions of the area do meet the criteria for ACEC designation (Sinbad Valley, Dolores River Riparian, John Brown Canyon proposed ACECs), or SRMA designation (Dolores River Canyon SRMA/ERMA)	0	42,731	0
South Shale Ridge-Cow Ridge RNA *Public Proposed*	Recreation	None	None	No	Portions of this proposal are included in the Coon Hollow/South Shale Ridge and Pyramid Rock ACECs and are	0	59,702	*See South Shale Ridge and Pyramid Rock ACECs*

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Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
					being carried forward for further analysis. Areas in the Cow Ridge region are not being carried forward for further analysis because they do not meet the relevance and importance criteria.			
South Shale Ridge Potential ACEC *Public Proposed*	Wildlife	2	1	No	Portions of this proposal are included in the Coon Hollow/South Shale Ridge and Pyramid Rock ACECs and are being carried forward for further analysis. Areas in the Cow Ridge region are not being carried forward for further analysis because they do not meet the relevance and importance criteria.	0	47,341	*See South Shale Ridge and Pyramid Rock ACECs*
	Plants	3	1 and 2					
Unaweep-Maverick Canyon SRMA *Proposed by public as a Special Recreation Management Area (SRMA). Proposal did not include any information regarding relevant and important values*	Recreation	None	None	No	Does not meet the relevance and importance criteria for ACEC designation. Does not meet the criteria for SRMA designation (recreation demand and issues, recreation setting characteristics, resolving use/user conflicts, compatibility with other resource uses and resource protection needs). Portions of the area do meet the criteria for ACEC designation (Dolores River Riparian, Juanita Arch proposed ACECs); for SRMA designation (Dolores River Canyon	0	29,917	0

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
for ACEC designation					SRMA/ERMA); or contain wilderness characteristics (Unaweep and Maverick units).			
Unaweep Seep ACEC/RNA *Public Proposed*	Fish and Wildlife	2 and 3	2	**Yes**	Meets the relevance criteria for wildlife and a natural system that supports the Unaweep fritillary butterfly *(Speyeria nokomis)*. The importance criteria for more than locally significant qualities and the wetland complex is fragile, sensitive, rare, irreplaceable, unique, and very vulnerable to adverse change for wildlife and rare plants. The Unaweep Seep is an existing natural area recognized by the State of Colorado that possesses habitat for the Unaweep fratillary butterfly, which depends on a unique wetland complex comprised of twenty seeps occurring in concentration on a hillside in Unaweep Canyon and a research location for giant helleborine *(Epipactus gigantea)*. Large wetland complexes are extremely rare within the GJFO, particularly undisturbed sites such as this that support a large diversity of plants and animals.	78	84	(85) 85
	Plants	3	1 and 2					
	Riparian Habitat	3	1 and 2					
	Hydrologic	3	2					
Unaweep Seep	Wildlife	2	2	No	Portions of the proposed ACEC	78	23,108	*See existing Unaweep*

Table D-2
Relevance and Importance Criteria Evaluation for Existing and New ACECs

Name of ACEC ***Existing, Proposed, and Approved***	**Values Assessed**	**Relevance Criteria** *see Section II for Relevance Criterion*	**Importance Criteria** *see Section II for Importance Criterion*	**Carried Forward for Analysis?**	**Comments**	**1987 RMP Acres**	**Proposed Acres**[1] *includes acres from 1987 RMP*	**Acres (Analyzed) Approved**[1]
Potential ACEC *Public Proposed*	Hydrologic	3	2		are within both the existing Unaweep Seep and Palisade ACEC and are being analyzed separately. Areas outside of the existing ACECs do not meet the relevance and importance criteria and are not being carried forward for further analysis.			*Seep and Palisade ACECs*

[1]Acreages include proposed expansions.

D.5 REFERENCES

BLM (US Department of the Interior, Bureau of Land Management). 1988. Manual 1613: Areas of Critical Environmental Concern. Rel. 1-1541. BLM, Washington, DC. September 29, 1988. 22 pp.

_____. Areas of Critical Environmental Concern Report on the Application of the Relevance and Importance Criteria. BLM, Grand Junction Field Office, Grand Junction, Colorado. January 2010. 84 pp.

Appendix E

BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado

APPENDIX E
BLM STANDARDS FOR PUBLIC LAND HEALTH AND GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT IN COLORADO

STANDARDS FOR PUBLIC LAND HEALTH

Standards describe conditions needed to sustain public land health, and relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape.

Standard 1

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff.

Indicators

- Expression of rills, soil pedestals is minimal.
- Evidence of actively-eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland water flow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.
- There are vigorous, desirable plants.

Standard 2

Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment, and provides forage, habitat and bio-diversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Indicators

- Vegetation is dominated by an appropriate mix of native or desirable introduced species.
- Vigorous, desirable plants are present.
- There is vegetation with diverse age class structure, appropriate vertical structure, and adequate composition, cover, and density.
- Streambank vegetation is present and is comprised of species and communities that have root systems capable of withstanding high streamflow events.
- Plant species present indicate maintenance of riparian moisture characteristics.
- Stream is in balance with the water and sediment being supplied by the watershed (e.g., no headcutting, no excessive erosion or deposition).
- Vegetation and free water indicate high water tables.
- Vegetation colonizes point bars with a range of age classes and successional stages.
- An active floodplain is present.
- Residual floodplain vegetation is available to capture and retain sediment and dissipate flood energies.
- Stream channels with size and meander pattern appropriate for the stream's position in the landscape, and parent materials.
- Woody debris contributes to the character of the stream channel morphology.

Standard 3

Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations, and ecological processes.

Indicators

- Noxious weeds and undesirable species are minimal in the overall plant community.

- Native plant and animal communities are spatially distributed across the landscape with a density, composition, and frequency of species suitable to ensure reproductive capability and sustainability.
- Plants and animals are present in mixed age classes sufficient to sustain recruitment and mortality fluctuations.
- Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.
- Photosynthetic activity is evident throughout the growing season.
- Diversity and density of plant and animal species are in balance with habitat/landscape potential and exhibit resilience to human activities.
- Appropriate plant litter accumulates and is evenly distributed across the landscape.
- Landscapes composed of several plant communities that may be in a variety of successional stages and patterns.

Standard 4

Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Indicators

- All the indicators associated with the plant and animal communities standard apply.
- There are stable and increasing populations of endemic and protected species in suitable habitat.
- Suitable habitat is available for recovery of endemic and protected species.

Standard 5

The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado. Water Quality Standards for surface and ground waters include the designated beneficial uses, numeric criteria, narrative criteria, and anti-degradation requirements set forth under State law as found in (5 CCR 1002-8), as required by Section 303(c) of the Clean Water Act.

Indicators

- Appropriate populations of macroinvertabrates, vertebrates, and algae are present.
- Surface and ground waters only contain substances (e.g. sediment, scum, floating debris, odor, heavy metal precipitates on channel

substrate) attributable to humans within the amounts, concentrations, or combinations as directed by the Water Quality Standards established by the State of Colorado (5 CCR 1002-8).

GUIDELINES FOR LIVESTOCK GRAZING MANAGEMENT

Guidelines are the management tools, methods, strategies, and techniques (e.g., best management practices) designed to maintain or achieve healthy public lands as defined by the standards. Currently, the only guidelines for BLM Colorado that have been developed in concert with the Resource Advisory Councils are livestock grazing management guidelines.

1. Grazing management practices promote plant health by providing for one or more of the following:
    - periodic rest or deferment from grazing during critical growth periods;
    - adequate recovery and regrowth periods;
    - opportunity for seed dissemination and seedling establishment.
2. Grazing management practices address the kind, numbers, and class of livestock, season, duration, distribution, frequency and intensity of grazing use and livestock health.
3. Grazing management practices maintain sufficient residual vegetation on both upland and riparian sites to protect the soil from wind and water erosion, to assist in maintaining appropriate soil infiltration and permeability, and to buffer temperature extremes. In riparian areas, vegetation dissipates energy, captures sediment, recharges ground water, and contributes to stream stability.
4. Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required, on land treatment efforts, emphasis will be placed on using native plant species. Seeding of non-native plant species will be considered based on local goals, native seed availability and cost, persistence of non-native plants and annuals and noxious weeds on the site, and composition of non-natives in the seed mix.
5. Range improvement projects are designed consistent with overall ecological functions and processes with minimum adverse impacts to other resources or uses of riparian/wetland and upland sites.
6. Grazing management will occur in a manner that does not encourage the establishment or spread of noxious weeds. In addition to mechanical, chemical, and biological methods of weed control, livestock may be used where feasible as a tool to inhibit or stop the spread of noxious weeds.

7. Natural occurrences such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist the recovery and conservation of threatened, endangered, or other special status species, by helping to provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors, and thus minimizing habitat fragmentation.

8. Colorado Best Management Practices and other scientifically developed practices that enhance land and water quality should be used in the development of activity plans prepared for land use.

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Appendix F

Wilderness Characteristics Inventory

APPENDIX F
WILDERNESS CHARACTERISTICS INVENTORY AND PLANNING

INTRODUCTION

The BLM, GJFO, in accordance with the BLM policy on conducting wilderness characteristics inventories on BLM lands under Section 201 of the FLPMA (BLM Manual 6310, Conducing Wilderness Characteristics Inventory on BLM Lands), has updated its inventory of lands with wilderness character found within the GJFO planning area. This document highlights the findings of this inventory. The complete inventory report is available on the RMP Web site at http://www.blm.gov/co/st/en/fo/gjfo/rmp.html.

The original wilderness characteristics Inventory was conducted in 1979, resulting in the establishment of current wilderness study areas (WSAs) found in the GJFO. Some of the units analyzed as part of this inventory were part of the original inventory of 1979, or a supplemental inventory in 1999.

Process for Identifying Wilderness Character Inventory Units

In an effort to conduct the most thorough analysis of lands with wilderness characteristics, the GJFO established a process for identification of wilderness character inventory units. This process included identification of units through two avenues; 1) Citizens' Wilderness Proposals (CWPs), and 2) Internal identification:

1) Citizens' Wilderness Proposals: Between 2001 and 2009, the Colorado Environmental Coalition submitted CWPs for 14 units within the planning area. These proposals included inventory reports conducted by non-BLM personnel. Several organizations referenced these CWPs in their comments during scoping for the GJFO Resource Management plan revision. The portions of the CWP identified units that are not within existing WSAs were carried forward for this inventory.

2) In addition to CWPs, GJFO staff identified areas that may possess wilderness characteristics based on their field knowledge. Then during the inventory process, the BLM Washington Office issued IM 2011-154, Requirement to Conduct and Maintain Inventory Information for Wilderness Characteristics and to Consider Lands with Wilderness Characteristics in Land Use Plans. This guidance included a document titled "Policy on Conducting Wilderness Characteristics Inventory on BLM Lands." Guidance in the IM was later published in BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands.

   In accordance with the new policy document, the GJFO completed a spatial data analysis to identify all areas in the GJFO which hosted 5,000 or more roadless acres of land. This analysis used the GJFO route inventory data set. A comprehensive route inventory had been compiled through years of field inventory for use in travel management planning. The analysis for identifying potential lands with wilderness characteristics utilized this data, seeking out certain route classes (not including single track or ATV trails) in determining the roadless areas. The initial boundaries of the units potentially containing wilderness characteristics were formed using land status and Route Inventory data. This process proved effective as evidenced by the fact that the results of the analysis pointed to all existing WSAs and all previously identified inventory units including CWPs as areas that may include over 5,000 roadless acres. The additional units identified by the spatial analysis provided the starting point for field inventory.

Process for Conducting Wilderness Character Inventory

The process defined above identified 31 units (in addition to existing WSAs), totaling approximately 400,000 acres to be inventoried for the presence or absence of wilderness characteristics. The inventory was conducted using the process identified in BLM Manual 6310, Conducting Wilderness Characteristics Inventory on BLM Lands. The field inventory identified the presence or absence of the following characteristics:

- size;
- apparent naturalness;
- opportunities for solitude;
- opportunities for primitive or unconfined recreation; and
- supplemental values found for the unit.

The findings of past inventories (where applicable), including those provided in CWPs were compared to the current state of the units, analyzing changes in the landscape and levels of human impact, and were either confirmed or refuted

based on the analysis. The inventory write up for each unit also included a summary of major human uses, including valid existing rights (e.g., fluid mineral leases and mining claims), which could affect wilderness characteristics in the future.

This inventory was conducted between 2009 and 2011, and in some cases involved validating previous inventories. Therefore specific descriptions (e.g., condition of a trail and acreage of the unit currently leased for fluid minerals) may no longer be exact but offer a snapshot of conditions at the time of the inventory.

Table F-1, Summary of Findings, provides details for each wilderness characteristics inventory unit (WCIU). **Figure F-1**, Wilderness Characteristics Inventory, shows a map of all the units and the defining characteristics of each.

Procedures for Considering Lands with Wilderness Characteristics in Land Use Planning

BLM Manual 6320, Considering Lands with Wilderness Characteristics in the BLM Land Use Planning Process provides BLM Field Offices guidance for considering lands with wilderness characteristics in the land use planning process. In accordance with this guidance, the GJFO RMP alternatives considered a full range of reasonable alternatives for management of lands with wilderness characteristics. The alternatives ranged from no specific protections for lands with wilderness characteristics, to an alternative that set specific protections for all of the units with wilderness characteristics.

The alternatives were developed considering manageability and resource values and uses. The alternatives also included a range of management prescriptions for WSAs, should they be released from wilderness consideration by Congress. This range included the management of the WSA areas for their wilderness characteristics.

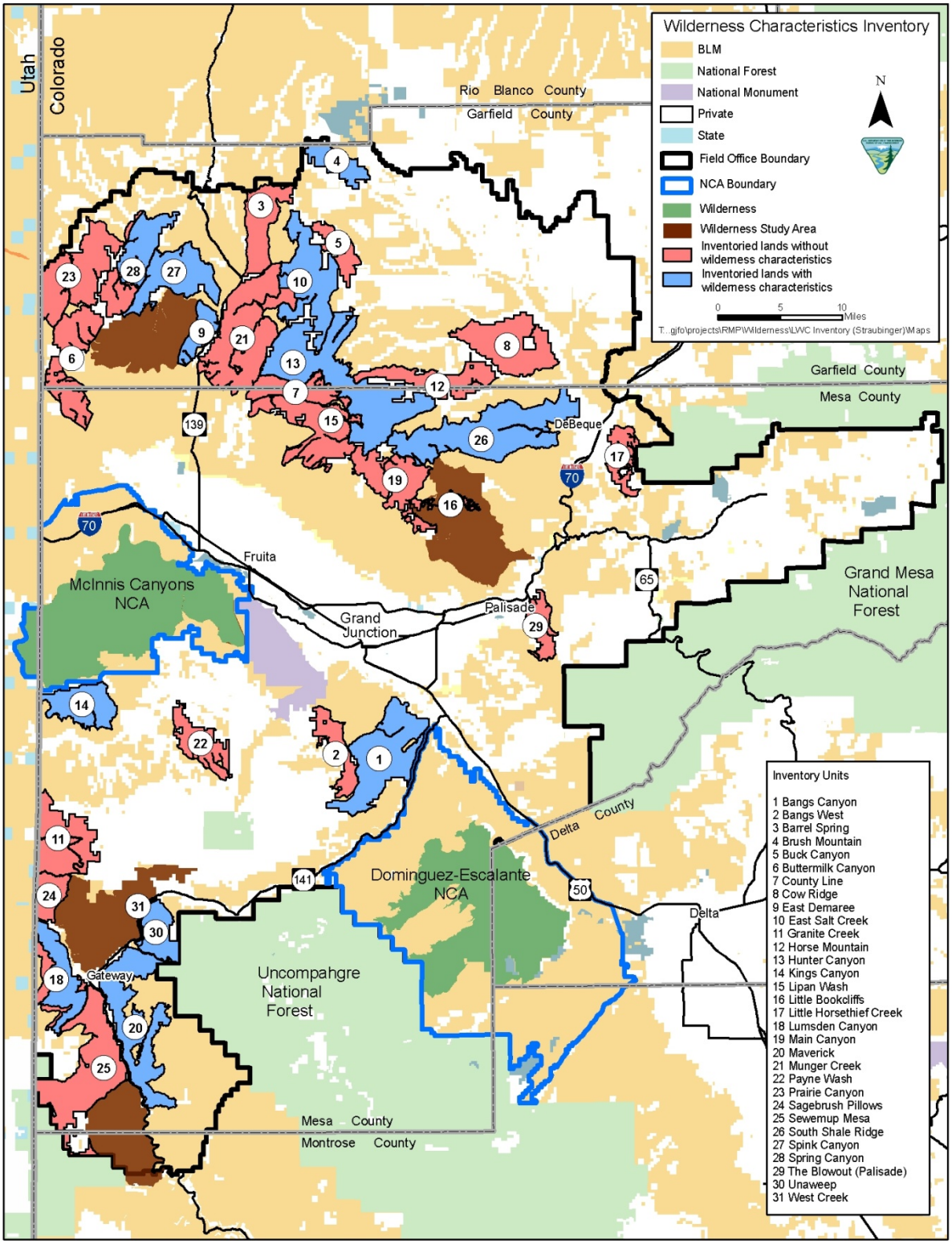
The RMP allocates three lands with wilderness characteristics units to be managed for their wilderness characteristics.

- Bangs Canyon (Bangs): A series of shallow to moderately deep canyons drain northeasterly from the edge of Piñon Mesa (a part of the Uncompahgre Plateau) into the Gunnison River. Bang's Canyon, West Bang's Canyon, and the canyon of North East Creek. Critically sensitive from a cultural resource standpoint, the area was utilized as long ago as 10,000 years - first by the paleo Indian culture and successively by the cultures commonly referenced as the archaic, Fremont and Ute. Recreational activities include mountain biking, hiking, backpacking, hunting, driving off-highway vehicles, and horseback riding. A short segment of the 142-mile Tabeguache Trail, an extension of the Colorado Plateau Mountain Bike Trail System, traverses the inventory unit.

Table F-1
Summary of Findings

Unit Identifier	WCIU Name	Total Acreage of WCIU	WCIU Identified by External Proponent	WCIU Identified by BLM	WCIU Found to have Wilderness Character	Acres Found to Have Wilderness Character
1	Bang's Canyon	20,434	•	•	•	20,434
2	Bang's West	6,879		•		
3	Barrel Spring	10,169		•		
4	Brush Mountain	5,310		•		
5	Buck Canyon	5,009		•		
6	Buttermilk Canyon	14,086		•		
7	County Line	7,380		•		
8	Cow Ridge	15,721	•			
9	East Demaree	4,796	•	•	•	4,796
10	East Salt Creek	18,303		•	•	17,008
11	Granite Creek	14,048	•			
12	Horse Mountain	10,303		•		
13	Hunter Canyon	32,700	•		•	32,228
14	Kings Canyon	9,606	•	•	•	9,606
15	Lipan Wash	15,373		•		
16	Little Bookcliffs WSA Expansion	1,580	•			
17	Little Horsethief Creek	5,732		•		
18	Lumsden Canyon	13,764		•	•	10,072
19	Main Canyon	12,613		•		
20	Maverick	20,401	•	•	•	20,401
21	Munger Creek	23,801		•		
22	Payne Wash	8,153		•		
23	Prairie Canyon	17,569	•			
24	Sagebrush Pillows	5,127	•			
25	Sewemup Mesa	23,551	•			
26	South Shale Ridge	27,540	•	•	•	27,540
27	Spink Canyon	13,081		•	•	13,081
28	Spring Canyon	14,009		•	•	8,848
29	The Blowout	5,105		•		
30	Unaweep	9,494	•	•	•	7,154
31	West Creek	111	•	•	•	111

Figure F-1
Wilderness Characteristics Inventory



- Maverick: A five-canyon complex and unique roadless area with outstanding opportunities for solitude given the topography, vegetation, and unique feature of Juanita Arch, which is the only natural bridge in Colorado. Mining claims are present at the boundaries of the unit but there has been no development of the claims. While there are existing oil and gas leases, the area is not within the area of current known potential for conventional or shale gas development and no past exploration or development for oil and gas has occurred.
- Unaweep: This area has outstanding opportunities for solitude and primitive and unconfined recreation with the unit primarily affected by the forces of nature. It includes the 1,000-foot-deep Ute Creek Canyon with the sheer granite cliffs of Unaweep Canyon. There are no right-of-way conflicts, and no current mining claims. While there are approximately 100 acres of existing oil and gas leases, the area is not within the area of current known potential for conventional or shale gas development and no past exploration or development for oil and gas has occurred.

The remaining nine areas fall within the portion of the GJFO with known potential for natural gas development, and are largely leased for oil and gas development; or provide motorized and mechanized use opportunities. Under the Preferred Alternative and its corresponding travel management plan the manageability of these areas for wilderness characteristics would be compromised by valid existing rights, and/or motorized and mechanized use and these areas would be managed for other resources and resource uses. The impacts of the management alternatives on lands with wilderness characteristics can be found in Chapter 4 of the Proposed RMP/Final EIS.

Appendix G

Comprehensive Air Resource Protection Protocol

February 2014

COLORADO BUREAU OF LAND MANAGEMENT

COMPREHENSIVE AIR RESOURCE PROTECTION PROTOCOL (CARPP)

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COMPREHENSIVE AIR RESOURCES PROTECTION PROTOCOL

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COMPREHENSIVE AIR RESOURCES PROTECTION PROTOCOL (CARPP)

SECTION I – PURPOSE, SCOPE, AND RESPONSIBILITIES

This Comprehensive Air Resources Protection Protocol (CARPP) describes the process and strategies the BLM will use when authorizing activities that have the potential to adversely impact air quality within the state of Colorado. This protocol also outlines specific measures that may be taken to address BLM-approved activities with the potential to cause significant adverse impacts to air resources (via the generation of significant quantities of air emissions) within any planning area (as determined on a case by case basis). Further, the purposes of this protocol are to address air quality issues identified by the Bureau of Land Management (BLM), or public scoping, in its analysis of potential impacts on air resources for BLM Colorado Resource Management Plans and Environmental Impact Statements (RMP/EIS); and clarify the mechanisms and procedures that BLM will use to achieve the air resources goals, objectives, and management actions set forth in BLM Colorado RMPs.

I.A CARPP Scope

The CARPP is not a decision document, but rather a strategy to address air quality concerns throughout BLM-managed lands and resources in Colorado. Because the CARPP is not a field office specific management tool, it may be modified as necessary to comport or comply with changing laws, regulations, BLM policy, or to address new information and changing circumstances without maintaining or amending any specific Field Office RMP (see reference version date on the cover page).

However, changes to the goals, objectives, or management actions set forth in any Colorado Field Office RMP/EIS as a result of the changes in the CARPP (or more specifically, any subsequent analysis based on such changes) would require an amendment of the specific RMP being affected.

I.B BLM Responsibilities under FLMPA and MLA

The BLM has the authority and responsibility under the Federal Land Policy and Management Act (FLPMA) to manage public lands in a manner that will protect the quality of air and atmospheric values [FLPMA Sec. 102(a)(8)]. The FLPMA also provides that the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands and includes provisions for implementing the Mining and Minerals Policy Act of 1970 [FLPMA Sec. 102(a)(12)]. The BLM has the responsibility under the Mineral Leasing Act (MLA) to implement the decisions of any RMP/EIS in a manner that recognizes valid and existing lease rights[1].

[1] H-1601-1 - LAND USE PLANNING HANDBOOK: A plan-level decision to open the lands to leasing represents BLM's determination, based on the information available at the time, that it is appropriate to allow development of the parcel consistent with the terms of the lease, laws, regulations, and orders, and subject to reasonable conditions of approval. When applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used.

Further, the FLPMA provides that "In the development and revision of land use plans, the Secretary shall provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementation plans;" [FLPMA Sec. 202(c)(8)][2].

SECTION II – INTERAGENCY AIR RESOURCES COLLABORATION

The Bureau of Land Management is firmly committed to working with federal, state, tribal, and local air resource management partners to address complex and often cross-jurisdictional air quality issues. As a federal agency, we have a role to provide leadership in addressing known air quality issues within our authority and domain, while upholding our responsibility to manage the public lands for multiple-use under the FLPMA. We also recognize that the State of Colorado, specifically the Colorado Department of Public Health and Environment (CDPHE), has the primary responsibility and authority delegated by the EPA to regulate and maintain air quality standards within Colorado in accordance with the Clean Air Act. Interagency collaboration is the key to management of air quality, as no single agency has all the necessary tools to solve these complex issues alone. We must act together.

To that end the BLM will work collaboratively with other local, state, federal, and tribal agencies involved in the management of air resources to develop a comprehensive strategy to protect air resources from potentially significant adverse impacts resulting from BLM approved activities in Colorado.

II.A National Air Quality MOU

When making oil and gas implementation decisions, the BLM will consider or apply, as appropriate, the provisions of the *Memorandum of Understanding Among the US Department of Agriculture, US Department of the Interior, and US Environmental Protection Agency, Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process*, signed June 23, 2011.

SECTION III – ACTIONS TO ANALYZE & PROTECT AIR QUALITY

The following sections describe actions the BLM will take to ensure an adequate analysis and subsequent protection for air quality resources within Colorado. Appropriate air resources protection requires the BLM to manage its authorized activities and actions at broad spatial and temporal scales that are dynamic and thus subject to change. The BLM will accomplish this through an adaptive management approach, which includes establishing baseline conditions, monitoring, reevaluation, and adjustment as necessary. Adaptive management therefore

[2] Note: Where sources of air pollution emissions are regulated by an entity/agency (Federal, State, Tribal, Local), the BLM shall not craft alternatives with features or conditions that interfere with a proponents ability to comply with such laws or standards. IBLA has held that the meaning of "providing for compliance" does not require that the BLM has any obligation to ensure compliance where another agency holds such responsibility [*Wyoming Outdoor Council, et al*176 IBLA 15, 27 (2008); Powder River Basin Resource Council, 183 IBLA 83, 94-95 (2012)]. However, the BLM should appropriately analyze such sources (as well as non-regulated sources) within the applicable NEPA context to disclose potential impacts, determine significance, and provide for mitigation as necessary and within our authority for any specific finding.

contemplates regular review and adjustment of management approaches during the authorization of emissions generating activities commensurate with changing circumstances.

III.A MONITORING

Ambient air monitoring provides valuable data for determining current and background concentrations of air pollutants, describing long term trends in air pollutant concentrations, and evaluating the effectiveness of air control strategies. The BLM's comprehensive air resource protection protocol includes the ambient air monitoring measures described in this section.

III.A.1 – Air Monitoring Network

The BLM will participate in a cooperative effort with industry, CDPHE, Forest Service, National Park Service, EPA, local counties, and other entities as appropriate, to establish, operate, and maintain a comprehensive air monitoring network within the planning areas where a need for monitoring has been identified (contingent upon available funding). The BLM will cooperate in the sharing of air monitoring data collected by the air monitoring network with other agencies and the public.

III.A.2 – Pre-Construction Air Monitoring

The BLM may request proponents of projects with the potential to generate significant air emissions, to submit pre-construction air monitoring data from a site within or adjacent to the proposed development area. The purpose of this air monitoring is to determine baseline air quality conditions prior to development at the site. The need for monitoring will be determined by the BLM based on the availability or absence of existing representative air monitoring data and the factors listed in Section III.D of this protocol. If the BLM determines that pre-construction monitoring is necessary, the project proponent must provide a minimum of one year of representative ambient air monitoring data for the pollutants of concern. The project proponent will be responsible for siting, installing, operating, and maintaining any new air monitoring equipment needed to fulfill this requirement in the absence of existing representative air monitoring data.

III.A.3 – Life of Project Air Monitoring

The BLM may require proponents or operators of Federal mineral development projects, or proponents of other potentially significant emission generating projects, to conduct air monitoring for the life of the project based on the availability or absence of representative air monitoring data and the factors listed in Section III.D of this protocol. The purpose of this air monitoring is to measure impacts potentially attributable to the project over time and to determine the effectiveness of emissions control measures required for the project. The project proponent will be responsible for siting, installing, operating, and maintaining any new air monitoring equipment needed to fulfill this requirement in the absence of existing representative air monitoring data.

III.A.4 – Monitoring Data Transparency

Project-specific monitoring data may be used by the BLM in subsequent NEPA analysis required for project approvals. Thus public disclosure of such data is assured via the NEPA process, if used. Additionally, the BLM will ensure that ambient air monitoring data collected as a COA for any BLM authorized activity will be made publicly available within the body or our annual report required under Section V of this protocol.

III.B EMISSIONS INVENTORIES

The BLM will request the proponent of an oil and gas development activity (as proposed in a permit application, plan of development, or Master Development Plan) to submit a comprehensive inventory of anticipated direct and indirect emissions associated with the proposed project. The emissions inventory will include estimated emissions of regulated air pollutants from all sources related to the proposed activity, including fugitive emissions and greenhouse gas emissions, for each year or distinct project phase over the life of the project. The BLM will review the emissions inventory to determine its completeness and accuracy. In most cases the BLM will accept inventory data reported to other agencies for the purposes of meeting this requirement. For example BLM would accept copies of actual emissions data for criteria pollutants, volatile organic compounds, hazardous air pollutants, and greenhouse gases that are submitted to CDPHE as required for applicable air permitting or APEN requirements, or submittals to COGCC in the form of drilling and production data reports, and data to EPA under the Greenhouse Gas Reporting Rule (40 CFR Part 98 Subpart W) for the authorized action.

III.C MODELING

Air dispersion and photochemical grid models are useful tools for predicting project-specific impacts on air quality, predicting the potential effectiveness of control measures and strategies, and forecasting trends in regional concentrations of air pollutants. The BLM will use regional air modeling and project-specific modeling, in conjunction with other air analysis tools, to develop air resource protection strategies consistent with our responsibilities under FLPMA. Further, the BLM will provide appropriate disclosure for any modeling of direct, indirect, and cumulative impacts of proposed actions during the required NEPA analysis.

III.C.1 – Project-specific Modeling

The BLM may require project-specific air quality modeling, consistent with the Air Resources MOU to analyze potential impacts from a proposed Federal mineral development project or other proposed activity that has the potential to emit significant quantities of a regulated air pollutant and the effectiveness of any air emission control measures. Project proponents may submit results from other modeling analyses that include activities similar to the proposed project for BLM's review and approval, and if approved, those modeling results may be used in lieu of new project-specific modeling. The decision as to whether to require air quality modeling will be based on factors listed in Section III.D of this protocol. The BLM will not require an air modeling analysis when it can be

demonstrated that the project will not cause a substantial increase in emissions of the pollutants of concern.

III.C.2 – Modeling Protocol

The BLM will determine the parameters required for a project-specific modeling analysis through the development of a modeling protocol for each analysis. When conducting a regional model or EIS level project specific oil and gas air modeling analysis, the BLM will adhere to the *Memorandum of Understanding Among the US Department of Agriculture, US Department of the Interior, and US Environmental Protection Agency, Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions Through the NEPA Process*, signed June 23, 2011.

III.C.3 – Regional Air Modeling

The BLM will support and participate in regional modeling efforts through multi-state and/or multi-agency organizations such as Western Governors' Association – Western Regional Air Partnership (WRAP) and the Federal Leadership Forum (FLF). In addition, BLM will, contingent upon available funding, conduct and facilitate regional air modeling as needed. Currently, the BLM is facilitating the Colorado Air Resources Management Modeling Study (CARMMS). CARMMS is a BLM funded regional air quality modeling study of expected impacts on air quality from projected increases in oil and gas development across Colorado and certain upwind adjacent states.

- The CARMMS modeling protocol/study will be developed by the BLM with involvement from appropriate local, state, federal, and tribal agencies involved in the management of air resources and the authorization and regulation of oil and gas development.
- The CARMMS results will include the predicted impacts from all projected federal and non-federal oil and gas development within the region.
- The CARMMS results and analysis will be made available to the public.

III.C.4 – Evaluation of Modeling Results

The BLM will cooperate in an interagency process to develop a comprehensive strategy to manage air quality impacts from future oil and gas development within the region. As part of that strategy, the local, state, federal, and Tribal agencies involved in the regulation of air quality and the authorization of oil and gas development would evaluate modeling results from CARMMS or other future modeling studies and identify potential air quality concerns and necessary reductions in air emissions. If the modeling predicts significant impacts, these agencies would use their respective authorities to implement appropriate enhanced emission control strategies, operating limitations, equipment standards, and/or pacing of development.

III.C.5 – Future Modeling Studies

Future iterations of the CARMMS, or a similar regional modeling study of expected impacts from oil and gas development, may be conducted through a collaborative interagency management mechanism and interagency / industry funding mechanism.

III.D PERMITTING

As part of the NEPA process and prior to the authorization of any Federal mineral development activity the BLM will conduct an air analysis to determine the potential impacts on air quality based on the estimated emissions from the activity being authorized. The BLM may conduct such an analysis for other authorized activities with the potential to generate significant emissions of a regulated pollutant. The BLM will consider the following factors to identify pollutants of concern and make decisions regarding the appropriate level of air analysis, monitoring, and reporting requirements for the proposed activity.

- magnitude of potential air emissions from the proposed activity
- duration of proposed activity and distinct phase considerations
- proximity to a federally mandated Class I area, sensitive Class II area (as identified on a case-by-case basis by CDPHE or a federal land management or tribal agency), population center, or other sensitive receptor
- location within or adjacent to a non-attainment or maintenance area
- meteorological and geographic conditions
- existing air quality conditions including measured exceedances of NAAQS or CAAQS and measured adverse impacts on air quality related values (AQRVs) at Class I and sensitive Class II areas
- intensity of existing and projected development in the area
- issues identified during project scoping

III.D.1 – Statewide Lease Notice

The following Lease Notice language will be incorporated into all new leases.

Due to potential air quality concerns, supplementary air quality analysis may be required for any proposed development of this lease. This may include preparing a comprehensive emissions inventory, performing air quality modeling, and initiating interagency consultation with affected land managers and air quality regulators to determine potential mitigation options for any predicted significant impacts from the proposed development. Potential mitigation may include limiting the time, place, and pace of any proposed development, as well as providing for the best air quality control technology and/or management practices necessary to achieve area-wide air resource protection objectives. Mitigation measures would be analyzed through the appropriate level of NEPA analysis to determine effectiveness, and will be required or implemented

as a permit condition of approval (COA). At a minimum, all projects and permitted uses implemented under this lease will comply with all applicable National Ambient Air Quality Standards and ensure Air Quality Related Values are protected in nearby Class I or Sensitive Class II areas that are afforded additional air quality protection under the Clean Air Act (CAA).

III.E MITIGATION

Many activities that the BLM authorizes, permits, or allows generate air pollutant emissions that have the potential to adversely impact air quality. The primary mechanism to reduce air quality impacts is to reduce emissions via project design features and mitigation. Appropriate emission reduction measures are best identified and required at the project authorization stage, when the temporal and spatial characteristics and technological specifications of the proposed action have been defined. The project-specific information available at that stage allows for the development of an emissions inventory and impact analysis that can be used to identify effective mitigation options for predicted adverse impacts. Section IV, Emissions Reduction Strategies and Best Management Practices, provides some emission reduction technologies and strategies as an example. The list in Table VI-1 is not intended to be all inclusive or preclude the use of other effective air pollution control technologies that may be proposed.

The BLM will ensure implementation of reasonable mitigation, control measures, and design features through appropriate mechanisms, including lease stipulations identified in RMPs, notices to lessees, and conditions of approval (permit terms and conditions) as provided for by law and consistent with lease rights and obligations. In the absence of, or in addition to effective control technologies, the BLM may manage the pace, place, density, and intensity of leasing and development to meet air quality goals and objectives as defined under any applicable RMP.

III.E.1 – Emissions Reduction Planning / Minimizing Air Emissions

The BLM will request proponents of oil and gas development projects that have the potential to significantly adversely impact air quality or predicted to exceed an air quality standard to provide an emissions reduction plan where air quality has been identified as a resource of concern in applicable NEPA analysis. Plans shall include a detailed description of operator committed measures to reduce project related air pollutant emissions including greenhouse gases and fugitive dust. All projects are required to comply with all applicable state and federal regulations.

III.E.2 – Project-specific Mitigation

If the project-specific air quality analysis predicts future impacts on NAAQS or CAAQS (i.e. exceedances) or adverse impacts to AQRVs in Class I or sensitive Class II areas, the BLM will analyze air quality mitigation measures for emission sources. Further, if the regional air quality modeling study conducted under Section III.C.3 predicts significant cumulative impacts on air resources from expected oil and gas development in the region, the BLM may require the

proponent of an oil and gas development project to apply reasonable mitigation including but not limited to best management practices (see Section VI), emissions offsets, and other control technologies or strategies identified in the project-specific air quality analyses.

Where identified and analyzed mitigation measures cannot be reasonably implemented for a particular proposed action due to the overall project design, or substantial technical or economic barriers, the BLM will work with project proponents during the NEPA process to develop operator-committed measures or acceptable emissions offsets that would be included as conditions of approval (COA). Any operator committed measures would be required to provide an air quality benefit sufficient in type, scale, location, and timing to avoid the anticipated adverse impact or at a minimum, to reduce it to an acceptable level for the specific area and pollutant(s) analyzed.

III.F Protocol Implementation

The BLM will ensure that air resource protection strategies and mitigation measures are implemented by including project-specific COAs (operator-committed and/or required mitigation) for each authorized action. Any COAs applied to projects as a result of this process shall be clearly consistent with the applicable RMP management decisions and/or subsequent analysis of new or previously unavailable information upon which the BLM can reasonably rely.

SECTION IV – ADAPTIVE MANAGEMENT PROCESSES FOR AIR RESOURCES

Adaptive management incorporates the principles of monitoring current conditions, predicting future impacts, and adapting management strategies to account for changing conditions. An adaptive management strategy for air quality resources allows the BLM to comply with NEPA and complete an appropriate analysis to ensure that activities approved by the BLM minimize adverse impacts to air quality; while allowing for development of important domestic energy resources.

The BLM will implement an adaptive management strategy to account for changing air quality conditions and to minimize adverse impacts to air resources from BLM-authorized activities. The strategy includes evaluating air quality on an on-going basis, and if necessary, implementing appropriate mitigation measures to meet the identified objectives and targets for any applicable Colorado RMP. The adaptive management strategy is intended to be transparent and as such the process includes an annual reporting component that will be made available to the public, as well as case by case incorporation of specific plan elements within individual project approvals. Components of this adaptive management strategy include the following:

IV.A Establish Baseline Air Quality Conditions

Existing air quality conditions will be established and continuously updated on an annual basis. To establish a periodic baseline, data must be compiled and analyzed such that air quality value trends (NAAQS & AQRVs for Class I and sensitive Class II areas) can be established or evaluated for the purpose of predicting future impacts from BLM-authorized activities. Sources of data for this analysis may include raw air quality

monitoring station data, air quality monitoring reports prepared by others (CDPHE, EPA, NPS or USFS), and/or appropriate regional modeling results.

In addition to monitored or predicted background data, regional emissions inventories will be continuously or periodically updated to reflect the annual mass of pollutants added to the atmosphere. The data will provide an understanding between mass emissions and monitored/modeled air quality conditions and provide a reasonable basis from which to evaluate impacts from future projects or actions.

The last component of the baseline analysis includes providing a brief synopsis of the current meteorological conditions that exist for any planning area such that exceptional events and historical deviations in atmospheric values can be documented to provide additional context for the observed/reported air quality values.

IV.B Emissions Tracking

To provide for the periodic baseline the BLM will use the project-specific information used in its NEPA analyses as a mechanism to track emissions of criteria pollutants, volatile organic compounds, hazardous air pollutants, and greenhouse gases from BLM authorized oil and gas activities within each field office planning area. (NOTE: the BLM may incorporate emissions inventories for other authorized activities with significant emissions to provide for an appropriate cumulative inventory, where such sources are not already included as a Colorado Air Pollution Emissions Notice, or National Emissions Inventory component). The BLM will use emissions data from APDs to inform iterative elements of our adaptive management strategy, including modeling inputs and any subsequent prescriptive or comparative project tiering from any applicable modeling results.

IV.C Prescriptive Model Validation

Prescriptive model validation includes comparing the annual NEPA emissions data from BLM authorized oil and gas activities within the planning areas to emission levels analyzed in the CARMMS modeling study (or the most recent BLM or interagency air impacts analysis conducted in accordance with the provisions of the modeling Section III above). Emissions data will include specific oil and gas indicators, such as the number of wells drilled, number of producing wells, production data, compressor stations installed, centralized liquids gathering stations, and gas treatment facilities constructed. The actual emissions levels and new baseline air quality observations will be correlated against the modeled parameters to determine the reasonableness of the model for predicting impacts and its continued appropriateness as a reference for any subsequent project analysis.

If during the course of our annual analysis it is determined that the model has not demonstrated a reasonable correlation of predicted impacts (for modeled emissions inventory levels) compared against the actual emissions recorded for a planning area, the BLM will investigate the potential sources of the discrepancy to determine a potential cause, such as meteorological factors (ex: winter time ozone, which cannot be modeled at this time), or fee mineral development (i.e. non-BLM authorized actions). If a probable cause for the discrepancy cannot be established, then the BLM will initiate

interagency coordination with our regulatory partners to determine if a new modeling analysis is potentially warranted.

IV.D Responding to Monitored Exceedances of the NAAQS

If during the course of a year a Federal Reference or Equivalent air monitor within any planning area records a validated exceedance of any NAAQS (excluding any non-attainment areas) the BLM will review the available data to determine if any BLM authorized activity caused or significantly contributed to the exceedance event. The review will encompass the following steps.

IV.D.1– QA/QC

The BLM will ensure the validity of the monitored data by: (a) reviewing Quality Assurance/Quality Control (QA/QC) metadata to ensure against false high readings, and (b) reviewing meteorological data to determine if an exceptional atmospheric event such as stratospheric ozone intrusion occurred. The BLM may contact CDPHE for technical consultation and concurrence regarding possible exceptional events.

IV.D.2 – Screening Analysis

If the monitoring data are validated, the BLM will conduct a screening analysis to determine the likely cause, source, or origin of the exceedance and whether any BLM authorized source(s) within or adjacent to the planning area caused or contributed to the monitored exceedance. If the screening analysis indicates BLM-authorized sources did NOT cause or significantly contribute to the exceedance, then no further action will be taken by the BLM. The data, analysis, and conclusions will be included in the annual public report described under I.C above.

IV.D.3 – Enforcement

Should the results of the screening analysis indicate that a BLM authorized source(s) caused or significantly contributed to the monitored exceedance, the BLM will review the COA from the authorization for the source(s) to determine if all the COA were implemented as required. Where it is determined that operators did not comply with the conditions of approval for their authorized activities, and did not submit an appropriate sundry notice for approved deviations from such conditions, BLM may issue a notice of incident of noncompliance or take other appropriate enforcement action.

IV.D.4 – Contingency Planning

If, after review the BLM determines that an authorized source(s) caused or significantly contributed to the monitored exceedance, the BLM will initiate consultation with CDPHE, EPA, and any other applicable local, state, federal, and tribal agencies with responsibility for managing air resources to address appropriate responses to the monitored exceedances. Responses to monitored exceedances may include employing more stringent mitigation measures within

the agencies' respective authority to reduce projected future emissions and performing additional modeling and analysis to determine the overall effectiveness of such mitigation measures.

Additionally, the BLM may implement reasonable temporary measures that have been included in a project specific authorization as conditions of approval, which could limit drilling operations, completions or well stimulations, blowdowns, or other non-essential operations during specified time periods (i.e. a timing limitation). Other actions the Bureau may take would include limiting the number of annual APD approvals issued for the affected area until such time that updated regional modeling can be conducted to provide an appropriate assessment of the expected impacts from a reasonable level of development.

IV.E Evaluating Projected Future Development/Emissions

Periodically, but not less than every three years, the BLM will evaluate the available or reasonably foreseeable oil and gas development projections for each planning area for the following three to five year period, and compare these projected levels to the level of predicted future development analyzed in the CARMMS modeling study (or the most recent BLM or interagency air impacts analysis conducted under the provisions of the modeling section(s) III.C.3 or III.C.5 above). The BLM will use the projected development/emissions data to determine whether the modeling analysis remains appropriate as a reference for any subsequent project analyses.

Section V – Annual Summary Report

Annually, the BLM will prepare a comprehensive summary report (from actual project data and analysis). This report will be made available to the public. The BLM will use this annual review to evaluate whether current air resources protection strategies are meeting the goals and objectives established within the BLM Colorado RMPs. If the analysis shows that the strategies are not achieving our defined air resource protection goals, the BLM will collaborate with CDPHE and the EPA to develop or modify air resource protection strategies as necessary to effectively protect air resources within any deficient planning area. Should this result in changes to RMP goals and objectives, additional planning level analyses will be required.

Section VI – Oil and Gas Development Emissions Reduction Strategies & BMPs

Table VI-1 displays some emission reduction measures, their potential environmental benefits and liabilities, and feasibility. The table is not meant to be exhaustive in terms of available or acceptable emissions reduction/control technologies or techniques, but provides a baseline or starting point from which to construct design features and mitigation options for project specific or regional analyses.

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Control Strategies for Drilling and Compression			
Multi-well pad directional or horizontal drilling.	When compared to single pad vertical drilling, reduces construction related emissions, decreases surface disturbance, reduces trip frequencies, and reduces habitat fragmentation.	Could result in higher air impacts in one area with longer sustained drilling times.	Depends on geological strata, topography, and other physical constraints.
Improved engine technology (Tier 2 or 4) for diesel drill rig engines.	Reduced NOx, PM, CO, and VOC emissions.		Dependent on availability of technology from engine manufacturers and, potentially differentials in cost for small operators..
Selective Catalytic Reduction (SCR) for drill rig engines and/or compressors.	NO_x emissions reduction, potential decreased formation of visibility impairing compounds and ozone. NOx control efficiency of 95% achieved on drill rig engines. NOx emission rate of 0.1 g/hp-hr achieved for compressors.	Potential NH3 emissions and formation of visibility impairing ammonium nitrate. Regeneration/disposal of catalyst can produce hazardous waste.	Not applicable to 2-stroke engines.
Non-selective catalytic reduction (NSCR) for drill rig engines and/or compressors.	NOx emissions reduction, potential decreased formation of visibility impairing compounds, and ozone. NOx control efficiency of 80-90% achieved for drill rig engines. NOx emission rate of 0.7 g/hp-hr achieved for compressor engines greater than 100 hp.	Regeneration/disposal of catalysts can produce hazardous waste.	Not applicable to lean burn or 2-stroke engines.

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Natural Gas fired drill rig engines.	NOx emissions reduction, potential decreased formation of visibility impairing compounds, and ozone.	May require construction of infrastructure (pipelines and/or gas treatment equipment). May require onsite gas storage. May require additional engines to supplement needed torque.	Requires onsite processing of field gas.
Electrification of drill rig engines and/or compressors	Decreased emissions at the source. Transfers emissions to more efficiently controlled source (EGU).	Displaces emissions to EGU. Temporary increase in emissions with construction of power lines.	Depends on availability of power and transmission lines.
Improved engine technology (Tier 2, 3 or 4) for all mobile and non-road diesel engines.	Reduced NOx, PM, CO, and VOC emissions.		Dependent on availability of technology from engine manufacturers.
Reduced emission (a.k.a. "green") completions.	Reduction in VOC and CH4 emissions. Reduces or eliminate flaring and venting and associated emissions. Reduces or eliminates open pits and associated evaporative emissions. Increased recovery of gas to pipeline rather than atmosphere.	Temporary increase in truck traffic and associated emissions due to delivery of onsite equipment or due to construction of infrastructure.	Need adequate pressure and flow. Need onsite infrastructure (tanks/dehydrator). Availability of sales line. Green completion required where feasible per COGCC Rule 805(b)(3) and NSPS 40 CFR 63 OOOO.
Flaring of completion emissions	Reduces methane, VOC, and some HAP emissions. Converts CH4 to CO2.		
Minimize/eliminate venting and/or use closed loop process where possible during "blow downs".	Reduces methane, VOC, and some HAP emissions		

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Eliminate evaporation pits for drilling fluids.	Reduces VOC and GHG emissions. Reduces potential for soil and water contamination. Reduces odors.	May increase truck traffic and associated emissions. May increase pad size.	Requires tank and/or pipeline infrastructure.
Electrification of wellhead compression/ pumping.	Reduces local emissions of fossil fuel combustion and transfers to more easily controlled source.	Displaces emissions to EGU.	Depends on availability of power and transmission lines.
Wind (or other renewable) generated power for compressors.	Low or no emissions.	May require construction of infrastructure. Visual impacts. Potential wildlife impacts.	Depends on availability of power and transmission lines.
Compressor seals – replace wet with dry or use mechanical seal.	Reduce gas venting (VOC and GHG emissions).		May be costly or not mechanically feasible.
Compressor rod packing system – use monitoring and replacement system.	Reduce gas leaks (VOC and GHG emissions).		Requires establishing a monitoring system and doing replacements.
Control Strategies Utilizing Centralized Systems			
Centralization (or consolidation) of gas processing facilities (e.g., separation, dehydration, sweetening).	Reduces vehicle miles traveled (truck traffic) and associated emissions. Reduced VOC and GHG emissions from individual dehydration/ separator units.	Temporary increase in construction associated emissions. Higher potential for pipe leaks/groundwater impacts.	Requires pipeline infrastructure, infeasible for highly dispersed or exploratory wells.
Liquids Gathering systems (for condensate and produced water).	Reduces vehicle miles traveled and associated emissions. Reduced VOC and GHG emissions from tanks, truck loading/unloading, and multiple production facilities.	Temporary increase in construction associated emissions. Higher potential for pipe leaks/groundwater impacts.	Requires pipeline infrastructure . May be infeasible for highly dispersed or exploratory wells, difficult terrain, or patchy surface ownership.

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Water and/or fracturing liquids delivery system.	Reduced long term truck traffic and associated emissions.	Temporary increase in construction associated emissions. Higher potential for pipe leaks/groundwater impacts.	Requires pipeline infrastructure. May be infeasible for highly dispersed or exploratory wells, difficult terrain, or patchy surface ownership.
Control Strategies for Tanks, Separators, and Dehydrators			
Eliminate use of open top tanks.	Reduced VOC and GHG emissions.		
Capture and control of flashing emissions from all storage tanks and separation vessels with vapor recovery and/or thermal combustion units.	Reduces VOC and GHG emissions.	Pressure buildup on older tanks can lead to uncontrolled rupture.	
Capture and control of produced water, crude oil, and condensate tank emissions.	Reduces VOC and GHG emissions.		95% VOC control required by COGCC in some areas and by CDPHE statewide with applicability thresholds
Capture and control of dehydration equipment emissions with condensers, vapor recovery, and/or thermal combustion.	Reduces VOC, HAP, and GHG emissions.		90% VOC control required by COGCC in some areas and by CDPHE statewide with applicability thresholds
Use zero emissions dehydrators or use desiccants dehydrators.	Reduces VOC, HAP, and GHG emissions.	Requires desiccants (salt tablets and forms a brine solution that must be disposed of.	Can be as effective as Triethylene glycol (TEG) dehydration.
Control Strategies for Misc. Fugitive VOC Emissions			
Install plunger lift systems to reduce well blow downs.	Reduces VOC and GHG emissions.		Can be more efficient at fluids removal than other methods; must have adequate pressure.
Install and maintain low VOC emitting seals, valves, hatches on production equipment.	Reduces VOC and GHG emissions.		

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Initiate equipment leak detection and repair program (e.g., including use of FLIR infrared cameras, grab samples, organic vapor detection devices, and/or visual inspection).	Reduction in VOC and GHG emissions.		
Install or convert gas operated pneumatic devices to electric, solar, or instrument (or compressed) air driven devices/controllers.	Reduces VOC and GHG emissions.	Electric or compressed air driven operations can displace or increase combustion emissions.	
Use "low" or "no bleed" gas operated pneumatic devices/controllers.	Reduces VOC and GHG emissions.		Required by COGCC and by CDPHE in non-attainment areas.
Use closed loop system or thermal combustion for gas operated pneumatic pump emissions.	Reduces VOC and GHG emissions.		
Install or convert gas operated pneumatic pumps to electric, solar, or instrument (or compressed) air driven pumps.	Reduces VOC and GHG emissions.	Electric or compressed air driven operations can displace or increase combustion emissions.	
Install vapor recovery on truck loading/unloading operations at tanks.	Reduces emissions of VOC and GHG emissions.	Pressure build up on older tanks can lead to uncontrolled rupture.	
Control Strategies for Fugitive Dust and Vehicle Emissions			
Unpaved surface treatments including watering, chemical suppressants, and gravel.	20% - 80% control of fugitive dust (particulates) from vehicle traffic.	Potential impacts to water and vegetation from runoff of suppressants.	
Use remote telemetry and automation of wellhead equipment.	Reduces vehicle traffic and associated emissions.		Not possible in some terrain.
Speed limit restrictions on unpaved roads.	Reduction of fugitive dust emissions.		

Table VI-1 Best Management Practices and Air Emission Reduction Strategies for Oil and Gas Development

Emission Reduction Measure	Potential Environmental Benefits	Potential Environmental Liabilities	Feasibility
Reduce commuter vehicle trips through car pools, commuter vans or buses, innovative work schedules, or work camps.	Reduced combustion emissions, reduced fugitive dust emissions, reduced ozone formation, reduced impacts to visibility.		
Miscellaneous Control Strategies			
Use of ultra-low sulfur diesel (e.g., in engines, compressors, construction equipment).	Reduces emissions of particulates and sulfates.		Fuel not readily available in some areas.
Reduce unnecessary vehicle idling.	Reduced combustion emissions, reduced ozone formation, reduced impacts to visibility, reduced fuel consumption.		
Reduced pace of (phased) development.	Peak emissions of all pollutants reduced.	Emissions generated at a lower rate but for a longer period. LOP, duration of impacts is longer.	May not be economically viable or feasible if multiple mineral interests.

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Appendix H

Best Management Practices and Standard Operating Procedures

APPENDIX H
BEST MANAGEMENT PRACTICES AND STANDARD OPERATING PROCEDURES

INTRODUCTION

This appendix provides a list of common standard operating procedures (SOPs) and best management practices (BMPs) for the resource management plan (RMP). Standard operating procedures are established guidelines that are followed by the BLM in carrying out management activities. While the list of SOPs is complete, the list is not intended to be comprehensive; additional SOPs could be developed and implemented to support achieving resource objectives.

Best management practices are state-of-the-art mitigation measures applied on a site-specific basis to avoid, minimize, reduce, rectify, or compensate for adverse environmental or social impacts. They are applied to management actions to aid in achieving desired outcomes for safe, environmentally responsible resource development by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. Best management practices can also be proposed by project applicants for activities on BLM-administered lands (e.g., for gas drilling). Best management practices not incorporated into the permit application by the applicant may be considered and evaluated through the environmental review process and incorporated into the use authorization as conditions of approval or stipulations. Standard conditions of approval and stipulations are also provided in this appendix, as appropriate. Additional BMPs, conditions of approval, and stipulations could be developed to meet resource objectives based on local conditions and resource-specific concerns.

Master Leasing Plan

Best management practices and SOPs that will be analyzed at the development stage and may be applied consistent with environmental analysis and existing lease rights are denoted by "**(MLP)**" in this appendix.

AIR QUALITY (A)

Air quality standards are governed by the Clean Air Act of 1990 (as amended) (42 United States [US] Code Chapter 85). The US Environmental Protection Agency is charged with setting National Ambient Air Quality Standards (US Environmental Protection Agency 2009). At the state level, the Colorado Department of Public Health and Environment (2009) has established its standards.

Standard Operating Procedures

A-1: The BLM has the authority and responsibility under the Federal Land Policy and Management Act of 1976 to manage public lands in a manner that will protect the quality of air and atmospheric values. Therefore, the BLM may manage the pace, place, density, and intensity of leasing and development to meet air quality goals.

A-2: The proponent of a project will be required to minimize air pollutant emissions by complying with all applicable state and federal regulations (including application of best available control technology) and may be required to apply mitigation including but not limited to BMPs and other control technologies or strategies identified by the BLM or Colorado Department of Public Health and Environment in accordance with delegated regulatory authority.

Best Management Practices

A-3: The BLM may require proponents of oil and gas development projects to conduct preconstruction air monitoring within or adjacent to the proposed development area. The purpose of this monitoring is to establish baseline air quality conditions prior to development at the site. The requirement for monitoring will be determined by the BLM based on the absence of existing monitoring; existing air quality conditions; magnitude of potential air emissions from the project or activity; magnitude of existing emission sources in the area; proximity to a federally mandated Class I area, sensitive Class II area, or population center; location within a nonattainment or maintenance area; meteorological or geographic conditions; project duration; or issues identified during project scoping. The project proponent will be required to provide a minimum of one year of baseline ambient air monitoring data for any pollutant(s) of concern as determined by BLM. If BLM determines that baseline monitoring is required, this pre-analysis data must meet Colorado Department of Public Health and Environment air monitoring standards, be obtained from a site within 50 kilometers of the project boundary, and cover the year immediately prior to the proposed project submittal. The project proponent will be responsible for siting, installing, operating, and maintaining any required air monitoring.

A-4: The BLM may require proponents of oil and gas development projects to conduct air monitoring for the life of the oil and gas development project depending on the magnitude of potential air emissions from the project or

activity; proximity to a federally mandated Class I area, sensitive Class II area, or population center; location within a nonattainment or maintenance area; meteorological or geographic conditions; existing air quality conditions; magnitude of existing development in the area; or issues identified during project scoping. The purpose of this air monitoring is to determine impacts attributable to the project over time. The project proponent will be responsible for siting, installing, operating, and maintaining any required air monitoring.

A-5: The BLM may require a project proponent to conduct air quality modeling for any pollutant(s) of concern in the absence of sufficient data to ensure compliance with laws and regulations or to determine the effectiveness of mitigation options, unless the project proponent can demonstrate that the project will result in no net increase in emissions of the pollutant(s) of concern. The requirement for modeling will be based on existing air quality conditions; magnitude of potential air emissions from the project or activity; magnitude of existing emission sources in the area; proximity to a federally mandated Class I area, sensitive Class II area, an area expected to exceed a National Ambient Air Quality Standard or Prevention of Significant Deterioration increment, population center, location within a nonattainment or maintenance area; meteorological or geographic conditions; project duration; or issues identified during project scoping. The BLM, in cooperation with an interagency review team, will determine the parameters for the modeling analysis through the development of a project-specific modeling protocol.

A-6: The BLM may require proponents of oil and gas development projects to submit a contingency plan that provides for reduced operations in the event of an air quality episode. Specific operations and pollutants to be addressed in the contingency plan will be determined by the BLM on a case-by-case basis taking into account existing air quality and project-emitted pollutants.

A-7: Implement directional drilling techniques to reduce construction-related emissions (dust and vehicle and construction equipment emissions).

A-8: **(MLP)** Improve engine technology (Tier 2 or better) for diesel drill rig engines to reduce nitrogen oxides (NOx), particulate matter (PM), carbon monoxide (CO), and volatile organic compound (VOC) emissions.

A-9: Utilize natural gas-fired drill rig engines to reduce NOx emissions and reduce formation of visibility impairing compounds and ozone.

A-10: Improve engine technology (Tier 2 or better) for all mobile and non-road diesel engines to reduce NOx, PM, CO, and VOC emissions.

A-11: Utilize "Green completion" (also known as closed loop or flareless) technology to reduce VOC and methane emissions. This would also reduce or eliminate open pits and associated evaporative emissions.

A-12: Utilize "Green workovers" to reduce VOC and methane emissions. This would also reduce or eliminate open pits and associated evaporative emissions.

A-13: Eliminate evaporation pits for drilling fluids to reduce VOC and greenhouse gas emissions.

A-14: Electrification of wellhead compression/pumping to reduce local emissions of fossil fuel combustion and transfers to a more easily controlled source.

A-15: Utilize renewable power sources to provide energy for compressors, monitoring equipment, or pumps.

A-16: Replace wet compressor seals with dry seals or use mechanical seals to reduce gas venting (VOC and greenhouse gas emissions).

A-17: Centralize or consolidate gas processing facilities, liquids gathering systems (condensate and produced water), water and/or fracturing liquids delivery systems, to reduce VOC and greenhouse gas emissions from individual dehydration/separator units and to reduce vehicle emissions.

A-18: Eliminate the use of open top tanks to reduce VOC and greenhouse gas emissions.

A-19: Improve capture and control of flashing emissions from all storage tanks and separation vessels with vapor recovery and/or thermal combustion units.

A-20: Improve capture and control of produced water, crude oil, and condensate tank emissions to reduce VOC and greenhouse gas emissions.

A-21: Improve capture and control of dehydration equipment emissions with condensers, vapor recovery, and/or thermal combustion to reduce VOC, hazardous air pollutants, and greenhouse gas emissions.

A-22: Use zero-emissions dehydrators or use desiccants dehydrators to reduce VOC, hazardous air pollutants, and greenhouse gas emissions.

A-23: Reduce miscellaneous fugitive VOC emissions by:

a) Installing plunger lift systems to reduce well blow downs
b) Installing and maintaining low VOC-emitting seals, valves, and hatches on production equipment
c) Initiating equipment leak detection and repair program (e.g., including use of infrared cameras, grab samples, organic vapor detection devices, and/or visual inspection)

d) Installing or converting gas-operated pneumatic devices to electric, solar, or instrument (or compressed) air driven devices/controllers

e) Using "low" or "no bleed" gas-operated pneumatic devices/controllers

f) Using closed-loop system or thermal combustion for gas-operated pneumatic pump emissions

g) Installing or converting gas-operated pneumatic pumps to electric, solar, or instrument (or compressed) air driven pumps

h) Install vapor recovery on truck loading/unloading operations at tanks

A-24: Utilize dust suppression techniques on unpaved surfaces, including watering, chemical suppressants, and gravel.

A-25: Utilize remote telemetry and automation of wellhead equipment to reduce vehicle traffic and associated emissions.

A-26: Post and enforce speed limits to reduce airborne fugitive dust from vehicular traffic on unpaved roads.

A-27: Reduce commuter vehicle trips through car pools, commuter vans or buses, innovative work schedules, or work camps.

A-28: Use ultra-low sulfur diesel (e.g., in engines, compressors, and construction equipment) to reduce emissions of particulates and sulfates.

A-29: Utilize best available technology and methods to degasify coal seams prior to mining. Capture methane gas from coal seams to obtain a market income. Modify methane drainage over time to ensure capture is optimal.

A-30: Reduce unnecessary vehicle idling to reduce combustion emissions, ozone formation, visibility impacts, and fuel consumption.

A-31: Reduce the pace of (phased) development to reduce the peak emissions of all pollutants.

A-32: Restrict surface disturbing activities to periods when wind speeds are less than 25 miles per hour.

A-33: Keep soil and coal refuse moist while loading into dump trucks.

A-34: Keep soil and coal refuse loads below the freeboard of the truck.

A-35: Minimize drop heights when loaders dump soil and coal refuse into trucks.

A-36: Tighten gate seals on dump trucks.

A-37: Cover dump trucks before traveling on public roads.

A-38: Cover construction materials, stockpiled soils, and stockpiled coal refuse if they are a source of fugitive dust.

A-39: Train workers to handle construction materials and debris to reduce fugitive emissions.

A-40: Employ water injection or rotoclones on all overburden drills.

A-41: Use chutes, drapes, or other means to enclose conveyor transfer points, screens, and crushers; cover all conveyors.

A-42: Suppress and extinguish spoil and coal fires as soon as is reasonable and safely possible.

References

BLM (US Department of the Interior, Bureau of Land Management). 2009. Air Quality BMPs – Best Management Practices for Fluid Minerals. Internet Web site: www.blm.gov/bmp.

Colorado Department of Public Health and Environment. 2011. Air Quality Control Commission Regulations. Internet Web site: http://www.cdphe.state.co.us/regulations/airregs. Accessed on May 21, 2011.

US Environmental Protection Agency. 2009. National Ambient Air Quality Standards. Internet Web site: http://www.epa.gov/air/criteria.html. Accessed on October 14, 2009.

SOILS (S)

Standard Operating Procedures

S-1: All routes shall be built and maintained to BLM Manual 9113 (BLM 2011a) standards for road shape and drainage features or where appropriate BLM Manual 9115 (BLM 2012a) standards for primitive roads. For drainage crossings, culverts should be sized for the 50-year storm event with no static head and to pass a 100-year event without failing. Site-specific conditions may warrant BLM to require designs for larger events (e.g., 75- to 100-year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

S-2: When saturated soil conditions exist on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until

soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads, and locations.

S-3: Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed sodding or seeding.

S-4: Topsoil shall only be used for reclamation and shall not be used as fill or to bed or pad the pipe during backfilling.

S-5: Topsoil stripping will include all growth medium present at a site (e.g., following initial clearing of large trees), as indicated by color or texture. Stripping and storage depth may be specified during the onsite inspection. All stripped topsoil/growth medium will be salvaged, segregated, and stored in a manner that extends biological viability and protects it from loss. Topsoil and all growth medium will be replaced prior to seedbed preparation. No topsoil will be stripped or segregated when soils are saturated or frozen below the stripping depth.

S-6: A Winter Construction Plan will be submitted and approved by the BLM Authorized Officer before a Notice to Proceed will be authorized for construction activities in frozen soils.

S-7: Prohibit placing fill on a frozen foundation.

S-8: Slopes shall not be created so close to property lines as to endanger adjoining properties without adequate protection against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.

S-9: Surface-disturbing actions will be sensitive to natural resource protection. When surface disturbance in sensitive areas is unavoidable, it will be minimized to the greatest extent practicable, especially near drainage features and on soils mapped as being saline (see **Glossary**).

S-10: Surface-disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book) (BLM 2007).

S-11: As detailed in the site plan for surface water management, drainage from disturbed areas will be confined or directed to minimize erosion, particularly within 100 feet of all drainages. No runoff, including that from roads, will be allowed to flow into intermittent or perennial waterways without first passing through sediment-trapping mechanisms such as vegetation, anchored bales, or catchments.

S-12: Standard secondary containment shall hold 110 percent of the capacity the largest single tank it contains and be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours. Earthen berms will be compacted and of fine material that will prevent seepage of any spill to surrounding area.

S-13: All tanks with a capacity of ten barrels or greater shall be labeled or posted with the following information: A. Name of operator; B. Operator's emergency contact telephone number; C. Tank capacity; D. Tank contents; and E. National Fire Protection Association label. Smaller chemical storage shall be labeled with contents and National Fire Protection Association label.

S-14: Interim and final reclamation procedures shall utilize best available science and technology to protect natural resources from undue degradation.

S-15: Use BLM GJFO Trail Design Criteria along with BLM Handbooks H-9113-2 (BLM 2011b) and H-9115-2 (BLM 2012b) to evaluate road conditions for maintenance and mitigation.

Best Management Practices

S-16: To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes, and side cuts across steep slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

S-17: Consider site-specific soil and vegetative characteristics and reclamation potential in project design and layout.

S-18: Native vegetation and soils will be protected, and disturbance to them will be minimized.

S-19: Cleared vegetation smaller than 4 inches in diameter will be stockpiled, shredded, and salvaged with topsoil. Cleared vegetation larger than 4 inches in diameter will be scattered over disturbed areas to accomplish reclamation objectives. Excessive vegetation larger than 4 inches in diameter may be removed from BLM-administered land or shredded in place to be salvaged with topsoil. A wood-cutting permit may be purchased from BLM for material removed from the site.

S-20: Windrowing of Topsoil. [Use where appropriate based on topography – may not be appropriate for pads in steep areas or where pad size should be minimized.] Topsoil shall be windrowed around the perimeter of surface disturbance to create a berm that limits and redirects stormwater runoff and extends the viability of the topsoil per BLM Topsoil Best Management Practices (BLM 2009 PowerPoint presentation available upon request from the Grand Junction Field Office). Topsoil shall also be windrowed, segregated, and stored along disturbed surfaces or linear features for later spreading across the

disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.

S-21: Where applicable, entrances to construction locations will be covered by gravel "track pads" to prevent sediment and weed seeds from being tracked in and out of the site.

S-22: In areas where all weather access is necessary, the operator will construct and maintain all-weather routes per BLM Manual 9113 (BLM 2011a) standards. Graveling or other appropriate surfacing material will be required to reduce environmental resource damage and provide safe all-weather access.

S-23: Specialized low surface impact equipment (e.g., wide- or balloon-tired vehicles and all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

S-24: Standard secondary containment shall include a study corrugated metal wall to create a basin, be lined with a heavy impervious poly liner, and be protected with a gravel surface. Small plastic hoppers shall be installed at all loadout connections to catch drips and small leaks.

References

BLM (US Department of the Interior, Bureau of Land Management). 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development – The Gold Book. BLM/WO/ST-06/021+3071/REV 07. BLM, Denver, CO. 84 pp.

_____. 2009. Handbook H-9112-1—Bridges and Major Culverts Handbook. BLM, Washington, DC.

_____. 2011a. Manual 9113—Roads Manual. BLM, Washington, DC.

_____. 2011b. Handbook H-9113-2—Roads National Inventory and Condition Assessment Guidance and Instructions. BLM, Washington, DC.

_____. 2011c. Handbook H-9113-1—Road Design Handbook. BLM, Washington, DC.

_____. 2012a. Manual 9115—Primitive Roads Manual. BLM, Washington, DC.

_____. 2012b. Handbook H-9115-2—Primitive Roads Inventory and Condition Assessment Guidance and Instructions. BLM, Washington, DC.

_____. 2012c. Handbook H-9115-1—Primitive Roads Design. BLM, Washington, DC.

US Department of the Interior and US Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. BLM, Denver, CO. 84 pp.

WATER RESOURCES (H)

Standard Operating Procedures

H-1: The operator/permittee shall adhere to all requirements under the Federal Water Pollution Control Act, as amended through Public Law 107-303, November 27, 2002.

H-2: For surface-disturbing activities exceeding 1 acre, develop and implement Stormwater Pollution Prevention Plans to include site-specific design, systematic site monitoring, installation of run-on/off controls such as ditches or berms, and installation of adaptive BMPs to reduce potential erosion and sediment production and transport. Stormwater will be dispersed to stabilized areas to slow velocity, prevent erosion, and support infiltration into soils. Stormwater BMPs identified in the State-approved Storm Water Pollution Prevention Plan shall be in place prior to any earth-disturbing activity. Additional BMPs will be installed if determined necessary by the BLM. All measures shall be maintained in good, functional condition. All temporary BMPs shall be removed once site stabilization and reclamation efforts have been deemed successful by the BLM.

H-3: For actions requiring individual permits through the US Army Corps of Engineers, require a licensed Professional Engineer to approve and stamp the project design, construction, and reclamation plans to mitigate to the fullest extent practicable riparian resource damage associated with the proposed action.

H-4: Spoil material from clearing, grubbing, and channel excavation shall be disposed of in a manner that will not interfere with the function of the channel and in accordance with all local, state, and federal laws and regulations.

H-5: Surface-disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book) (BLM 2007).

H-6: Before activities take place, every pad, access road, or facility site will have an approved surface drainage plan for establishing positive management of surface water drainage and to reduce erosion and sediment transport. The drainage plan will include adaptive BMPs, monitoring, maintenance, and reporting. BMPs may include run-on/run-off controls such as surface pocking or revegetation, ditches or berms, basins, and other control methods to reduce erosion. Pre-construction drainage BMPs will be installed as appropriate.

H-7: The operator will reduce potential for contaminating water resources where spills of drilling fluids are most vulnerable. Areas of vulnerability will include a 0.25-mile buffer around the following: mapped alluvial, colluvial, and glacial deposits; springs and perennial water sources; Source Water Protection Areas; and Municipal Watersheds. In these areas, the operator will:

a) Utilize closed-loop drilling systems

b) Utilize gas-blocker additives during the cementing process

c) Contain flowback and stimulation fluids in tanks on well pad with secondary containment mats/blankets (or equivalent)

d) Install containment devices beneath and around crude oil, condensate, and produced water storage tanks

e) Collect baseline water quality data from downstream fresh water sources prior to drilling, mining, or storing potentially harmful substances. Parameters to be analyzed will be determined on a site-specific basis based on the nature of the proposed action. The operator will be responsible for submitting a list of parameters to BLM for approval prior to sampling.

f) Provide notification of potentially impacted Public Water Systems 15 miles downstream

g) Develop an emergency spill and response program to be reviewed and approved by BLM prior to surface-disturbing activities

H-8: Protection of drinking water supply sources within surface water supply areas (leased or made available for leasing) will concur with Colorado Oil and Gas Conservation Commission rule 317B and subsequent updates.

H-9: All routes shall be built and maintained to BLM Manual 9113 (BLM 2011a) standards for road shape and drainage features or where appropriate BLM Manual 9115 (BLM 2012a) standards for primitive roads. For drainage crossings, culverts should be sized for the 50-year storm event with no static head and to pass a 100-year event without failing. Site-specific conditions may warrant BLM to require designs for larger events (e.g., 75- to 100-year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

H-10: Erosion control features shall be maintained through periodic inspection and maintenance, including cleaning dips and cross-drains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.

H-11: Surface discharges shall comply with all regulatory requirements outlined in the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act), as amended through Public Law 107-303, November 27, 2002.

Additionally, surface discharges should be made to well-defined channels away from major erosional features. Furthermore, discharges should be limited to a volume less than or equal to the naturally occurring mean annual peak flow (which is roughly equivalent to a peak generated by a 2-year 24-hour storm event) and that can be handled by the natural channel under anticipated conditions.

H-12: To protect water quality, anti-backflow devices shall be utilized while drafting fresh water from streams, springs, reservoirs, and wells.

H-13: Range improvements will conform to BLM Manual H-1740-2 and subsequent updates (BLM 2008).

H-14: Discharge of surface and groundwater to surface drainages will comply with the Federal Water Pollution Control Act (as amended through Public Law 107-303, November 27, 2002), will be pre-approved by BLM, and will meet the following criteria:

a) Discharge operations will not negatively impact downstream beneficial uses

b) Discharge soil/water interactions will not facilitate the movement of water quality contaminants (e.g., salt, selenium [typically associated with Mancos shale-derived soils], sediment, and metals) above natural rates in surface and/or groundwater

c) Water discharge shall be limited to well-defined major channels to reduce potential of discharged water dissolving and transporting salts from the stream channel and to reduce concentration of salts in alluvium

d) Discharges will be limited to a volume that can be handled by the natural channel and less than or equal to the naturally occurring mean annual peak flow (roughly equivalent to a 2-year, 24-hour storm peak)

e) Discharge points will be located in stable channels or reservoirs away from any downstream head-cuts or other major erosional features (as determined by BLM). Outfall design may include discharge aprons and downstream stabilization of channel side slopes to prevent erosion and provide energy dissipation.

f) Subject to BLM approval, water quality thresholds for both surface and groundwater will be set and monitored during discharge operations in order that they will cease if thresholds were exceeded

g) Surface and groundwater quantity and quality will be monitored during all discharge operations. Monitoring locations will be subject to BLM approval. Monitoring activities will continue for at least two water years following cessation of discharge.

H-15: Hazardous substances will not be used in drilling, testing, or completion operations, or introduced at any time into the reserve or cuttings pit. Fluids will be confined to pits or tanks and all pits that may contain liquids will be lined to protect groundwater. Liners will be maintained in good condition, with no tears or holes, until they are removed when the reserve pit is closed.

H-16: Pits will be constructed so that water will not run into them. Fluid levels will be maintained below 2 feet of the lowest point of containment.

H-17: Interim and final reclamation procedures shall utilize best available science and technology to protect natural resources from undue degradation.

Best Management Practices

H-18: **(MLP)** To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes, and side cuts across steep slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

H-19: Provide energy dissipaters (e.g., rock piles and logs) where necessary at the downstream end of ditch relief culverts to reduce the erosion energy of the emerging water.

H-20: The face of cut or fill slopes shall not be subject to any concentrated flows of surface water, such as from natural drainage ways, graded swales, and downspouts.

H-21: Provide subsurface drainage where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

H-22: Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.

H-23: Avoid cutting the toe of cut slopes when grading roads or pulling ditches.

H-24: The operator will be responsible for keeping road inlet and outlet ditches, catch-basins, and culverts free of obstructions, particularly before and during spring runoff. Routine machine-cleaning of ditches shall be kept to a minimum during wet weather. Leave the disturbed area in a condition that provides drainage with no additional maintenance.

H-25: Remove all temporary stream crossings immediately after use, and cross-ditch the ends of routes or rights-of-way to mitigate erosion from disturbed areas.

H-26: When designing protective/mitigation measures, consider the changes that may occur in the watershed hydrology and sedimentation over the design life of the measure. Moreover, design and construct roads that are self-maintaining and consider using road surfacing, such as gravel when year-long access may be necessary.

H-27: Design and construct stream crossings at right angles, in straight sections of stable reaches to handle (at a minimum) the 100-year flood, and consider culvert and bridge designs that facilitate aquatic life passage.

H-28: Where the access road crosses small drainages and intermittent streams not requiring culverts, low water crossings shall be used. The road will dip to the original streambed elevation of the drainage and the crossing will prevent any blockage or restriction of the existing channel. Material moved from the banks of the crossing will be stockpiled nearby for later use in reclamation. Gravel, riprap, or concrete bottoms may be required in some situations.

H-29: For pipeline crossings of drainage ways: Pipelines crossing at the surface must be constructed high enough to remain above the highest possible flood flows at each crossing. Pipeline crossings below the surface must be buried deep enough to remain undisturbed by scour and fill processes typically associated with passage of peak flows. A hydraulic analysis should be completed during the pipeline design phase to avoid repeated maintenance of such crossings and eliminate costly repairs and potential environmental degradation associated with pipeline breaks at stream crossings (US Department of the Interior 2007). Utilize horizontal-directional boring techniques under perennial water bodies and/or wetland complexes when environmental circumstances allow.

H-30: Minimize crossing of streams (intermittent and perennial) and wetlands with vehicles and heavy machinery.

H-31: Time work in wetlands and watercourses to occur during low-flow season when conditions are driest. High flows occur during late summer early fall as a result of high-intensity convective thunderstorm events. Work in these areas must also be done in a manner consistent with BMPs for biological resources.

H-32: Exclude livestock and vehicles from spring sources and riparian areas where on-site evaluation and/or monitoring data indicate degrading conditions or potential to degrade spring or riparian function.

H-33: Avoid alteration of natural hydrologic function and condition in source areas for springs, seeps, fens, or other water developments. Relocate surface-disturbing activities away from these sensitive areas as site conditions warrant.

H-34: Limit consumptive water use from federal point source water rights on BLM-administered lands that are not sustainable and/or would jeopardize discharge to streams, springs, seeps, fens, or downstream senior water rights.

H-35: Manage and manipulate invasive stands of brush and weeds on forest, range, pasture land by mechanical, chemical, or biological means or by prescribed burning to improve watershed function and condition.

H-36: Limit surface disturbance near drainage features and minimize surface disturbance on steep slopes, fragile soils, saline soils, and Mancos shale-derived soils.

H-37: When activity in streams, wetlands, or riparian areas is unavoidable, the operator will first employ best available technology such as eco-Matting to reduce impacts. The operator would then restore modified or damaged areas as close as practicable to natural conditions to protect banks and wetlands and to re-establish riparian vegetation.

H-38: Maintain to the greatest extent practicable natural flow rates and chemical and physical properties of surface and groundwater during work within stream channels, floodplains, and/or riparian areas.

H-39: Oil and gas drilling operations within municipal watersheds, source water protection areas, or locally important fresh water aquifers should utilize methods and materials that will prevent degradation of the underlying groundwater. This may include practices such as surface and intermediate casing through potential fresh water zones, gas blocker additives to cement jobs, the use of green fracturing fluids, pitless drilling, and closed loop drilling. The use of "green" fracturing fluids will be documented in the form of Material Safety Data Sheets, which will be reviewed by the operator for compliance prior to use. Material Safety Data Sheets will remain on site at all times such chemicals are present.

H-40: Water from well production tests (water wells) or hydrostatic testing of pipelines shall be filtered of sediments prior to discharge into wetlands. Energy dissipating methods (e.g., straw-bails, waddles, and vegetative buffers) shall be in place prior to discharge of production water or water used for hydrostatic testing.

H-41: Within portions of municipal watersheds and source water protection areas available for fluid minerals development, the operator should develop and implement a watershed protection plan. This plan would include characterization and monitoring of baseline hydrologic/hydrogeologic conditions

such as, but not limited to, water quality, water quantity, groundwater flow patterns, connectivity between geologic formations, and communication between surface and groundwater. The operator should collaborate with all watershed stakeholders in development and implementation of the watershed protection plan.

H-42: Livestock feeding and salting shall be done in a manner to protect water quality. When possible, these developments or practices should be done at least 550 meters from riparian zones.

H-43: Maintain appropriate vegetative/riparian buffers around water features to slow runoff and trap sediments and protect water quality. A minimum buffer distance should be 200 meters or greater where site conditions warrant.

H-44: Surface-disturbing actions should not permanently impair floodplain function.

H-45: No operations using chemical processes (except for vegetation management) or other pollutants in their activities will be allowed within 200 feet of any water bodies. This includes staging equipment for refueling, as well as equipment maintenance.

H-46: Fill material will not be cast over hilltops or into drainages.

H-47: All pipeline welds within 100 feet of a perennial stream will be x-rayed to prevent leakage into the stream. Where pipelines cross streams that support federal or state-listed threatened or endangered species or BLM-listed sensitive species, additional safeguards such as double-walled pipe and remotely-actuated block or check valves on both sides of the stream may be used.

H-48: Baseline information of channel characteristics and riparian vegetation present must be documented before actions are permitted to disturb riparian areas and the stream channel.

H-49: Direct overflow from water developments back to the original natural drainage in a way that does not accelerate erosion or modify riparian habitats.

H-50: Avoid soil compaction or surface-disturbing activities in recharge areas that could impair natural function of springs and/or seeps.

References

US Department of the Interior and US Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. BLM, Denver, CO. 84 pp.

_____. 2008. Handbook H-1740-2—Integrated Vegetation Management Handbook. BLM, Washington, DC. Internet Web site: http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.59510.File.dat/H-1740-2.pdf. Accessed on May 18, 2012.

BLM (US Department of the Interior, Bureau of Land Management). 2009. Handbook H-9112-1—Bridges and Major Culverts Handbook. BLM, Washington, DC.

_____. 2011a. Manual 9113—Roads Manual. BLM, Washington, DC.

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_____. 2012a. Manual 9115—Primitive Roads Manual. BLM, Washington, DC.

US Department of the Interior. 2007. Hydraulic considerations for pipelines crossing stream channels. Technical Note 423. BLM/ST/ST-07/007+2880. BLM, National Science and Technology Center, Denver, CO. Internet Web site: http://www.blm.gov/nstc/library/techno2.htm. Accessed on May 18, 2012.

VEGETATION: RANGELAND (VR)

Guidance may come from various sources. See individual resources.

Standard Operating Procedures

VR-1: When making decisions about proposed projects/actions in known sagebrush habitat, existing plans and guidance will be used by interdisciplinary teams and considered in the decision-making process. This guidance includes the conservation actions/guidelines identified in the Western Association of Fish and Wildlife Agencies – Conservation Assessment of Greater Sage-Grouse and Sagebrush habitats (Connelly et al. 2004), and local working group population plans (Pinion Mesa population of Gunnison Sage-Grouse and Parachute-Piceance-Roan Population of Greater Sage-Grouse).

VR-2: Utilize the techniques and methods for vegetation treatments identified in the Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

Best Management Practices

VR-3: Close and rehabilitate roads quickly once they are no longer needed.

VR-4: Close selected routes to protect special status species and significant plant communities.

VR-5: Build roads to the appropriate standard, no higher than necessary for use and safety, and utilize primitive or two-track roads rather than newly constructed roads where feasible.

VR-6: Pipelines (and electrical power lines when possible) shall be placed within road corridors to minimize disturbance.

VR-7: Minimize disturbance to soil and native vegetation as much as possible.

VR-8: Stockpile topsoil for use in final reclamation. Topsoil shall be stored separately from other fill materials.

VR-9: When timely natural regeneration of the native plant community is not likely to occur, carefully select species that will not compete with or exclude botanical resources for revegetation efforts. Bare sites shall be seeded as soon as appropriate to prevent establishment of undesirable plant species.

VR-10: Ensure that seed used for revegetation as well as straw and hay bales used for erosion control are certified free of noxious weeds.

VR-11: Monitor revegetation sites to ensure successful establishment of desired species.

VR-12: Monitor the long-term success of revegetation efforts to ensure successful establishment of desired species and detect any noxious weed infestations. If revegetation is unsuccessful, continue efforts to establish desired species in disturbed sites.

VR-13: In Salt Desert Shrub communities with biological soil crusts, require reclamation that includes, but is not limited to, broadcasting bacterial inoculants; planting native grass, forbs, and shrubs seedlings; and installing exclosure fences.

References

BLM (US Department of the Interior, Bureau of Land Management). 2007. Final Vegetation Treatment Using Herbicides on BLM Lands in 17 Western States, Programmatic Environmental Impact Statement. BLM, Nevada State Office, Reno, NV. June 2007.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitat. Western Association of Fish and Wildlife Agencies. Unpublished report. Cheyenne, WY.

Elliott, B.A., S. Spackman Panjabi, B. Kurzel, B. Neely, R. Rondeau, and M. Ewing. 2009. Recommended Best Management Practices for Plants of Concern. Practices developed to reduce the impacts of oil and gas development activities to plants of concern. Unpublished report prepared by the Rare

Plant Conservation Initiative for the National Fish and Wildlife Foundation.

VEGETATION: RIPARIAN HABITAT AND WETLANDS (VRW)

Standard Operating Procedures

VRW-1: Utilize the techniques and methods for vegetation treatments identified in the Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

VRW-2: Utilize the techniques and processes for protection of floodplains as identified in Executive Order 11988, Floodplain Management.

VRW-3: Road crossings that will be used for longer than one year on perennial streams will be engineered and approved by the BLM Authorized Officer.

VRW-4: Do not locate roads or other facilities immediately parallel to streams. Where roads or facilities must cross streams, cross perpendicularly and immediately exit the buffer zone.

VRW-5: **(MLP)** Armor low-water stream crossings, place properly sized culverts, or span streams as appropriate to protect the riparian zone.

VRW-6: Maintain a minimum of six-inch stubble height at the end of October or winter grazing rotation on streambank (lotic) riparian. If stability of riparian system is dependent upon riparian grasses and forbs, maintain adequate stubble height to dissipate energy from spring runoff.

VRW-7: Maintain a minimum of four-inch stubble height at the end of October on wet meadows (lentic) systems.

VRW-8: Roads and trails (off-highway vehicle, horse, bicycle, and hiking) will avoid wetlands and if avoidance is not possible will be designed and constructed in accordance with Technical Reference 2E22A68-NPS, Off-highway Vehicle Management (Meyer 2002).

Best Management Practices

VRW-9: Minimize crossing of streams (intermittent and perennial) and wetlands with vehicles, heavy machinery, and facilities (e.g., pipelines).

VRW-10: Locate residue piles (e.g., sawdust, field chipping residue, and disposal ponds) away from drainages where runoff may wash residue into water bodies or wetlands.

VRW-11: Maintain appropriate vegetative/riparian buffers from ground disturbing or heavy use activities of at least 200 meters around riparian and wetland areas to protect and enhance the health and function of these systems.

VRW-12: Manage vegetation in riparian areas to provide wildlife habitat, adequate shade, sediment control, bank stability, and recruitment of wood into stream channels.

VRW-13: Locate project staging areas for refueling, maintenance equipment, materials, operating supplies, and boring in areas not designated as riparian and/or wetland areas.

VRW-14: Minimize surface disturbance within riparian areas and in wetlands.

VRW-15: Avoid late summer or early fall grazing in areas with declining willow populations. If grazing during these time periods must occur, allow for at least one full year of rest between grazing rotations.

VRW-16: Utilize riparian pastures as appropriate to manage grazing activities in riparian areas. Vary the timing, duration, and frequency of grazing in riparian pastures.

VRW-17: Create off-stream watering facilities when possible (e.g., stock tanks, stock ponds, and nose pumps). Place grazing stock tanks and other watering facilities at least 550 meters from riparian zones.

VRW-18: Actively move cattle to and from riparian pastures or pastures containing riparian habitat. Do not allow for cattle to drift between pastures (Leonard et al., p. 33-34).

VRW-19: Low-stress stockmanship methods should be used to encourage cattle grazing away from riparian areas. Cattle should be turned out away from riparian areas when enter new pastures or allotments. Cattle should also be guided to appropriate bedding areas.

VRW-20: Cull cattle from the herd that congregate or preferentially graze riparian areas for extended periods of time.

VRW-21: Place salt, hay, grain, molasses, and other supplements on uplands at least 550 meters away from riparian and wetland areas to encourage cattle to graze uplands and move out of riparian areas. Supplementation sites should be at least 1,100 meters (1,200 yards) apart.

VRW-22: Phase the size and timing of vegetation removal treatments within riparian areas. Phasing treatments sizes and timing to reduce soil and water temperatures, maintain bank and soil stability, and retain adequate wildlife habitat for cover and nesting.

VRW-23: Phase the size and timing of vegetation-removal treatments on uplands immediately adjacent to riparian areas, and buffer treatment boundaries away from riparian areas to reduce sedimentation and erosion in riparian zones.

Allow for at least one year between vegetation removal treatments in uplands and in riparian or wetland areas.

VRW-24: Relocate existing roads away from riparian areas as feasible during requested permitting or authorization of these routes. Reclaim abandoned portions of relocated roads back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas.

VRW-25: Fences should not be placed immediately on the edge of riparian areas. Place fences away from riparian or wetland areas to decrease impacts from trailing along fences.

References

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Leonard, S., G. Kinch, V. Elsbernd, M. Borman, and S. Swanson. 1997. Riparian Area Management Technical Reference 1737-14—Grazing Management for Riparian-Wetland Areas. BLM (US Department of the Interior, Bureau of Land Management) and US Department of Agriculture, Forest Service, Denver, CO. 80pp.

NOXIOUS AND INVASIVE WEED PREVENTION (WEED)

This list incorporates many suggested practices under various land uses and is designed to allow managers to choose those practices that are most applicable to and feasible for each situation. SOPs established by policy or law are identified as such.

Site-Disturbing Projects

Pre-project Planning

WEED-1: Environmental analyses for projects and maintenance programs should assess weed risks, analyze high-risk sites for potential weed establishment and spread, and identify prevention practices.

WEED-2: Determine site-specific restoration and monitoring needs and objectives at the onset of project planning.

WEED-3: Learn to recognize noxious and invasive weeds.

WEED-4: Inventory all proposed projects for weeds prior to ground-disturbing activities. If weeds are found, they should be treated (if the timing is appropriate) or removed (if seeds are present) to limit weed seed production and dispersal.

WEED-5: Be cognizant of moving equipment and machinery from weed-contaminated areas to uncontaminated areas.

WEED-6: Locate and use weed-free project staging areas. Avoid or minimize travel through weed-infested areas, or restrict travel to periods when spread of disseminules is least likely.

WEED-7: Identify sites where equipment can be cleaned. Remove mud, dirt, and plant parts from project equipment before moving it into a project area. Seeds and plant parts should be collected and incinerated when possible.

WEED-8: If certified weed-free gravel pits become available in the county, the use of certified weed-free gravel will be required wherever gravel is applied to BLM-administered lands (e.g., roads). **(SOP)**

WEED-9: Maintain stockpiled, non-infested material in a weed-free condition. Topsoil stockpiles should be promptly revegetated to maintain soil microbial health and reduce the potential for weeds.

WEED-10: Use competitive seed mixes when practical. A certified seed laboratory shall test each lot according to the Association of Official Seed Analysts standards (which include an all-state noxious weed list) and provide documentation of the seed inspection test. The seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. **(SOP)**

Project Implementation

WEED-11: Minimize soil disturbance. To the extent practicable, native vegetation should be retained in and around project activity areas, and soil disturbance should be kept to a minimum.

WEED-12: If a disturbed area must be left bare for a considerable length of time, cover the area with weed barrier until revegetation is possible.

Post-project Actions

WEED-13: Clean all equipment before leaving the project site when operating in weed-infested areas.

WEED-14: Inspect, remove, and properly dispose of weed seed and plant parts found on clothing and equipment. Proper disposal means bagging and incinerating seeds and plant parts or washing equipment in an approved containment area.

WEED-15: Revegetate disturbed soil where appropriate to optimize plant establishment for that specific site. Define revegetation objectives for each site. Revegetation may include topsoil replacement, planting, seeding, fertilization, and certified weed-free mulching as necessary. Use native material where appropriate and feasible.

WEED-16: Monitor sites where seed, hay, straw, or mulch has been applied. Eradicate weeds before they form seed. In contracted projects, contract specifications could require that the contractor control weeds for a specified length of time.

WEED-17: Inspect and document all ground-disturbing activities in noxious weed-infested areas for at least three growing seasons following project completion. For ongoing projects, continue to monitor until reasonably certain that no weeds are present. Plan for follow-up treatments based on inspection results.

Roads and Utilities

Pre-project Planning

WEED-18: Communicate with contractors, local weed districts, or weed management areas about projects and BMPs for prevention.

WEED-19: Remove mud, dirt, and plant parts from project equipment before moving it into a project area. Seeds and plant parts shall be collected and incinerated when practical, or washed off in an approved containment area. **(SOP)**

WEED-20: Avoid acquiring water for road dust abatement where access to water is through weed-infested sites.

WEED-21: Treat weeds on travel rights-of-way before seed formation so that construction equipment does not spread weed seed.

WEED-22: Schedule and coordinate blading or pulling of noxious weed-infested roadsides or ditches in consultation with the local weed specialist. When it is necessary to blade weed-infested roadsides or ditches, schedule the activity when disseminules are least likely to be viable.

Project Implementation

WEED-23: Retain shade to suppress weeds by minimizing the removal of trees and other roadside vegetation during construction, reconstruction, and maintenance, particularly on south aspects.

WEED-24: Do not blade or pull roadsides and ditches infested with noxious weeds unless doing so is required for public safety or protection of the roadway. If the ditch must be pulled, ensure that weeds remain onsite. Blade from least-infested to most-infested areas.

Post-project Actions

WEED-25: Power or high-pressure clean all equipment of all mud, dirt, and plant parts before leaving the project site if operating in areas infested with weeds. Seeds and plant parts shall be collected and incinerated when possible.

WEED-26: When seeding has been specified for construction and maintenance activities, seed all disturbed soil (except travel route) soon after work is completed.

WEED-27: Use a certified weed-free seed mix suitable for local environmental conditions that includes fast, early growing (preferably native) species to provide quick revegetation. Consider applying weed-free mulch with seeding. **(SOP)**

WEED-28: Periodically inspect roads and rights-of-way for noxious weeds. Train staff to recognize weeds and report locations to the local weed specialist. Follow-up with treatment when needed.

WEED-29: When reclaiming roads, treat weeds before roads are made impassable. Inspect and follow up based on initial inspection and documentation.

WEED-30: To avoid weed infestations, create and maintain healthy plant communities whenever possible, including utility rights-of-way, roadsides, scenic overlooks, trailheads, and campgrounds.

Recreation Activities

WEED-31: Inspect and clean mechanized trail vehicles of weeds and weed seeds.

WEED-32: Wash boots and socks before hiking into a new area. Inspect and clean packs, equipment, and bike tires.

WEED-33: Avoid hiking through weed infestations whenever possible.

WEED-34: Keep dogs and other pets free of weed seeds.

WEED-35: Avoid picking unidentified "wildflowers" and discarding them along trails or roadways.

WEED-36: Maintain trailheads, campgrounds, visitor centers, boat launches, picnic areas, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition. Consider high-use recreation areas as high-priority sites for weed eradication.

WEED-37: Sign trailheads and access points to educate visitors about noxious and invasive weeds and the consequences of their activities.

WEED-38: In areas susceptible to weed invasion, limit vehicles to designated, maintained travel routes. Inspect and document travel corridors for weeds, and treat as necessary.

WEED-39: Encourage use of pelletized feed for backcountry horsemen and hunters. Pelletized feed is unlikely to contain weed seed.

Watershed Management

WEED-40: Frequently and systematically inspect and document riparian areas and wetlands for noxious weed establishment and spread. Eradicate new infestations immediately because effective tools for riparian-area weed management are limited.

WEED-41: Promote dense growth of desirable vegetation in riparian areas (where appropriate) to minimize the availability of germination sites for weed seeds or propagules transported from upstream or upslope areas.

WEED-42: Address the risk of invasion by noxious weeds and other invasive species in watershed restoration projects and water quality management plans.

Grazing Management

WEED-43: Consider prevention practices and cooperative management of weeds in grazing allotments. Prevention practices may include:

a) Altering season of use
b) Minimizing ground disturbance
c) Excluding livestock grazing
d) Preventing weed seed transportation
e) Maintaining healthy vegetation
f) Revegetating areas
g) Inspecting areas
h) Educating permittees and users
i) Reporting

WEED-44: Provide certified weed-free supplemental feed in a designated area so that new weed infestations can be detected and treated immediately. Pelletized feed is unlikely to contain viable weed seed.

WEED-45: If livestock may contribute to seed spread in a weed-infested area, schedule livestock use prior to seed-set or after seed has fallen.

WEED-46: If livestock were transported from a weed-infested area, annually inspect and treat entry units for new weed infestations.

WEED-47: Consider closing infested pastures to livestock grazing when grazing will either continue to exacerbate the condition or contribute to weed seed spread. Designate those pastures as unsuitable range until weed infestations are controlled.

WEED-48: Manage the timing, intensity (utilization), duration, and frequency of livestock activities to maintain the competitive ability of desirable plants and retain litter cover. The objective is to prevent grazers from selectively removing desirable plant species and leaving undesirable species.

WEED-49: Exclude livestock grazing on newly seeded areas with fencing to ensure that desired vegetation is well established, usually after two to three growing seasons. **(SOP)**

WEED-50: Reduce ground disturbance, including damage to biological soil crusts. Consider changes in the timing, intensity, duration, or frequency of livestock use; location and changes in salt grounds; restoration or protection of watering sites; and restoration of yarding/loafing areas, corrals, and other areas of concentrated livestock use.

WEED-51: Inspect areas of concentrated livestock use, especially watering locations and other sensitive areas that may be particularly susceptible to invasion, for weed invasion. Inventory and manage new infestations.

WEED-52: Defer livestock grazing in burned areas until vegetation is successfully established, usually after two to three growing seasons. **(SOP)**

Outfitting / Recreation Pack and Saddle Stock Use

WEED-53: Allow only certified weed-free hay/feed on BLM-administered lands. **(SOP)**

WEED-54: Inspect, brush, and clean animals (especially hooves and legs) before entering BLM-administered land. Inspect and clean tack and equipment.

WEED-55: Regularly inspect trailheads and other staging areas for backcountry travel. Bedding in trailers and hay fed to pack and saddle animals may contain weed seed or propagules.

WEED-56: Tie or contain stock in ways that minimize soil disturbance and prevent loss of desirable native species.

WEED-57: Authorized trail sites for tying pack animals should be monitored several times per growing season to quickly identify and eradicate new weeds. Trampling and permanent damage to desired plants is likely. Tie-ups shall be located away from water and in shaded areas where the low light helps suppress weed growth.

WEED-58: Educate outfitters to look for and report new weed infestations.

Wildlife

WEED-59: Periodically inspect and document areas where wildlife concentrate in the winter and spring and cause excess soil disturbance.

WEED-60: Use weed-free materials for all wildlife management activities.

WEED-61: Incorporate weed prevention into all wildlife habitat improvement project designs.

Fire

Fire Management Plans

WEED-62: Prescribed fire plans should include pre-burn invasive weed inventory and risk assessment components, as well as post-burn mitigation components.

WEED-63: Integrate prescribed fire and other weed-management techniques to achieve best results. This may involve post-burn herbicide treatment or other practices that require careful timing.

WEED-64: Include weed prevention and follow-up monitoring in all prescribed fire activities. Include in burn plans the possibility for post-burn weed treatment.

Incident Planning

WEED-65: Increase weed awareness and weed prevention by providing training to new and/or seasonal fire staff on invasive weed identification and prevention.

WEED-66: For prescribed burns, inventory the project area and evaluate potential weed spread with regard to the fire prescription. Areas with moderate to high weed cover should be managed for at least two years prior to the prescribed burn to reduce the number of weed seeds in the soil. Continue weed management after the burn.

WEED-67: On wildfires or prescribed burns in or near weed-infested areas, ensure that a Qualified Resource Advisor familiar with weeds issues or who has

access to the relevant information is assigned. Include a discussion of weed-prevention operational practices in all fire briefings.

WEED-68: Use operational practices (e.g., avoiding weed infestations when locating fire lines) to reduce weed spread.

WEED-69: Identify and periodically inspect potential helispots, staging areas, incident command posts, and base camps and maintain a weed-free condition. Encourage network airports and helibases to do the same.

WEED-70: Develop a burned area integrated weed-management plan, including a monitoring component to detect and eradicate new weeds early.

Fire-fighting

WEED-71: Ensure that all equipment (including borrowed or rental equipment) is free of weed seed and propagules before entering incident location.

WEED-72: When possible, use fire-suppression tactics that reduce disturbances to soil and vegetation, especially when creating fire lines.

WEED-73: Use wet or scratch-lines where possible instead of fire breaks made with heavy equipment.

WEED-74: Given the choice of strategies, avoid ignition and burning in areas at high risk for weed establishment or spread.

WEED-75: Hose off vehicles on site if they have traveled through infested areas.

WEED-76: Inspect clothing for weed seeds if foot travel occurred in infested areas.

WEED-77: When possible, establish incident bases, fire operations staging areas, and aircraft landing zones in areas that have been inspected and are verified to be free of invasive weeds.

WEED-78: Cover weed-infested cargo areas and net-loading areas with tarps if weeds exist and cannot be removed or avoided.

WEED-79: Flag high-risk weed infestations in areas of concentrated activity, and show weeds on facility maps.

WEED-80: If fire operations involve travel or work in weed-infested areas, a power wash station should be staged at or near the incident base and helibase. Wash all vehicles and equipment upon arrival from and departure to each incident. This includes fuel trucks and aircraft service vehicles.

WEED-81: Identify areas affected by suppression activities that may be vulnerable to weed invasion, and utilize suppression funds to repair.

Post-fire Rehabilitation

WEED-82: Have a weed specialist review burned area rehabilitation reports to ensure that proper and effective weed prevention and management is addressed.

WEED-83: Thoroughly clean the undercarriage and tires of vehicles and heavy equipment before entering a burned area.

WEED-84: Treat weeds in burned areas. Weeds can recover as quickly as two weeks following a fire.

WEED-85: Schedule inventories one month and one year post-fire to identify and treat infestations. Eradicate or contain newly emerging infestations.

WEED-86: Restrict travel to established roads to avoid compacting soil that could hinder the recovery of desired plants.

WEED-87: Determine soon after a fire whether revegetation is necessary to speed recovery of a native plant community, or whether desirable plants in the burned area will recover naturally. Consider the severity of the burn and the proportion of weeds to desirable plants on the land before it burned. In general, more severe burns and higher pre-burn weed populations increase the necessity of revegetation. Use a certified weed-free seed mix. **(SOP)**

WEED-88: Inspect and document weed infestations on fire access roads, equipment cleaning sites, and staging areas. Control infestations to prevent spread within burned areas.

WEED-89: Seed and straw mulch to be used for burn rehabilitation (e.g., for wattles, straw bales, and dams) shall be certified weed-free. **(SOP)**

WEED-90: Replace soil and vegetation right side up (i.e., any uprooted plants still in a clump of soil are replaced upward) when rehabilitating fire line.

FISH AND WILDLIFE MANAGEMENT AND SPECIAL STATUS SPECIES (FWS)

Standard Operating Procedures

FWS-1: To minimize the spread of aquatic nuisance species, including, but not limited to, zebra mussels, New Zealand mud snails, quagga mussels, rusty crayfish, and whirling disease vectors, personnel working in water will:

a) Before leaving a particular water, inspect and clean gear used in the water, including watercraft (e.g., boats, canoes, kayaks, and rafts), trailers, oars, nets, waders, wading boots, sandals, and life jackets.

Remove vegetation, mud, grit, algae, and the like, and drain water from boats and other gear.

b) Prior to entering another water body, clean gear by spraying with 409 or a similar soap or bleach solution, and let equipment dry in the hot sun for several hours, or use hot tap water that drains onto the ground, not down a drain or into another water course.

FWS-2: Constructed fences will comply with applicable wildlife fence standards, such as those described in BLM Handbook H-1741-1, Fencing (BLM 1989). Current standards for fencing cattle out in deer and elk range is a 4-strand fence 40 inches high with a spacing of wires from ground to top of 60 inches (smooth bottom wire), 6 inches (second wire barbed), 6 inches (third wire barbed), and 12 inches (top wire preferably smooth, but it may need to be barbed in areas of intense cattle use).

FWS-3: The GJFO will consult agency species management plans and other conservation plans as appropriate to guide management and devise mitigation measures when needed. Examples of these plans include, but are not limited to, the Colorado Wildlife Action Plan; Colorado Sagebrush: A Conservation Assessment and Strategy; National, Rangewide, statewide, and local working group conservation plans for Gunnison and Greater Sage-Grouse; Sharing the land with pinyon-juniper birds; Birds in a sagebrush sea: managing sagebrush habitats for bird communities; North American Landbird Conservation Plan; North American Waterbird conservation Plan; National and Colorado Partners in Flight Bird Conservation Plans; and Colorado Gunnison's and White-tailed Prairie Dog Conservation Strategy and Recovery plans for federally listed species.

FWS-4: Lessees will be notified that a lease parcel contains potential habitat for threatened, endangered, proposed, candidate, and BLM sensitive plants, fish, and wildlife.

FWS-5: Existing plant location records will be consulted and site inventories will be conducted to identify suitable habitat[1] for these plants. Surveys for occupied suitable habitat will be performed prior to any ground disturbance. Surveys will take place when the plants can be positively identified during the appropriate flowering periods. Surveys will be performed by qualified field botanists/biologists who will provide documentation of their qualifications, experience, and knowledge of the species prior to starting work.

FWS-6: In complex linear or split-estate actions, early coordination with private landowners will facilitate the process the BLM must complete prior to authorizing the action. To comply with the Endangered Species Act, the BLM must consider the effects to listed species on private land that result from a federal action, such as linear rights-of-way or constructing a well pad on private land to drill to federal lease. Before an applicant can contract a biological survey,

the private surface owner must allow the biological consultant access. Projects can be authorized without completing biological surveys on private lands, but this may lead to lengthy delays while the BLM completes consultation.

FWS-7: For Colorado hookless cactus and other threatened, endangered, proposed, and candidate species, surface-disturbing activities will be avoided within 200 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible.

FWS-8: For BLM sensitive species, surface-disturbing activities will be avoided within 100 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible.

FWS-9: Where development is allowed within 100 meters of occupied habitat for threatened, endangered, proposed, and candidate species or BLM sensitive species, unauthorized disturbance of plant habitat will be avoided by on-site guidance from a biologist, and by fencing the perimeter of the disturbed area, or such other method as agreed to by US Fish and Wildlife Service. In such instances, a monitoring plan approved by US Fish and Wildlife Service will be implemented for the duration of the project to assess impacts to the plant population or seed bank. If detrimental effects are detected through monitoring, corrective action will be taken through adaptive management.

FWS-10: Surface disturbance closer than 20 meters to a listed plant will be considered an adverse effect. Mitigating measures within this narrow buffer are important and helpful to individual plants, but not all adverse effects can be fully mitigated within this distance. Some adverse effects due to dust, dust suppression, loss of pollinator habitat, and toxic spills will likely remain. There are two possible exceptions to this rule: 1) the new disturbance is no closer to a listed plant than preexisting disturbance, and no new or increased impacts to the listed plant are expected; or 2) the listed plant is screened from the proposed disturbance (e.g., tall, thick vegetation, or a berm acts as a screen or effective barrier to fugitive dust and other potential impacts).

[1] Occupied habitat includes areas historically or currently supporting plants and/or soils containing a viable seed bank. Suitable habitat is defined as an area that contains or exhibits the specific components or constituents necessary for plant persistence, as determined by existing maps plus field inspection and/or surveys. It may or may not be occupied by plants or a seed bank. Potential habitat is defined as an area that satisfies the broad criteria of the species' habitat description. It is usually determined by preliminary in-house assessment.

[2] An avoidance buffer helps to minimize dust transport, weed invasion, unauthorized vehicular activities, and chemical and produced-water spills, and also helps protect pollinator habitat.

FWS-11: Transplantation of potentially affected plants will not be used as a rationale to defend a "not likely to adversely affect" or a "no effect" determination for listed plant species.

FWS-12: For drilling pads and other installations, surveys will extend beyond the edge of disturbance by at least 200 meters for threatened, endangered, proposed, and candidate species. For linear features such as roads and pipelines, surveys will extend at least 100 meters beyond the edge of the proposed ground disturbance along each side of the right-of-way. If special status plants are found within the survey area, the contractor will determine the complete extent of the occurrence and the approximate number of individuals within it.

FWS-13: Documentation will include individual plant locations and suitable habitat distributions. Prior to conducting plant surveys, the operator will provide the BLM maps (as hard copy and Geographic Information System files) of all proposed areas of disturbance. Maps will include existing and proposed roads, pipelines, well pads, pits, parking lots, and all other work areas. Post-construction or as-built maps will also be submitted to account for any deviations from pre-project maps. Specific polygons where rare plant surveys have been conducted will be included, along with the results of those surveys (positive or negative). The locations of any monitoring plots established to measure the status of rare plants and habitat in the vicinity of project activities will be displayed.

FWS-14: Protect pollinator species for endangered or threatened species by incorporating the SOPs found in the Final Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

FWS-15: Conduct development on existing or previously disturbed surface locations to reduce impacts on undisturbed areas and minimize impact on wildlife habitat.

FWS-16: To protect nesting raptors, raptor surveys shall be conducted prior to activities that could impact nesting activities. Based on the survey results, the following mitigation measures may be applied:

a) Protect nest sites from human disturbances by implementing Colorado Parks and Wildlife and US Fish and Wildlife Service recommended buffers around known nest sites.

b) Provide perching and nesting structures as mitigation where disturbances are impacting raptors.

c) Apply guidance from Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006 (Avian Power Line Interaction Committee 2006) and Avian Protection Plan Guidelines (Avian Power Line Interaction Committee and US Fish and Wildlife

Service 2005) or most current guidance for new power line construction (including upgrades and reconstruction) to prevent electrocution of raptors.

FWS-17: **(MLP)** Implement drilling technology improvements, such as horizontal drilling, to maximize resource recovery and minimize environmental impacts.

FWS-18: **(MLP)** Install pipelines adjacent to roads wherever possible.

FWS-19: **(MLP)** Strategically apply fugitive dust-control measures to reduce coating of vegetation and deposition in water sources, including enforcing established speed limits on BLM-administered and private roads.

FWS-20: Ensure that ponds containing mining or other wastes that are potentially hazardous to fish and wildlife are enclosed to exclude birds, bats, and other wildlife attracted to the water.

FWS-21: When placing culverts on streams containing fish or amphibians, design culverts to maintain or improve aquatic organism passage.

FWS-22: In wildland fire situations work with Fire Resource Advisors during suppression efforts in the GJFO when considering dipping water from ponds, reservoirs, and lakes throughout the Grand Valley. Select reservoirs, ponds, and lakes harbor native and/or endangered fishes and should be avoided if at all possible. If these waters must be used, screen water intakes with 0.25-inch mesh to avoid fish entrainment.

FWS-23: When obtaining water from any live stream or river, the following actions should be taken:

a) The best method to avoid fish entrainment is to pump from off-channel locations (e.g., ponds, lakes, and diversion ditches) not directly connected to the mainstem rivers even during high spring flows;

b) If the pump head must be located in the river channel where larval fish are known to occur:

    1. Do not situate the pump in a low-flow or no-flow area, as these habitats tend to concentrate larval or young-of-year fishes. Instead, place the pump into fast moving/riffle habitat.

    2. Limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (June 1 to August 15).

3. Avoid pumping, to the greatest extent possible, during the pre-dawn hours (two hours prior to sunrise), as larval fish drift studies indicate that this is a period of greatest daily activity.

c) Screen all pump intakes with 0.25-inch or finer mesh material.

d) Report any fish impinged on any intake screens to US Fish and Wildlife Service (970-243-2778) or Colorado Parks and Wildlife:

Northwest Region
711 Independent Avenue, Grand Junction, CO 81505
Phone: (970) 255-6100

Southwest Region
415 Turner Drive, Durango, CO 81303
Phone: (970) 375-6700

Best Management Practices

FWS-24: Design lighting required for recreation, oil and gas, and other programs to be directing downward using shielded lights and only the minimum illumination required. Utilize green lights in areas that require illumination at night and prevent skyward projection of lighting that may disorient night migrating birds. Sodium vapor lights, widely used for streetlights and security lighting, should not be used because they have been shown to attract night-flying birds.

FWS-25: Limit flaring operations when well pads are within 100 meters of occupied threatened, endangered, proposed, candidate, and sensitive species habitat.

FWS-26: Control noxious weeds using integrated techniques. Limit chemical control in areas with rare plant species to avoid damage to non-target species. Mechanical or chemical control in and near rare plant habitat shall only be implemented by personnel familiar with the rare plants.

FWS-27: Prohibit collection of rare plants or plant parts, except as permitted by the BLM Authorized Officer for scientific research.

FWS-28: The use of deicers and dust suppressants within 100 meters of road-side occurrences of special status plant species will require prior approval from the BLM.

FWS-29: Herbicide application shall be kept at least 200 meters from known plant populations, except in instances where weed populations threaten habitat integrity or plant populations. Great care shall be used to avoid pesticide drift in those cases.

FWS-30: Use temporary water delivery lines laid on the surface of the ground to reduce truck traffic.

FWS-31: Retain existing snags for wildlife use in places where they will not create a human hazard.

FWS-32: Where linear disturbance is proposed, edges of vegetation shall be feathered to avoid long linear edges of habitat and allow for greater habitat complexity for wildlife.

FWS-33: Protect existing temporary pools to providing breeding and hibernating habitat for amphibians.

FWS-34: Avoid fragmentation of wildlife habitat, especially in wildlife migration and movement corridors.

FWS-35: **(MLP)** Encourage the use of a variety of BMPs, as defined by the most recent version of "Best Management Practices for Oil and Gas Development on Public Lands," http://www.blm.gov/bmp/.

FWS-36: Identify in-channel features (e.g., culverts and water-diversion structures) that block aquatic organism movement and/or impair stream connectivity and replace, modify, or remove these impediments as they are identified and as opportunities allow. Consider and address aquatic organism passage and appropriate life-stage requirements when designing new or modifying existing stream crossings.

FWS-37: Where construction of in-channel barriers will benefit aquatic species by limiting access from competitive species and/or disease vectors, consider barriers as a management tool on a site-specific basis.

FWS-38: In critical and sever winter range for deer and elk, avoid recurring transportation activity within two hours before and after sunrise and sunset to avoid disturbing wintering wildlife between December 1 and May 1 (excluding emergencies).

FWS-39: For intensive activities within winter range for wildlife, use carpooling for activities like crew rotations and shift changes.

FWS-40: For intensive activities within winter range for wildlife, monitor and enforce speed limits.

FWS-41: For intensive activities within winter range for wildlife, prohibit pets and possession of fire arms on the site by employees or contractors.

FWS-42: Implement closed-loop drilling systems on all active rigs, using only a small cuttings mixing area on each location.

FWS-43: Optimize completion operations to minimize impact. Techniques include:

a) Simultaneous drilling and completion operations minimize the operating time on the well pad, where space and safety restrictions permit the use of this technique.

b) Remote completion operations using nearby existing well pads minimize overall surface disturbance.

FWS-44: Reuse water whenever possible for drilling and completion activities. Recycle all water used in completion activities to meet water needs for completion of subsequent wells on location; this will reduce fresh water consumption and reduce truck traffic.

FWS-45: Expand the water-distribution system to efficiently move water in pipelines, thereby reducing truck traffic for drilling and completion activities.

FWS-46: Reduce visits to well sites through remote monitoring (i.e., supervisory control and data acquisition) and the use of multi-function contractors.

FWS-47: **(MLP)** Use solar panels as an alternative energy source for on location production equipment to limit trips to the location for production maintenance.

FWS-48: Use dual-fuel natural gas/diesel systems, thereby reducing diesel delivery to the well site by as much as 70 percent.

FWS-49: **(MLP)** Use existing roads instead of new construction segments wherever feasible.

FWS-50: **(MLP)** Seed all access roads and facilities other than well pads in a timely manner after construction has been completed. Seed all topsoil from pad construction.

FWS-51: Noise-reduction techniques and designs will be used to reduce noise from compressors or other motorized equipment.

FWS-52: Where new roads are constructed, seasonal restrictions on public vehicular access will be evaluated where there are wildlife conflict or road damage/maintenance issues.

FWS-53: Install multiple pipelines in a single trench to minimize disturbance.

FWS-54: Install trench plugs (sloped to allow wildlife or livestock to exit the trench should they enter) at known wildlife or livestock trails to allow safe crossing on long spans of open trench.

FWS-55: Coordinate with Colorado Parks and Wildlife about BLM projects and BLM-authorized projects that are proposed within 0.5-mile of a small-

capacity water development and 2.0 miles of a large-capacity wildlife water development. Projects determined to have a detrimental effect on wildlife using wildlife water developments will be avoided or rerouted if possible.

FWS-56: Coordinate with Colorado Parks and Wildlife about migratory bird inventories when migratory bird inventories are proposed by BLM or required of third parties.

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BLM (US Department of the Interior, Bureau of Land Management) and US Fish and Wildlife Service. 2008. Recommendations for Avoiding Adverse Effects on Threatened, Endangered, Proposed, Candidate, and BLM Sensitive Plants on BLM Lease Lands in Colorado. Draft. July 25, 2008.

US Department of Agriculture, Forest Service. 2007. Designing for Aquatic Organism Passage at Road-Stream Crossings.

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WILDLIFE DAMAGE MANAGEMENT (WDM)

Standard Operating Procedures

WDM-1: Control activities conducted by the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services will be coordinated with the GJFO on an annual basis, including review of authorized control areas and annual submittal of control activities on BLM-administered lands.

WDM-2: US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services will notify the GJFO before any damage control activity is implemented within the restricted area(s), and exceptions will be approved on a case-by-case basis.

WDM-3: All US Environmental Protection Agency use restrictions and requirements for toxicants are to be followed where control devices are employed on BLM-administered lands. The GJFO must be notified before any toxicants are deployed, and a map of the treatment area must be provided. Adequate signage must be provided and maintained.

WDM-4: All aerial control activities in the wild horse area must be conducted in compliance with all applicable Colorado State Statutes, the provisions of the 1971 Wild and Free-Roaming Horses and Burros Act, as amended, and its associated regulations (43 Code of Federal Regulations [CFR] 4700). No harassment of wild horses and burros is permitted under these provisions; maliciously or negligently causing the injury of a wild horse or burro is also expressly prohibited.

WDM-5: Any aerial control activities in the wild horse area will require notification of and prior approval from the GJFO.

WDM-6: During the foaling season (March 1 to June 30), a flyover survey to determine whether wild horses are present will be conducted prior to commencing any wildlife damage management activities. This survey will be conducted at a minimum of 500 feet above ground level. If wild horses are determined to be present, flyover surveys will be adjusted as needed to prevent any disturbance or harassment of the animals present, and wildlife damage activities that would result in disturbance or harassment of these animals will not occur.

WDM-7: All persons involved with wildlife damage management activities shall be briefed on the regulations and penalties relating to harassment of wild horses prior to commencing animal-control operations.

WDM-8: The GJFO will identify through the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services annual work plan process areas of BLM-administered lands considered special resource use areas on which control activities be avoided except as requested by Colorado Parks and Wildlife, or other protective restrictions may apply. Examples may include special status species habitats (e.g., sage-grouse leks and nesting areas and bald eagle nests).

WDM-9: Interim Management Policies (BLM 2012) must be adhered to at all times in Wilderness Study Areas (WSAs), and the GJFO must be notified before any wildlife damage management activity is implemented. Wildlife damage management activities in WSAs must be directed at the offending animal. Aerial

hunting may be allowed in WSAs as long as those actions do not impair wilderness characteristics.

References

BLM (US Department of the Interior, Bureau of Land Management). 2012. Manual 6330—Management of Wilderness Study Areas. Rel. 6-134. BLM, Washington, DC. July 13, 2012.

WILD HORSES (WH)

Standard Operating Procedures

WH-1: Wild Horse and/or Burro Gathers SOPs.

WH-2: Wild Horse Fertility Control Treatment SOPs.

WH-3: All new or reconstructed exclosures within herd management areas will follow the horse fencing standards.

WH-4: Any new facilities shall be a minimum of 0.25-mile from water sources to avoid hindrance of use by wild horses.

WH-5: Any new facilities shall be designed to avoid injury to horses or fenced to prevent wild horse access.

WH-6: Require rebar to be welded between the rails of cattle guards if the cattle guard or similar device is to be installed in or near herd management areas to decrease the risk of wild horse and/or burro entrapment.

WH-7: All new or reconstructed fences on the perimeter of the wild horse range will be comprised of materials (e.g., wooden poles and smooth wire) that would reduce injury to wild horses.

WH-8: Seed mixes for projects within the wild horse range shall benefit wild horses (emphasis on palatable grasses) while meeting land health standards.

WH-9: If a project involves heavy or sustained traffic, require road signs for safety and protection of wild horses.

WH-10: Above-ground facilities requiring painting will be designed to blend in with local environment.

WH-11: Disturbed areas will be contoured to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with the surface disturbance.

WH-12: Still or motion picture photography for personal use is permitted; however, photography for commercial purposes may require a permit. Contact the local BLM office.

WH-13: Feed weed-free certified hay or pellet feed (refer to www.weedfreefeed.com for more information).

WH-14: For guide/outfitters and recreationists: The permittee shall inform all staff and clients that wild horses protected by federal law and will prevent harassment of wild horses from permitted activities. Prohibited acts include, but are not limited to, maliciously injuring or harassing a wild horse, chasing wild horses, removing or attempting to remove a wild horse from BLM-administered lands, destroying a wild horse, selling or attempting to sell a wild horse, and commercially exploiting a wild horse. Crimes are punishable by fine and/or imprisonment. Examples of violations include harassment by all-terrain vehicle, injury or death by a bullet or arrow, and illegal capture.

Best Management Practices

WH-15: Adequate water for livestock and dogs may not be available for recreationists. Springs and other water sources identified on maps may be dry at any time.

WH-16: Bring a sufficient quantity of drinking water for riding stock (15 gallons or more per day, per animal)

WH-17: Secure riding stock adequately (use portable panels or corrals).

WH-18: Ensure that domestic riding stocks are current with annual vaccinations.

WH-19: Do not bring sick or diseased riding animals into herd management areas. Wild horses on the range are not vaccinated against any diseases.

WH-20: Do not drive across, camp on, or stake riding stock out to graze on riparian areas.

WH-21: Water riding stock only at springs or streams with stable banks and dry soils.

WH-22: Keep riding stock secured away from dispersed camp sites and spread manure before leaving.

WH-23: Explore the area prior to hauling in a trailer to assess access. Pulling horse or other trailers off of State- or County-designated roads shall only be done with prior operator knowledge of the road. Many roads are narrow, rough, steep, or impassable. Turning around may be difficult or impossible, especially with a trailer.

WH-24: In the event that a foaling mare or newborn foal is encountered, every effort shall be made to stay away from that location. Do not attempt to help the mare or foal.

WH-25: Stay at least 100 feet away from wild horses.

WH-26: Try not to place yourself between members of a wild horse band or between adjoining bands.

WH-27: Observe wild horses quietly so wild behavior is not disrupted.

WH-28: If you are approached by wild horses while riding horseback, stay calm, maintain control of your animal, and leave the area as soon as possible. Ride with others whenever possible.

WH-29: Mares, especially if in season, may attract wild stud horses to you or your camp. Keep domestic horses secure at all times. Ride with others who are experienced and skilled at resolving unwanted wild horse or burro interactions.

WH-30: Do not feed or try to attract animals towards you.

WH-31: Keep dogs under control so they do not disturb or chase wild horses.

WH-32: Report sick or injured animals, or violations, to the BLM.

WH-33: Please do not attempt to assist or handle sick or injured animals.

CULTURAL RESOURCES (CR)

Standard Operating Procedures

CR-1: Evaluation of all BLM activities and BLM-authorized activities shall be made in compliance with BLM Manual 8100, The Foundations for Managing Cultural Resources (BLM 2004a) and subsequent 8100 series (BLM 2004b, 2004c, 2004d, 2004e, 2004f, 2004g, and 2004h); Handbook of Guidelines and Procedures for Inventory, Evaluation, and Mitigation of Cultural Resources (BLM 1998); and the current State Protocol Agreement between the Colorado BLM and the Colorado State Historic Preservation Office.

CR-2: In complex linear or split-estate actions, early coordination with private landowners will facilitate the process the BLM must complete prior to authorizing the action. To comply with the National Historic Preservation Act, the BLM must consider the effects to cultural resources on private land that result from a federal action, such as linear rights-of-way or constructing a well pad on private land to drill to federal lease. Before an applicant can contract a cultural survey, the private surface owner must allow the cultural consultant access. Projects can be authorized without completing cultural surveys on private lands, but this may lead to lengthy delays while the BLM completes consultation.

CR-3: The holder of a BLM authorization to carry out land use activities on federal lands, including all leases and permits, must notify the BLM, by telephone

and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony (43 CFR 10.4[g]). Activities must stop in the immediate vicinity of the discovery. The discovery must be protected from the authorized activity for a period of 30 days or unless otherwise notified by the BLM (43 CFR 10.4[c] and [d]).

CR-4: The National Historic Preservation Act, as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during project implementation, work in that area must stop and the BLM Authorized Officer must be notified immediately. Within five working days, the BLM Authorized Officer will inform the proponent as to:

a) Whether the materials appear eligible for the National Register of Historic Places;

b) The mitigation measures the proponent will likely have to undertake before the site could be used (assuming in situ preservation is not practicable) (36 CFR 800.13); and

c) A timeframe for the BLM Authorized Officer to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Office, that the BLM Authorized Officer's findings were correct and mitigation was appropriate.

CR-5: A standard Education/Discovery stipulation for cultural resource protection shall be attached to the land use authorization. The operator or its contractor is responsible for informing all persons who are associated with the project operations that federal laws protect cultural resources and they will be subject to prosecution for disturbing or destroying any historic or archaeological sites, or collecting any cultural objects, prehistoric or historic from federal lands.

CR-6: Strict adherence to the confidentiality of information concerning the nature and location of archeological resources will be required of any company issued a land use authorization and all of their subcontractors (Archaeological Resource Protection Act, 16 US Code 470hh).

CR-7: When a National Environmental Policy Act of 1969 (NEPA) document specifically stipulates the need for an archaeological monitor during construction or a project is located in areas that require an archaeological monitor to be present (see conditions of approval polygons for Sunnyside, Grand Mesa Slopes, and Indian Creek), it is the applicant's responsibility to contract an archaeological consultant holding a current Colorado BLM permit and authorized to work in the GJFO. Fieldwork authorizations are required prior to any cultural resource monitoring where resources are present or reasonably expected is permitted only when the ground surface is free of snow, unfrozen, and dry.

CR-8: A cultural resource must be allocated to public use prior to:

a) authorizing or implementing any Heritage Tourism project;

b) issuing Special Recreation Permits that will use a cultural resource; or

c) a BLM recreation project is proposed that involves the use or interpretation of a cultural resource.

Best Management Practices

CR-9: BLM specialists shall complete a File Search Request form and submit to the GJFO Archaeologist as soon as there is proposed BLM activity or BLM-authorized activity that will require preparation of a NEPA document. This will provide the specialist with immediate information as to the need for Class III inventory, whether that will be contracted or in-house, or the presence of cultural resources that may preclude or impede the project.

CR-10: Once it has been determined that a project will require contracted cultural inventory, the BLM specialists shall complete a Request for Cultural Resource Compliance form *(find at S:\blm share\CRM_for_FO\ CR Compliance)* and submit it to the GJFO Archaeologist as soon as a final design for a BLM-proposed project or activity is complete.

CR-11: When possible, locate projects in areas that are previously disturbed. To comply with the National Historic Preservation Act, the BLM must identify significant cultural resources. Under the current regulations and guidelines, the BLM may decide that no inventory needs to be conducted because the proposed action is located in an environment where ground disturbance has modified the surface so extensively that the likelihood of finding intact cultural resources is negligible.

CR-12: Where proposed projects or development will adversely affect a cultural resource, testing, data recovery, or full excavation to recover scientific information may be required as mitigation. The applicant or operator bears the full cost of mitigation and is encouraged to consider avoiding adverse effects through project relocation or redesign rather than mitigating adverse effects.

CR-13: **(MLP)** A File Search Request form must be submitted to the GJFO Archaeologist identifying the site and the proposed use so the allocation to public use can be confirmed.

References

BLM (US Department of the Interior, Bureau of Land Management). 1998. Handbook of Guidelines and Procedures for Inventory, Evaluation, and Mitigation of Cultural Resources. BLM, Colorado State Office, Lakewood, CO. Revised 2007.

_____. 2004a. Manual 8100—The Foundations for Managing Cultural Resources. Release 8-72. BLM, Washington, DC. December 3, 2004.

_____. 2004b. Manual 8110—Identifying and Evaluating Cultural Resources. Release 8-73. BLM, Washington, DC. December 3, 2004.

_____. 2004c. Manual 8120—Tribal Consultation under Cultural Resources. Release 8-74. BLM, Washington, DC. December 3, 2004.

_____. 2004d. Manual 8120-1—General Procedural Guidance for Native American Consultation. Release 8-75. BLM, Washington, DC. December 3, 2004.

_____. 2004e. Manual 8130—Planning for Uses of Cultural Resources. Release 8-76. BLM, Washington, DC. December 3, 2004.

_____. 2004f. Manual 8140—Protecting Cultural Resources. Release 8-77. BLM, Washington, DC. December 3, 2004.

_____. 2004g. Manual 8150—Permitting Uses of Cultural Resources. Release 8-78. BLM, Washington, DC. December 3, 2004.

_____. 2004h. Manual 8170—Interpreting Cultural Resources for the Public. Release 8-79. BLM, Washington, DC. December 3, 2004.

TRIBAL CONSULTATION (TC)

Standard Operating Procedures

TC-1: The BLM has a responsibility to develop a government-to-government relationship with the tribes: the formal relationship that exists between the federal government and tribal governments under US laws. Tribal governments are considered dependent domestic sovereignties with primary and independent jurisdiction (in most cases) over tribal lands. Concerning proposed BLM plans and actions, at least the level of consideration and consistency review provided to state governments must be afforded to tribal governments.

TC-2: The BLM is responsible for consultation under General Authorities defined as "laws, executive orders, and regulations that are not considered cultural resource authorities." The regulations implementing both the Federal Land Policy and Management Act of 1976 and NEPA require Native American consultation. The American Indian Religious Freedom Act and the Indian Sacred sites order (Executive Order 13007) pertain to the free exercise clause of the First Amendment (BLM Manual 8120-1, Guidelines for Conducting Tribal Consultation [BLM 2004b], Federal Land Policy and Management Act of 1976 Title II, NEPA Section 102 (40 CFR 1501.2 and 1501.7)

TC-3: Tribes must be consulted whenever other governmental entities or the public are formally involved in the BLM's environmental review process in any NEPA documentation that entails public involvement or initial discussions with local or state governments (BLM Handbook H-1790-1, National Environmental Policy Act [BLM 2008]).

TC-4: National Historic Preservation Act Section 106 consultations for cultural resources that are significant to Indian tribes. Consultation with an Indian tribe must recognize the government-to-government relationship between the federal government and Indian tribes. The agency official shall consult with representatives designated or identified by the tribal government. Consultation shall be conducted in a manner sensitive to the concerns and needs of the Indian tribe. (36 CFR 800.2[c][2][ii][C]).

Best Management Practices

TC-5: Notification is conducted by simple, one-way written means. Consultation is generally construed to mean direct, two-way communication.

TC-6: When publishing notices or open letters to the public indicating that the BLM is contemplating an action and that comments are welcome, BLM managers shall send individual letters by certified mail or delivery confirmation to tribes requesting their input on actions being considered. If this is an opening dialogue, prior to having developed a strong working relationship with the tribe, if a timely response is not received, the BLM manager shall follow up with personal telephone calls.

TC-7: For the benefit of both parties, BLM managers are encouraged to strive for the most efficient and effective method of consultation. Whatever method is chosen, all consultation activities shall be carefully documented in the official record.

TC-8: Consultation roles can be facilitated but may not be transferred to others. Cultural resource consulting firms working for land use applicants cannot negotiate, make commitments, or otherwise give the appearance of exercising the BLM's authority in consultations.

TC-9: Owing to their status as self-governing entities, tribes shall be notified and invited to participate at least as soon as (if not earlier than) the Governor, state agencies, local governments, and other federal agencies.

TC-10: Tribal consultation means dialogue between a BLM manager and an American Indian Tribe. The BLM managers are encouraged to visit tribal councils and appropriate tribal leaders on a recurring basis. This face-to-face meeting helps to develop relationships that can reduce the time and effort spent in later consultation or individual projects. This government-to-government consultation shall be treated with appropriate respect and dignity of position.

References

BLM (US Department of the Interior, Bureau of Land Management). 2004a. Manual 8120—Tribal Consultation under Cultural Resources. Release 8-74. BLM, Washington, DC. December 3, 2004.

_____. 2004b. Manual 8120-1—General Procedural Guidance for Native American Consultation. Release 8-75. BLM, Washington, DC. December 3, 2004.

_____. 2008. Handbook H-1790-1—National Environmental Policy Act. BLM, Washington, DC. January 2008.

PALEONTOLOGY (P)

Standard Operating Procedures

P-1: Attach lease notices, stipulations, and other requirements to permitted activities to prevent damage to paleontological resources.

P-2: Prior to any surface-disturbing activities, an inventory of paleontological resources (fossils) may be required. Mitigation may be required upon the discovery of any vertebrate fossil or other scientifically important paleontological resource. Mitigation of scientifically important paleontological resources may include avoidance, monitoring, collection, excavation, or sampling. Mitigation of discovered scientifically important paleontological resources may require the relocation of the disturbance over 100 meters. This and any subsequent mitigation work shall be conducted by a BLM-permitted paleontologist.

P-3: The lessee/operator shall bear all costs for inventory and mitigation (BLM 2008).

P-4: The lessee is prohibited from surface occupancy and surface-disturbing activities within 100 meters around all known scientifically important paleontological resources.

(Locality-specific name)

This stipulation is to protect scientific information that may be damaged from inadvertent or authorized uses.

Exception: The BLM Authorized Officer may: (1) allow for paleontological excavation and (2) change the protection boundary on a case-by-case basis, taking into account topographical barriers, the design of the proposed action, and the characteristics of the paleontological resource.

Modification: None

Waiver: Destruction of all the physical characteristics of a paleontological resource.

P-5: A standard Education/Discovery stipulation for paleontological resource protection shall be attached to the land use authorization. The operator or its contractor is responsible for informing all persons who are associated with the project operations that federal laws protect paleontological resources, and they will be subject to prosecution for disturbing or destroying any vertebrate fossils or paleontological sites, or collecting any fossilized bones, tracks, or any other vertebrate trace fossils from federal lands.

P-6: The Paleontological Resources Preservation Act [16 US Code 470aaa] requires the lessee/operator to immediately suspend activities in the vicinity of a vertebrate fossil discovery, protect the discovery from damage, and notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The BLM Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM Authorized Officer after consulting with the operator. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either: (1) following the BLM Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource; or (2) following the BLM Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

References

BLM (US Department of the Interior, Bureau of Land Management). 2008. Instruction Memorandum 2009-011—Assessment and Mitigation of Potential Impacts to Paleontological Resources. BLM, Washington, DC. October 10, 2008.

VISUAL RESOURCES (V)

Standard Operating Procedures

V-1: All new surface-disturbing projects or activities, regardless of size or potential impact, will incorporate visual design considerations during project design as a reasonable attempt to meet the Visual Resource Management class objectives for the area and minimize the visual impacts of the proposal. Visual design considerations will be incorporated by:

a) Using the Visual Resource Management contrast rating process (required for proposed projects in highly sensitive areas, high impact projects, or for other projects where it appears to be the most effective design or assessment tool).

b) Providing a brief narrative visual assessment for all other projects that require an environmental assessment or environmental impact statement.

c) Measures to mitigate potential visual impacts could include the use of natural materials, screening, painting, project design, location, or restoration (BLM Handbook H-8431-1, Visual Resource Contrast Rating [BLM 1986]; or online at http://www.blm.gov/nstc/VRM/8431.html, for information about the contrast rating process).

V-2: All new roads will be designed and constructed to a safe and appropriate standard, "no higher than necessary" to accommodate intended vehicular use. Roads will follow the contour of the land where practical. Existing oil and gas roads that are in eroded condition or contribute to other resource concerns will be brought to BLM standards within a reasonable period of time.

Best Management Practices

V-3: Impacts to dark night skies will be prevented or reduced through the application of specific mitigation measures identified in activity level planning and NEPA-level review. These measures may include directing all light downward, using shielded lights, using only the minimum illumination necessary, using lamp types such as sodium lamps (less prone to atmospheric scattering), using circuit timers, and using motion sensors.

V-4: Any facilities authorized will use the best technology available to minimize light emissions.

V-5: Any new permits/authorizations, including renewals, will be stipulated to use the best technology available to minimize light emissions, as compatible with public health and safety.

V-6: Restrict visual intrusion in Visual Resource Management Class I and II areas and within 0.25-mile of historic trails.

V-7: Screening facilities from view and avoiding placement of production facilities on steep slopes, hilltops, and ridgelines.

V-8: Paint all facilities a color that best allows the facility to blend with the background (operator-committed BMP).

V-9: Gravel of road color shall be similar to adjacent dominant soil colors.

V-10: Reduce impacts on Visual Resource Management Class II and III areas.

V-11: Bury distribution power lines and flow lines in or adjacent to access roads.

V-12: Repeat form, line, color, and texture elements to blend facilities with the surrounding landscape.

V-13: All aboveground facilities, including power boxes, building doors, roofs, and any visible equipment, will be painted a color selected from the latest national color charts that best allows the facility to blend into the background.

V-14: Perform final reclamation recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography.

V-15: To the extent opportunities are practicable, extreme visual contrast created by past management practices or human activities will be minimized. Examples include right-of-way amendments, mineral material sites, abandoned mines, and areas impacted by unauthorized off-road driving.

V-16: Reclaim unused well pads within one year.

V-17: Final reclamation of all oil and gas disturbance will involve recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography and revegetating all disturbed areas.

V-18: The use of submersible pumps will be strongly encouraged, especially in Visual Resource Management Class I, II, or III areas or any area visible by the visiting public.

V-19: The use of partial or completely below-grade wellheads will be strongly encouraged in high visibility areas as well as VRM Class I, II, or III areas.

V-20: The placement of production facilities on hilltops and ridgelines will be prohibited where they are highly visible.

References

BLM (US Department of the Interior, Bureau of Land Management). 1986. BLM Handbook H-8431-1—Visual Resource Contrast Rating. BLM, Washington, DC. January 17, 1986.

WILDLAND FIRE ECOLOGY AND MANAGEMENT (WFM)

Standard Operating Procedures

Fire Suppression

WFM-1: Resource Advisors and other applicable specialists shall be utilized to advise the Incident Commander and suppression resources on the natural resource values during the suppression effort.

WFM-2: Avoid applying fire retardant in or near drinking water sources.

WFM-3: Avoid the application of retardant or foam within 300 feet of a waterway or stream channel. Deviations from this procedure are acceptable if life or property is threatened.

WFM-4: Fire lines will not be constructed by heavy equipment within riparian stream zones. If construction is necessary due to threats to life or property, control lines shall terminate at the edge of the riparian zone at a location determined appropriate to meet fire-suppression objectives based on fire behavior, vegetation/fuel types, and fire fighter safety.

WFM-5: For streams currently occupied by cutthroat trout or other aquatic special status species, extractions of water from ponds or pools shall not be allowed if stream inflow is minimal and water extraction will lower the existing pond or pool level.

WFM-6: Lands will be temporarily closed to other uses in areas where fire suppression is being implemented.

WFM-7: Stream flow shall not be impounded or diverted by heavy equipment in order to facilitate extraction of water from the stream for fire-suppression efforts.

WFM-8: If it is determined that use of retardant or surfactant foam within 300 feet of a waterway or stream channel is appropriate due to threats to life or property; alternative line construction tactics are not feasible because of terrain constraints, congested areas, or lack of ground personnel; or potential damage to natural resources outweighs possible loss of aquatic life, then the unit administrator shall determine whether there have been any adverse effects to federally listed species. If the action agency determines that adverse effects were incurred by federally listed species or their habitats, then the action agency must consult with US Fish and Wildlife Service, as required by 50 CFR 402.05, as soon as practicable.

WFM-9: Avoid whenever possible burning out unburned islands of native vegetation, specifically sagebrush communities.

WFM-10: Minimize/mitigate impacts to cultural resources and pristine vegetative communities.

WFM-11: Prior to use on BLM-administered lands, thoroughly rinse to remove mud and debris from all fire-suppression equipment from off-district or out of state and used to extract water from lakes, ponds, streams, or spring sources. Examples of this equipment are helicopter buckets, draft hoses, and screens. After cleaning the equipment, disinfect it to prevent the spread of invasive aquatic species. Do not rinse equipment with disinfectant solutions within 100 feet of natural water sources. GJFO suppression equipment used to extract water from sources known to be contaminated with invasive aquatic species, as

identified by US Fish and Wildlife Service and Colorado Parks and Wildlife, also shall be disinfected beforehand on GJFO BLM-administered lands.

WFM-12: Vehicle and equipment shall be washed before being assigned to fires to minimize the spread of noxious weeds. Larger fires with incident management teams assigned may need to have a weed wash station.

Emergency Stabilization, Burned Area Rehabilitation, and Suppression Repair

Treatments from these three programs include the following:

WFM-13: Stabilize areas that have low potential to naturally revegetate and that have high wind and soil erosion potential. Treatments include the following:

a) Installing water bars and other drainage diversions, culverts along fire roads, dozer lines, and other cleared areas;

b) Seeding and planting to provide vegetative cover;

c) Spreading mulch to protect bare soil and discourage runoff;

d) Repairing damaged roads and drainage facilities;

e) Clearing stream channels of structures or debris that is deposited by suppression activities;

f) Installing erosion control structures;

g) Installing channel-stabilization structures;

h) Fencing or restricting areas to livestock and wild horse and burro grazing to promote success of natural revegetation or establishment of seeded species;

i) Temporarily closing lands to other uses during emergency stabilization and rehabilitation practices if activities inhibit treatment;

j) Repairing or replacing range improvements and facilities; and

k) Monitoring emergency stabilization and rehabilitation treatments.

Best Management Practices

Fuels Management

WFM-14: Construct fuel breaks or green strips to protect wildland-urban interface communities and provide for firefighter safety by using mechanical, chemical, biological, and prescribed fire treatment methods.

WFM-15: Construct fuel breaks and green strips in areas containing a good understory of native perennials in order to successfully compete with and deter the establishment and spread of annual species.

WFM-16: Seed fuels treatments in areas that do not have a good understory of desirable native perennials that can successfully compete with annual weed species.

WFM-17: Where practicable, use large-scale landscape planning to connect fuel treatments and avoid small, piecemeal projects.

WFM-18: Plan for maintenance cycles and maintain fuel treatments to ensure effectiveness.

WFM-19: Prevent seeded species from being grazed during the first two growing seasons (more than 18 months) following seeding, or until site-specific analysis and/or monitoring data indicates that vegetation cover, species composition, and litter accumulation are adequate to support and protect watershed values, meet vegetation objectives, and sustain grazing use

WFM-20: Provide fire prevention and mitigation outreach information and education to communities within the GJFO.

WILDERNESS, WILDERNESS STUDY AREAS, AND LANDS WITH WILDERNESS CHARACTERISTICS (WSA)

Standard Operating Procedure

WSA-1: All WSAs will be managed in accordance with BLM Manual 6330, Management of Wilderness Study Areas (BLM 2012).

References

BLM (US Department of the Interior, Bureau of Land Management). 2012. Manual 6330—Management of Wilderness Study Areas. Release 6-134. BLM, Washington, DC. July 13, 2012. 56pp.

FORESTRY (F)

Standard Operating Procedures

F-1: No fuel wood cutting of live trees will be allowed for cottonwood, willow, or alder, unless resource objectives allow otherwise.

F-2: No forestry harvest or collection of products will be allowed during the winter closure timing restraints (November 30 to May 1).

F-3: Trees marked for wildlife protection and/or "Seed Tree Do Not Fall" will not be allowed to be harvested for any type of forestry products.

F-4: Harvest plans will be completed on all commercial sales within woodlands and forests, showing access roads, decks, and skid trail locations. Approval of these plans by the BLM Authorized Officer is required before harvest can start.

Best Management Practices

F-5: The closure of new roads will be considered and planned for during sale preparation in accordance with existing policy.

F-6: Clear cuts will be considered for use in the pinyon-juniper and aspen types in critical big game winter ranges and other areas where economically feasible.

F-7: Clear cuts will be considered for use in restoring aspen sites.

F-8: Cuts that thin the pinyon-juniper canopy cover to 20 percent or less will be favored for use in bighorn sheep ranges. These cuts will focus on the smaller trees in the stand,

F-9: Large conifer seed trees (three to seven trees per acre) will be left where practical as wildlife shelter on south-facing slopes of big game winter ranges to ensure the succession of quality snags.

F-10: An average of three to seven trees per acre of the largest nonhazardous snags, particularly those adjacent to openings and open water, will be left on commercial sale areas.

F-11: Sale areas with less than 15 percent ground cover in the understory on critical deer and elk winter ranges will be seeded using a mixture of grasses, forbs, and shrubs and will be paid for with wildlife funds.

F-12: A minimum of 180-year rotation will be allowed for pinyon-juniper stands. Other species will be managed on a rotation of sufficient length to produce cavity trees for flickers and small owls.

F-13: A minimum 50-foot buffer will be maintained along all riparian areas.

F-14: Snags with existing cavities or nests will be priority for retention.

F-15: Snag diameter for retention will be the largest class on site and will be retained in clusters if possible.

F-16: If site potential allows, retain five to seven snags per acre, preferably in a clumped configuration.

F-17: If possible, retain at least 15 live trees per acre for future snag recruitment. Recruitment snags will not have to be structurally superior; live tree with forked and broken tops may be preferred.

F-18: Do not disturb or destroy active or inactive nests of raptors that are reused.

F-19: Avoid heavy equipment use in stands of cottonwood, willow, and alder. If heavy equipment use is necessary, allow on a case-by-case basis and mitigate for adverse impacts.

F-20: Allow dead and down collection of cottonwood for personal use.

F-21: Protect seed and important wildlife habitat trees in pinyon-juniper stands.

F-22: Allow removal of pinyon-juniper encroachment utilizing mechanical, biological, and chemical treatments. Allow tree harvesting for Christmas trees and transplants other woodland products and biomass reduction.

F-23: Minimize disturbance to the soil such that surface runoff does not result in sediment transport into waterbodies. Concentrate skidding on as few skid trails as needed.

F-24: Limit primary skid trails to 10 percent of the total working area.

F-25: Avoid widespread or random skidding patterns with repeated passes.

F-26: Minimize placement and use of skid trails in ephemeral drainages. If skid trails must be within or cross an ephemeral drainage, additional BMPs are needed to protect water quality.

F-27: Minimize the extent of gouges or trenches upon the ground surface that are created by the skidding of trees or logs.

F-28: On sloping terrain, skid trails shall follow along the land contours and shall be kept to 25 percent grade or less when practical.

F-29: Establish decks at locations where soil disturbance is minimized.

F-30: Maintain as close to normal (pre-construction) streamflow by maintaining depth, width, gradient, and capacity of the stream channel at the crossing.

F-31: Perform construction, installation, and removal work during low-water flow if circumstances allow.

F-32: Stabilize the approachways and/or stream crossing locations so sediment is not transported into the stream.

F-33: Approaches to the stream are relatively flat to better control runoff.

F-34: The crossing can be installed at a right (90-degree) angle to the stream channel so crossing distance is minimized.

F-35: Any trees removed during these processes will be purchased by the applicant prior to construction. The applicant is responsible for a per-cord fee.

Guidelines for Christmas Tree and Firewood Harvesting

F-36: Vehicle use is restricted to existing roads and trails. Do not drive off road.

F-37: Do not damage adjacent trees.

F-38: When cutting down standing trees, cut the stump 12 inches or less, or as close to the ground as possible.

F-39: Scatter lopped branches at least 50 feet from the stump.

F-40: Do not top a larger tree to obtain a Christmas tree.

F-41: Do not harvest any trees within 100 feet of a spring or creek unless trees are identified for selective removal to meet resource objectives.

F-42: Pack out personal trash, as well as trash left by others.

F-43: Do not harvest when soils are saturated to a depth of 3 inches to prevent damage to roads.

F-44: The GJFO closes annually to firewood harvesting on November 30. Firewood harvesting reopens in the spring based on road conditions.

LIVESTOCK GRAZING

Standard Operating Procedures

LG-1: Follow the Grazing Guidelines established along with the Colorado Standards for Rangeland Health.

LG-2: Protect seedings from grazing for one full year and through the growing season of the second year. Some seedings established during adverse weather cycles may need protection for a longer period.

LG-3: New fences shall be constructed to BLM standards allowing for the appropriate wildlife passage. Fences constructed will comply with applicable wildlife fence standards, such as those described in BLM Handbook H-1741-1, Fencing (BLM 1989).

LG-4: Bird and wildlife ramps shall be installed in all troughs.

LG-5: Access routes to functioning range improvements shall be retained to allow for periodic maintenance and prevent cross-country travel.

LG-6: Continue to maintain range-improvement projects to support proper livestock management including optimal distribution.

LG-7: Rangeland and vegetation monitoring will be conducted to detect changes in grazing use, trend, and range conditions. These data will be used to support and direct grazing management decisions. These efforts will help ensure that livestock grazing meets objectives for rangeland health and resolves conflicts with wildlife or other resources.

LG-8: Grazing management decisions will be based on inventory and monitoring data, both short-term and long-term, which will be jointly developed by grazing permittees and the appropriate federal land-management agency.

LG-9: All water-development activities for livestock grazing use that exceed the minimum depletion level established by US Fish and Wildlife Service must comply with all US Fish and Wildlife Service fees and prescribed mitigations to offset water depletion in the Colorado River.

LG-10: Surface-disturbing activities will be coordinated with livestock grazing permittees to minimize the effects of the surface disturbance on other approved operations. To the maximum extent practicable, this effort will include consulting on scheduling of operations to mutually minimize effects.

LG-11: Any damage to the function of range improvements (e.g., fence damage, cattle guard cleaning, and livestock loss) from other approved operations will be repaired immediately or remedied by the operator causing the damage.

LG-12: Well pads, pits, and other facilities that could be hazardous to livestock will be fenced to keep livestock out and the fences maintained in functioning condition.

Best Management Practices

LG-13: Development of springs and seeps or other projects affecting water and associated resources shall be designed to maintain the associated riparian area and assure attainment of standards.

LG-14: Disturbance to established rangeland study sites shall be avoided to provide for the continuation of monitoring efforts, which involves comparisons of data to previous records of that site.

LG-15: Facilities shall be constructed a minimum of 0.125-mile from livestock gathering spots, such as water sources and gathering facilities, to prevent disruption of the use of these facilities and potential damage to the facility by livestock.

LG-16: Exclosures may be established in areas where the vegetative potential of the area is questionable or to compare the effectiveness of grazing management.

LG-17: Livestock grazing could be used as an intensively managed prescriptive grazing practice to control cheatgrass and noxious or invasive weeds.

LG-18: Use grazing systems that contain rotation, deferment, and rest to produce a mosaic of habitat patches and increases the density, height, and distribution of native plants.

LG-19: Rotate livestock use areas year to year; avoid grazing in the same place at the same time each year.

LG-20: Avoid re-grazing the same plants in one growing season.

LG-21: Adjust grazing seasons to benefit both warm- and cool-season grass species by providing periodic rest from grazing for each type.

LG-22: Avoid grazing an area during the spring and fall period in one year's time.

LG-23: Allow for adequate litter cover following grazing use to protect soil surface and enhance soil moisture retention.

LG-24: During spring grazing, ensure livestock are removed early enough so that sufficient soil moisture remains for plant recovery.

LG-25: Allow for rest/recovery periods before or after grazing during critical growth periods. Recovery shall include the production of seed to allow for the regeneration of desirable plant species.

LG-26: Occasional grazing use during the dormant season will provide rest during the growing season and will allow plants to recover.

LG-27: Adjust intensity, timing, and/or duration of grazing during periods of drought.

LG-28: Manage livestock grazing, including dormant season use, to ensure adequate residual grass cover remains when soil moisture or wildlife habitat is of concern.

LG-29: Proper utilization allows stubble for root and crown protection, litter accumulation for organic matter contribution to the soil, cover and habitat for wildlife, and forage availability for grazing animals utilizing the area. Generally, utilization levels shall be based upon recovery periods and other resource objectives. Suggested utilization guidelines are:

a) In areas not meeting land health standards where cattle grazing is a causative factor, limit utilization on key species to 30 percent during the critical growth period and 40 percent during the dormant season

b) In areas meeting land health standards, limit utilization on key species to 40 percent during the critical growth period and 50 percent during the dormant season

c) If wildlife/livestock conflicts exist, annual utilization would be read before the next seasons growth begins to account for all uses and demands on the plants

d) The exception to these guidelines is if the permittee can convince the BLM Authorized Officer that they have the knowledge, ability, and commitment to implement a grazing system that should result in improvements to the ecosystem

LG-30: Limit use in areas of valuable woody plants during times when they are selected.

LG-31: Avoid the following grazing management practices:

a) Long seasonal use with no recovery time

b) Heavy use that stresses plants

c) Little or no re-growth before winter (i.e., little stubble for root crown protection)

d) Use at the same time every year (i.e., repeating the stress)

e) No rest or growing season recovery (i.e., little recovery with long seasons of use)

f) Little or ineffective herding

g) Salt placed in the same locations year after year

h) Livestock left behind after pasture moves

i) Grazing during the critical growth period year after year

LG-32: When using livestock to control noxious or invasive weeds, match animal dietary preference or tolerance to the target species.

LG-33: Use the target weed's phenology when developing a grazing strategy.

LG-34: Manage heavy grazing on target weed species to account for any intermixed desirable species.

Vegetation/Riparian Zone Grazing Management Guidelines

LG-35: To reduce negative impacts to grazing, determine the critical period(s) of a riparian site, and then limit grazing during the critical period(s) to no more often than once every three or four years. Critical periods and impacts are likely to be either in late spring/early summer when streambanks are more easily broken down by trampling, or late summer/early fall, when excessive browsing man damage vegetation. Each site has its own critical period that shall be

individually determined. Important critical period variables are soil moisture, plant species composition, and animal behavior patterns. Site may be grazed every year if use does not occur during the critical period(s). Extended periods of rest or deferment from grazing may be needed to enable recovery of badly degraded sites. Graze earlier in the season when cattle use uplands (Mosley et al. 1997).

LG-36: To maintain streambank stability, limit cattle access to surface water when adjacent streambanks and shorelines are overly wet and susceptible to trampling and sloughing. Streambank trampling can often be reduced by capitalizing on the natural foraging behavior of cattle. Cattle generally avoid grazing excessively wet sites or in cold-air pockets. Cattle seek out wind-swept ridges, and they graze on upland forage when it is more palatable than forage in riparian areas. Avoid hot season grazing of riparian areas (Mosley et al. 1997).

LG-37: To graze a site more than once per growing season, moisture and temperature conditions shall be conducive to plant growth. For such sites, allow a recovery period of at least 30 to 60 days, depending on vegetation type, before re-grazing within the same growing season. Grazing more often and for shorter periods (i.e., three weeks or less at a time) is preferable to fewer and longer grazing periods (Mosley et al. 1997).

LG-38: To control the timing, frequency, and intensity of cattle grazing, consider creating smaller riparian pastures with similar or homogenous features. Adjusting timing, frequency, and intensity of grazing in individual pasture units is more important than adopting a formalized grazing season (Mosley et al. 1997).

LG-39: To protect streambanks, prevent cattle from congregation near surface waters; fencing, supplemental feeding, and herding methods work best. Provide remote watering systems for cattle. Manage the riparian area as a separate and unique pasture. Inappropriate cattle grazing will usually first be evidenced by excessive physical disturbance to streambanks and shorelines (Mosley et al. 1997).

LG-40: On riparian areas that are determined to be non-functioning or functioning at risk as a result of livestock grazing impacts, limits of bank disturbance will be determined and included within the Terms and Conditions of the grazing permit.

LG-41: In general, utilization standards in riparian areas should be no more than 30 percent use of current the year's growth on woody species, and a minimum of 4 inches of stubble height shall remain at the end of the grazing period.

LG-42: To protect streambanks, discourage trailing up and down the channel by placing logs across trails, perpendicular to the stream channel.

LG-43: Adjust intensity, timing, and/or duration of grazing during periods of drought.

References

BLM (US Department of the Interior, Bureau of Land Management). 1989. Handbook H-1741-1—Fencing. BLM, Washington, DC. 58pp.

Mosley, J.C., P.C. Cook, A.J. Griffis, and J. O'Laughlin. 1997. Guidelines for Managing Cattle Grazing in Riparian Areas to Protect Water Quality: Review of Research and Best Management Practices Policy. Report No. 15. University of Idaho, Moscow, ID. December 1997.

RECREATION (REC)

Standard Operating Procedures and Best Management Practices

GJFO recreation management relies heavily on community partnerships and employs the basic concept of the four E's:- Engineering, Education, Enforcement, and Evaluation. Partnerships and the four E's provide an effective recreation management framework. The following SOPs and BMPs are categorized using that framework. The following SOPs and BMPs are arranged to correspond with those four general categories.

Partnerships

REC-1: Develop and maintain partnerships with recreation-based organizations and service providers. These partnerships should engage partners in the planning, implementation, and monitoring of recreation opportunities and facilities on BLM-administered lands.

REC-2: Administer Extensive Recreation Management Areas (ERMAs) and Special Recreation Management Areas (SRMAs) (and associated Recreation Management Zones [RMZs]) cooperatively through partnership agreements (example memorandum of understanding) between managing partners (e.g., recreation organizations and municipal governments) and the BLM GJFO that outline administrative roles and responsibilities.

REC-3: Consider administering specific recreation facilities (e.g., campgrounds) cooperatively through partnership agreements with partner organizations or businesses.

REC-4: With community partners (local governments, recreation related businesses, clubs, and organizations), utilize community and visitor assessments to determine demand for regional recreation resources and opportunities.

REC-5: Develop and maintain partnerships with local and regional municipalities, recreation organizations, businesses, and other community partners to assist in the maintenance and enhancement of recreation routes, signs, facilities, and visitor services that help achieve recreation management

objectives. Visitor use fees may be charged to support infrastructure and services (e.g., campgrounds, campsites, trailhead facilities, trail construction and maintenance, trail patrols, emergency medical services, law enforcement, maps, and information).

REC-6: Coordinate with adjoining public land management units (i.e., Dominguez-Escalante National Conservation Area, McInnis Canyon National Conservation Area, BLM Colorado River Valley Field Office, BLM Moab Field Office, BLM Uncompahgre Field Office, BLM White River Field Office, Colorado National Monument, US Bureau of Reclamation parcels, Colorado Parks and Wildlife parcels, and County and city parcels) to establish consistent recreation management actions.

Recreation Facilities and Trails (Engineering)

REC-7: Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve recreation and other resource use objectives, while protecting natural and cultural resources (BLM 2005, 2014).

REC-8: Reroute or close trails that create resource damage and/or trespass on private property.

REC-9: For recreation facility development, utilize the BLM Guidelines for a Quality Built Environment manual (BLM 2010).

REC-10: Develop and maintain recreation visitor use data monitoring systems to track visitor use trends.

REC-11: Work with targeted recreation users and managing partners to protect and enhance targeted recreation opportunities in ERMAs and SRMAs.

REC-12: Work with partners (e.g., recreation organizations and municipal governments) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.

REC-13: In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., camping near stock ponds.)

REC-14: In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.

REC-15: In SRMAs, locate new developments for other resource uses to mitigate impacts to targeted recreation resources.

REC-16: Develop recreation facilities at primary access points that may include, but are not limited to, parking/staging areas that accommodate targeted users, vault toilets, informational kiosks, and shade shelters.

REC-17: Work with private landowners and recreationists to avoid trespass issues where public and private lands interface.

REC-18: Work with community partners and utility permit applicants to minimize the impact to recreation from utility developments in right-of-way corridors and/or Renewable Energy Emphasis areas (wind and solar) that overlap ERMAs and SRMAs.

REC-19: Use guidance from Best Management Practices for Lead at Outdoor Shooting Ranges (US Environmental Protection Agency 2005) in areas where intensive recreational target shooting occurs.

REC-20: Utilize Recreation Management Guidelines to Meet Public Land Health Standards on BLM Lands in Colorado (BLM 2000).

REC-21: Utilize current BMPs and the Recreation Management Guidelines to Meet Public Land Health Standards on BLM Lands in Colorado (BLM 2000) to reduce or eliminate impacts from recreation to the other natural and cultural resources listed in the objective above. This appendix describes BMPs current at the time of the RMP planning process. BMPs will likely evolve over the life of the RMP. Implementation of management actions should be based on the most current BMPs.

REC-22: In areas managed for multiple activities, support cooperative efforts by recreation users and other stakeholders that develop strategies promoting compatible interactions between recreation users (e.g., multi-user/interdisciplinary working groups).

Recreation Information and Education

REC-23: Provide clear, consistent, and standardized messaging to the public regarding recreation opportunities and regulations on BLM-administered lands. This messaging should be included in digital communications (e.g., websites and social media), print media (e.g., brochures and kiosk displays), signage, and personal contacts with recreation customers (e.g., office visits, phone calls, and field contacts).

REC-24: Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about targeted recreation opportunities in ERMAs and SRMAs.

REC-25: Clearly identify primary access points to recreation areas both onsite (e.g., signs and developed recreation facilities) and offsite (e.g., digital and print media and recreation service providers.)

REC-26: In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.

REC-27: Work with cooperators and partners to provide visitor information and education resources that help achieve area recreation management objectives and the objectives of adjoining or overlapping designations (e.g., WSAs, lands with wilderness characteristics units, Areas of Critical Environmental Concern (ACECs), wildlife emphasis areas, and recreation management areas [RMAs]).

REC-28: Work with managing partners (e.g., local clubs, businesses, and municipalities) to develop appropriate marketing strategies and informational materials (e.g., maps and brochures) that help achieve specific recreation management objectives.

REC-29: Clearly identify RMA/RMZ boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least-obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to contain use along portions of an RMZ boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.

REC-30: In areas where intensive recreational target shooting occurs, work with volunteers and managing partners to develop and communicate shooting range safety rules, etiquette, and stewardship messages.

REC-31: Promote the seven standard principles of Leave No Trace (www.lnt.org) outdoor ethics through print and electronic media and through personal communications with recreationists participating in non-motorized recreation activities on BLM-administered lands.

REC-32: Promote the principles of Tread Lightly (www.treadlightly.org) outdoor ethics, including the Respected Access campaign, through print and electronic media and through personal communications with recreationists participating in recreation activities on BLM- administered lands.

Recreation Monitoring (Enforcement and Evaluation)

REC-33: Special recreation permits will contain noxious weed management stipulations (e.g., pre-event inventories to avoid infested areas; event management to avoid or isolate activities that could cause weed introduction or spread, monitoring, and treatment of infestations exacerbated by the activity; and other appropriate noxious weed management stipulations).

REC-34: Lands may be temporarily closed to other uses during recreation events performed under special recreation permit (e.g., equestrian endurance rides or motorcycle events).

REC-35: In SRMAs, monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and recreation setting characteristics (RSCs) annually during the primary use season of mid-April through October.

REC-36: Manage recreation to minimize or prevent adverse effects to biological and cultural resources using the Recreation Guidelines to Meet Public Land Health Standards on BLM Lands in Colorado (BLM 2000).

REC-37: Ensure all recreation management actions in areas overlapping ACECs help protect the relevance and importance criteria of those ACECs. Conduct social and physical monitoring to determine if recreation use is consistent with specific ACEC goals, objectives, and resource protection measures. Promote stewardship of ACEC resources by providing opportunities for visitors to learn about those resources.

REC-38: Adapt specific recreation regulations (e.g., camping stay limits) if monitoring indicates that recreation use is causing unacceptable resource damage or is compromising achievement of recreation or other resource use objectives.

REC-39: Coordinate with partner groups to complete resource monitoring requirements.

Special Recreation Management Areas

REC-40: In SRMAs, work with recreation users and other stakeholders to ensure protection of targeted activities, experiences, and outcomes.

Bangs SRMA

Bangs RMZ 1 – Lunch Loops Community Recreation Area

REC-41: (Resource objective): Through the life of the RMP, manage the Bangs SRMA, RMZ 1, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources:

Colorado hookless cactus (*Sclerocactus glaucus*), Grand Junction milkvetch (*Astragalus linifolius*), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

REC-42: (Resource use objective): Through the life of the RMP, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Bangs SRMA, RMZ 1, during the planning process: lands and realty.

REC-43: Partnerships: Develop and maintain partnerships with local and regional recreation organizations and other community partners to assist in the maintenance and enhancement of RMZ routes, signs, facilities, and visitor services.

REC-44: BMPs for the Bangs SRMA, RMZ 1, (for both resource and resource use objectives) include, but are not limited to, the following:

- Work with stakeholders to create additional access to the RMZ.
- Work with stakeholders to acquire adjacent lands to be managed consistently with the RMZ and to increase targeted recreational opportunities.
- Work with partners (e.g., City of Grand Junction and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve RMZ objectives.
- Administer the RMZ cooperatively through a partnership agreement (example memorandum of understanding) between the City of Grand Junction and BLM GJFO that outlines administrative roles and responsibilities.
- Work with partners, local tourism groups, local businesses, and the City of Grand Junction to tailor information and maps to the needs and wants of local customers. Provide information at local outlets and onsite locations only.
- In SRMAs, locate new developments for other resource uses to mitigate impacts to recreation resources.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and

recreation setting characteristics (RSCs) annually during the primary use season of mid-April through October.

Bangs RMZ 2: Magellan – Tabeguache OHV Trails

REC-45: (Resource objective): Through the life of the RMP, manage the Bangs SRMA, RMZ 2, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), Grand Junction milkvetch (*Astragalus linifolius*), canyon tree frog (*Hyla arenicolor*), northern leopard frog (*Rana pipiens*), desert bighorn sheep, deer and elk winter range, water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers), soils, riparian resources, paleontological resources, and cultural (historic and prehistoric) resources.

REC-46: (Resource use objective): Through the life of the RMP, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Bangs SRMA, RMZ 2, during the planning process: livestock grazing.

REC-47: Partnerships: Develop and maintain partnerships with local and regional OHV organizations and other community partners to assist in the maintenance and enhancement of RMZ routes, signs, facilities and visitor services.

REC-48: BMPs for the Bangs SRMA, RMZ 2, (for both resource and resource use objectives) include, but are not limited to, the following:

- Work with stakeholders to create additional access to the RMZ.
- Work with stakeholders to acquire adjacent lands to be managed consistently with the RMZ and to increase targeted recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create a sustainable recreational route system that helps achieve RMZ objectives.
- Work with partners, local tourism groups, local OHV clubs, local businesses, and the City of Grand Junction to develop appropriate marketing materials that meet RMZ management objectives.
- In cooperation with partner groups, monitor motorized routes through canyons (e.g., Billings Canyon) on an annual basis.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and

RSCs annually during the primary use season of mid-April through October.

Bangs RMZ 3: Mica Mine/Rough Canyon Outdoor Classroom

REC-49: (Resource objective): Through the life of the RMP, manage the Bangs SRMA, RMZ 3, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*); Grand Junction milkvetch (*Astragalus linifolius*); significant plant communities, including West Slope Pinyon Woodland (*Pinus edulis-Juniperus osteosperma/Coleogyne ramosisima* Woodland); canyon tree frog (*Hyla arenicolor*); northern leopard frog (*Rana pipiens*); desert bighorn sheep; deer and elk winter range; water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers); soils; riparian resources; paleontological resources; and cultural (historic and prehistoric) resources.

REC-50: (Resource use objective): Through the life of the RMP, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Bangs SRMA, RMZ 3, during the planning process: mineral collecting, livestock grazing, and lands and real estate.

REC-51: Partnerships: Develop and maintain partnerships with local schools and community partner organizations to assist in the development, implementation, and maintenance of educational opportunities and facilities in the RMZ.

REC-52: BMPs for the Bangs SRMA, RMZ 3, (for both resource and resource use objectives) include, but are not limited to, the following:

- Ensure all management actions in the RMZ help protect the relevance and importance criteria of the Rough Canyon ACEC. Promote stewardship of the ACEC resources by providing opportunities for visitors to learn about those resources.
- Work with cooperators, partners, and local schools to provide curriculum-based, educational opportunities in this zone consistent with the management objectives of the RMZ and ACEC.
- Develop an interpretation and environmental education plan to enhance outdoor classroom opportunities in cooperation with local schools and visitors to the area.
- Conduct social and physical monitoring to determine if recreation use is consistent with the Rough Canyon ACEC goals, objectives, and resource-protection measures.

- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve RMZ and ACEC objectives.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

Bangs RMZ 4 – Bangs Primitive Backcountry Zone:

REC-53: (Resource objective): Through the life of the RMP, manage the Bangs SRMA, RMZ 4, to minimize recreation impacts to other resources, with special consideration given to protection/ mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), deer and elk winter range, water quality (non-point source erosion/ sedimentation into the Colorado River), soils, paleontological resources, and cultural (historic and prehistoric) resources.

REC-54: (Resource use objective): Through the life of the RMP, minimize impacts from other resource use to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Bangs SRMA, RMZ 4, during the planning process: livestock grazing.

REC-55: Partnerships: Develop and maintain partnerships with local and regional recreation organizations and other community partners to assist in the oversight and monitoring of the RMZ.

REC-56: BMPs for the Bangs SRMA, RMZ 4, (for both resource and resource use objectives) include, but are not limited to, the following:

- Work with stakeholders to acquire adjacent lands to be managed consistently with the RMZ and to increase targeted recreational opportunities.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

Dolores River Canyons SRMA

REC-57: (Resource objective): Through the life of the RMP, manage the Dolores River Canyons SRMA to minimize recreation impacts to other

resources, with special consideration given to protection/mitigation of the following resources: rare plants, including Kachina daisy (*Erigeron kachinensis*), Eastwood's monkeyflower (*Mimulus eastwooodiae*), San Rafael milkvetch (*Astragalus rafaelensis*), Fisher milkvetch (*Astragalus piscator*), Dolores River skeleton plant (*Lygodesmia doloresensis*), horseshoe milkvetch (*Astragalus equisolensis*), Grand Junction milkvetch (*Astragalus linifolius*), tufted frasera (*Frasera paniculatum*), Osterhout's cryptantha (*Cryptantha osterhoutii*), and Gypsum catseye; significant plant communities, including Foothills Riparian Shrubland (*Forestiera pubescens shrubland*) and Narrowleaf Cottonwood Riparian Forest (*Acer negundo – Populus angustifolia/ Celtis reticulate* Forest); (*Cryptantha gypsophila*); invasive non-native vegetation including Russian knapweed (*Acroptilon repens*) and tamarisk (*Tamarix* spp.); bald eagle (*Haliaeetus leucocephalus*); peregrine falcon (*Falco peregrinus*); deer and elk winter range; riparian resources; visual resources; paleontological resources; and cultural (historic and prehistoric) resources.

REC-58: (Resource use objective): Through the life of the RMP, minimize impacts from other resource use to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Dolores River Canyons SRMA during the planning process: gold prospecting, lands and realty (right-of-way corridor), and livestock grazing. In the portions of this RMZ that overlap the right-of-way corridor, manage recreation to achieve management objectives for the right-of-way corridor.

REC-59: Partnerships

- Develop and maintain partnerships with local and regional recreation organizations and other community partners to assist in the oversight and monitoring of the SRMA.
- Coordinate education and interpretation efforts to ensure consistency with Unaweep-Tabeguache Scenic and Historic Byway objectives and actions.

REC-60: BMPs for the Dolores River Canyons SRMA (for both resource and resource use objectives) include, but are not limited to, the following:

- Ensure all management actions in the SRMA help protect the relevance and importance criteria of the Dolores River Riparian ACEC and The Palisade ACEC. Promote stewardship of ACEC resources by providing opportunities for visitors to learn about those resources.
- Work with cooperators and partners to provide educational opportunities in the area that are consistent with the management objectives of the SRMA and ACECs.

- Develop an interpretation and environmental education plan to enhance educational/interpretive opportunities in cooperation with managing partners and visitors to the area.
- Conduct social and physical monitoring to determine if recreation use is consistent with ACEC goals, objectives, and resource protection measures.
- Work with community partners, and utility permit applicants to minimize the impact to recreation from utility developments in the right-of-way corridor.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve SRMA and ACEC objectives.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

Grand Valley OHV SRMA

REC-61: (Resource objective): Through the life of the RMP, manage the Grand Valley OHV SRMA to minimize recreation impacts in areas adjacent to the SRMA, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), Grand Junction suncup (*Camissonia eastwoodiae*), Grand Junction buckwheat (*Eriogonum contortum*), water quality (salinity and non-point source erosion/sedimentation into the Colorado River), and Mancos soils.

REC-62: (Resource use objective): Through the life of the RMP, minimize impacts from other resource use to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in the Grand Valley OHV SRMA during the planning process: lands and realty (right-of-way corridor, land acquisitions, and private property trespass) and livestock grazing. In the portions of this SRMA that overlap the right-of-way corridor, manage recreation to achieve management objectives for the right-of-way corridor.

REC-63: Partnerships

- Develop and maintain partnerships with local and regional recreation organizations, businesses, and other community partners to assist in the maintenance and enhancement of SRMA routes, signs, facilities, and visitor services identified as necessary for achievement of SRMA objectives.

- Coordinate with local governments, businesses, and other recreation tourism partners to develop and implement strategies for protecting water quality by reducing non-point sources of pollutants from the SRMA.

REC-64: BMPs for the Grand Valley OHV SRMA (for both resource and resource use objectives) include, but are not limited to, the following:

- Clearly identify primary access points to the SRMA both onsite (e.g., signs and developed recreation facilities) and offsite (e.g., digital and print media and recreation service providers.)
- Work with stakeholders to create additional access to the SRMA.
- Work with stakeholders to acquire adjacent lands to be managed consistently with the SRMA and to increase targeted recreational opportunities.
- Work with partners (e.g., State of Colorado, City of Grand Junction, and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Work with partners, local tourism groups, local businesses, and municipalities to develop appropriate marketing information and maps to promote SRMA objectives.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

North Fruita Desert SRMA

REC-65: (Resource objective): Through the life of the RMP, manage the North Fruita Desert RMZ to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: mule deer and elk winter range, water quality (non-point source erosion/sedimentation into the Colorado River), and soils.

REC-66: (Resource use objective): Through the life of the RMP, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the North Fruita Desert RMZ during the planning process: livestock grazing.

REC-67: Partnerships: Develop and maintain partnerships with local and regional recreation organizations and other community partners to assist in the

maintenance and enhancement of SRMA routes, signs, facilities, and visitor services.

REC-68: BMPs for the North Fruita Desert RMZ (for both resource and resource use objectives) include, but are not limited to, the following:

- Work with stakeholders to acquire adjacent lands to be managed consistently with the SRMA and to increase targeted recreational opportunities.
- Work with partners (e.g., Colorado Plateau Mountain Bike Trail Association, City of Fruita, and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create a sustainable recreational route system that helps achieve SRMA objectives.
- Reroute trails that create resource damage and/or trespass on private property.
- Consider administering portions of the SRMA (e.g., campground) cooperatively through partnership agreements with partner organizations or businesses.
- Work with local, regional, national, and international chambers of commerce, tourism groups, and businesses to provide accurate recreation information, user ethics, and use/user expectations, with an emphasis on promotional marketing.
- If monitoring indicates long-term camping is displacing targeted SRMA visitors, implement a seven-day camping limit.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

Palisade Rim SRMA

REC-69: (Resource objective): Through the life of the RMP, manage the Palisade Rim SRMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, Colorado hookless cactus (*Sclerocactus glaucus*), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

REC-70: (Resource use objective): Through the life of the RMP, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in the Palisade Rim SRMA during the planning process: lands and realty (access across US Bureau of Reclamation withdrawal parcel), land acquisition, private property trespass). In the portions of the SRMA that overlap the right-of-way corridor, manage recreation to achieve right-of-way corridor management objectives.

Rec-71: Partnerships

- Develop and maintain partnerships with local and regional recreation organizations and other community partners to assist in the maintenance and enhancement of SRMA routes, signs, facilities, and visitor services.
- Coordinate with Town of Palisade, Orchard Mesa Irrigation District, US Bureau of Reclamation, and Colorado Department of Transportation to develop and/or maintain necessary recreation facilities and access.
- Coordinate with Town of Palisade and other service providers to appropriately market the SRMA to achieve SRMA objectives.

REC-72: BMPs for the Palisade Rim SRMA (for both resource and resource use objectives) include, but are not limited to, the following:

- Work with stakeholders to improve existing access and create additional access to the SRMA.
- Work with stakeholders to acquire adjacent lands to be managed consistently with the SRMA and to increase targeted recreational opportunities.
- Work with partners (e.g., Town of Palisade and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create a sustainable recreational route system that helps achieve SRMA objectives.
- Reroute, or close and naturalize trails that create resource damage and/or trespass on private property.
- Administer the SRMA cooperatively through partnership agreements (example memorandum of understanding) between the Town of Palisade, US Bureau of Reclamation, and Colorado

Department of Transportation, Orchard Mesa Irrigation District, and BLM GJFO that outline administrative roles and responsibilities.

- Work with partners, local tourism groups, local businesses and municipalities (Town of Palisade) to develop appropriate marketing information and maps to promote SRMA objectives.
- Monitor outcome attainment and preferences through customer assessments (e.g., focus group interviews or visitor studies) on five-year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

Extensive Recreation Management Areas

REC-73: In ERMAs managed for multiple activities, consider separating incompatible recreation uses in either time or space if conflict arises and warrants the change (e.g., different uses on different trails on different days and designating directional travel on system trails).

REC-74: Develop and maintain partnerships as appropriate with local residents, local and regional recreation organizations, businesses, local government agencies, and other community partners to assist in the maintenance and enhancement of routes, signs, facilities, monitoring, and visitor services that help achieve recreation objectives in ERMAs/RMZs.

Barrel Springs ERMA

REC-75: (Resource objective): Through the life of the plan, manage the Barrel Springs ERMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, fragile and slumping soils, riparian habitat, paleontological resources, rare plants - Piceance Bladderpod (*Lesquerella parviflora*), and the following Significant plant communities: Montane Riparian Woodland (*Populus balsamifera* Woodland), Emergent Wetlands (*Eleocharis rostellata* Herbaceous Vegetation), Foothills Riparian Shrubland (*Betula occidentalis / Maianthemum stellatum* Shrubland).

REC-76: (Resource use objective): Through the life of the RMP, manage recreation in the Barrel Springs ERMA to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing, livestock grazing, and lands and realty.

REC-77: BMPs for the Barrel Springs ERMA (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management

strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.

- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the RMA's targeted recreation opportunities.
- In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., camping near stock ponds.)
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve ERMA objectives.
- Work with targeted recreation users and Colorado Parks and Wildlife to protect and enhance hunting opportunities in the ERMA.

Gateway ERMA

REC-78: (Resource objective): Through the life of the RMP, manage the Gateway ERMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: scenic values; wilderness characteristics; geological features; plant species of concern, including Gypsum Valley cateye (*Cryptantha gypsophila*), San Rafael milkvetch (*Astragalus rafaelensis*), Naturita milkvetch (*Astragalus naturitensis*), Grand Junction milkvetch (*Astragalus linifolius*); two significant plant communities, including Fremont's Cottonwood Riparian Forests (*Populus deltoides ssp. wislizeni / Rhus trilobata* Woodland) and Emergent Wetlands (*Eleocharis rostellata* herbaceous vegetation); deer and elk winter range; cliff-nesting raptors; cultural resources; and paleontological resources. The resources listed above are also identified for special management and protection in one or more of the following areas that the ERMA overlaps or is immediately adjacent to: Palisade WSA, Sewemup WSA , Maverick lands with wilderness characteristics unit, Unaweep Canyon lands with wilderness characteristics unit, Dolores River Riparian ACEC, Juanita Arch ACEC, The Palisade ACEC, Sinbad Valley ACEC, Unaweep Seep ACEC, Blue Mesa wildlife emphasis area, Bull Hill wildlife emphasis area, Calamity Camp National Historic Register site, and Dolores River Riparian SRMA.

REC-79: (Resource use objective): Through the life of the RMP, manage recreation in the Gateway ERMA to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: uranium exploration and mining, mineral material sales, and livestock grazing.

REC-80: BMPs for the Gateway ERMA (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the ERMA's targeted recreation opportunities.
- In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., camping near stock ponds and parking on or near cultural sites.)
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.
- Work with partners (e.g., Museum of Western Colorado and Gateway Canyon Resort) to focus interpretive media and other educational efforts on cultural heritage tourism and the stewardship of natural and cultural resources.
- Work with cooperators and partners to provide educational opportunities in the area that are consistent with the management objectives of the ERMA and adjoining or overlapping WSAs, lands with wilderness characteristics units, ACECs, wildlife emphasis areas and SRMAs.
- Ensure all management actions in the ERMA help protect the relevance and importance criteria of the Dolores River Riparian ACEC, Juanita Arch ACEC, The Palisade ACEC, and Sinbad Valley ACEC. Promote stewardship of ACEC resources by providing opportunities for visitors to learn about those resources.
- Develop an interpretation and environmental education plan to enhance educational/interpretive opportunities in cooperation with managing partners and visitors to the area.

- Work with managing partners to develop appropriate marketing strategies that help achieve the ERMA's objectives.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve ERMA objectives.

Grand Valley Shooting Ranges ERMA

REC-81: (Resource use objective): Through the life of the RMP, manage the Grand Valley Shooting Ranges ERMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*) and water quality (lead contamination and non-point source erosion/sedimentation into the Colorado River).

REC-82: (Resource use objective): Through the life of the RMP, manage recreation in the Grand Valley Shooting Ranges ERMA to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing and fluid mineral leasing.

REC-83: Partnerships

- Coordinate with community (Mesa County), state (Colorado Parks and Wildlife), and national (National Rifle Association) partners to maintain shooting range access, facilities (e.g., parking areas, fences/barriers, backstops, shade shelters, shooting benches, and chronograph pads), and visitor services (e.g., volunteer range stewards) that help achieve ERMA objectives.
- Work with partners to post conditions of use and facilitate activity participation.

REC-84: BMPs for the Grand Valley Shooting Ranges ERMA (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- In ERMAs, Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education,

and enforcement patrols) to inform recreation participants about the RMA's targeted recreation opportunities.

- Use guidance from the Best Management Practices for Lead at Outdoor Shooting Ranges (US Environmental Protection Agency 2005)
- Locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.
- Work with volunteers and managing partners to develop and communicate shooting range safety rules, etiquette, and stewardship messages.

Gunnison River Bluffs ERMA

REC-85: (Resource objective): Through the life of the RMP, manage the Gunnison River Bluffs ERMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), cliff-nesting raptors, paleontological resources, and cultural resources.

REC-86: (Resource use objective) Through the life of the RMP, manage recreation in the Gunnison River Bluffs ERMA to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing and lands and realty.

REC-87: BMPs for the Gunnison River Bluffs ERMA (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the ERMA's targeted recreation opportunities.
- Work with partners (e.g., City of Grand Junction and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.

- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve ERMA objectives.
- Administer the ERMA cooperatively through partnership agreements (example memorandum of understanding) between managing partners (e.g., Old Spanish Trail Association and Mesa County) and BLM GJFO that outline administrative roles and responsibilities.
- In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., trails near livestock developments or private residences.)
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.

Horse Mountain ERMA

RMZ 1 – Horse Mountain Trails

REC-88: (Resource objective): Through the life of the RMP, manage the Horse Mountain ERMA, RMZ 1, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*) and water quality (non-point source erosion/sedimentation into the Colorado River).

REC-89: (Resource use objective): Through the life of the RMP, manage recreation in the Horse Mountain ERMA, RMZ 1, to ensure a balance between protecting targeted recreation activities and settings with other resource uses. Consider the following resource uses: fluid mineral leasing and livestock grazing. In the portions of this RMZ that overlap the right-of-way corridor and Wind Energy Emphasis Area, manage recreation to achieve management objectives for those designations.

REC-90: Partnerships: Work with community partners (e.g., Town of Palisade, Mesa County, City of Grand Junction, local businesses, and private landowners) to plan and develop a trail system that helps achieve RMZ objectives.

REC-91: BMPs for the Horse Mountain ERMA, RMZ 1, (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation

behavior that mitigates impacts to operations and facilities of other resource uses.

- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the RMZ's targeted recreation opportunities.
- Work with community partners, and utility permit applicants to minimize the impact to recreation from utility developments in the right-of-way corridor and Wind Energy Emphasis area that overlap the RMZ.
- Work with partners (e.g., Town of Palisade, City of Grand Junction and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve RMZ objectives.
- Administer the RMZ cooperatively through partnership agreements (example memorandum of understanding) between managing partners (e.g., Town of Palisade) and BLM GJFO that outline administrative roles and responsibilities.
- In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., trails near livestock developments or private residences.)
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.

RMZ 2 – C Road OHV Open Area

REC-92: (Resource objective): Through the life of the RMP, manage the Horse Mountain SRMA, RMZ 2, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*) and water quality (non-point source erosion/sedimentation into the Colorado River).

REC-93: (Resource use objective): Through the life of the RMP, manage recreation in the Horse Mountain SRMA, RMZ 2, to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: lands and realty (right-of-way corridor) and fluid mineral leasing. In the portions of this RMZ that overlap the

right-of-way corridor, manage recreation to achieve management objectives for the right-of-way corridor.

REC-94: BMPs for the Horse Mountain SRMA, RMZ 2, (for both resource and resource use objectives) include, but are not limited to, the following:

- Clearly identify OHV open area boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least-obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to contain use along portions of an open OHV area boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.
- Develop recreation facilities at primary access points that may include, but are not limited to, parking/staging areas that accommodate OHV-hauling rigs, OHV loading/unloading ramps, vault toilets, informational kiosks, and shade shelters.
- Clearly identify primary access points to the RMZ both onsite (e.g., signs and developed recreation facilities) and offsite (e.g., digital and print media and recreation service providers.)
- Work with partners, local businesses and municipalities to tailor information and maps to promote RMZ objectives.
- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the RMZ's targeted recreation opportunities.
- Work with adjoining landowners and users to minimize conflicts with private property.
- Work with community partners, and utility permit applicants to minimize the impact to recreation from utility developments in the right-of-way corridor where it overlaps the RMZ.

- Administer the RMZ cooperatively through partnership agreements (example memorandum of understanding) between managing partners and BLM GJFO that outline administrative roles and responsibilities.
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.

RMZ 3 – Target Shooting

REC-95: (Resource objective): Through the life of the RMP, manage the Horse Mountain SRMA, RMZ 3, to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*) and water quality (lead contamination and non-point source erosion/sedimentation into the Colorado River).

REC-96: (Resource use objective): Through the life of the RMP, manage recreation in the Horse Mountain SRMA, RMZ 3, to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing and livestock grazing. In the portions of this RMZ that overlap the right-of-way corridor, manage recreation to achieve management objectives for the right-of-way corridor.

REC-97: Partnerships

- Coordinate with community partners to maintain access and facilities (e.g., access roads, parking areas, fences/barriers, and signage), and visitor services (e.g., volunteers) that help achieve RMZ objectives.
- Work with partners to post conditions of use and facilitate activity participation.
- Work with adjoining landowners and users to minimize conflicts with private property.

REC-98: BMPs for the Horse Mountain SRMA, RMZ 3, (for both resource and resource use objectives) include, but are not limited to, the following:

- Clearly identify RMZ boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least-obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to

contain use along portions of the RMZ boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (e.g., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the RMA's targeted recreation opportunities.
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.
- Work with area residents, volunteers and managing partners to develop and communicate shooting safety rules, etiquette, and stewardship messages.

North Desert ERMA

REC-99: (Resource objective): Through the life of the RMP, manage the North Desert ERMA to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), Grand Junction buckwheat (*Eriogonum contortum*), Grand Junction suncup (*Camissonia eastwoodiae*), Dolores River skeletonplant (*Lygodesmia doloresensis*); significant plant communities, including Saline Bottomland Shrublands (*Sarcobatus vermiculatus / Suaeda moquinii* Shrubland), Western Slope Grasslands (*Achnatherum hymenoides* Shale Barren Herbaceous Vegetation), Cold Desert Shrublands (*Atriplex confertifolia / Achnetherum hymenoides* Shrubland), Gardner's Mat Saltbush Shrublands (*Atriplex gardneri / Leymus salinus* Dwarf-shrubland), and Skunkbrush Riparian Shrubland (*Rhus triloblata* Shrubland); water quality (non-point source erosion/sedimentation into the Colorado River); Mancos Shale; saline soils; deer and elk winter range; and pronghorn.

REC-100: (Resource use objective): Through the life of the RMP, manage recreation in the North Desert ERMA to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: coal leasing, mineral material sales, fluid mineral leasing, and livestock grazing. In the portions of this RMZ that overlap the right-of-way corridor and Solar Energy Emphasis Areas (Mitchell Road and 21 Road), manage recreation to achieve management objectives for those designations.

REC-101: Develop and maintain partnerships with local and regional OHV recreation organizations and other community partners to assist in the maintenance and enhancement of ERMA routes, signs, facilities, and visitor services.

REC-102: BMPs for the North Desert ERMA (for both resource and resource use objectives) include, but are not limited to, the following:

- In ERMAs, utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.
- Utilize information portals (e.g., information/education kiosks, signs, brochures, maps, and websites) and management strategies (i.e., onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about the ERMA's targeted recreation opportunities.
- Work with community partners, and utility permit applicants to minimize the impact to recreation from utility developments in the right-of-way corridor and Solar Energy Emphasis areas that overlap the ERMA.
- Work with partners (e.g., City of Fruita, City of Grand Junction, and Mesa County) to develop connectivity to adjoining urban trails to provide safe access to BLM-administered lands, alternative transportation options, and improved recreational opportunities.
- Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see **Appendix M**) to create and maintain a sustainable recreational route system that helps achieve ERMA objectives.
- Administer the ERMA cooperatively through partnership agreements (example memorandum of understanding) between managing partners (e.g., City of Fruita, City of Grand Junction, and Mesa County) and BLM GJFO that outline administrative roles and responsibilities.
- In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g., trails near livestock developments or private residences.)
- In ERMAs, locate new recreation facility developments to mitigate recreation impacts on other resource uses and developments.

References

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US Environmental Protection Agency. 2005. Best Management Practices for Lead at Outdoor Shooting Ranges, EPA-902-B-01-001 Revised June 2005. US Environmental Protection Agency, Region 2, Denver, CO.

LANDS AND REALTY (LR)

Standard Operating Procedures

LR-1: Power lines shall be constructed in accordance to standards outlined in Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996 (Avian Power Line Interaction Committee 2006). Right-of-way applicants shall assume the burden and expense of proving that proposed pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the BLM Authorized Officer.

LR-2: Rights-of-way and other lands and realty authorizations, including power lines, pipelines, transmission corridors, energy development sites and related development, and gravel pits, will contain noxious and invasive plant management terms or stipulations for all ground-disturbing actions. These will include conducting a pre-disturbance noxious weed inventory, designing to avoid or minimize vegetation removal and weed introduction or spread, managing weeds during the life of the right-of-way or authorization to prevent or minimize weed introduction or spread, abandoning the right-of-way or authorization to establish competitive vegetation on bare ground areas, and monitoring revegetation success and weed prevention and control for a reasonable number of years.

LR-3: Rights-of-way will be constructed to avoid physical damage to range improvements and rangeland study areas.

LR-4: The right-of-way holder shall notify the BLM Authorized Officer at least 48 hours prior to the commencement construction, reclamation, maintenance, or any surface-disturbing activities under this grant.

LR-5: Copies of the right-of-way grant with the stipulations shall be kept on site during construction and maintenance activities. All construction personnel shall review the grant and stipulations before working on the right-of-way or permitted area.

LR-6: All facilities shall be labeled with the authorization number, operator, and contact information.

LR-7: No signs or advertising devices shall be placed on the premises or on adjacent BLM-administered lands, except those posted by or at the direction of the BLM Authorized Officer.

LR-8: The Holder shall promptly remove and dispose of all waste caused by its activities. The term "waste" as used herein means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, ashes, and equipment. No burning of trash, trees, brush, or any other material shall be allowed.

LR-9: The Proponent (applying for new right-of-way) shall notify all existing right-of-way holders in the project area prior to beginning any surface-disturbance or construction activities. The Holder shall obtain an agreement with any existing right-of-way holders or other parties with authorized facilities that cross or are adjacent to those of the holder to assure that no damage to an existing right-of-way or authorized facility will occur. The agreement(s) shall be obtained prior to any use of the right-of-way or existing facility.

LR-10: The Holder shall participate in the formation of a Road User's Association for the road if new rights-of-way are granted for use of the existing road. All new users will be required to join the association.

LR-11: The Holder will provide a performance bond for the authorized facility, acceptable to the BLM Authorized Officer, in the amount of $(_) that must be maintained in effect until restoration of the right-of-way has been accepted by the BLM Authorized Officer. The bond shall be furnished by the holder within 30 days of signing the grant (_) and shall be applied to all additional authorizations associated with the project as necessary.

LR-12: Incorporate conditions of approval and mitigation measures from the Final Programmatic EIS on Wind Energy Development on BLM-administered Lands in the Western US (BLM 2005), as applicable.

LR-13: Incorporate conditions of approval and mitigation measures from the Solar Energy Programmatic EIS, as applicable (BLM 2012).

LR-14: All construction activities shall be confined to the minimum area necessary. The exterior boundaries of the construction area shall be clearly flagged prior to any surface-disturbing activities.

LR-15: Existing roads will be used wherever possible. Additional roads shall be kept to the minimum. Route locations must be approved by the BLM prior to construction.

LR-16: When blasting is necessary, the following precautions will be used:

a) In areas of human use, blasting blankets will be used.

b) Landowners or tenants in close proximity to the blasting will be notified in advance of the blasting so that livestock and other property can be adequately protected.

c) Access to the blasting area will be restricted by construction personnel stationed at each end of the area to be blasted.

d) Blasting within 0.25-mile of federally owned or controlled springs and flowing water wells must be approved in writing by the area manager.

e) No blasting will be permitted within 0.25-mile of historic trails, natural areas, identified archaeological sites, and recreation areas.

f) Powder magazines will be located out of sight or at least 0.5-mile from roads. Loaded shot holes will not be left unattended. Approval from the area manager will be obtained for the magazine locations.

LR-17: **(MLP)** Roads will be constructed and maintained to BLM road standards [BLM Manual 9113 (BLM 2011a)]. All vehicle travel will be within the approved driving surface.

Standard Operating Procedures for Pipeline Projects

LR-18: A preconstruction field conference shall be requested by the grantee at least five working days prior to any construction activities unless otherwise agreed upon by the BLM Authorized Officer.

LR-19: Once the pipeline is constructed, the grantee/operator shall restore the existing roadway to meet or exceed conditions prior to construction. The preconstruction width of the driving surface shall also be restored and erosion-control structure installed subject to approval of the BLM Authorized Officer. The grantee/operator shall be responsible for road maintenance from the beginning to completion of operations. This may include, but not be limited to, blading the roadway, cleaning ditches and drainage facilities, dust abatement, or other requirements as directed by the BLM Authorized Officer.

LR-20: Construction width shall include the existing road. The pipeline shall be located two to three feet from the edge of the ditch along the existing road. The existing road shall be on the working side of the trench.

LR-21: The grantee shall accomplish the crossing of the pipeline owned by (company name) in accordance with an agreement between the grantee/operator.

LR-22: Pipeline location warning signs shall be installed within five days of construction completion. Each sign shall be permanently marked with the right-of-way serial number.

Standard Operating Procedures for Geophysical Exploration

LR-23: The operator will furnish a map with the Notice of Intent showing approximate line to be used. A map will also be filed with the Notice of Completion showing the completed line. The map will be of a minimum scale of 0.5-inch equals 1.0 mile.

LR-24: Rehabilitation of disturbed areas is to be done concurrent with the geophysical operations.

LR-25: Blasting or vibrating within 0.25-mile of federally-owned or controlled springs and flowing water wells or cultural resource sites must be approved in writing by the area manager.

LR-26: Plugging of drill holes will conform to the Colorado Reclamation Standards Abandoned Drill Holes Act. Drill hole cuttings will be returned to the hole.

LR-27: No blading or other dirt work will be allowed without written permission from the area manager.

LR-28: Adhere to Standard Terms and Conditions described in BLM Handbook H-3150-1: Onshore Oil and Gas Geophysical Exploration Surface Management Requirements (BLM 1994).

Best Management Practices

LR-29: Coordinate with the Colorado Parks and Wildlife early in the sale process on proposals to sell BLM-administered land encumbered by a small-capacity wildlife water development.

References

Avian Power Line Interaction Committee. 2006. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996. Edison Electric Institute, Avian Power Line Interaction Committee, and the California Energy Commission. Washington, DC, and Sacramento, CA.

BLM (US Department of the Interior, Bureau of Land Management). 1994. Handbook H-3150-1—Onshore Oil and Gas Geophysical Exploration Surface Management Requirements. BLM, Washington, DC. Revised 2007.

_____. 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western US. BLM, Washington, DC. June 2005.

_____. 2011a. Manual 9113—Roads Manual. BLM, Washington, DC.

_____. 2011b. Handbook H-9113-1—Road Design Handbook. BLM, Washington, DC.

_____. 2012. Approved Resource Management Plan Amendments/Record of Decision for Solar Energy Development in Six Southwestern States. BLM, Washington, DC. October 2012.

MINERALS AND ENERGY (M&E)

Actions involving minerals and energy are governed by:

- Minerals Leasing Act of 1920 (30 US Code 181 et seq.);
- Federal Oil and Gas Royalty Management Act (30 US Code 1718[b]);
- Federal Onshore Oil and Gas Leasing Reform Act (30 US Code 226[g]);
- 43 CFR 8900 et seq.
- Federal On Shore Orders 1-7
- 43 CFR 3809 regulations (Locatable Minerals Management)

Standard Operating Procedures

SOPs are measures that are required in most circumstances. Some are based on laws and policy, while others are specific to the planning area to achieve resource management objectives.

Geophysical Exploration

M&E-1: If operations open an existing fence, temporary gates will be installed for use during the course of operations, or the fence will be immediately repaired. On completion of operations, fences will be restored to their original condition or better.

M&E-2: When saturated soil conditions exist on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads, and locations.

M&E-3: For geophysical operations, specialized low surface impact equipment (e.g., wide- or balloon-tired vehicles or all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

M&E-4: Prohibit the use of subsurface explosives and vibrosis buggies within 0.25-mile of all spring sources and perennial streams.

M&E-5: Powder magazines will be located at least 1.0 mile from traveled roads, unless otherwise authorized after analysis or review. Loaded shot holes and charges will be attended at all times.

M&E-6: Materials or equipment related to project activities (e.g., trash, flagging, and lath) will be removed to an authorized disposal site.

M&E-7: Project materials which could be a hazard to public health, safety, or resource values will be stored in appropriate secondary containment. No oil or lubricants will be drained onto the ground surface.

M&E-8: Shot-hole cuttings will be returned to the hole, or an alternative plan will be submitted for BLM approval.

Reducing Fluid Mineral Development Footprint

M&E-9: Surface-disturbing actions will be sensitive to natural resource protection. When surface disturbance in sensitive areas is unavoidable, they will be minimized to the greatest extent practicable, especially near drainage features and on soils mapped as being saline (see **Glossary**).

M&E-10: Utilities such as gas and water lines, power lines, and roads will be located in common corridors where practicable.

Administrative / General and Planning

M&E-11: **(MLP)** Consider site specific soil and vegetative characteristics and reclamation potential in project design and layout.

M&E-12: **(MLP)** Design and construct energy service roads to a safe and appropriate standard, no higher than necessary to accommodate their intended use.

M&E-13: **(MLP)** Locate and construct roads and other linear facilities to follow the contour of the landform or mimic lines in the vegetation.

M&E-14: **(MLP)** A pre-construction meeting will be held with the BLM before and to facilitate implementation of plans and ensure compliance with stipulations or conditions of approval. The BLM will be notified at least 48 hours prior to construction or reclamation work.

M&E-15: By November 1 each year, companies will provide georeferenced spatial data depicting as-built locations of all facilities, wells, roads, pipelines, power lines, reservoirs, discharge points, and other related facilities to the BLM for all Master Development Plans where construction and development have been completed.

M&E-16: Where winter range areas are not protected by lease stipulations, operations such as construction, drilling, completion, work-overs and other intensive activities will be avoided from January 1 to March 1 to minimize impacts to wintering big game.

M&E-17: Before activities take place, every pad, access road, or facility site will have an approved surface drainage plan (storm water management plan) for establishing positive management of surface water drainage, to reduce erosion and sediment transport. The drainage plan will include adaptive BMPs, monitoring, maintenance and reporting. BMPs may include run-on/run-off controls such as surface pocking or revegetation, ditches or berms, basins, and other control methods to reduce erosion. Pre-construction drainage BMPs will be installed as appropriate.

M&E-18: **(MLP)** Before surface disturbance, agreements will be obtained with all existing rights-of-way holders, authorized users and pipeline operators affected by permitted activities. If agreement cannot be reached, the operator will comply with the law or regulations.

M&E-19: Disclosure of hydraulic fracture fluids per Colorado Oil and Gas Conservation Commission rule 205A will be done using www.FracFocus.org 30 days following the conclusion of the hydraulic fracturing treatment and in no case later than 90 days after the commencement of such hydraulic fracturing treatment.

Pre-Construction

M&E-20: Stakes, snow fence, or flagging will be installed to mark boundaries of permitted areas of disturbance, including pre-construction BMPs and soils storage areas, and be maintained in place until final construction cleanup is completed.

M&E-21: **(MLP)** Pre-construction drainage BMPs will be installed as appropriate, per the approved surface/storm drainage water management plan to protect stream drainages and to reduce erosion and sediment transport.

M&E-22: **(MLP)** Surveys for raptor nests, sensitive plant, and animal species and cultural resources will be conducted prior to construction activities following BLM survey standards. Survey results will be submitted to the BLM for analysis and recommendations before project approval.

Construction

M&E-23: **(MLP)** All routes shall be built and maintained to BLM Manual 9113 (BLM 2011a) standards for road shape and drainage features or where appropriate BLM Manual 9115 (BLM 2012a) standards for primitive roads. For drainage crossings, culverts should be sized for the 50-year storm event with no static head and to pass a 100-year event without failing. Site specific conditions may warrant BLM to require designs for larger events (e.g., 75- to 100-year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009a). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

M&E-24: As detailed in the site plan for surface/storm water management, drainage from disturbed areas will be confined or directed to minimize erosion, particularly within 100 feet of all drainages. No runoff, including that from roads, will be allowed to flow into intermittent or perennial waterways without first passing through sediment-trapping mechanisms such as vegetation, anchored bales, or catchments.

M&E-25: **(MLP)** Topsoil stripping will include all growth medium present at a site (e.g., following initial clearing of large trees), as indicated by color or texture. Stripping and storage depth may be specified during the onsite inspection. All stripped topsoil /growth medium will be salvaged, segregated, and stored in a manner that extends biological viability and protects it from loss. Topsoil and all growth medium will be replaced prior to seedbed preparation. No topsoil will be stripped or segregated when soils are saturated or frozen below the stripping depth.

M&E-26: **(MLP)** Access roads requiring construction with cut-and-fill will minimize surface disturbance and consider the character of the landform's contours, visual contrasts, the cut materials, the depth of cut, where the fill material will be deposited, and other resource concerns.

M&E-27: **(MLP)** Fill material will not be cast over hilltops or into drainages without BLM approval.

M&E-28: **(MLP)** When saturated soil conditions existing on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads, and locations.

M&E-29: **(MLP)** Construction activities at drainage crossings (e.g., burying pipelines and installing culverts) will be timed to avoid high-flow conditions. Construction activities that affect stream flow will consist of either a piped stream diversion or the use of a coffer dam and pump to divert flow around the disturbed area.

M&E-30: **(MLP)** When activity in a wetland is unavoidable, the operator will reduce impacts through the use of oak or high-density polyethylene (HDP) mats and will restore all temporarily disturbed wetlands or riparian areas, consulting with the BLM to determine appropriate mitigation, including verification of native plant species to be used in restoration.

M&E-31: **(MLP)** All stream crossings affecting perennial streams or streams supporting riparian habitat shall be professionally engineered (design, construction, and maintenance).

M&E-32: **(MLP)** Where the access road crosses small drainages and intermittent streams not requiring culverts, low-water crossings shall be used. The road will dip to the original streambed elevation of the drainage and the crossing will prevent any blockage or restriction of the existing channel. Material moved from the banks of the crossing will be stockpiled nearby for later use in reclamation. Gravel, riprap, or concrete bottoms may be required in some situations.

M&E-33: **(MLP)** All pipeline welds within 100 feet of a perennial stream will be x-rayed to prevent leakage into the stream. Where pipelines cross streams that support federal or state-listed threatened or endangered species or BLM-listed sensitive species, additional safeguards such as double-walled pipe and remotely-actuated block or check valves on both sides of the stream may be used.

M&E-34: **(MLP)** Water from hydrostatic testing of pipelines will be filtered of sediments prior to discharge. Energy dissipating methods such as straw-bales, wattles, and vegetative buffers will be in place before any discharge of water.

M&E-35: **(MLP)** Baseline information of channel characteristics and riparian vegetation present must be documented before actions are permitted to disturb riparian areas and the stream channel.

Drilling

M&E-36: **(MLP)** Pits that may contain liquid, such as reserve pits, produced water pits, frac-water pits, cuttings trenches (if covered by water/fluid), and evaporation pits, will install and maintain netting to prevent entry or use by migratory birds. They will be fenced on three sides before drilling activity and closed off on the fourth side after drilling is completed.

M&E-37: If any pit that may contain liquid is constructed with a slope steeper than 3:1, or if the pit is lined, escape ramps will be installed every 50 feet along the pit slope and at each corner to allow escape by livestock and wildlife.

M&E-38: Fluids will be confined to pits and all pits that may contain liquids will be lined to protect groundwater. Liners will be maintained in good condition, with no tears or holes, until they are removed when the reserve pit is closed.

M&E-39: Pits will be constructed so that water will not run into them. Fluid levels will be maintained below two feet of the lowest point of containment.

Utilization and Production

M&E-40: Operations will not damage, disrupt or interfere with water flows and/or improvements associated with springs, wells, or impoundments.

M&E-41: Regularly scheduled road maintenance will include, but not be limited to, crown or slope reconstruction, clean-out of ditches, culverts and catchments, replacement of the road surface, and dust abatement.

M&E-42: Well pads and facilities will be kept free of unnecessary equipment, trash, and other materials not in current use.

M&E-43: Pits will be promptly drained, tested, closed, and reclaimed according to local state and federal regulations.

M&E-44: Dust from vehicular traffic, equipment operations, or wind events will be controlled as needed. No application of surfactants or dust agents will proceed without BLM approval. In areas with soils mapped as Mancos shale, application of water on native road surfaces will be limited to minimize mobilization of selenium. In such areas, alternate dust-abatement measures such as proper road surfacing and maintenance, and speed limits will be used, subject to BLM approval.

M&E-45: Noise will be minimized by methods such as closed compressor buildings to comply with Colorado Oil and Gas Conservation Commission standards for noise.

M&E-46: **(MLP)** Pipeline warning signs permanently marked with the operator's and owner's names (emergency contact) and purpose (product) of the pipeline will be installed within five days of construction completion and before use of the pipeline for transportation of product.

M&E-47: All production equipment with a chimney, vent, or stack shall be fitted with a device to prevent birds from entering or perching on the chimney, such as an excluder cone or equivalent.

M&E-48: Production facilities will be located and arranged to facilitate safety and maximize areas to be reclaimed.

M&E-49: **(MLP)** All above-ground facilities should be painted a natural color selected from the BLM Standard Environmental Color Chart to minimize contrast with adjacent vegetation and/or rock outcrops. Color(s) should be selected in the field at the proposed project location and should be planned for the season with the greatest number of viewers. Selected color(s) should be one to two shades darker than those naturally occurring in the background

landscape (this will also help with the effects of fading over time). The operator may need to paint drill rig anchors and those minor working tips and edges of production facilities that are subject to Occupational Safety and Health Administration safety requirements a red, yellow, or orange color.

M&E-50: Standard secondary containment shall hold 110 percent of the capacity the largest single tank it contains and be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours. Earthen berms must be compacted and of fine material that will prevent seepage of any spill to surrounding area.

M&E-51: All tanks with a capacity of ten barrels or greater shall be labeled or posted with the following information: A. Name of operator; B. Operator's emergency contact telephone number; C. Tank capacity; D. Tank contents; and E. National Fire Protection Association label. Smaller chemical storage shall be labeled with contents and National Fire Protection Association label.

M&E-52: All liquids management hoses will be stored inside secondary containment when not in use.

M&E-53: **(MLP)** All open top tanks, catchments or secondary containment vessels will be equipped with sturdy metal screening to prevent access to wildlife of all sizes to prevent entrapment and drowning of small wildlife.

Site Stabilization, Reclamation and Monitoring

M&E-54: Road and pipeline reclamation, including seedbed preparation and seeding of temporarily disturbed areas, will be completed within 30 days following completion of construction.

M&E-55: **(MLP)** Following completion of pad construction, topsoil storage piles, stormwater control features, and cut-and-fill slopes will be temporarily seeded to stabilize the materials, maintain biotic soil activities, and minimize weed infestations. When this is not feasible, disturbed surfaces must be stabilized using other methods like hydro-mulch or erosion matting while vegetation is establishing. Seedbed preparation is not generally required for topsoil storage piles or other areas of temporary seeding.

M&E-56: Interim reclamation includes recontouring and revegetating the entire portion of the disturbed area, except that part of the well pad needed for production activities.

a) It will be completed within six months following completion of the last well planned for the pad or after a year has passed with no new wells drilled on the pad. All areas unnecessary to production activities will be revegetated, including the area within the remaining rig anchors. In special cases, an exception to this will be requested.

b) Before interim reclamation is scheduled, the operator will meet with BLM to inspect the disturbed area, review the existing reclamation plan, and agree upon any revisions to it.

c) All parts of the area unnecessary for long-term operations will be reshaped to blend with natural topography, covered evenly with topsoil, and a seedbed prepared.

d) For cut-and-fill slopes, initial reclamation will typically consist of moving fill material back into cuts, back-filling, and reshaping to achieve the configuration specified in the reclamation plan. Compacted areas will be well ripped in two passes at perpendicular directions. In fragile or loose soils, compaction techniques such as tread-walking may be necessary to prevent high erosion hazard. Topographic contours will be reshaped to blend with natural topography. These may include berms and swales to manage water drainage, support revegetation, mitigate visual impacts, and maximize natural appearances.

M&E-57: Seedbed Preparation. Good seedbed preparation is key to soil stabilization, moisture infiltration, and improving the chances for revegetation success.

a) Following contouring, backfilled or ripped surfaces will be covered evenly with topsoil.

b) Within 24 hours of broadcast seeding, the spread topsoil will be roughened by a method such as pitting, raking, or harrowing before seeding to break up any crust that has formed and ensure good seed-to-soil contact.

c) To control erosion and enhance vegetative establishment on slopes steeper than 3:1, or to create a more natural looking landscape in areas of visual sensitivity, seedbed preparation may include pocking or pitting the soil material to form microbasins scaled to the site and materials. These microbasins will be constructed in irregularly spaced and irregularly aligned rows with an orientation perpendicular to the natural flow of runoff down a slope.

d) Requests to use soil amendments, including fertilizer and soil conditioners, will be submitted to the BLM for approval. Submittal will include basic information on the amendment and the purpose of its use.

M&E-58: Seed Mixes. Seed mixes will typically consist of native, early-succession species, or species with the ability to establish quickly in disturbed soil areas. Non-native species considered desirable under special circumstances, such as sterile non-native grasses, will be submitted to the BLM for approval before use.

a) Seed mix composition will be calculated based on the number of Pure Live Seed per pound rather than percentage by weight. Seeding rate in pounds per acre will be based on the total number of Pure Live Seeds per square foot.

b) Weed free seed will be used. It will contain no noxious, prohibited, or restricted weed seeds and no more than 0.5 percent by weight of any other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. To maintain quality, purity, germination, and yield, only tested, certified seed for the current year, with a minimum germination rate of 80 percent and a minimum purity of 90 percent, will be used unless otherwise approved by BLM in advance of purchase. Seed shall be viability-tested in accordance with state law(s) and within nine months before purchase.

c) Seed mixes for temporary use may contain one or more sterile hybrid grasses or other non-native cover crop in addition to native perennial species, if pre-approved by BLM.

d) For private surfaces, BLM-approved seed mixes will be recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation.

e) Seed tags or other official documentation of the seed mix will be supplied to the BLM for approval at least 14 days before the date of proposed seeding. Seed that does not meet the above criteria will not be applied to BLM-administered lands. A Sundry Notice describing the completed work, the weed-free certification, and the seed tag(s) will be submitted BLM within 30 days after seeding.

M&E-59: Seeding Procedures

a) Seeding will be conducted no more than 24 hours following completion of final seedbed preparation (see Seedbed Preparation).

b) Where practical, seed will be planted by drill-seeding to a depth of 0.25- to 0.5-inch along the contour of the site. Drill seeding will be followed by culti-paction to enhance seed-to-soil contact and prevent losses of both. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25- to 0.5-inch of soil cover. Hydro-seeding and hydro-mulching may be used in temporary seeding or in areas where drill-seeding or broadcast-seeding/ raking are impracticable. Hydro-seeding and hydro-mulching must be conducted in two separate applications to ensure adequate seed-to-soil contact.

c) If interim revegetation is unsuccessful, reseedings will be repeated annually until satisfactory vegetative cover has been achieved. Requirements for reseeding of temporary areas will be considered on a case-by-case basis. Seeding will be considered successful when the site is protected from erosion and revegetated with a vigorous, self-sustaining, and diverse cover of native (or otherwise approved) plant species. The BLM shall not require reseeding during periods that have proven less than optimal.

M&E-60: Mulch

a) Mulch will be applied within 24 hours following completion of seeding. Where areas have been drill- or broadcast-seeded and raked, certified weed-free straw or certified weed-free native grass hay mulch will be crimped into the soil. Hydro-mulching may be used in areas of interim reclamation where crimping is impractical, in areas of interim reclamation that were hydroseeded, and in areas of temporary seeding regardless of seeding method.

b) Mulch will not be applied in areas where erosion potential necessitates use of a biodegradable erosion-control blanket (straw matting).

M&E-61: Cut-and-fill slopes will be protected against erosion by contour grading, microbasins, or other measures approved by the BLM. Well-anchored BMPs such as biodegradable matting, weed-free bales, or wattles may also be used on cut-and-fill slopes and along drainages to protect against soil movement.

M&E-62: The reclaimed pad will be protected from disturbance by a fence to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. Seeded species will be considered firmly established when perennial grass and forb species are at least 80 percent cover of that of the surrounding or reference area.

M&E-63: Monitoring. Because weed and reclamation management activities are components of a long-term process, monitoring and reporting are integral to and long-term commitment to land health.

a) All sites considered as "operator reclamation in progress" will be routinely monitored for reclamation success. Reports will be submitted to the BLM by December 1 of each year. Annual reports will include whether accomplishment of objectives appears likely and of not, what corrective actions are proposed.

b) All sites will be routinely monitored for the presence of noxious weeds or other undesirable plant species as set forth in the joint BLM/US Department of Agriculture, Forest Service Noxious and Invasive Weed Management Plan for Oil and Gas Operators.

Pesticide use proposals will be approved by the BLM before application of herbicides. Annual weed monitoring reports shall be submitted to the BLM by December 1. They will include weed species found (listed by common names), total acres infested with weeds, total acres treated, treatment methods, and total pounds of active ingredient of pesticides applied. All Noxious Weed Inventory and Pesticide Application records for that year will be included with the report.

M&E-64: Visual Resources

a) Every proposal will include a detailed, site-specific description and plan of how it will meet the Visual Resource Management Class of the area where it is proposed. As much as possible all proposed features will be located and placed to avoid or minimize visibility from travel corridors, residential areas, and other sensitive observation points.

b) To the extent practical, existing vegetation shall be preserved when clearing and grading for pads, roads, and pipelines. Cleared trees and rocks may be salvaged for redistribution over reshaped cut-and-fill slopes or along linear features.

c) Above-ground facilities will be painted a non-reflective natural color selected to minimize contrast with adjacent vegetation or rock outcrops. Colors may be specified by the BLM on a project-by-project basis.

d) Adaptive management techniques may be applied before or after construction to mitigate straight-line visual contrast effects of pad margins, cut-and-fill slopes, pipeline alignments, or other cleared vegetation. This could include additional tree removal along contrasting edges to create irregularly shaped openings or more natural-looking mosaic patterns, or treating surfaces to mitigate visual contrasts in color or surface texture.

Best Management Practices

BMPs are adaptive state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. Numerous BMPs for oil and gas development are also incorporated into the general oil and gas development requirements. These include minimizing the number and size of pads through use of multiple well designs and directional drilling, centralizing hydraulic fracturing and water management, minimizing road footprints, centralizing support facilities such as tank batteries, collocating utilities and pipelines in common corridors and aligning them along roadways, and implementing intensive interim reclamation practices. The BLM encourages applicants to include in their proposals BMPs such as those identified. If not, BLM will likely require them. Actual BMPs proposed or required during the

permitting process to mitigate impacts are expected to vary according to technologies and site-specific needs. BMPs will also be expected to change over the life of a project, being adaptively updated in response to monitoring and changing project conditions. Additional practices could be required, withdrawn, or modified in response to changing activities or future planning. Such adaptive changes to BMPs may generally be implemented without further review or land use planning, but will be analyzed during the NEPA analysis associated with the permitting process. Monitoring and adaptive management practices will help to refine and clarify needed BMPs, consistent with the goals and objectives of this RMP.

The listed BMPs are not intended to be complete, but rather to offer operators and resource staff examples of commonly used methods to reduce impacts that sometimes result when fluid mineral development occurs. More fluid mineral development BMPs can be found at www.blm.gov/bmp.

Geophysical Exploration

M&E-65: Specialized low surface impact equipment (e.g., wide- or balloon-tired vehicles or all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

M&E-66: **(MLP)** Pre-mobilization inspection will be performed to insure that all construction equipment and vehicles are clean and free of weeds, weed seed, soil, and vegetative material prior to moving onto BLM-administered lands. Driving through or parking on noxious weed infestations will be avoided.

Reducing Fluid Mineral Development Footprint

M&E-67: **(MLP)** The operator will co-locate multiple wells on well pads and use directional drilling to reduce the number of pads and roads.

M&E-68: **(MLP)** The operator will use centralize completions to reduce the number of truck trips, expense, exhaust emissions, and fugitive dust.

M&E-69: **(MLP)** To minimize construction disturbance, truck traffic, dust, and other impacts to air quality, soils, and wildlife, centralized production facilities will be used for all natural gas liquids and produced water.

M&E-70: **(MLP)** Telemetry will be used to remotely monitor producing wells and facilities to reduce vehicular traffic. During winter closures, unavoidable monitoring and or maintenance activities will be conducted between 9 a.m. and 3 p.m., to the extent practical.

Administrative / General and Planning

M&E-71: **(MLP)** To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes, and side cuts across steep

slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

M&E-72: **(MLP)** Drilling will be done with closed-loop systems as much as possible, particularly in areas where water resources are most vulnerable, including soils mapped as alluvial, colluvial, and glacial deposits; near springs and perennial water sources; in important groundwater recharge areas; and within municipal watersheds.

M&E-73: **(MLP)** Chemicals used in the fracturing process will be biodegradable, non-toxic, pH neutral, residual free, non-corrosive, non-polluting, and non-hazardous in the forms and concentrations being used. Documentation in the form of Material Safety Data Sheets will be reviewed by operator for compliance prior to use, and Material Safety Data Sheets will remain on site at all times such chemicals are present.

M&E-74: **(MLP)** In municipal watersheds, the operator will develop and implement a Watershed Protection Plan. This plan will characterize baseline hydrologic and hydrogeologic conditions such as, but not limited to, water chemistry, water quantity, groundwater flow patterns, connectivity between geologic formations, and communication between surface and groundwater. The operator will collaborate with all watershed stakeholders in development of the plan.

M&E-75: **(MLP)** Adopt BMPs per the BLM and US Department of Agriculture, Forest Service Noxious and Invasive Weed Management Plan for Oil and Gas Operators (BLM and US Department of Agriculture, Forest Service 2007).

M&E-76: Incorporate BMPs and conditions of approval from the Final Programmatic EIS for Geothermal Leasing in the Western US (BLM and US Department of Agriculture, Forest Service 2008), as applicable.

Pre-Construction

M&E-77: **(MLP)** Pre-mobilization inspections will be performed to ensure that all construction equipment and vehicles are clean and free of soils, weeds, weed seed, and vegetative material prior to moving onto BLM-administered lands. Driving through or parking on noxious weed infestations will be avoided.

Construction

M&E-78: **(MLP)** Surface-disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book) (BLM 2007b).

M&E-79: **(MLP)** Where feasible, entrances to construction locations will be covered by gravel "track pads" to prevent sediment and weed seeds from being tracked in and out of the site.

M&E-80: **(MLP)** In areas of mapped Mancos Shale, saline soils, or fragile soils, groundwater will not be discharged to surface water drainages to minimize mobilization and transport of selenium, salts, and sediment within the Colorado River Basin.

M&E-81: **(MLP)** Where linear disturbance is proposed, edges of vegetation removal will be feathered to avoid long linear habitat edges and support habitat complexity for wildlife. Additional trees will be removed along such edges to create irregularly shaped openings and more natural mosaic habitat.

M&E-82: **(MLP)** Cleared vegetation smaller than four inches in diameter will be stockpiled, shredded, and salvaged with topsoil. Cleared vegetation larger than four inches in diameter will be scattered over disturbed areas to accomplish reclamation objectives. Excessive vegetation larger than four inches in diameter may be removed from BLM-administered land or shredded in place to be salvaged with topsoil. A wood cutting permit will be purchased from BLM for material removed from the site.

M&E-83: **(MLP)** Windrowing of Topsoil. [Use where appropriate based on topography – may not be appropriate for pads in steep areas or where pad size should be minimized.] Topsoil shall be windrowed around the perimeter of surface disturbance to create a berm that limits and redirects stormwater runoff and extends the viability of the topsoil per BLM Topsoil Best Management Practices (BLM 2009b PowerPoint presentation available upon request from the Grand Junction Field Office). Topsoil shall also be windrowed, segregated, and stored along disturbed surfaces or linear features for later spreading across the disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.

M&E-84: **(MLP)** Cattle guards will be installed and maintained whenever access roads intersect existing gates or fences.

Drilling

M&E-85: **(MLP)** Catalytic converters will be installed on all internal combustion engines to minimize emissions to Tier 3 levels.

M&E-86: Hazardous substances will not be used in drilling, testing, or completion operations or introduced at any time into the reserve or cuttings pit.

Utilization and Production

M&E-87: **(MLP)** Secondary containment shall include a study corrugated metal wall to create a basin, be lined with a heavy impervious poly liner, and be protected with a gravel surface. Small hoppers or drip pans shall be installed at all loadout connections to catch drips and small leaks.

M&E-88: When special resource values are at risk, such as crucial wildlife areas, companies controlling access into these areas will gate and lock roads or restrict use to authorized users.

M&E-89: Speed control measures will be in place on all project-related unpaved roads to reduce fugitive dust.

M&E-90: **(MLP)** Use enclosed tanks instead of open tanks or pits to reduce fugitive VOC emissions.

M&E-91: **(MLP)** Use vapor recovery units on oil, condensate, and produced water storage tanks to reduce fugitive VOCs and recovers British thermal unit-rich vapors for sale or use on site.

M&E-92: **(MLP)** Use and maintain proper hatches, seals, and valves to minimize VOC emissions.

M&E-93: **(MLP)** Optimize glycol circulation and install flash tank separator to capture methane and reduce VOC emissions on glycol dehydrators.

M&E-94: **(MLP)** Replace wet seals with dry seals in centrifugal compressors. Centrifugal wet seal compressor emissions from the seal oil degassing vent can be reduced by the replacement of wet seals with dry seals that emit less methane and have lower power requirements.

M&E-95: Reduce gas leaks and emissions from reciprocating compressors by the economic replacement of rod packing at frequent intervals.

M&E-96: Reduce methane and VOC emissions by installing or replacing high-bleed pneumatic devices with low-bleed pneumatic devices.

M&E-97: Reduce methane emissions by installing plunger lifts and smart automation systems which monitor well production parameters.

M&E-98: Implement a Direct Inspection and Monitoring Program that identifies and cost effectively fixes fugitive gas leaks using leak detection, infrared camera, organic vapor analyzer, soap solution, ultrasonic leak detectors, measurement, calibrated bagging, rotameters, and/or high volume samplers.

Site Stabilization, Reclamation and Monitoring

M&E-99: **(MLP)** During interim reclamation, contour land forming will be used to create a visual barrier to the permanent structures location on the site.

M&E-100: **(MLP)** Re-topsoil and revegetate access road cut-and-fill slopes, backslopes and road shoulders, and borrow ditches. Also, revegetate the travel surface of surfaced roads and turnarounds, where practical. With low-traffic roads, this will result in a hardpan, two-track road that is stable and requires less maintenance.

References

BLM (US Department of the Interior, Bureau of Land Management). 1992. Handbook H-3042-1—Solid Minerals Reclamation. Release 3-275. BLM, Washington, DC. February 2, 1992. 104 pp.

_____. 2002. Handbook H-3600-1—Mineral Materials Disposal. Release 3-315. BLM, Washington, DC. February 22, 2002. 171 pp.

_____. 2009a. Handbook H-9112-1—Bridges and Major Culverts Handbook. BLM, Washington, DC.

_____. 2009b. Topsoil Best Management Practices. Microsoft PowerPoint presentation. Unpublished report. BLM, Grand Junction Field Office, Grand Junction, CO.

_____. 2011a. Manual 9113—Roads Manual. BLM, Washington, DC.

_____. 2011b. Handbook H-9113-1—Road Design Handbook. BLM, Washington, DC.

_____. 2012a. Manual 9115—Primitive Roads Manual. BLM, Washington, DC.

BLM (US Department of the Interior, Bureau of Land Management) and US Department of Agriculture, National Forest Service. 2007a. Noxious and Invasive Weed Management Plan for Oil and Gas Operators: Grand Junction Field Office and Grand Valley Ranger District. BLM, Grand Junction Field Office, Grand Junction, CO. March 2007.

_____. 2007b. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development – The Gold Book. BLM/WO/ST-06/021+3071/REV 07. BLM, Denver, CO. 84 pp.

_____. 2008. Record of Decision, Programmatic Environmental Impact Statement for Geothermal Leasing in the Western US – Appendix B. BLM, Washington Office, Washington, DC. December 2008.

RENEWABLE ENERGY (RE)

Standard Operating Procedures

RE-1: Authorize rights-of-way by applying appropriate BMPs from the BLM Record of Decision for Implementation of a Wind Energy Development Program (BLM 2005), land use restrictions, stipulations, and mitigation measures.

References

BLM (US Department of the Interior, Bureau of Land Management). 2005. Record of Decision for Implementation of a Wind Energy Development

Program and Associated Land Use Plan Amendments. BLM, Washington, DC. December 15, 2005.

TRANSPORTATION AND ACCESS (TA)

Standard Operating Procedures

TA-1: Continue coordination with counties and other agency road entities to promote utilization of BMPs for road maintenance they perform within GJFO boundaries. Maintain an inventory of existing road and trail systems.

TA-2: **(MLP)** BLM Manual 9113 (BLM 2011a) and BLM Handbook 9113-2 (BLM 2011b) will be used to guide all maintenance and road construction designs and requirements. Include definitions for functional road classification and maintenance levels for BLM roads.

TA-3: All highway rights-of-way and other road authorizations will contain noxious and invasive weed stipulations that include prevention, inventory, treatment, and revegetation or rehabilitation. Road abandonment will include at least three years of post-abandonment monitoring and treatment.

TA-4: All travel management decisions will concur with the BLM GJFO Travel Management Plan (see **Appendix M**).

Best Management Practices

TA-5: In order to ensure public access and safety, the GJFO shall continue an active road maintenance program employing the use of redesign, blading, brush removal for sight distance as appropriate, scarification, graveling, water barring, low water crossings, spur ditching, seeding, and installation/cleaning of culverts.

TA-6: NEPA Requirements. No new NEPA analysis will be required for road maintenance activities within the defined maintenance disturbance/easement footprint, which is defined as previously disturbed or maintained. Disturbance outside of the defined maintenance disturbance/easement footprint or road realignment will be subject to additional NEPA compliance.

References

BLM (US Department of the Interior, Bureau of Land Management). 2011a. Manual 9113—Roads Manual. BLM, Washington, DC.

_____. 2011b. Handbook H-9113-2—Roads National Inventory and Condition Assessment Guidance and Instructions. BLM, Washington, DC.

_____. 2011c. Handbook H-9113-1—Road Design Handbook. BLM, Washington, DC.

RECLAMATION (R)

The objectives of interim reclamation are to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize loss of habitat, forage, and visual resources during the life of the well or facilities.

The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, standards will be enforced to meet objectives for site stability, visual quality, hydrological function, and vegetative productivity.

Standard Operating Procedures

R-1: A reclamation plan will be provided to the BLM with the original proposed action or when activities are needed. The plan will follow the BLM Colorado Northwest District Template for Reclamation Plans (BLM 2012). Reclamation plans will discuss interim and final reclamation activities. The plan will include provisions for:

a) Reclamation timeline

b) Pre-disturbance planning recommendations if applicable

c) Vegetation monitoring plan

d) Stabilization and stormwater

e) Dust abatement

f) Vegetation clearing

g) Topsoil management

h) Pit closures, if applicable

i) Recontouring and seedbed preparation

j) Application of topsoil and revegetation

k) Fencing

l) Management of invasive, noxious, and non-native species

Best Management Practices

R-2: Trees and vegetation will be left along the edges of the pads whenever feasible to provide screening.

R-3: **(MLP)** To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, debris, and rock over recontoured cut-and-fill slopes.

R-4: To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops).

R-5: Production facilities will be clustered and placed away from cut-and-fill slopes to allow the maximum recontouring of cut-and-fill slopes.

R-6: **(MLP)** All long-term above ground structures will be painted [Covert Green] (from the BLM Supplemental Environmental Colors chart) to blend with the natural color of the late summer landscape background.

R-7: Projects should be located to take advantage of existing vertical features, such as landforms or existing stands of vegetation to provide visually screening.

R-8: **(MLP)** Projects should not be located in visually exposed locations, such as ridgelines and hilltops.

R-9: **(MLP)** Projects should be located in areas that will minimize the amount of cut-and-fill needed to meet natural grade.

R-10: **(MLP)** Linear disturbances (roads and pipelines) should follow the natural contours of the landscape as much as possible.

R-11: Project design should take into consideration any existing vegetation surrounding the project that can be used for visual screening. Care should be taken to preserve the integrity of the vegetation, and the vegetation should remain standing and undamaged when the cut-and-fill slopes are recontoured.

R-12: **(MLP)** Thinning and feathering of existing vegetation may also be used in areas where clearing within dense vegetation is required. Thinning and feathering will reduce the hard line between new construction and existing vegetation and will emulate the forms of natural clearings.

R-13: **(MLP)** Production facilities should be placed to maximize recontouring of the cut-and-fill slopes and interim reclamation. Facilities should be oriented in the direction that is least visually obtrusive and should be clustered to reduce the overall impact and the area that will need to be visually mitigated. Facilities should be located away from the cut-and-fill slopes and, if possible, near the access road or entrance to the pad to maximize the total surface area that can be reclaimed.

R-14: **(MLP)** Cut-and-fill slopes should be recontoured to the approximate original contour or consistent with the adjacent topography so that the reclaimed landscape features blend into the natural surroundings.

R-15: **(MLP)** Berms may be utilized to provide visual screening but should be used only when viewing the surrounding natural environment and should blend with the adjacent topography.

R-16: **(MLP)** Cleared vegetation and rocks salvaged during construction should be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features to emulate the color and texture closer to that of the natural landscape and to help create microclimates to encourage vegetation growth. The material should be placed so that it appears to be naturally deposited.

R-17: **(MLP)** Above-ground facilities should be painted a natural color selected from the BLM Standard Environmental Color Chart to minimize contrast with adjacent vegetation and/or rock outcrops. Color(s) should be selected in the field at the proposed project location and should be planned for the season with the greatest number of viewers. Selected color(s) should be one to two shades darker than those naturally occurring in the background landscape (this will also help with the effects of fading over time).

References

BLM (US Department of the Interior, Bureau of Land Management). 2012. Draft BLM Colorado Northwest District Template for Reclamation Plans. Unpublished report.

Appendix I

Cultural Resource Allocation to Use Categories

APPENDIX I
CULTURAL RESOURCES ALLOCATION TO USE CATEGORIES

Allocations to Use Categories are made in land use plans and may be applied to both individual properties and classes of properties. Categorizing cultural resources according to their potential uses is a result of the identification process and a tool for protection and utilization decisions. The following tables identify the suitable uses for cultural properties by considering the properties' characteristics, condition, setting, location, and accessibility, and their perceived values and potential uses. This allocation list is based on available cultural information used to prepare the Class I Cultural Resource Overview and as such is a "snap-shot", where the data record was current to March 2009.

Table I-1, Relationship Among Use Categories, National Register Eligibility, and Preservation/National Register Nomination, serves as a general guide to consider the relationship between National Register evaluation and allocation to use categories. In addition each category includes a description of the criteria used to evaluate the sites. As previously recorded sites are reevaluated and newly recorded sites are received these criteria will be use to assign allocation. Previous allocations may be reevaluated and revised using these, as appropriate, when circumstances change or new data become available thus precluding the need for a plan amendment (BLM Manual 8110, Identifying and Evaluating Cultural Resources, Section .41, Allocation to Use Categories [BLM 2004]).

The following defines use categories for sites in the Grand Junction Field Office RMP planning area. Italicized sections are quoted from BLM Manual 8110, Identifying and Evaluating Cultural Resources (BLM 2004).

Table I-1
Relationship Among Use Categories, National Register Eligibility, and Preservation/National Register Nomination

Cultural Resource Use Category	National Register Eligibility	Preservation/National Register Nomination
Scientific Use	Usually eligible	Long-term preservation not critical; medium National Register nomination priority
Conservation for Future Use	Always eligible	Long-term preservation is required; highest nomination priority
Traditional Use	May be eligible	Long-term preservation is desirable; nomination priority is determined in consultation with the appropriate cultural group(s).
Public Use	Usually eligible	Long-term preservation is desirable; high nomination priority
Experimental Use	May be eligible	Long-term preservation is not anticipated; low nomination priority.
Discharged from Management	Not eligible	Long-term preservation and management are not considerations; nomination is inappropriate

Source: BLM 2004

I.1 SCIENTIFIC USE

This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that would result in the property's physical alteration or destruction. This category applies almost entirely to prehistoric and historic archaeological properties, where the method of use is generally archaeological excavation, controlled surface collection, and/or controlled recordation (data recovery). Recommendations to allocate individual properties to this use must be based on documentation of the kinds of data the property is thought to contain and the data's importance for pursuing specified research topics. Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance.

Additional criteria can be applied in consideration of assigning Isolated Finds to this category. Unless otherwise determined at the time of submitting a project to the SHPO IFs will be allocated to Scientific use. When allocating IFs recorded in the past one should consider the following:

- Some isolated finds represent a period in prehistory where little is known, in the RMPPA this applies to Paleoindian artifacts.

- IFs have been recorded where the environmental setting is conducive to a prehistoric ground surface being preserved, where the site is actually at a depth not discernible by surface inventory and the few artifacts recorded on the surface as an IF are the result of mechanical or biological displacement. These isolates may actually represent sites and therefore may be included in this category. These cultural resources would require sub-surface inventory (trench or other surface disturbing construction monitoring) as mitigation for any surface disturbing projects or evaluative testing for proposed actions that would remove them from federal ownership (e.g. lease or exchanges).
- In the past some isolated prehistoric features or historic sites, were recorded as Isolated Finds when they should have been recorded as sites. These need to be reevaluated if they are in the Area of Potential Effect or if they meet a particular research proposal.

One thousand five hundred seventy-four (1,574) cultural resources are allocated to this category which includes 27 isolated features/isolated finds (see **Table I-2**, Scientific Use Sites, at the end of this appendix).

I.2 CONSERVATION FOR FUTURE USE

This category is reserved for any unusual cultural property which, because of scarcity, a research potential that surpasses the current state of the art, singular historic importance, cultural importance, architectural interest, or comparable reasons, is not currently available for consideration as the subject of scientific or historical study that would result in its physical alteration. A cultural property included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses, that would threaten the maintenance of its present condition or setting, as pertinent, and will remain in this use category until specified provisions are met in the future. No additional criteria were applied.

Four (4) cultural resources are allocated to this category as a primary allocation and three sites with this use allocation as a secondary use (see **Table I-3**, Conservation for Future Use Sites, at the end of this appendix).

I.3 TRADITIONAL USE

This category is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well being of the group. Cultural properties assigned to this category are to be managed in ways that recognize the importance ascribed to them and seek to accommodate their continuing traditional use. Although a few cultural resources have been attributed to Shoshone and Navajo in the Grand Junction Field Office, most protohistoric and historic Native American Indian sites are affiliated to the Ute. The Ute have a generalized concept of spiritual significance that is not easily transferred to Western models or definitions. As such the BLM recognizes that they have identified sites that are of concern because of their association with Ute occupation of the area

as part of their traditional lands. These sites include wickiup camps and open camps with definitive Ute occupation (associated to Ute rock art, artifact assemblages and/or trails), isolated Ute rock art, Culturally Modified Trees (e.g. scarred and prayer trees) and Ceremonial features (e.g. eagle traps, vision circles, and special structures). This list is in no way intended to be a comprehensive list and may continue to grow through consultation.

Traditional Use sites with known associated burials will have a secondary allocation to Conservation Use, precluding the disturbance of these sites or the option of mitigation of these sites through data recovery. Other sites that are identified through consultation as inappropriate for Scientific or Public Use would also have a secondary allocation to Conservation Use to further emphasize the protection of the site. Consultation would be required to assign a secondary use prior to authorizing actions at a Traditional Use. Examples of this situation would be secondary allocation to Public use in response to a request to use a site for a heritage tourism or recreation opportunity (e.g. rock art or trails) or secondary allocation to Scientific use and a request to conduct any evaluative testing (excavation of small test units that are under the threshold that would require consultation under an ARPA permit) or using a rock art site to conduct a field school to teach rock art recording. At the current time there are no anticipated projects that would qualify a secondary use allocation of Experimental Use at a Traditional Use site. If there is such a proposal in the future it would require consultation and unless it was something proposed or approved by a tribe it would not be authorized.

One hundred thirty-five (135) cultural resources are allocated to this category (see **Table I-4**, Traditional Use Sites, at the end of this appendix).

I.4 PUBLIC USE

This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site, or as shelter along a cross-country ski trail.

Sites allocated to public use often require the completion of scientific investigation and preparation and accommodations for public health and safety prior to being made available for public use. Their allocation to this category is only the first step in this process. In many cases sites may not meet National Register criteria but they are part of the historic landscape and may be important to residents and for heritage tourism.

Prehistoric and historic routes, trails, abandoned railroad grades, and roads, may be assigned to Public Use category. Where these segments are accessible to the public and could be used or are currently used for travel/transportation the method of use will be appropriate to their National Register eligibility, the effect

of the proposed use (is it consistent with the historical use of the property?) and will be designated through Travel Management. Active railroads are assigned to this category. Historic mining sites are allocated to this use as a primary use. Visual integrity needs to be considered when projects are proposed by the Abandoned Mine Lands program where reclamation for public health and safety is the priority. The criterion of visual historic landscape for Public Use allocation is also applied to cabins, homesteads, and other ranching/agricultural sites. Also included in this category are sites that as an overall site type may not be appropriate for "use by the general public". One example of this type of allocation is the functioning irrigation ditches, canals, and other water control features. As a whole the irrigation systems are what made the settlement and agricultural development of areas in the RMPPA possible, and they contribute to the development of the historic landscape, but alone we may be managing only a segment of ditch across an isolated BLM parcel. They are interpretable and in some locations may even be appropriate for on-site information; this is the rationale for their designation to Public Use.

Ninety-five (95) cultural resources are allocated to this category (see **Table I-5**, Public Use Sites, at the end of this appendix).

I.5 EXPERIMENTAL USE

This category may be applied to a cultural property judged well suited for controlled experimental study, to be conducted by BLM or others concerned with the techniques of managing cultural properties, which would result in the property's alteration, possibly including loss of integrity and destruction of physical elements. Committing cultural properties or the data they contain to loss must be justified in terms of specific information that would be gained and how it would aid in the management of other cultural properties. Experimental study should aim toward understanding the kinds and rates of natural or human caused deterioration, testing the effectiveness of protection measures, or developing new research or interpretation methods and similar kinds of practical management information. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses.

A group of sites that have been officially determined not eligible to the National Register have been allocated to this use through the plan. They are located in a variety of environments and represent sites that have been affected by grazing, mechanical vegetation treatments, wildland fire, and recreation development. If there are new research proposals outside of studying the effects of these impacts, or proposals where these sites would not meet the research needs a research plan would be required. Other conditions for archaeological research may apply. In the past it was common to completely surface collect sites, leaving no visible trace of the site. Decades later these sites may have new surface evidence. Another case is where there are sites in depositional environments where the setting is conducive to a prehistoric ground surface being preserved, where the site is actually at a depth not discernible by surface inventory and the

few artifacts on the surface are the result of mechanical or biological displacement. A cultural management plan needs to be prepared to identify sites that would fit this experimental category with a secondary use of Scientific. Findings would result in a reallocation based on the site's new determined potential.

Seventy-nine (79) cultural resources are allocated to this category (see **Table I-6**, Experimental Use Sites, at the end of this appendix).

I.6 DISCHARGED FROM MANAGEMENT

This category is assigned to cultural properties that have no remaining identifiable use. Most often these are prehistoric and historic archaeological properties, such as small surface scatters of artifacts or debris, whose limited research potential is effectively exhausted as soon as they have been documented. Also, more complex archaeological properties that have had their salient information collected and preserved through mitigation or research may be discharged from management, as should cultural properties destroyed by any natural event or human activity. Properties discharged from management remain in the inventory, but they are removed from further management attention and do not constrain other land uses. Particular classes of unrecorded cultural properties may be named and described in advance as dischargeable upon documentation, but specific cultural properties must be inspected in the field and recorded before they may be discharged from management.

Archives (site record, cultural plat, database entry, and curation if applicable) continue to be maintained for all Discharge Use category sites. Isolated Finds are not automatically allocated to this category. This category should not be used to retire an assigned site number based on a lack of information in the original site recording. It should be used as a management decision for sites that the BLM has managed in the past that now meet the following criteria: 1) they have been removed from federal ownership either through land exchange, lease patent, or removal of a patent reservation; 2) they have been totally excavated; 3) they are destroyed to a point that no physical evidence remains (e.g. a wooden fence is burned in a fire or a flood removes all traces of a site). This is not meant to be an exhaustive list of events that could lead to this allocation but is meant to guide future decisions for discharge use. Justification should always become part of the record for a discharge use site.

Seven (7) cultural resources are allocated to this category (see **Table I-7**, Sites Discharged from Management, at the end of this appendix).

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5GF.1051		Mining	Need data (F)	Book Cliffs	
5GF.1055	Sheltered camp		Not eligible (F)	Book Cliffs	
5GF.1056		Habitation/ homestead	Not eligible (F)	Grand Valley	
5GF.1063	Open camp		Not Eligible (O)	Book Cliffs	
5GF.1065	Open lithic		Not eligible (F)	Roan Creek	
5GF.1067	Isolated feature-hearth		Not eligible (F)	Roan Creek	
5GF.1068	Isolated feature-hearth		Not eligible (O)	Roan Creek	
5GF.1074	Sheltered camp		Need data (F)	Book Cliffs	
5GF.1075		Habitation/ homestead	Not eligible (F)	Book Cliffs	
5GF.1076		Habitation/ homestead	Need data (F)	Book Cliffs	
5GF.1077	Open camp		Not eligible (F)	Roan Creek	
5GF.1079	Sheltered camp		Need data (F)	Book Cliffs	
5GF.1081	Open lithic		Need data (F)	Roan Creek	
5GF.1082	Open lithic		Need data (F)	Roan Creek	
5GF.1083	Open camp		Need data (F)	Roan Creek	
5GF.1084	Isolated find – Paleoindian		Not Eligible (F)	Grand Valley	
5GF.1124	Open lithic		Need data (F)	Roan Creek	
5GF.1127	Open lithic		Not eligible (F)	Grand Valley	
5GF.1130		Farm/ranch	Not eligible (F)	Book Cliffs	
5GF.114	Open camp		Need data (F)	Book Cliffs	
5GF.1152		Isolated feature	Not eligible (F)	Book Cliffs	
5GF.1155		Farm/ranch	Not eligible (F)	Book Cliffs	
5GF.116	Open camp		Need data (F)	Book Cliffs	
5GF.1171	Open camp		Need data (F)	Grand Valley	
5GF.1204	Open camp		Eligible (F)	Book Cliffs	
5GF.1223	Open lithic		Not eligible (F)	Roan Creek	
5GF.1335	Open camp		Not Eligible (O)	Grand Valley	
5GF.1336	Open camp		Need data (F)	Book Cliffs	
5GF.1337	Open camp		Not Eligible (O)	Grand Valley	
5GF.1340	Open camp		Need data (F)	Book Cliffs	
5GF.1341	Open camp		Need data (F)	Book Cliffs	
5GF.1342	Open lithic		Need data (F)	Book Cliffs	
5GF.1343	Open camp		Need data (F)	Book Cliffs	
5GF.1344	Open lithic		Need data (F)	Book Cliffs	
5GF.1345	Open lithic		Need data (F)	Book Cliffs	
5GF.1346	Open camp		Need data (F)	Book Cliffs	
5GF.1347	Sheltered camp		Need data (F)	Book Cliffs	
5GF.1348	Sheltered camp		Need data (F)	Book Cliffs	
5GF.1349	Sheltered camp		Need data (F)	Book Cliffs	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5GF.1443		Isolated feature	Not eligible (F)	Roan Creek	
5GF.1444		Isolated feature	Not eligible (F)	Roan Creek	
5GF.1459	Open camp		No assessment	Book Cliffs	
5GF.1475		Camp	Not eligible (F)	Grand Valley	
5GF.1550		Farm/ranch	Not Eligible (O)	Book Cliffs	
5GF.157	Sheltered lithic		Not eligible (F)	Book Cliffs	
5GF.1589.1		Road	Not Eligible (O)	Roan Creek	
5GF.174	Open lithic		Eligible (F)	Roan Creek	
5GF.183	Open camp		Not Eligible (O)	Roan Creek	
5GF.221		Trash scatter/ dump	Not eligible (F)	Book Cliffs	
5GF.222		Camp	Not Eligible (O)	Book Cliffs	
5GF.223		Camp	Not eligible (F)	Book Cliffs	
5GF.224	Open camp		Not eligible (F)	Book Cliffs	
5GF.225	Open camp		Need data (F)	Grand Valley	
5GF.226	Open lithic		Not eligible (F)	Grand Valley	
5GF.2292	Open camp		Eligible (O)	Grand Valley	
5GF.2293	Open camp		Eligible (O)	Grand Valley	
5GF.2701	Open camp		Eligible (F)	Grand Valley	
5GF.271	Sheltered lithic	Trash scatter/ dump	Not Eligible (O)	Book Cliffs	
5GF.274	Open camp		Not eligible (F)	Book Cliffs	
5GF.2785		Trash scatter/ dump	Not Eligible (O)	Roan Creek	
5GF.2797	Open camp		Not Eligible (O)	Roan Creek	
5GF.283		Farm/ranch	Not eligible (F)	Book Cliffs	
5GF.284		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5GF.2947		Rock feature	Not eligible (F)	Roan Creek	
5GF.3101	Isolated find – Paleoindian		Not Eligible (F)	Book Cliffs	
5GF.3183	Open camp		Eligible (O)	Roan Creek	
5GF.3184	Open camp		Eligible (O)	Roan Creek	
5GF.3234		Isolated feature	Not eligible (F)	Roan Creek	
5GF.345	Open lithic		No assessment	Roan Creek	
5GF.3577	Open lithic		Need data (O)	Book Cliffs	
5GF.3579	Open lithic		Not Eligible (O)	Book Cliffs	
5GF.3672		Habitation/ homestead	Not Eligible (O)	Roan Creek	
5GF.3876	Open lithic		Not Eligible (O)	Grand Valley	
5GF.3877	Open lithic	Farm/ranch	Not eligible (F)	Grand Valley	
5GF.3878	Open lithic		Eligible (F)	Grand Valley	
5GF.3879	Open camp		Eligible (F)	Grand Valley	
5GF.3880	Open camp		Eligible (F)	Grand Valley	
5GF.395		Building	Not Eligible (O)	Book Cliffs	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5GF.3951	Open lithic		Not eligible (F)	Book Cliffs	
5GF.399		Camp	Not eligible (F)	Book Cliffs	
5GF.403		Camp	Not eligible (F)	Grand Valley	
5GF.4048	Open camp		Not eligible (F)	Roan Creek	
5GF.4049	Open camp		Need data (F)	Roan Creek	
5GF.4230	Open camp		Eligible (F)	Roan Creek	
5GF.4243	Open architectural	Brush Fence	Not Eligible (O)	East Salt Creek, Book Cliffs	Public Use
5GF.4244	Isolated feature		Eligible (F)	Grand Valley	
5GF.435	Open lithic		Not eligible (F)	Roan Creek	
5GF.442	Open lithic		Need data (F)	Roan Creek	
5GF.443	Open camp		Need data (F)	Roan Creek	
5GF.454	Open lithic		Not eligible (F)	Book Cliffs	
5GF.487		Habitation/ homestead	Not eligible (F)	Roan Creek	
5GF.622		Inscription	Need data (F)	Book Cliffs	
5GF.640		Farm/ranch	Eligible (O)	Book Cliffs	
5GF.641		Rock feature	Not eligible (F)	Book Cliffs	Public Use
5GF.741	Sheltered camp		Need data (O)	Book Cliffs	
5GF.745		Logging	Not eligible (F)	Roan Creek	
5GF.826		Camp	Not eligible (F)	Roan Creek	
5GF.841	Open camp		Need data (F)	Roan Creek	
5GF.954		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5GF.959	Open camp	Trash scatter/ dump	Eligible (O)	Roan Creek	
5GF.960	Open lithic		Not Eligible (O)	Roan Creek	
5GF.962	Isolated feature		Need data (O)	Roan Creek	
5GF.966		Farm/ranch	Not eligible (F)	Roan Creek	
5GF.967		Farm/ranch	Not Eligible (O)	Roan Creek	
5GF.969	Open camp		Need data (F)	Roan Creek	
5GF.986	Open lithic		Not eligible (F)	Roan Creek	
5ME.1004	Quarry		Not eligible (F)	Plateau Valley	
5ME.1019	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1056	Open camp		Eligible (O)	Plateau Valley	
5ME.1059	Open lithic		Need data (F)	Grand Mesa Slopes	
5ME.106	Open lithic		Not eligible (F)	Grand Valley	
5ME.1062	Open camp		Eligible (O)	Grand Valley	
5ME.1063	Open architectural	Camp	Not eligible (F)	Grand Valley	
5ME.1066	Open lithic		Need data (F)	Gateway	
5ME.110	Open lithic		No assessment	Plateau Valley	
5ME.11033	Open lithic		Need data (F)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.11034			Need data (F)	Glade Park	
5ME.11037	Open camp		Need data (F)	Book Cliffs	
5ME.11044	Open lithic		Eligible (O)	Glade Park	
5ME.11065	Open camp		Eligible (O)	Roan Creek	
5ME.11085	Open camp	Habitation/ homestead	Eligible (O)	Gateway	
5ME.111	Open camp		Need data (O)	Plateau Valley	
5ME.112	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.11223	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11224	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11225	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11265		Camp	Not Eligible (O)	Grand Mesa Slopes	
5ME.11266		Trash scatter/ dump	Not Eligible (O)	Grand Mesa Slopes	
5ME.11269	Open camp		Need data (O)	Gateway	
5ME.11270	Open camp		Need data (O)	Gateway	
5ME.113	Open camp		No assessment	Plateau Valley	Public Use
5ME.11367	Open camp		Eligible (O)	Glade Park	
5ME.11373	Open lithic		Not Eligible (O)	Glade Park	
5ME.11383	Open camp		Eligible (O)	Gateway	
5ME.11387	Open camp		Eligible (O)	Gateway	
5ME.11390	Open camp		Eligible (O)	Gateway	
5ME.11391	Open camp	Trash scatter/ dump	Eligible (O)	Glade Park	
5ME.11396	Open lithic		Not Eligible (O)	Gateway	
5ME.11400	Sheltered camp		Eligible (O)	Glade Park	
5ME.11451	Open lithic		Need data (F)	Plateau Valley	
5ME.11469	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.1148	Open camp		Need data (F)	Plateau Valley	
5ME.11526	Open lithic		Need data (O)	Grand Mesa Slopes	
5ME.11527	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.11534	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.1155	Sheltered camp		Need data (O)	Bangs Canyon	
5ME.1156	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.1157	Sheltered camp	Rock feature	Need data (F)	Bangs Canyon	
5ME.11576	Open lithic		Not Eligible (O)	Grand Mesa Slopes	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.11579	Open lithic		Not Eligible (O)	Gateway	
5ME.1158	Sheltered camp	Camp	Need data (F)	Bangs Canyon	
5ME.11580	Open camp		Not Eligible (O)	Gateway	
5ME.11588		Mining	Eligible (O)	Bangs Canyon	
5ME.11590		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11608		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11609		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11610		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11611		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11612		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11613		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11614		Mining	Not Eligible (O)	Grand Valley	
5ME.11615		Camp	Not Eligible (O)	Grand Valley	
5ME.11616		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11617		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11618		Trash scatter/ dump	Not Eligible (O)	Book Cliffs	
5ME.11619		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.11624		Farm/ranch	Not eligible (F)	Grand Valley	
5ME.11626		Isolated feature	Not eligible (F)	Grand Valley	
5ME.1163	Open camp		Eligible (F)	Plateau Valley	
5ME.11630		Isolated feature	Not eligible (F)	Grand Valley	
5ME.11636		Isolated feature	Not eligible (F)	Book Cliffs	
5ME.11639	Open camp		Not Eligible (O)	Roan Creek	
5ME.1164		Building	Not eligible (F)	Gateway	
5ME.11652	Open lithic		Not Eligible (O)	Glade Park	
5ME.11660	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.11661	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.11662	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11663	Open camp		Not Eligible (O)	Grand Mesa Slopes	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.11667	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.1167		Camp	Not eligible (F)	Grand Valley	
5ME.11670	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.11671	Open camp	Trash scatter/ dump	Eligible (O)	Grand Mesa Slopes	
5ME.11673	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11674	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.11675	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11679	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.1168		Habitation/ homestead	Not eligible (F)	Grand Valley	
5ME.11692	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.11693	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.11714	Open camp		Need data (F)	Roan Creek	
5ME.11717	Open camp		Need data (O)	Roan Creek	
5ME.11720	Open lithic		Need data (O)	Gateway	
5ME.11721	Open lithic		Need data (O)	Gateway	
5ME.11723	Open lithic		Eligible (O)	Gateway	
5ME.11724	Open camp		Eligible (O)	Gateway	
5ME.11725	Open lithic		Eligible (O)	Gateway	
5ME.1178		Mining	Not Eligible (O)	Grand Mesa Slopes	
5ME.1179	Unknown		No assessment	Grand Valley	
5ME.11793		Camp	Not Eligible (O)	Grand Valley	
5ME.118	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.11801	Open camp		Need data (O)	Plateau Valley	
5ME.11852	Open camp		Not Eligible (O)	Plateau Valley	
5ME.11894	Open lithic		Not Eligible (O)	Grand Valley	
5ME.11918	Open camp		Eligible (O)	Bangs Canyon	
5ME.1192	Open camp		Eligible (F)	Gateway	
5ME.11920	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.11922	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.11923		Trash scatter/ dump	Not Eligible (O)	Bangs Canyon	
5ME.11976	Open camp		Not Eligible (O)	Glade Park	
5ME.11977	Open lithic	Trash scatter/ dump	Not Eligible (O)	Glade Park	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.11997	Isolated find – Early Archaic		Not Eligible (F)	Glade Park	
5ME.12000	Open camp		Need data (O)	Glade Park	
5ME.12001	Open camp		Need data (O)	Glade Park	
5ME.12022	Open camp		Eligible (O)	Glade Park	
5ME.12024	Sheltered camp		Not Eligible (O)	Glade Park	
5ME.12026	Open camp		Eligible (O)	Glade Park	
5ME.12027	Open camp		Need data (O)	Glade Park	
5ME.12028	Sheltered architectural		Eligible (O)	Glade Park	
5ME.1203	Open camp		Not Eligible (O)	Plateau Valley	
5ME.12030	Sheltered camp		Eligible (O)	Glade Park	
5ME.12051	Isolated find-Paleoindian		Not Eligible (F)	Glade Park	
5ME.1207	Open lithic	Camp	Need data (F)	Grand Mesa Slopes	
5ME.1210	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.1211	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.1214	Open camp		Need data (F)	Grand Valley	
5ME.12142	Open camp		Eligible (O)	Glade Park	
5ME.12143	Open camp		Eligible (O)	Glade Park	
5ME.12146	Open camp		Need data (O)	Roan Creek	
5ME.12147	Open camp		Need data (O)	Roan Creek	
5ME.1215		Camp	Not eligible (F)	Grand Valley	
5ME.1217	Open architectural	Trash scatter/ dump	Need data (F)	Grand Valley	
5ME.12207	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12208		Trash scatter/ dump	Not Eligible (O)	Bangs Canyon	
5ME.12217	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.12218	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.12219	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.12243	Open camp		Not Eligible (O)	Gateway	
5ME.12249	Open camp		Need data (O)	Bangs Canyon	
5ME.12250	Sheltered camp		Eligible (O)	Bangs Canyon	
5ME.12280	Open camp		Not Eligible (O)	Roan Creek	
5ME.123	Open lithic		Need data (F)	Glade Park	
5ME.1232	Open camp		Not Eligible (O)	Glade Park	
5ME.12357	Open camp		Not Eligible (O)	Roan Creek	
5ME.12362	Open camp		Eligible (F)	Gateway	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.12363	Open camp		Eligible (F)	Gateway	
5ME.12365	Open camp		Eligible (F)	Gateway	
5ME.12366	Open camp		Eligible (F)	Gateway	
5ME.12368	Open lithic		Eligible (F)	Gateway	
5ME.12373	Open lithic		Not eligible (F)	Gateway	
5ME.12374	Open lithic		Not eligible (F)	Gateway	
5ME.12377	Open lithic		Eligible (F)	Gateway	
5ME.12378	Open lithic		Not eligible (F)	Gateway	
5ME.12379		Rock feature	Not eligible (F)	Gateway	
5ME.12383	Open lithic		Not eligible (F)	Gateway	
5ME.12384	Open camp		Eligible (F)	Gateway	
5ME.12385	Open camp		Eligible (F)	Gateway	
5ME.12387	Open lithic		Not eligible (F)	Gateway	Scientific
5ME.12388	Open camp		Eligible (F)	Gateway	
5ME.12390	Open camp		Eligible (F)	Gateway	
5ME.12395	Open camp		Eligible (F)	Gateway	
5ME.12397	Open camp		Eligible (F)	Gateway	
5ME.12398	Open camp		Not eligible (F)	Gateway	
5ME.12399	Open lithic		Eligible (F)	Gateway	
5ME.12401	Open lithic		Eligible (F)	Gateway	
5ME.12402	Open camp		Eligible (F)	Gateway	
5ME.12405	Open lithic		Not eligible (F)	Gateway	
5ME.1241	Open camp	Camp	Eligible (F)	Grand Mesa Slopes	
5ME.12410	Open camp		Eligible (F)	Gateway	
5ME.12412	Open lithic		Not eligible (F)	Gateway	
5ME.12413	Open camp		Eligible (F)	Gateway	
5ME.12414	Open camp		Eligible (F)	Gateway	
5ME.12415	Open camp		Eligible (F)	Gateway	
5ME.12417	Open camp		Not eligible (F)	Gateway	
5ME.12418	Open camp		Not eligible (F)	Gateway	
5ME.12419	Open camp		Not eligible (F)	Gateway	
5ME.1242	Open camp		Need data (F)	Grand Mesa Slopes	
5ME.12420	Open lithic		Eligible (F)	Gateway	
5ME.12422	Open camp		Need data (O)	Plateau Valley	
5ME.12423	Open camp		Need data (O)	Plateau Valley	
5ME.1243	Open camp		Not Eligible (O)	Glade Park	
5ME.1244	Open camp		No assessment	Bangs Canyon	
5ME.12482		Building	Within Potential District-Contributing	Roan Creek	
5ME.12485		Habitation/ homestead	Within Potential District-Contributing	Roan Creek	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.12497	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.12500	Open camp		Need data (O)	Roan Creek	
5ME.12501	Sheltered camp		Need data (O)	Roan Creek	
5ME.12517	Open camp		Not Eligible (O)	Glade Park	
5ME.12526	Open camp		Need data (O)	Glade Park	
5ME.12527	Open lithic		Not Eligible (O)	Glade Park	
5ME.12534	Open camp		Need data (O)	Glade Park	
5ME.12548	Open camp		Need data (O)	Glade Park	
5ME.12562	Open camp		Not Eligible (O)	Glade Park	
5ME.12565	Open camp		Not Eligible (O)	Gateway	
5ME.12567		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.12568		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.12569		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.12641	Open camp		Eligible (O)	Plateau Valley	
5ME.12642	Open camp		Eligible (O)	Plateau Valley	
5ME.12645	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.12646	Sheltered camp		Not Eligible (O)	Bangs Canyon	
5ME.12647	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12648	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12662	Open camp		Need data (O)	Roan Creek	
5ME.12736	Open camp		Not Eligible (O)	Glade Park	
5ME.12737	Open lithic		Not Eligible (O)	Glade Park	
5ME.12738	Open lithic		Not Eligible (O)	Glade Park	
5ME.12739	Open lithic		Not Eligible (O)	Glade Park	
5ME.12740	Open camp		Not Eligible (O)	Glade Park	
5ME.12741	Open lithic		Not Eligible (O)	Glade Park	
5ME.12742	Open lithic		Need data (O)	Glade Park	
5ME.12743	Open lithic		Not Eligible (O)	Glade Park	
5ME.12744	Open camp		Need data (O)	Glade Park	
5ME.12745	Open camp		Need data (O)	Glade Park	
5ME.12746	Open camp		Need data (O)	Glade Park	
5ME.12747	Open camp		Not Eligible (O)	Glade Park	
5ME.12748	Open lithic		Need data (O)	Glade Park	
5ME.12749	Open camp		Need data (O)	Glade Park	
5ME.12750	Open camp		Not Eligible (O)	Glade Park	
5ME.12751	Open camp		Need data (O)	Glade Park	
5ME.12752	Open lithic		Not Eligible (O)	Glade Park	
5ME.12753	Open lithic		Not Eligible (O)	Glade Park	
5ME.12754	Open lithic		Not Eligible (O)	Glade Park	
5ME.12755	Open lithic		Not Eligible (O)	Glade Park	
5ME.12756	Open camp		Not Eligible (O)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.12757	Open camp		Need data (O)	Glade Park	
5ME.12759	Open lithic		Need data (O)	Glade Park	
5ME.12760	Open camp		Not Eligible (O)	Glade Park	
5ME.12761	Open lithic		Not Eligible (O)	Glade Park	
5ME.12762	Open camp		Need data (O)	Glade Park	
5ME.12763	Open lithic		Not Eligible (O)	Glade Park	
5ME.12764	Open camp		Not Eligible (O)	Glade Park	
5ME.12765	Open camp		Not Eligible (O)	Glade Park	
5ME.12766	Open camp		Need data (O)	Glade Park	
5ME.12767	Open camp		Need data (O)	Glade Park	
5ME.12768	Open camp		Not eligible (F)	Glade Park	
5ME.12786	Open camp		Eligible (O)	Gateway	
5ME.12788	Open camp		Need data (O)	Gateway	
5ME.12789	Open camp		Eligible (O)	Gateway	
5ME.12790	Open camp		Eligible (O)	Gateway	
5ME.12792	Open camp		Need data (O)	Gateway	
5ME.12793	Open camp		Need data (O)	Gateway	
5ME.12794	Open camp		Need data (O)	Gateway	
5ME.12795	Open camp		Eligible (O)	Gateway	
5ME.12796	Open camp		Eligible (O)	Gateway	
5ME.12797	Open camp		Eligible (O)	Gateway	
5ME.12798	Open camp		Eligible (O)	Gateway	
5ME.12799	Open camp		Eligible (O)	Gateway	
5ME.12800	Open camp		Eligible (O)	Gateway	
5ME.12802	Open camp		Need data (O)	Gateway	
5ME.12804	Open lithic		Not Eligible (O)	Gateway	
5ME.12806	Open camp	Trash scatter/ dump	Eligible (O)	Gateway	
5ME.12808	Open camp	Trash scatter/ dump	Need data (O)	Gateway	
5ME.12809		Camp	Not Eligible (O)	Plateau Valley	
5ME.12810	Open camp		Not Eligible (O)	Plateau Valley	
5ME.12811	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.12812	Open camp		Need data (O)	Glade Park	
5ME.12813	Open camp		Not Eligible (O)	Glade Park	
5ME.12860		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.12872	Open camp		Not Eligible (O)	Gateway	
5ME.12873	Open camp		Need data (O)	Gateway	
5ME.12875	Open camp		Not Eligible (O)	Gateway	
5ME.12879	Open lithic		Not Eligible (O)	Gateway	
5ME.12883	Open camp		Not Eligible (O)	Gateway	
5ME.12886	Open camp		Need data (O)	Gateway	
5ME.12893	Open lithic		Not Eligible (O)	Gateway	
5ME.12894	Open camp		Not Eligible (O)	Gateway	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.12895	Open camp		Need data (O)	Gateway	
5ME.12896	Open camp		Not Eligible (O)	Gateway	
5ME.12897	Open lithic		Not Eligible (O)	Gateway	
5ME.12898	Open lithic		Not Eligible (O)	Gateway	
5ME.12899	Open lithic		Not Eligible (O)	Gateway	
5ME.12916	Open lithic		Not Eligible (O)	Gateway	
5ME.12917	Open lithic		Not Eligible (O)	Gateway	
5ME.12918	Open lithic		Not Eligible (O)	Gateway	
5ME.12919	Open camp		Not Eligible (O)	Gateway	
5ME.12920	Open lithic		Not Eligible (O)	Gateway	
5ME.12921	Open lithic		Not Eligible (O)	Gateway	
5ME.12961		Farm/ranch	Not Eligible (O)	Bangs Canyon	
5ME.12970	Open camp	Camp	Need data (O)	Bangs Canyon	
5ME.12971	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12972	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12973	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.12978	Open camp	Camp	Need data (O)	Bangs Canyon	
5ME.12979	Open camp		Need data (O)	Bangs Canyon	
5ME.1298	Open camp		Eligible (F)	Plateau Valley	
5ME.12980	Open camp		Eligible (O)	Bangs Canyon	
5ME.12981	Open camp		Need data (O)	Bangs Canyon	
5ME.12982	Open camp	Camp	Need data (O)	Bangs Canyon	
5ME.12983	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.12984	Open lithic		Need data (O)	Bangs Canyon	
5ME.12985	Open lithic		Need data (O)	Bangs Canyon	
5ME.12991		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.12992		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.12993		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.13007	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.13008	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.13009	Open camp		Need data (O)	Bangs Canyon	
5ME.13018		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.13023	Open camp	Camp	Need data (O)	Bangs Canyon	
5ME.13040		Inscription	Not eligible (F)	Bangs Canyon	
5ME.13042	Open camp		Need data (O)	Bangs Canyon	
5ME.13075	Open lithic		Not Eligible (O)	Glade Park	
5ME.13076	Open lithic		Not Eligible (O)	Glade Park	
5ME.13077	Open camp		Not Eligible (O)	Glade Park	
5ME.13078	Open camp		Not Eligible (O)	Glade Park	
5ME.13079	Open camp		Not Eligible (O)	Glade Park	
5ME.131	Open lithic		Need data (F)	Bangs Canyon	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.13101	Isolated find – Paleoindian		Not Eligible (F)	Glade Park	
5ME.13108	Isolated find – Paleoindian		Not Eligible (F)	Glade Park	
5ME.13127	Open camp		Eligible (O)	Plateau Valley	
5ME.13131	Open camp		Not Eligible (O)	Plateau Valley	
5ME.13136	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.13140	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.13143	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.13186	Open camp		Not Eligible (O)	Plateau Valley	
5ME.13191	Sheltered camp		Eligible (O)	Bangs Canyon	
5ME.13192		Building	Not Eligible (O)	Bangs Canyon	
5ME.13193	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.13196	Open lithic		Not Eligible (O)	Gateway	
5ME.13233	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.13236	Open lithic	Trash scatter/ dump	Not Eligible (O)	Bangs Canyon	
5ME.13237	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.13239		Trash scatter/ dump	Not Eligible (O)	Roan Creek	
5ME.13240	Open camp		Not Eligible (O)	Roan Creek	
5ME.13241	Sheltered camp		Eligible (O)	Roan Creek	
5ME.13310	Open camp		Need data (O)	Book Cliffs	
5ME.13313	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.13314	Open lithic		Not Eligible (O)	Gateway	
5ME.13315	Open lithic		Not Eligible (O)	Glade Park	
5ME.13323	Isolated find – Paleoindian		Not Eligible (F)	Glade Park	
5ME.13328	Open lithic		Not eligible (F)	Roan Creek	
5ME.13353	Open camp		Need data (O)	Bangs Canyon	
5ME.1339	Open lithic		No assessment	Roan Creek	
5ME.13422		Trash scatter/ dump	Not Eligible (O)	Bangs Canyon	
5ME.1348	Open camp		Eligible (F)	Roan Creek	
5ME.1357	Open camp		Eligible (F)	Gateway	
5ME.1358	Open camp		Eligible (F)	Glade Park	
5ME.1360	Open camp	Camp	Not Eligible (O)	Glade Park	
5ME.1362	Open lithic		Need data (F)	Gateway	
5ME.13656	Open lithic		Eligible (O)	Plateau Valley	
5ME.13658	Sheltered camp		Eligible (O)	Glade Park	
5ME.13661	Open camp		Eligible (O)	Glade Park	
5ME.13664	Open camp		Eligible (O)	Glade Park	
5ME.13665	Open camp		Eligible (O)	Glade Park	
5ME.13666	Open camp	Trash scatter/ dump	Not Eligible (O)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.13668	Open lithic		Not eligible (F)	Glade Park	
5ME.13694	Open camp		Not Eligible (O)	Roan Creek	
5ME.13695	Open camp		Eligible (O)	Roan Creek	
5ME.13707		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13708		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13709	Open camp		Not Eligible (O)	Glade Park	
5ME.1371	Open camp	Isolated feature	Need data (O)	Glade Park	
5ME.13710		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13711		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13712	Open lithic		Not Eligible (O)	Glade Park	
5ME.13713	Open lithic		Not Eligible (O)	Glade Park	
5ME.13714	Open lithic		Not Eligible (O)	Glade Park	
5ME.13715		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13716		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13717	Open camp		Eligible (O)	Glade Park	
5ME.1373	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.1374		Habitation/ homestead	Need data (O)	Roan Creek	
5ME.1375		Trash scatter/ dump	Not eligible (F)	Roan Creek	
5ME.1376	Open camp		Eligible (F)	Plateau Valley	
5ME.13797	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.13798	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.13800	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.13801	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.13802	Open camp		Need data (O)	Grand Mesa Slopes	
5ME.13828	Open camp		Eligible (O)	Glade Park	
5ME.13829	Open camp		Not Eligible (O)	Glade Park	
5ME.1385			Not eligible (F)	Roan Creek	
5ME.1386	Open lithic		Need data (F)	Grand Valley	
5ME.13886	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.1389	Open camp		Eligible (F)	Plateau Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.13894	Open lithic		Not Eligible (O)	Roan Creek	
5ME.13897	Open lithic		Not Eligible (O)	Glade Park	
5ME.13898	Open camp	Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13899		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13900		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.13960	Open camp		Not Eligible (O)	Plateau Valley	
5ME.13961	Open camp		Need data (O)	Plateau Valley	
5ME.13962	Open camp		Need data (O)	Plateau Valley	
5ME.13963	Open architectural		Not Eligible (O)	Plateau Valley	
5ME.13964	Open camp		Eligible (O)	Plateau Valley	
5ME.13965	Open camp		Not Eligible (O)	Plateau Valley	
5ME.13966	Open camp		Not Eligible (O)	Plateau Valley	
5ME.13969		Camp	Not eligible (F)	Plateau Valley	
5ME.14002	Open lithic		Not eligible (F)	Plateau Valley	
5ME.14009	Open lithic		Not eligible (F)	Glade Park	
5ME.14045	Open camp		Not Eligible (O)	Glade Park	
5ME.14049	Open lithic		Not Eligible (O)	Glade Park	
5ME.14093		Trash scatter/ dump	Not Eligible (O)	Plateau Valley	
5ME.14102	Open camp		Eligible (O)	Roan Creek	
5ME.14105	Open camp		Not Eligible (O)	Roan Creek	
5ME.1412	Open lithic		Need data (F)	Plateau Valley	
5ME.14123	Open camp		Not Eligible (O)	Roan Creek	
5ME.14132	Open camp		Need data (O)	Glade Park	
5ME.14133	Open camp		Not Eligible (O)	Glade Park	
5ME.1414	Open lithic		No assessment	Plateau Valley	
5ME.14141	Open lithic		Not Eligible (O)	Roan Creek	
5ME.14142	Open camp		Eligible (O)	Roan Creek	
5ME.14143	Open camp		Eligible (O)	Roan Creek	
5ME.14144	Open camp		Eligible (O)	Roan Creek	
5ME.14148			Not eligible (F)	Roan Creek	
5ME.1419		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.1420	Open camp	Trash scatter/ dump	No assessment	Grand Valley	
5ME.14208	Open camp		Not Eligible (O)	Glade Park	
5ME.14221	Open camp		Not Eligible (O)	Glade Park	
5ME.14222	Open lithic		Not Eligible (O)	Glade Park	
5ME.1424	Open lithic		No assessment	Plateau Valley	
5ME.1425	Open camp		Not eligible (F)	Roan Creek	
5ME.14261	Sheltered camp		Need data (O)	Bangs Canyon	Experimental

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.14264	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14265		Camp	Not Eligible (O)	Bangs Canyon	
5ME.14266	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14267	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14268	Open camp		Eligible (O)	Bangs Canyon	
5ME.14269		Camp	Not Eligible (O)	Bangs Canyon	
5ME.14270	Open camp		Eligible (O)	Bangs Canyon	
5ME.14271	Sheltered camp		Need data (O)	Bangs Canyon	
5ME.14272	Open camp		Eligible (O)	Bangs Canyon	
5ME.14273	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.14274	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14275	Sheltered lithic		Need data (O)	Bangs Canyon	
5ME.14276	Sheltered camp		Need data (O)	Bangs Canyon	
5ME.14277	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14278	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14279	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14280	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14282	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.14283	Sheltered camp		Not Eligible (O)	Bangs Canyon	
5ME.14284	Sheltered camp		Need data (O)	Bangs Canyon	
5ME.14287	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.1429	Open lithic		No assessment	Plateau Valley	
5ME.1430	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.14301	Open camp		Eligible (O)	Gateway	
5ME.14303	Open lithic		Not Eligible (O)	Gateway	
5ME.14304	Open camp		Not Eligible (O)	Gateway	
5ME.14308	Open camp		Not Eligible (O)	Gateway	
5ME.14309	Open lithic		Not Eligible (O)	Gateway	
5ME.14310	Open lithic		Not Eligible (O)	Gateway	
5ME.1433	Open lithic		No assessment	Plateau Valley	
5ME.1434	Open camp		No assessment	Plateau Valley	
5ME.14341	Open camp		Eligible (F)	Bangs Canyon	
5ME.14342	Open camp		Eligible (F)	Bangs Canyon	
5ME.14352	Open camp		Not Eligible (O)	Glade Park	
5ME.14353	Open camp		Eligible (O)	Glade Park	
5ME.14356	Open lithic		Not Eligible (O)	Glade Park	
5ME.14361	Open lithic		Not Eligible (O)	Glade Park	
5ME.14362	Open lithic		Not Eligible (O)	Glade Park	
5ME.1437	Open lithic		No assessment	Plateau Valley	
5ME.14370	Open camp		Not Eligible (O)	Glade Park	
5ME.14371	Open camp		Eligible (O)	Glade Park	
5ME.1438	Open lithic		No assessment	Plateau Valley	
5ME.14383	Open lithic		Not Eligible (O)	Glade Park	
5ME.14385	Open lithic		Not Eligible (O)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.14424	Open camp		Eligible (O)	Gateway	
5ME.14425	Open lithic		Not Eligible (O)	Gateway	
5ME.14426	Open camp		Not Eligible (O)	Gateway	
5ME.14427	Open camp		Not Eligible (O)	Gateway	
5ME.14428	Open lithic		Not Eligible (O)	Gateway	
5ME.14429	Open lithic		Not Eligible (O)	Gateway	
5ME.14438	Open camp		Not Eligible (O)	Gateway	
5ME.14439	Open camp		Not Eligible (O)	Gateway	
5ME.14440	Open lithic		Not Eligible (O)	Gateway	
5ME.14441	Open camp		Not Eligible (O)	Gateway	
5ME.14442	Open lithic		Not Eligible (O)	Gateway	
5ME.14443	Open camp		Not Eligible (O)	Gateway	
5ME.14444	Open camp		Not Eligible (O)	Gateway	
5ME.14449	Open camp		Not Eligible (O)	Gateway	
5ME.14450	Open camp		Not Eligible (O)	Gateway	
5ME.14455	Open camp		Not Eligible (O)	Glade Park	
5ME.1446	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1448	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1449	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1450	Open lithic		No assessment	Grand Mesa Slopes	
5ME.14507	Open camp		Not Eligible (O)	Plateau Valley	
5ME.14515	Open lithic	Camp, road	Not Eligible (O)	Plateau Valley	
5ME.1457	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.1458	Isolated find – Early Archaic		Not Eligible (F)	Grand Mesa Slopes	
5ME.1459	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.146	Open camp		Need data (F)	Gateway	
5ME.1462	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1463	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1465	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1471	Open camp		No assessment	Plateau Valley	
5ME.1472	Open camp		Not eligible (F)	Plateau Valley	
5ME.1476	Open lithic	Camp	No assessment	Grand Mesa Slopes	
5ME.1478	Isolated find – Paleoindian		Not Eligible (F)	Grand Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.148	Open camp		Not eligible (F)	Gateway	
5ME.1486	Open lithic		No assessment	Grand Mesa Slopes	
5ME.1489	Open lithic		Not eligible (F)	Plateau Valley	
5ME.149	Open camp		Need data (F)	Gateway	
5ME.1491	Open lithic		No assessment	Roan Creek	
5ME.15005		Camp	Not Eligible (O)	Grand Mesa Slopes	
5ME.15006		Camp	Not Eligible (O)	Grand Mesa Slopes	
5ME.15007		Camp	Not Eligible (O)	Grand Mesa Slopes	
5ME.1501	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.1506	Open camp		Not Eligible (O)	Plateau Valley	
5ME.15105	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.15106	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.15107	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.1512	Open lithic		Not eligible (F)	Plateau Valley	
5ME.1514	Open lithic		No assessment	Plateau Valley	
5ME.15148	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.1515	Open lithic		No assessment	Plateau Valley	
5ME.15157	Open camp		Eligible (O)	Gateway	
5ME.15159	Open lithic		Eligible (O)	Gateway	
5ME.15198	Open lithic		Need data (O)	Glade Park	
5ME.1520	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.15215	Open camp		Not eligible (F)	Plateau Valley	
5ME.1523	Open camp		Eligible (F)	Plateau Valley	
5ME.1525		Camp	Eligible (F)	Plateau Valley	
5ME.1526	Open camp		Eligible (F)	Plateau Valley	
5ME.1527	Open camp		Eligible (F)	Plateau Valley	
5ME.15305	Open camp		Need data (O)	Roan Creek	
5ME.15306	Open camp		Eligible (O)	Roan Creek	
5ME.15307	Open camp		Not Eligible (O)	Roan Creek	
5ME.15371	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.15375	Open lithic		Not Eligible (O)	Roan Creek	
5ME.15397	Open lithic		Not Eligible (O)	Grand Valley	
5ME.15398	Open lithic		Eligible (O)	Grand Valley	
5ME.1545	Open camp		No assessment	Glade Park	
5ME.15456		Pole cache	Not Eligible (O)	Plateau Valley	
5ME.15457	Open camp		Eligible (O)	Plateau Valley	
5ME.1546	Open lithic		Need data (F)	Gateway	
5ME.15462	Open camp		Not Eligible (O)	Plateau Valley	
5ME.15464	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.15468		Pole cache	Not Eligible (O)	Plateau Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.15470	Open lithic		Need data (O)	Plateau Valley	
5ME.15498		Trash scatter/ dump	Not Eligible (O)	Grand Valley	
5ME.15503	Open lithic		Need data (O)	Grand Mesa Slopes	
5ME.15505	Open lithic		Need data (O)	Grand Mesa Slopes	
5ME.15506	Open lithic		Eligible (O)	Grand Mesa Slopes	
5ME.1553	Open camp		Need data (F)	Plateau Valley	
5ME.1554	Open lithic		Not Eligible (O)	Grand Valley	
5ME.1555	Open lithic		Not eligible (F)	Grand Valley	
5ME.15568		Mining	Eligible (F)	Bangs Canyon	
5ME.15589	Open lithic		Need data (O)	Bangs Canyon	
5ME.15592	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.15594	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.15596	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.15597	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.15599	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.1561	Open lithic		Not Eligible (O)	Glade Park	
5ME.15631	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.15636	Sheltered camp		Eligible (O)	Plateau Valley	
5ME.1566	Open lithic		Not eligible (F)	Plateau Valley	
5ME.1567	Open lithic		Eligible (F)	Plateau Valley	
5ME.15709	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15710	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15716	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15717	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15718	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15719	Open camp		Not eligible (F)	Plateau Valley	
5ME.15721	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15722	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15723	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15724	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15725	Open lithic		Not eligible (F)	Plateau Valley	
5ME.15726	Open camp		Not eligible (F)	Plateau Valley	
5ME.1574	Open lithic		Need data (F)	Roan Creek	
5ME.15765	Open camp		Eligible (O)	Gateway	
5ME.15769	Open lithic		Not Eligible (O)	Gateway	
5ME.15770	Sheltered camp		Eligible (O)	Gateway	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.15771	Sheltered camp		Eligible (O)	Gateway	
5ME.15772		Isolated feature	Not Eligible (O)	Gateway	
5ME.15786	Open camp		Eligible (O)	Roan Creek	
5ME.15787		Camp, rock feature	Not Eligible (O)	Roan Creek	
5ME.15795	Open lithic		Not Eligible (O)	Gateway	
5ME.1580	Open camp		No assessment	Roan Creek	
5ME.1581	Sheltered camp		Not eligible (F)	Roan Creek	
5ME.1588		Farm/ranch	Not eligible (F)	Roan Creek	
5ME.15908	Open camp		Eligible (O)	Gateway	
5ME.15909	Open camp		Eligible (O)	Gateway	
5ME.15910	Open lithic		Not Eligible (O)	Gateway	
5ME.15912	Open camp		Eligible (F)	Gateway	
5ME.15913	Open camp		Eligible (O)	Gateway	
5ME.15930	Open lithic		Need data (O)	Bangs Canyon	
5ME.15931	Open lithic		Eligible (F)	Bangs Canyon	
5ME.15932	Open lithic		Eligible (O)	Bangs Canyon	
5ME.15934	Open lithic		Eligible (O)	Bangs Canyon	
5ME.15935	Open lithic		Eligible (O)	Bangs Canyon	
5ME.16051	Open camp		Eligible (F)	Bangs Canyon	
5ME.16052	Open camp		Eligible (F)	Bangs Canyon	
5ME.16096	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.16098	Open camp		Eligible (O)	Plateau Valley	
5ME.16100	Open camp		Eligible (O)	Plateau Valley	
5ME.16101	Open lithic		Not eligible (F)	Plateau Valley	
5ME.16102	Open camp		Eligible (O)	Plateau Valley	
5ME.16103	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.16138	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.16141	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.16142	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.16143	Isolated feature		Not eligible (F)	Grand Mesa Slopes	
5ME.16144	Open lithic	Camp	Not eligible (F)	Grand Mesa Slopes	
5ME.16145	Open lithic	Trash scatter/ dump	Not eligible (F)	Grand Mesa Slopes	
5ME.16147	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.16148		Camp	Not eligible (F)	Grand Mesa Slopes	
5ME.16149	Open lithic		Not eligible (F)	Grand Mesa Slopes	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.16150	Quarry		Not eligible (F)	Grand Mesa Slopes	
5ME.16151	Quarry		Not eligible (F)	Grand Mesa Slopes	
5ME.16152	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.16153	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.16154	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.16257		Trail	Not Eligible (O)	Bangs Canyon	
5ME.16258	Open camp		Need data (O)	Bangs Canyon	
5ME.16295	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16296	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16297	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16298	Isolated feature		Eligible (F)	Bangs Canyon	
5ME.16299	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.16300	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16301	Open lithic		Need data (F)	Bangs Canyon	
5ME.16302	Open camp		Need data (F)	Bangs Canyon	
5ME.16303	Sheltered lithic		Need data (F)	Bangs Canyon	Public Use
5ME.16304	Open lithic		Need data (F)	Bangs Canyon	
5ME.16305	Open camp		Need data (F)	Bangs Canyon	
5ME.16306	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16307	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16308	Open camp		Eligible (F)	Bangs Canyon	
5ME.16309	Open camp		Eligible (F)	Bangs Canyon	
5ME.16310	Sheltered lithic		Need data (F)	Bangs Canyon	
5ME.16311	Open lithic		Need data (F)	Bangs Canyon	
5ME.16312	Open camp		Eligible (F)	Bangs Canyon	
5ME.16313	Open camp		Need data (F)	Bangs Canyon	
5ME.16314	Sheltered camp		Need data (F)	Bangs Canyon	Public Use
5ME.16315	Open camp		Need data (F)	Bangs Canyon	
5ME.16316	Open lithic		Need data (F)	Bangs Canyon	
5ME.16317	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16318	Open lithic		Need data (F)	Bangs Canyon	
5ME.16319	Open lithic		Need data (F)	Bangs Canyon	
5ME.16321	Open camp		Eligible (F)	Bangs Canyon	
5ME.16322	Open lithic		Need data (F)	Bangs Canyon	
5ME.16323	Open camp		Eligible (F)	Bangs Canyon	
5ME.16324	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16324	Sheltered camp		Eligible (O)	Bangs Canyon	
5ME.16325	Sheltered camp		Eligible (F)	Bangs Canyon	
5ME.16326	Open camp		Need data (F)	Bangs Canyon	
5ME.16327	Open lithic		Not eligible (F)	Bangs Canyon	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.16328	Open camp		Need data (F)	Bangs Canyon	
5ME.16329	Open camp		Need data (F)	Bangs Canyon	
5ME.16330			Need data (F)	Bangs Canyon	
5ME.16332	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16334	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16335	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16336	Open lithic		Need data (F)	Bangs Canyon	
5ME.16337	Open camp		Eligible (F)	Bangs Canyon	
5ME.16338	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16339	Open lithic		Need data (F)	Bangs Canyon	
5ME.16340	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16341	Open lithic		Need data (F)	Bangs Canyon	
5ME.16342	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16343	Open camp		Eligible (F)	Bangs Canyon	
5ME.16344	Open lithic		Eligible (F)	Bangs Canyon	
5ME.16345	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16346	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16347	Sheltered camp		Not eligible (F)	Bangs Canyon	
5ME.16348	Open camp		Eligible (F)	Bangs Canyon	
5ME.16349	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16350	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16351	Open camp		Need data (F)	Bangs Canyon	
5ME.16352	Open lithic		Need data (F)	Bangs Canyon	
5ME.16353		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.16354	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16355		Trash scatter/ dump	Not eligible (F)	Bangs Canyon	
5ME.16356	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16357	Open lithic		Not eligible (F)	Bangs Canyon	Public Use
5ME.16358	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16359	Open camp		Eligible (F)	Bangs Canyon	
5ME.16360		Camp	Not eligible (F)	Bangs Canyon	
5ME.16361	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.16362	Open camp		Need data (F)	Bangs Canyon	
5ME.16380	Open lithic		Not eligible (F)	Plateau Valley	
5ME.16381	Open camp		Not eligible (F)	Plateau Valley	
5ME.16409	Open lithic		Not eligible (F)	Plateau Valley	
5ME.16411	Open lithic		Not eligible (F)	Plateau Valley	
5ME.1642	Open camp		Need data (F)	Gateway	
5ME.16426	Open lithic		Not eligible (F)	Plateau Valley	
5ME.1643	Open camp		Not Eligible (O)	Glade Park	
5ME.16437	Open lithic		Not eligible (F)	Plateau Valley	
5ME.1644	Open camp		Not Eligible (O)	Glade Park	
5ME.16466	Open lithic		Not eligible (F)	Plateau Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.16501	Open lithic		Not eligible (F)	Gateway	
5ME.16525	Open lithic		Not eligible (F)	Gateway	
5ME.16547		Habitation/ homestead	Not eligible (F)	Plateau Valley	
5ME.16552	Open camp		Eligible (F)	Gateway	
5ME.16553	Open camp		Not eligible (F)	Gateway	
5ME.16576	Open lithic		Need data (F)	Plateau Valley	
5ME.16577	Open camp		Need data (F)	Plateau Valley	
5ME.16578	Open camp		Need data (F)	Plateau Valley	
5ME.166	Quarry		Need data (F)	Gateway	
5ME.16640	Open lithic	Camp	Not eligible (F)	Gateway	
5ME.16642	Open lithic		Eligible (F)	Bangs Canyon	
5ME.16643	Open lithic		Need data (F)	Bangs Canyon	
5ME.16644	Open lithic		Need data (F)	Bangs Canyon	
5ME.16645	Open lithic		Need data (F)	Bangs Canyon	
5ME.16679		Water control feature	Eligible (F)	Grand Valley	
5ME.16680		Water control feature	Eligible (F)	Grand Valley	
5ME.16681		Water control feature	Eligible (F)	Grand Valley	
5ME.16781				Roan Creek	
5ME.169	Sheltered camp		No assessment	Gateway	
5ME.170	Quarry		Need data (F)	Gateway	
5ME.171	Sheltered camp		Need data (F)	Gateway	
5ME.172	Sheltered camp		Need data (F)	Gateway	
5ME.177	Open lithic		Need data (F)	Gateway	
5ME.205		Camp	Need data (F)	Grand Valley	
5ME.214	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.265	Open camp	Farm/ranch	Eligible (O)	Grand Mesa Slopes	
5ME.269	Open lithic	Trash scatter/ dump	Eligible (O)	Grand Mesa Slopes	
5ME.270	Open camp		Eligible (F)	Plateau Valley	
5ME.271	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.272	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.274	Open lithic		Not Eligible (O)	Grand Valley	
5ME.275	Open lithic		Eligible (F)	Grand Mesa Slopes	
5ME.276	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.277	Open camp		Eligible (F)	Plateau Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.278	Open camp		Eligible (F)	Plateau Valley	
5ME.280	Sheltered camp		Eligible (F)	Plateau Valley	
5ME.283	Open camp		Eligible (F)	Plateau Valley	
5ME.284	Open camp	Trash scatter/dump	Eligible (F)	Grand Mesa Slopes	
5ME.285	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.286	Open camp		Eligible (F)	Plateau Valley	
5ME.288	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.289	Open lithic		Not Eligible (O)	Grand Valley	
5ME.293	Open lithic		Need data (F)	Plateau Valley	
5ME.295	Open camp		Need data (F)	Plateau Valley	
5ME.303	Open lithic		Not eligible (F)	Grand Valley	
5ME.306	Open camp		Need data (F)	Grand Valley	
5ME.311	Open lithic		Need data (F)	Gateway	
5ME.312	Open camp		Need data (F)	Glade Park	
5ME.322	Open lithic		Eligible (F)	Bangs Canyon	
5ME.323	Open camp		Need data (F)	Bangs Canyon	
5ME.324	Open camp		Eligible (F)	Bangs Canyon	
5ME.326	Open lithic		Eligible (F)	Bangs Canyon	
5ME.327	Open camp		Need data (O)	Bangs Canyon	
5ME.333	Open camp		Eligible (O)	Bangs Canyon	
5ME.334	Open architectural		Eligible (F)	Glade Park	
5ME.338	Open camp		Need data (F)	Glade Park	
5ME.339	Open camp		Need data (F)	Glade Park	
5ME.340	Open camp		Eligible (F)	Glade Park	
5ME.341	Open camp		Need data (F)	Glade Park	
5ME.342	Open camp		Need data (F)	Glade Park	
5ME.343	Open camp		Need data (F)	Glade Park	
5ME.344	Open lithic		Need data (F)	Glade Park	
5ME.346	Open camp		Need data (F)	Gateway	
5ME.3647	Open lithic		Eligible (O)	Grand Mesa Slopes	
5ME.3648	Open lithic		Eligible (O)	Grand Mesa Slopes	
5ME.3649	Open lithic	Trash scatter/ dump	Eligible (O)	Grand Mesa Slopes	
5ME.3650	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.3651	Open lithic		Need data (F)	Roan Creek	
5ME.3663	Open camp		No assessment	Bangs Canyon	
5ME.3668	Open camp		Need data (O)	Plateau Valley	
5ME.3670	Open lithic		Need data (F)	Plateau Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.3671	Open camp, quarry		Need data (F)	Plateau Valley	
5ME.3672	Open lithic		Need data (F)	Plateau Valley	
5ME.3673	Open lithic		Eligible (F)	Plateau Valley	
5ME.3685	Sheltered camp		Need data (F)	Plateau Valley	
5ME.3686	Open camp		Eligible (F)	Plateau Valley	
5ME.3687	Open camp		Need data (F)	Plateau Valley	
5ME.3688	Open camp		Need data (F)	Plateau Valley	
5ME.3689	Quarry		Not eligible (F)	Plateau Valley	
5ME.3690	Open lithic	Trash scatter/ dump	Need data (F)	Plateau Valley	
5ME.3693	Open camp		Eligible (F)	Plateau Valley	
5ME.3695	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.3696	Open lithic, quarry		Not Eligible (O)	Plateau Valley	
5ME.3698	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.3709	Open camp		Need data (F)	Plateau Valley	
5ME.3710	Open camp		Need data (F)	Plateau Valley	
5ME.3711	Open camp		Need data (F)	Plateau Valley	
5ME.3712	Open camp		Need data (F)	Plateau Valley	
5ME.3713	Open camp		Need data (F)	Plateau Valley	
5ME.3714	Open camp		Need data (F)	Plateau Valley	
5ME.3716	Open camp		Need data (F)	Plateau Valley	
5ME.3728	Open camp		Need data (F)	Plateau Valley	
5ME.3730	Open camp		Not eligible (F)	Plateau Valley	
5ME.3732		Farm/ranch	Not eligible (F)	Roan Creek	
5ME.3733	Isolated feature		Not eligible (F)	Roan Creek	
5ME.3735			Not eligible (F)	Roan Creek	
5ME.3771	Open camp		Need data (F)	Glade Park	
5ME.3775	Open camp		Need data (F)	Plateau Valley	
5ME.3776	Open lithic		Need data (F)	Plateau Valley	
5ME.3783	Open camp		Need data (F)	Plateau Valley	
5ME.3788	Open camp		Need data (F)	Plateau Valley	
5ME.3789	Open architectural	Habitation/ homestead	Need data (F)	Bangs Canyon	
5ME.3802	Open camp		Not eligible (F)	Grand Valley	
5ME.3803	Open camp	Mining	Not eligible (F)	Grand Valley	
5ME.3806	Open camp		Need data (F)	Bangs Canyon	
5ME.3807	Open camp		Not Eligible (O)	Glade Park	
5ME.3808	Open camp		Need data (F)	Plateau Valley	
5ME.3809	Open camp		Not eligible (F)	Plateau Valley	
5ME.3810	Open lithic		Need data (F)	Plateau Valley	
5ME.3818	Open lithic		Not eligible (F)	Grand Mesa Slopes	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.3819		Trash scatter/ dump	Not eligible (F)	Grand Mesa Slopes	
5ME.3824	Open lithic		Not eligible (F)	Plateau Valley	
5ME.3825	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.3837	Open camp		Not eligible (F)	Plateau Valley	
5ME.3839	Open lithic		Not eligible (F)	Plateau Valley	
5ME.3840	Open lithic		Not eligible (F)	Plateau Valley	
5ME.3844	Open camp		Not eligible (F)	Plateau Valley	
5ME.3845	Open camp		Eligible (F)	Plateau Valley	
5ME.3859	Open camp		Not eligible (F)	Roan Creek	
5ME.386		Habitation/ homestead	Eligible (F)	Grand Mesa Slopes	
5ME.3860	Open camp		Not eligible (F)	Roan Creek	
5ME.3861	Open camp		Not eligible (F)	Roan Creek	
5ME.3863	Open camp		Not eligible (F)	Roan Creek	
5ME.3864	Open camp		Not eligible (F)	Roan Creek	
5ME.3865	Sheltered camp		Not eligible (F)	Roan Creek	
5ME.3866	Open camp		Need data (F)	Roan Creek	
5ME.3874		Fence	Not eligible (F)	Roan Creek	
5ME.3876	Open camp		Not eligible (F)	Roan Creek	
5ME.388		Water control feature	Eligible (F)	Grand Mesa Slopes	
5ME.3880	Open lithic	Trash scatter/ dump	Need data (F)	Grand Valley	
5ME.3886	Open lithic		No assessment	Glade Park	
5ME.389	Open lithic		Eligible (F)	Grand Mesa Slopes	
5ME.3895	Open camp		Not eligible (F)	Plateau Valley	
5ME.3899	Open camp		Not eligible (F)	Plateau Valley	
5ME.390	Open lithic		Eligible (F)	Grand Mesa Slopes	
5ME.3907	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.391	Open lithic		Eligible (O)	Grand Mesa Slopes	
5ME.3911	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.3912	Open camp		Not eligible (F)	Roan Creek	
5ME.3915	Open lithic		Need data (F)	Plateau Valley	
5ME.3916	Open lithic		Need data (F)	Plateau Valley	
5ME.3917	Open lithic		Need data (F)	Plateau Valley	
5ME.392	Open lithic		Eligible (F)	Grand Mesa Slopes	
5ME.3921		Trash scatter/ dump	Not eligible (F)	Grand Valley	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.3924		Camp	Not eligible (F)	Grand Valley	
5ME.3925		Camp	Not eligible (F)	Grand Valley	
5ME.3929		Camp	Not eligible (F)	Grand Valley	
5ME.393	Open lithic		Eligible (O)	Grand Mesa Slopes	
5ME.3930		Camp	Not eligible (F)	Grand Valley	
5ME.3932		Camp	Not eligible (F)	Grand Valley	
5ME.3933		Camp	Not eligible (F)	Grand Valley	
5ME.3935		Camp	Not eligible (F)	Grand Valley	
5ME.3937		Camp	Not eligible (F)	Grand Valley	
5ME.3939		Camp	Not eligible (F)	Grand Valley	
5ME.394	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.3941		Camp	Not eligible (F)	Grand Valley	
5ME.3942		Camp	Not eligible (F)	Grand Valley	
5ME.3943		Camp	No assessment	Grand Valley	
5ME.3944		Camp	Not eligible (F)	Grand Valley	
5ME.3945		Camp	Not eligible (F)	Grand Valley	
5ME.3946		Camp	Not eligible (F)	Grand Valley	
5ME.3947		Camp	Not eligible (F)	Grand Valley	
5ME.3948		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.3949		Camp	Not eligible (F)	Grand Valley	
5ME.3950		Camp	Not eligible (F)	Grand Valley	
5ME.396	Open lithic		Not Eligible (O)	Grand Valley	
5ME.397	Open lithic		Not Eligible (O)	Grand Valley	
5ME.3970	Open camp	Water control feature	Need data (F)	Roan Creek	
5ME.3971		Camp	Not eligible (F)	Roan Creek	
5ME.3977	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.3978	Sheltered camp		Not Eligible (O)	Roan Creek	
5ME.399	Open camp		Eligible (F)	Plateau Valley	
5ME.400	Open camp		Eligible (F)	Plateau Valley	
5ME.4000		Farm/ranch	Not eligible (F)	Roan Creek	
5ME.401	Open camp		Eligible (F)	Plateau Valley	
5ME.4010		Farm/ranch	Not eligible (F)	Roan Creek	
5ME.4011	Sheltered camp		Need data (O)	Roan Creek	
5ME.4018	Open camp		Need data (F)	Glade Park	
5ME.402	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.4020	Open lithic		Not eligible (F)	Glade Park	
5ME.4021		Farm/ranch	Eligible (O)	Roan Creek	
5ME.4031	Open lithic		Not eligible (F)	Grand Mesa Slopes	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4032	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.4033	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.4034	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.4044	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4045	Open camp		Not eligible (F)	Plateau Valley	
5ME.4046	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4047	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4048	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4049	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.405	Open camp		Eligible (F)	Plateau Valley	
5ME.4050	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4051	Open lithic		Need data (F)	Grand Mesa Slopes	
5ME.4052	Open camp		Need data (F)	Plateau Valley	
5ME.4053	Open lithic		Not eligible (F)	Plateau Valley	
5ME.4054	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4055	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4056	Open lithic		No assessment	Grand Mesa Slopes	
5ME.4057		Habitation/ homestead	Need data (F)	Gateway	
5ME.4058	Open lithic		Need data (F)	Gateway	
5ME.4059	Open camp		Need data (F)	Gateway	
5ME.4060	Open camp		Not Eligible (O)	Glade Park	
5ME.4061	Open lithic		Need data (F)	Bangs Canyon	
5ME.4064	Open architectural		Not Eligible (O)	Gateway	
5ME.408	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.4082	Sheltered camp	Camp	Need data (O)	Bangs Canyon	
5ME.4083	Open lithic		Need data (F)	Bangs Canyon	
5ME.4084	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.4085	Open lithic		Need data (F)	Bangs Canyon	
5ME.4086	Open lithic		Need data (F)	Bangs Canyon	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4087	Sheltered camp	Camp	Need data (F)	Bangs Canyon	
5ME.4088	Open lithic		Need data (F)	Bangs Canyon	
5ME.4089	Open lithic		Need data (F)	Bangs Canyon	
5ME.409		Fence	Eligible (F)	Plateau Valley	
5ME.4090	Open lithic		Need data (F)	Bangs Canyon	
5ME.4092	Open lithic		Need data (F)	Bangs Canyon	
5ME.4093	Open lithic		Need data (F)	Bangs Canyon	
5ME.4094	Open lithic		Need data (F)	Bangs Canyon	
5ME.4095	Open lithic		Need data (F)	Bangs Canyon	
5ME.4096	Open lithic		Need data (F)	Bangs Canyon	
5ME.4097	Open camp		Need data (O)	Bangs Canyon	
5ME.4098	Open lithic		Need data (F)	Bangs Canyon	
5ME.4099	Open camp		Need data (O)	Bangs Canyon	
5ME.410	Open lithic		Eligible (F)	Grand Mesa Slopes	
5ME.4100	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4104	Open lithic		Not eligible (F)	Gateway	
5ME.4105	Open camp		Need data (F)	Roan Creek	
5ME.4106	Open camp		Need data (F)	Roan Creek	
5ME.4107	Open lithic		Not eligible (F)	Gateway	
5ME.4108	Open lithic		Need data (F)	Gateway	
5ME.4109	Open lithic		Not eligible (F)	Gateway	
5ME.411	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.4116		Water control feature	Not Eligible (O)	Grand Valley	
5ME.412	Open architectural		Not Eligible (O)	Grand Mesa Slopes	
5ME.413	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.414	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.415	Open camp		Eligible (O)	Plateau Valley	
5ME.418	Open camp		Eligible (F)	Grand Valley	
5ME.419	Open lithic		Eligible (F)	Grand Valley	
5ME.420	Open camp		Need data (O)	Grand Valley	
5ME.4200	Isolated find – Paleoindian		Not Eligible (F)	Book Cliffs	
5ME.4201	Open camp		Need data (F)	Book Cliffs	
5ME.4206	Open lithic		Need data (F)	Bangs Canyon	
5ME.4207	Open lithic		Need data (F)	Bangs Canyon	
5ME.4208	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4209	Open lithic		Need data (F)	Bangs Canyon	
5ME.4210	Open lithic		Need data (F)	Bangs Canyon	
5ME.4211	Open lithic		Need data (F)	Bangs Canyon	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4212	Open lithic		Need data (F)	Bangs Canyon	
5ME.4213	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4214	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4215	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4216	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4217	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4218	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4219	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.422	Open camp		Eligible (O)	Grand Valley	
5ME.4220	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.4221	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4222	Open lithic		Need data (F)	Bangs Canyon	
5ME.4223	Open lithic		Need data (F)	Bangs Canyon	
5ME.423	Open lithic		Need data (F)	Grand Valley	
5ME.4232	Open lithic		Not eligible (F)	Glade Park	
5ME.4234	Open lithic		Not eligible (F)	Glade Park	
5ME.4235	Open lithic		Not eligible (F)	Glade Park	
5ME.4236	Open lithic		Not eligible (F)	Glade Park	
5ME.4237	Sheltered camp		Need data (F)	Glade Park	
5ME.4238	Open camp		Not eligible (F)	Glade Park	
5ME.4239	Open camp		No assessment	Glade Park	
5ME.4240	Open camp		Not eligible (F)	Glade Park	
5ME.4241	Open lithic		Not eligible (F)	Glade Park	
5ME.4242	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4243	Open lithic		Not eligible (F)	Gateway	
5ME.4244	Open camp		Need data (F)	Bangs Canyon	
5ME.4245	Open lithic		Need data (F)	Bangs Canyon	
5ME.4246	Open lithic		Need data (F)	Bangs Canyon	
5ME.4247	Open lithic		Need data (F)	Bangs Canyon	
5ME.4248	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4249	Open lithic		Need data (F)	Bangs Canyon	
5ME.4250	Open lithic		Need data (F)	Bangs Canyon	
5ME.4251	Open lithic		Need data (F)	Bangs Canyon	
5ME.4252	Open lithic		Need data (F)	Bangs Canyon	
5ME.4253	Open lithic		Need data (F)	Bangs Canyon	
5ME.4254	Open camp		Need data (F)	Bangs Canyon	
5ME.4255	Open lithic		Need data (F)	Bangs Canyon	
5ME.4256	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4257	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4258	Open lithic		Need data (F)	Bangs Canyon	
5ME.4259	Open lithic		Need data (F)	Bangs Canyon	
5ME.4260	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4261	Open lithic		Need data (F)	Bangs Canyon	
5ME.4262	Open lithic		Need data (F)	Bangs Canyon	
5ME.4263	Open lithic		Need data (F)	Bangs Canyon	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4264	Open lithic		Need data (F)	Bangs Canyon	
5ME.4265	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4266	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4267	Open lithic		No assessment	Bangs Canyon	
5ME.4268	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4269	Open lithic		Need data (F)	Bangs Canyon	
5ME.427	Open lithic, quarry		Not eligible (F)	Grand Mesa Slopes	
5ME.4270	Open lithic		No assessment	Bangs Canyon	
5ME.4271	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4272	Quarry		Not eligible (F)	Bangs Canyon	
5ME.4273	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4274	Open lithic		Need data (F)	Bangs Canyon	
5ME.4275	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4276	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4277	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4278	Open lithic		Need data (F)	Bangs Canyon	
5ME.4279	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4280	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4297	Open lithic		Need data (F)	Gateway	
5ME.4298	Open lithic		Need data (F)	Gateway	
5ME.4299	Sheltered camp		Need data (F)	Roan Creek	
5ME.4300	Open camp		Need data (F)	Grand Valley	
5ME.4301	Open lithic		Not eligible (F)	Grand Valley	
5ME.4302	Open camp		Not eligible (F)	Grand Valley	
5ME.4303	Open lithic		Not eligible (F)	Roan Creek	
5ME.4318	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.4333	Open camp	Camp	Need data (F)	Roan Creek	
5ME.4334	Open lithic		Need data (F)	Grand Valley	
5ME.4335	Open lithic		Need data (F)	Gateway	
5ME.4336	Open lithic		Not eligible (F)	Gateway	
5ME.4337	Open lithic		Need data (F)	Grand Valley	
5ME.4338	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.4339	Open camp		Not eligible (F)	Gateway	
5ME.4340	Open camp		Not eligible (F)	Roan Creek	
5ME.4341	Open lithic		Not eligible (F)	Roan Creek	
5ME.4342	Open camp		Not eligible (F)	Bangs Canyon	
5ME.4343	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.4344	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4349		Habitation/ homestead	Need data (F)	Roan Creek	
5ME.4350	Open lithic		Need data (F)	Roan Creek	
5ME.4355	Sheltered lithic		Not Eligible (O)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4385	Sheltered lithic		Need data (F)	Bangs Canyon	
5ME.4386	Open lithic		Need data (F)	Bangs Canyon	
5ME.4387	Open camp		Need data (F)	Roan Creek	
5ME.4392	Open lithic		Need data (F)	Roan Creek	
5ME.4395		Camp	Not eligible (F)	Grand Valley	
5ME.4396		Camp	Not eligible (F)	Grand Valley	
5ME.4413	Open lithic		Not eligible (F)	Plateau Valley	
5ME.4416	Open lithic		Need data (F)	Plateau Valley	
5ME.4419			Need data (F)	Roan Creek	
5ME.4420	Open camp		Eligible (F)	Roan Creek	
5ME.4421		Habitation/ homestead	Not eligible (F)	Roan Creek	Public Use
5ME.4422	Open camp		Not eligible (F)	Roan Creek	
5ME.4423	Isolated feature-hearth		Not eligible (F)	Roan Creek	
5ME.4424	Open camp		Need data (F)	Roan Creek	
5ME.4429	Open lithic		Need data (F)	Roan Creek	
5ME.4431	Open camp		Eligible (O)	Roan Creek	
5ME.4432	Sheltered camp		Eligible (O)	Roan Creek	
5ME.4434	Sheltered camp		Not eligible (F)	Roan Creek	
5ME.4435	Open lithic		Not eligible (F)	Roan Creek	
5ME.4437	Open camp		Not Eligible (O)	Roan Creek	
5ME.4438	Open camp		Need data (F)	Roan Creek	
5ME.4439	Open lithic		Not eligible (F)	Roan Creek	
5ME.4440	Open camp		Eligible (F)	Roan Creek	
5ME.4441	Open camp		Not eligible (F)	Roan Creek	
5ME.4452	Open camp		Not eligible (F)	Grand Valley	
5ME.4453	Open lithic		Not eligible (F)	Grand Valley	
5ME.4454	Open camp		Eligible (F)	Grand Valley	
5ME.4455	Open camp		Not Eligible (O)	Grand Valley	
5ME.4456	Open lithic		Not eligible (F)	Grand Valley	
5ME.4479	Open camp		Not eligible (F)	Grand Valley	
5ME.4488		Mining	Eligible (F)	Book Cliffs	
5ME.4491	Quarry		Need data (F)	Bangs Canyon	
5ME.4492	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.4494	Quarry		Need data (F)	Bangs Canyon	
5ME.4495	Open lithic		Need data (F)	Bangs Canyon	
5ME.4497	Open camp	Camp	Eligible (F)	Roan Creek	
5ME.4500	Isolated find – Paleoindian		Not Eligible (F)	Grand Mesa Slopes	
5ME.4503	Sheltered camp		Not eligible (F)	Plateau Valley	
5ME.4509		Mining	Need data (F)	Book Cliffs	
5ME.4510		Mining	Need data (F)	Roan Creek	
5ME.4512		Mining	Need data (F)	Book Cliffs	
5ME.4513		Mining	Need data (F)	Book Cliffs	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4514		Mining	Not eligible (F)	Book Cliffs	
5ME.4519	Open camp		Not Eligible (O)	Grand Valley	
5ME.4521	Open camp		Eligible (O)	Plateau Valley	
5ME.456	Open camp		Need data (F)	Bangs Canyon	
5ME.4632	Open lithic		Need data (F)	Plateau Valley	
5ME.4634	Open camp		Eligible (F)	Plateau Valley	
5ME.4635	Open camp		Need data (F)	Plateau Valley	
5ME.4638	Open camp		Eligible (F)	Plateau Valley	
5ME.4643	Open camp		Eligible (O)	Plateau Valley	
5ME.4644	Open lithic		Not Eligible (O)	Book Cliffs	
5ME.4646	Open camp		Not Eligible (O)	Plateau Valley	
5ME.4648	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.4649	Open camp		Need data (F)	Plateau Valley	
5ME.4663		Camp	Not eligible (F)	Grand Valley	
5ME.4664		Camp	Not eligible (F)	Grand Valley	
5ME.4684			Not eligible (F)	Grand Valley	
5ME.4699	Sheltered camp		Not Eligible (O)	Bangs Canyon	
5ME.4702	Open lithic		Need data (F)	Grand Mesa Slopes	
5ME.4705	Sheltered lithic		Need data (F)	Bangs Canyon	
5ME.4709	Open lithic		Need data (F)	Gateway	
5ME.471	Open camp	Farm/ranch	Not Eligible (O)	Plateau Valley	
5ME.4710	Open lithic		Need data (F)	Gateway	
5ME.4713	Open camp		Not eligible (F)	Plateau Valley	
5ME.4719	Open lithic		Need data (F)	Glade Park	
5ME.472	Open camp		Eligible (F)	Plateau Valley	
5ME.4725	Open camp		Need data (F)	Plateau Valley	
5ME.473	Open camp		Eligible (O)	Plateau Valley	
5ME.4732	Open lithic		Not eligible (F)	Grand Valley	
5ME.4733	Open lithic		Not eligible (F)	Grand Valley	
5ME.4735	Open camp		Eligible (F)	Book Cliffs	
5ME.4736	Open lithic		Not eligible (F)	Grand Valley	
5ME.4737	Open camp		Not eligible (F)	Grand Valley	
5ME.4738	Open lithic		Not eligible (F)	Grand Valley	
5ME.4739	Open camp		Not Eligible (O)	Grand Valley	
5ME.474	Open lithic		Eligible (F)	Plateau Valley	
5ME.4740	Open lithic		Not eligible (F)	Grand Valley	
5ME.4741	Open camp		Not Eligible (O)	Grand Valley	
5ME.4742	Open camp		Not Eligible (O)	Grand Valley	
5ME.4743	Open lithic		Not eligible (F)	Grand Valley	
5ME.4765	Open lithic		No assessment	Bangs Canyon	
5ME.4776	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.4778	Open lithic		Not Eligible (O)	Grand Mesa Slopes	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4779	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.4780	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.480	Open camp		Need data (F)	Gateway	
5ME.4805	Isolated find – Paleoindian		Not Eligible (F)	Plateau Valley	
5ME.481	Open lithic		Need data (F)	Gateway	
5ME.4812		Farm/ranch	Not eligible (F)	Glade Park	
5ME.482		Water control feature	Eligible (F)	Plateau Valley	
5ME.4830	Open lithic		Not eligible (F)	Glade Park	
5ME.4833	Open lithic		Not eligible (F)	Glade Park	
5ME.4836	Open lithic		No assessment	Glade Park	
5ME.4837		Building	No assessment	Glade Park	
5ME.4838	Sheltered camp		No assessment	Glade Park	
5ME.4847	Open lithic		No assessment	Bangs Canyon	
5ME.4851		Camp	Not Eligible (O)	Bangs Canyon	
5ME.4857	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.4862	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.4889	Open lithic		Not Eligible (O)	Grand Valley	
5ME.4890	Open camp		Eligible (O)	Grand Valley	
5ME.4891	Open lithic		Need data (F)	Grand Valley	
5ME.4892	Isolated find – Early Archaic		Not Eligible (F)	Grand Valley	
5ME.4917	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.4919		Habitation/ homestead	Not Eligible (O)	Grand Mesa Slopes	
5ME.4926		Water control feature	Eligible (O)	Grand Mesa Slopes	
5ME.4928		Mining	Not Eligible (O)	Roan Creek	
5ME.4941	Sheltered camp		Need data (F)	Bangs Canyon	Public Use
5ME.4942	Sheltered camp		Not eligible (F)	Bangs Canyon	
5ME.4943	Sheltered lithic		Not eligible (F)	Bangs Canyon	
5ME.4944	Sheltered lithic		Not eligible (F)	Bangs Canyon	
5ME.4955	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.4959	Open camp		Eligible (O)	Plateau Valley	
5ME.4961	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.4962	Open lithic	Camp	Not Eligible (O)	Grand Mesa Slopes	
5ME.4963		Camp	Eligible (F)	Grand Mesa Slopes	
5ME.4972	Open lithic		Not Eligible (O)	Grand Mesa Slopes	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.4973	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.4974	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.4981			Not eligible (F)	Plateau Valley	
5ME.5119	Open camp		Not Eligible (O)	Gateway	
5ME.5140	Open lithic		Not eligible (F)	Gateway	
5ME.5148	Open camp		Not eligible (F)	Gateway	
5ME.5163	Open camp		Not eligible (F)	Gateway	
5ME.5165	Open lithic		Not eligible (F)	Gateway	
5ME.5168	Open lithic		Not eligible (F)	Gateway	
5ME.5175	Isolated find – Paleoindian		Not Eligible (F)	Roan Creek	
5ME.5178	Sheltered architectural		Need data (O)	Bangs Canyon	
5ME.5214	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.5215	Open lithic		Not eligible (F)	Glade Park	
5ME.5216		Mining	Not eligible (F)	Grand Mesa Slopes	
5ME.5227	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.5228	Open camp	Building	Not eligible (F)	Gateway	
5ME.5231	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.5233	Open lithic		Not eligible (F)	Gateway	
5ME.5234			Not eligible (F)	Plateau Valley	
5ME.5240	Open lithic		Need data (F)	Bangs Canyon	
5ME.5243	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.5244	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.5249	Open camp		No assessment	Grand Mesa Slopes	
5ME.5260	Quarry		Not eligible (F)	Grand Valley	
5ME.5261	Open lithic		Not eligible (F)	Grand Valley	
5ME.5262	Sheltered camp		Need data (F)	Bangs Canyon	
5ME.5296	Isolated find – Paleoindian		Not Eligible (F)	Grand Valley	
5ME.5381	Open camp		Not eligible (F)	Gateway	
5ME.548	Open camp		Eligible (F)	Gateway	
5ME.549	Open camp		Need data (F)	Gateway	
5ME.550	Open camp		Need data (F)	Bangs Canyon	
5ME.5762	Isolated find – Paleoindian		Not Eligible (F)	Grand Mesa Slopes	
5ME.5829			Not eligible (F)	Bangs Canyon	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.5866	Open camp		Not eligible (F)	Glade Park	
5ME.5867	Open camp		Not eligible (F)	Bangs Canyon	
5ME.5898	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.5903	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.5905	Open lithic		Not eligible (F)	Glade Park	
5ME.5936	Open camp		Eligible (O)	Gateway	
5ME.5979	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.6010	Open lithic		Need data (O)	Bangs Canyon	
5ME.6011	Open lithic, quarry		Need data (O)	Bangs Canyon	
5ME.6012	Open camp		Not Eligible (O)	Bangs Canyon	
5ME.6015	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.6016	Open lithic		Not Eligible (O)	Bangs Canyon	
5ME.6017	Open lithic		Need data (O)	Bangs Canyon	
5ME.6019	Open lithic, quarry		Need data (O)	Bangs Canyon	
5ME.6021	Open lithic		Not eligible (F)	Grand Valley	
5ME.6023	Open lithic		Not eligible (F)	Grand Valley	
5ME.6028	Open lithic		Not eligible (F)	Grand Valley	
5ME.6029	Open lithic		Not eligible (F)	Grand Valley	
5ME.6031	Open lithic	Camp	Not eligible (F)	Grand Valley	
5ME.6073		Trash scatter/ dump	Not eligible (F)	Grand Valley	
5ME.617	Open lithic		Not eligible (F)	Plateau Valley	
5ME.6170	Open lithic	Farm/ranch	Not Eligible (O)	Gateway	
5ME.6173	Open camp		Eligible (O)	Gateway	
5ME.6217	Sheltered lithic		Need data (O)	Bangs Canyon	
5ME.625	Open camp		Eligible (O)	Plateau Valley	
5ME.628	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.632		Habitation/ homestead	Not Eligible (O)	Grand Mesa Slopes	
5ME.633		Farm/ranch	Eligible (F)	Grand Mesa Slopes	
5ME.634	Sheltered camp		Eligible (F)	Plateau Valley	
5ME.6346	Open camp		Eligible (F)	Glade Park	
5ME.6347	Open lithic		Not eligible (F)	Glade Park	
5ME.6348	Open lithic		Not eligible (F)	Glade Park	
5ME.6349	Open lithic		Not eligible (F)	Glade Park	
5ME.635	Open camp		Eligible (F)	Plateau Valley	
5ME.6350	Sheltered camp		Eligible (F)	Glade Park	
5ME.6351	Sheltered camp		Eligible (F)	Glade Park	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.6352	Open camp		Eligible (F)	Glade Park	
5ME.6356	Isolated find – Paleoindian				
5ME.636	Open camp		Need data (F)	Grand Valley	
5ME.6360	Open lithic		Not eligible (F)	Glade Park	
5ME.6370	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6379	Open camp		Need data (O)	Glade Park	
5ME.6383	Open lithic		Eligible (O)	Plateau Valley	
5ME.6384	Open lithic		Eligible (O)	Plateau Valley	
5ME.6385	Open camp		Eligible (O)	Plateau Valley	
5ME.6386	Open camp		Eligible (O)	Plateau Valley	
5ME.6388	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6389	Open camp		Eligible (O)	Plateau Valley	
5ME.6390	Open lithic		Eligible (O)	Plateau Valley	
5ME.6391	Open camp		Eligible (O)	Plateau Valley	
5ME.6392	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6393	Open lithic		Eligible (O)	Plateau Valley	
5ME.6394	Open lithic		Eligible (O)	Plateau Valley	
5ME.6395	Open camp		Eligible (O)	Plateau Valley	
5ME.6396	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6397	Open camp		Eligible (O)	Plateau Valley	
5ME.6398	Open camp		Eligible (O)	Plateau Valley	
5ME.6399	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.640	Sheltered camp		Need data (F)	Plateau Valley	
5ME.6400	Open camp		Eligible (O)	Plateau Valley	
5ME.6401	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.642		Building	Eligible (O)	Plateau Valley	
5ME.6436	Open lithic		Not Eligible (O)	Roan Creek	
5ME.6443	Sheltered camp		Eligible (F)	Roan Creek	
5ME.6444	Open camp		Eligible (F)	Roan Creek	
5ME.6445	Open camp		Eligible (O)	Roan Creek	
5ME.6458	Open lithic		Not eligible (F)	Grand Mesa Slopes	
5ME.6459	Open lithic	Water control feature	Not eligible (F)	Grand Mesa Slopes	
5ME.6460	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6461	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.6472	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.6474	Open camp		Eligible (O)	Roan Creek	
5ME.6475	Open lithic		Not Eligible (O)	Roan Creek	
5ME.6478	Open camp		Not Eligible (O)	Gateway	

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Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.6479	Open lithic		Not Eligible (O)	Gateway	
5ME.6480	Isolated find – Early Archaic		Not Eligible (F)	Gateway	
5ME.6484	Open camp		Need data (O)	Roan Creek	
5ME.6485	Open camp		Not Eligible (O)	Roan Creek	
5ME.6494	Open lithic		Need data (O)	Grand Mesa Slopes	
5ME.6495	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6538	Open camp		Need data (O)	Roan Creek	
5ME.6540	Open camp		Not Eligible (O)	Roan Creek	
5ME.6541	Open camp		Need data (O)	Roan Creek	
5ME.6543	Open lithic		Not Eligible (O)	Roan Creek	
5ME.6659	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6660	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6661	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6662	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.6674		Camp	Eligible (O)	Plateau Valley	
5ME.6693	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6694	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6702	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6703	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6704	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6705	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6706	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.6707	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6708	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6709	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.6713	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6715	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.6716	Open lithic		Not Eligible (O)	Grand Mesa Slopes	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.6717	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6729	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6730	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.6731	Open camp	Habitation/ homestead	Eligible (O)	Grand Mesa Slopes	
5ME.6744	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6759	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6760	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6773	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.6774	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.6778	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.682		Camp	Not eligible (F)	Roan Creek	
5ME.6828		Habitation/ homestead	Not Eligible (O)	Grand Mesa Slopes	
5ME.684	Open lithic		Need data (F)	Gateway	
5ME.6844		Mining	Not Eligible (O)	Bangs Canyon	
5ME.6845		Mining	Not Eligible (O)	Bangs Canyon	
5ME.6846		Mining	Not Eligible (O)	Bangs Canyon	
5ME.686	Open lithic		Need data (F)	Gateway	
5ME.689	Open lithic		No assessment	Roan Creek	
5ME.691	Unknown		No assessment	Roan Creek	
5ME.692	Unknown		No assessment	Roan Creek	
5ME.693	Unknown		No assessment	Roan Creek	
5ME.6934	Isolated find – Paleoindian		Not Eligible (F)	Grand Valley	
5ME.6938	Sheltered camp		Need data (O)	Plateau Valley	
5ME.6939	Sheltered camp		Need data (O)	Plateau Valley	
5ME.6942	Open camp		Need data (O)	Plateau Valley	
5ME.6951	Open camp		Need data (O)	Plateau Valley	
5ME.6960	Open lithic		Need data (O)	Plateau Valley	
5ME.697	Open lithic		Not eligible (F)	Glade Park	
5ME.699	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.7004	Open camp	Trash scatter/ dump	Eligible (O)	Roan Creek	
5ME.7005	Open camp		Need data (O)	Roan Creek	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.701	Open lithic		Need data (F)	Gateway	
5ME.7030	Open camp		Need data (O)	Bangs Canyon	Public Use
5ME.708	Sheltered camp		No assessment	Roan Creek	
5ME.7121	Open camp		Need data (O)	Roan Creek	
5ME.714	Sheltered camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.715	Open lithic		Need data (F)	Plateau Valley	
5ME.716	Open lithic		Need data (F)	Grand Mesa Slopes	
5ME.717		Camp	Need data (O)	Roan Creek	
5ME.720	Open camp		Need data (F)	Gateway	
5ME.7297	Open camp		Eligible (O)	Plateau Valley	
5ME.7298	Open lithic		Not Eligible (O)	Plateau Valley	
5ME.7305	Open camp		Eligible (O)	Plateau Valley	
5ME.7306	Open camp		Eligible (O)	Plateau Valley	
5ME.7308	Sheltered camp		Eligible (O)	Plateau Valley	
5ME.7326	Open lithic		Eligible (O)	Grand Valley	
5ME.7327	Open lithic		Eligible (O)	Grand Valley	
5ME.7328	Open lithic		Eligible (O)	Grand Valley	
5ME.734	Open camp		Not eligible (F)	Grand Mesa Slopes	
5ME.7352	Sheltered camp, open camp		Eligible (O)	Plateau Valley	
5ME.7354	Open lithic		Not eligible (F)	Roan Creek	
5ME.7355	Open camp		Not eligible (F)	Roan Creek	
5ME.736	Open lithic		No assessment	Roan Creek	
5ME.737		Mining	No assessment	Roan Creek	
5ME.7372		Mining	Not Eligible (O)	Bangs Canyon	
5ME.7373		Mining	Not Eligible (O)	Bangs Canyon	
5ME.738	Unknown		No assessment	Roan Creek	
5ME.752		Farm/ranch	Not Eligible (O)	Roan Creek	
5ME.753		Habitation/ homestead	No assessment	Roan Creek	
5ME.757		Habitation/ homestead	No assessment	Plateau Valley	
5ME.760		Farm/ranch	Eligible (O)	Grand Mesa Slopes	
5ME.770		Water control feature	Need data (F)	Grand Mesa Slopes	
5ME.7740	Open lithic		Not Eligible (O)	Glade Park	
5ME.7741	Open camp		Not Eligible (O)	Glade Park	
5ME.7742	Open camp		Not Eligible (O)	Glade Park	
5ME.776			No assessment	Roan Creek	
5ME.782	Open lithic		No assessment	Roan Creek	
5ME.787	Open camp		Need data (F)	Roan Creek	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.788	Sheltered camp		Need data (F)	Roan Creek	
5ME.789	Open camp		No assessment	Glade Park	
5ME.790	Open lithic		Not Eligible (O)	Glade Park	
5ME.791	Open lithic		Not Eligible (O)	Glade Park	
5ME.7961	Open camp		Eligible (O)	Roan Creek	
5ME.7963	Open camp		Eligible (O)	Glade Park	
5ME.7964	Open camp		Eligible (O)	Glade Park	
5ME.7965	Open camp		Need data (O)	Glade Park	
5ME.7966	Open lithic		Need data (O)	Glade Park	
5ME.7967	Open camp		Need data (O)	Glade Park	
5ME.7968	Sheltered camp		Eligible (F)	Glade Park	
5ME.7969	Open lithic		Need data (O)	Glade Park	
5ME.797	Open camp		Need data (F)	Roan Creek	
5ME.7970	Open lithic		Need data (O)	Glade Park	
5ME.7971	Open camp		Need data (O)	Glade Park	
5ME.7972	Open lithic		Need data (O)	Glade Park	
5ME.7973	Open camp		Need data (O)	Glade Park	
5ME.7974	Open camp		Eligible (O)	Glade Park	
5ME.7975	Open lithic		Need data (O)	Glade Park	
5ME.7976	Sheltered camp		Eligible (O)	Glade Park	
5ME.7977	Open camp		Eligible (O)	Glade Park	
5ME.7978	Open camp		Eligible (O)	Glade Park	
5ME.7979	Open camp		Eligible (O)	Glade Park	
5ME.7980	Open camp		Need data (O)	Glade Park	
5ME.7982	Open camp		Need data (O)	Glade Park	
5ME.799	Open lithic		Need data (F)	Glade Park	
5ME.8005	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8006	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.8033	Open camp		Eligible (F)	Grand Mesa Slopes	
5ME.8035		Road	Not eligible (F)	Grand Mesa Slopes	
5ME.8037	Open camp		Eligible (O)	Grand Mesa Slopes	
5ME.8042	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8047	Rock art, open camp		Eligible (O)	Grand Mesa Slopes	
5ME.8048	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8049	Open lithic		Not Eligible (O)	Grand Mesa Slopes	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.8057	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8058	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8059	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8060	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8061	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8072	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8073	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8074	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8075	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8076	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.8077	Open lithic		Not Eligible (O)	Grand Mesa Slopes	
5ME.8078	Open camp		Not Eligible (O)	Grand Mesa Slopes	
5ME.808	Sheltered camp		Need data (F)	Roan Creek	
5ME.809	Sheltered camp		Need data (F)	Roan Creek	
5ME.811	Open lithic		Eligible (F)	Gateway	Public Use
5ME.816		Farm/ranch	No assessment	Gateway	
5ME.819	Open lithic		Need data (F)	Gateway	
5ME.820	Open camp	Trash scatter/ dump	Need data (F)	Gateway	
5ME.822	Open lithic		Need data (F)	Gateway	
5ME.823	Open lithic		Need data (F)	Gateway	
5ME.824	Open camp		Not eligible (F)	Gateway	
5ME.825	Open lithic		Need data (F)	Gateway	
5ME.826	Open lithic		Need data (F)	Gateway	
5ME.827	Open lithic		Need data (F)	Gateway	
5ME.828	Open lithic		Need data (F)	Gateway	
5ME.829	Open lithic		Not eligible (F)	Gateway	
5ME.83	Sheltered lithic		No assessment	Roan Creek	
5ME.837	Open camp	Isolated feature	Eligible (F)	Roan Creek	
5ME.839	Sheltered architectural		No assessment	Bangs Canyon	
5ME.842	Open camp		Eligible (F)	Glade Park	
5ME.843	Open lithic		Need data (F)	Gateway	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.844	Sheltered camp		Not eligible (F)	Plateau Valley	
5ME.845	Sheltered camp		Not eligible (F)	Plateau Valley	
5ME.846	Sheltered camp		Need data (F)	Plateau Valley	
5ME.854	Unknown		No assessment	Bangs Canyon	
5ME.857	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.858	Open lithic		Not eligible (F)	Bangs Canyon	
5ME.859	Open camp		Need data (F)	Glade Park	
5ME.863	Open lithic		No assessment	Roan Creek	
5ME.8669	Open lithic		Need data (O)	Glade Park	
5ME.8670	Open lithic		Not Eligible (O)	Glade Park	
5ME.8671	Open camp		Need data (O)	Glade Park	
5ME.8672	Open lithic	Habitation/ homestead	Need data (O)	Glade Park	
5ME.8674	Open camp		Need data (O)	Glade Park	
5ME.8676	Open lithic		Not Eligible (O)	Glade Park	
5ME.8677	Open lithic		Not Eligible (O)	Glade Park	
5ME.8679	Open lithic		Not Eligible (O)	Glade Park	
5ME.8680	Open lithic		Not Eligible (O)	Glade Park	
5ME.8681	Open camp		Need data (O)	Glade Park	
5ME.8682	Open lithic		Not Eligible (O)	Glade Park	
5ME.8683	Open lithic		Not Eligible (O)	Glade Park	
5ME.8685	Open camp		Need data (O)	Glade Park	
5ME.8689	Open lithic		Not Eligible (O)	Glade Park	
5ME.8690	Open camp		Need data (O)	Glade Park	
5ME.8691	Open lithic		Not Eligible (O)	Glade Park	
5ME.8692	Open camp		Not Eligible (O)	Glade Park	
5ME.8693	Open lithic		Need data (O)	Glade Park	
5ME.8694	Open lithic		Not Eligible (O)	Glade Park	
5ME.8695	Open lithic		Not Eligible (O)	Glade Park	
5ME.8696		Trash scatter/ dump	Not Eligible (O)	Glade Park	
5ME.8697	Open lithic		Not Eligible (O)	Glade Park	
5ME.8698	Open lithic	Camp	Need data (O)	Glade Park	
5ME.8699	Open lithic		Not Eligible (O)	Glade Park	
5ME.8700		Habitation/ homestead	Not Eligible (O)	Glade Park	
5ME.8701	Open lithic		Not Eligible (O)	Glade Park	
5ME.8703	Open lithic		Not Eligible (O)	Glade Park	
5ME.8704	Open lithic		Not Eligible (O)	Glade Park	
5ME.8705	Open lithic		Need data (O)	Glade Park	
5ME.8706	Open lithic		Not Eligible (O)	Glade Park	
5ME.8707	Open lithic		Need data (O)	Glade Park	
5ME.8708	Open lithic		Not Eligible (O)	Glade Park	
5ME.8709	Open lithic		Not Eligible (O)	Glade Park	
5ME.8711	Open camp		Not Eligible (O)	Glade Park	

Table I-2
Scientific Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.8712	Open lithic		Not Eligible (O)	Glade Park	
5ME.8767	Open lithic		Not Eligible (O)	Glade Park	
5ME.930		Habitation/ homestead	Need data (F)	Bangs Canyon	
5ME.931		Water control feature	Not eligible (F)	Roan Creek	
5ME.934	Open camp		Need data (F)	Plateau Valley	
5ME.939	Open camp	Habitation/ homestead	Eligible (F)	Plateau Valley	
5ME.944	Open camp	Farm/ranch, trash scatter	Need data (F)	Plateau Valley	
5ME.946		Farm/ranch	Need data (F)	Plateau Valley	
5ME.948	Open lithic		Eligible (F)	Plateau Valley	
5ME.949	Open camp		Eligible (F)	Plateau Valley	
5ME.950	Open camp		Need data (F)	Plateau Valley	
5ME.954	Sheltered camp		Need data (F)	Roan Creek	
5ME.970			Not eligible (F)	Plateau Valley	
5ME.973			Not eligible (F)	Plateau Valley	
5ME.975			Not eligible (F)	Plateau Valley	
5MN.2143	Open camp		Need data (F)	Gateway	
5MN.2144	Open lithic		Need data (F)	Gateway	
5MN.2145	Open lithic		Need data (F)	Gateway	
5MN.3734	Open camp		Eligible (O)	Gateway	
5MN.3735	Open lithic		Not Eligible (O)	Gateway	
5MN.5381	Open camp		Eligible (O)	Gateway	
5MN.5382	Open camp		Not Eligible (O)	Gateway	
5MN.6236	Open camp		Eligible (O)	Gateway	
5MN.6850	Open lithic		No assessment	Gateway	
5MN.7956	Open lithic	Habitation/ homestead	Not eligible (F)	Gateway	
5MN.805	Open camp		Need data (F)	Gateway	

Table I-3
Conservation for Future Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.82	DeBeque Rock Shelter - Sheltered camp		Eligible (O)	Plateau Valley	
5ME.213	Watershed Rockshelter -Rock art, sheltered camp	Camp	Eligible (O)	Grand Mesa Slopes	
5ME.465	Rock art		Eligible (O)	Glade Park	Traditional Use
5ME.12851	Rock art, sheltered camp		Eligible (O)	Bangs Canyon	Traditional Use

Table I-4
Traditional Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.15376	Burial		Eligible (O)	Roan Creek	Conservation Use
5ME.16500	Ceremonial	Mining	Eligible (F)	Gateway	Scientific Use
5ME.14046	Culturally scarred tree		Eligible (O)	Glade Park	Scientific Use
5ME.14047	Culturally scarred tree		Eligible (O)	Glade Park	Scientific Use
5ME.16646	Culturally scarred tree		Eligible (F)	Gateway	Scientific Use
5ME.6060	Culturally scarred tree		Not eligible (F)	Grand Valley	Scientific Use
5ME.6018	Culturally scarred tree, open camp		Need data (O)	Bangs Canyon	Scientific Use
5GF.1080	Open architectural		Need data (F)	Roan Creek	Scientific Use
5GF.1128	Open architectural		Eligible (F)	Grand Valley	Scientific Use
5GF.115	Open architectural		Eligible (F)	Book Cliffs	Scientific Use
5GF.1217	Open architectural		Need data (F)	Roan Creek	Scientific Use
5GF.327	Open architectural		Need data (F)	Grand Valley	Scientific Use
5GF.4251	Open architectural		Eligible (F)	Roan Creek	Scientific Use
5ME.11726	Open architectural		Eligible (O)	Gateway	Scientific Use
5ME.12031	Open architectural		Not Eligible (O)	Glade Park	Scientific Use
5ME.12407	Open architectural		Eligible (F)	Gateway	Scientific Use
5ME.13062	Open architectural		Eligible (O)	Gateway	Scientific Use
5ME.13959	Open architectural		Eligible (O)	Plateau Valley	Scientific Use
5ME.14071	Open architectural		Eligible (O)	Glade Park	Scientific Use
5ME.14103	Open architectural		Eligible (O)	Roan Creek	Scientific Use
5ME.14104	Open architectural		Eligible (O)	Roan Creek	Scientific Use
5ME.14198	Open architectural	Brush Fence	ONE	Plateau Valley	Public Use
5ME.14199	Open architectural		Need data (O)	Plateau Valley	Scientific Use

Table I-4
Traditional Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.14302	Open architectural		Eligible (O)	Gateway	Scientific Use
5ME.14307	Open architectural		Eligible (O)	Gateway	Scientific Use
5ME.1524	Open architectural		Eligible (O)	Plateau Valley	Scientific Use
5ME.15309	Open architectural		Eligible (O)	Roan Creek	Scientific Use
5ME.15325	Open architectural		Eligible (O)	Roan Creek	Scientific Use
5ME.15461	Open architectural		Eligible (O)	Plateau Valley	Scientific Use
5ME.15827.1	Open architectural	Brush Fence	OND	Plateau Valley	Public Use
5ME.16331	Open architectural		Eligible (F)	Bangs Canyon	Scientific Use
5ME.176	Open architectural		Need data (F)	Gateway	Scientific Use
5ME.244	Open architectural		Need data (F)	Bangs Canyon	Scientific Use
5ME.325	Open architectural		Eligible (O)	Bangs Canyon	Scientific Use
5ME.330	Open architectural		Eligible (O)	Bangs Canyon	Scientific Use
5ME.332	Open architectural		Eligible (O)	Bangs Canyon	Scientific Use
5ME.3910	Open architectural	Camp	Need data (F)	Grand Mesa Slopes	Scientific Use
5ME.4651	Open architectural		Not Eligible (O)	Plateau Valley	Scientific Use
5ME.470	Open architectural		Eligible (F)	Plateau Valley	Scientific Use
5ME.4734	Open architectural		Not Eligible (O)	Grand Valley	Scientific Use
5ME.5226	Open architectural		Not eligible (F)	Grand Mesa Slopes	Scientific Use
5ME.6022	Open architectural	Trash scatter/ dump	Eligible (F)	Grand Valley	Scientific Use
5ME.6387	Open architectural		Eligible (O)	Plateau Valley	Scientific Use
5ME.694	Open architectural		No assessment	Plateau Valley	Scientific Use
5ME.719	Open architectural		No assessment	Roan Creek	Scientific Use
5ME.807	Open architectural	Ute Trail	No assessment	Roan Creek	Public Use
5ME.84	Open architectural		Eligible (F)	Plateau Valley	Scientific Use
5ME.8667	Open architectural		Not Eligible (O)	Bangs Canyon	Scientific Use
5MN.6235	Open architectural		Eligible (O)	Gateway	Scientific Use
5GF.1460	Open architectural, ceremonial		Eligible (F)	Book Cliffs	Scientific Use
5ME.5962	Open architectural, culturally scarred trees		Eligible (O)	Gateway	Scientific Use
5ME.3768	Open architectural, rock art		Eligible (F)	Grand Mesa Slopes	Scientific Use
5ME.7089	Open camp		Eligible (O)	Roan Creek	Scientific Use
5ME.974	Open camp, culturally scarred trees		Eligible (F)	Plateau Valley	Scientific Use
5GF.1078	Rock art		Not eligible (F)	Book Cliffs	Scientific Use
5GF.1436	Rock art		Not eligible (F)	Book Cliffs	Scientific Use
5GF.168	Rock art	Inscription	Eligible (F)	Book Cliffs	Scientific Use
5GF.332	Rock art	Inscription	Not eligible (F)	Book Cliffs	Scientific Use
5GF.333	Rock art		Not eligible (F)	Book Cliffs	Scientific Use

Table I-4
Traditional Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5GF.342	Rock art		Need data (F)	Book Cliffs	Scientific Use
5GF.518	Rock art		Not eligible (F)	Book Cliffs	Scientific Use
5GF.742	Rock art		Eligible (O)	Book Cliffs	Scientific Use
5ME.11361	Rock art		Eligible (O)	Glade Park	Scientific Use
5ME.11376	Rock art		Eligible (O)	Glade Park	Scientific Use
5ME.11380	Rock art		Eligible (O)	Glade Park	Scientific Use
5ME.11399	Rock art		Eligible (O)	Glade Park	Scientific Use
5ME.1637	Rock art		No assessment	Bangs Canyon	Public Use
5ME.165	Rock art		Need data (F)	Gateway	Scientific Use
5ME.237	Rock art		No assessment	Gateway	Scientific Use
5ME.279	Rock art		Eligible (F)	Plateau Valley	Scientific Use
5ME.398	Rock art		Eligible (F)	Grand Mesa Slopes	Scientific Use
5ME.459	Rock art		Need data (F)	Bangs Canyon	Scientific Use
5ME.4661	Rock art		Not eligible (F)	Gateway	Scientific Use
5ME.6218	Rock art		Need data (O)	Bangs Canyon	Scientific Use
5ME.705	Rock art		Eligible (O)	Gateway	Scientific Use
5ME.706	Rock art		No assessment	Gateway	Scientific Use
5ME.729	Rock art		No assessment	Gateway	Scientific Use
5ME.786	Rock art		No assessment	Glade Park	Scientific Use
5ME.79	Rock art		No assessment	Plateau Valley	Scientific Use
5ME.8673	Rock art		Not Eligible (O)	Glade Park	Scientific Use
5ME.8686	Rock art	Inscription	Eligible (O)	Glade Park	Public Use
5ME.1550	Rock art		Eligible (O)	Roan Creek	Scientific Use
5ME.450	Rock art, open camp		Eligible (F)	Glade Park	Scientific Use
5ME.4502	Rock art, open camp		Eligible (F)	Plateau Valley	Scientific Use
5ME.15720	Rock art, open lithic		Eligible (F)	Plateau Valley	Conservation Use
5ME.328	Rock art, open lithic		Eligible (O)	Bangs Canyon	Scientific Use
5ME.329	Rock art, open lithic		Eligible (O)	Bangs Canyon	Public Use
5GF.1509	Rock art, sheltered camp		Eligible (O)	Book Cliffs	Scientific Use
5GF.931	Rock art, sheltered camp		Need data (O)	Book Cliffs	Scientific Use
5ME.11250	Rock art, sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.11368	Rock art, sheltered camp		Eligible (O)	Glade Park	Scientific Use
5ME.11369	Rock art, sheltered camp		Eligible (O)	Glade Park	Scientific Use
5ME.11377	Rock art, sheltered camp		Eligible (O)	Glade Park	Scientific Use

Table I-4
Traditional Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.1548	Rock art, sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.1635	Rock art, sheltered camp		Need data (F)	Roan Creek	Scientific Use
5ME.168	Rock art, sheltered camp		Need data (F)	Gateway	Scientific Use
5ME.3731	Rock art, sheltered camp		Eligible (F)	Plateau Valley	Scientific Use
5ME.4091	Rock art, sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.468	Rock art, sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.4947	Rock art, sheltered camp		Eligible (O)	Grand Mesa Slopes	Public Use
5ME.718	Rock art, sheltered camp		Eligible (O)	Bangs Canyon	Scientific Use
5ME.11334	Rock art, sheltered camp		Eligible (O)	Glade Park	Scientific Use
5ME.6026	Sheltered architectural		Eligible (F)	Grand Valley	Scientific Use
5GF.1147	Sheltered architectural, rock art		Eligible (O)	Book Cliffs	Scientific Use
5ME.241	Sheltered architectural, rock art		Eligible (O)	Bangs Canyon	Scientific Use
5GF.341	Sheltered camp		Need data (F)	Book Cliffs	Scientific Use
5GF.768	Sheltered camp		Need data (O)	Book Cliffs	Scientific Use
5ME.1053	Sheltered camp		Need data (F)	Glade Park	Scientific Use
5ME.11374	Sheltered camp		Eligible (O)	Glade Park	Scientific Use
5ME.11669	Sheltered camp	Camp	Eligible (O)	Grand Mesa Slopes	Scientific Use
5ME.11800	Sheltered camp		Eligible (F)	Glade Park	Scientific Use
5ME.13659	Sheltered camp	Inscription	Eligible (O)	Glade Park	Scientific Use
5ME.13958	Sheltered camp		Eligible (O)	Plateau Valley	Scientific Use
5ME.245	Sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.268	Sheltered camp		Eligible (F)	Plateau Valley	Scientific Use
5ME.281	Sheltered camp		Eligible (F)	Plateau Valley	Scientific Use
5ME.317	Sheltered camp		No assessment	Plateau Valley	Scientific Use
5ME.3838	Sheltered camp		Not Eligible (O)	Plateau Valley	Scientific Use
5ME.395	Sheltered camp		Listed NR	Bangs Canyon	Scientific Use
5ME.4009	Sheltered camp		Not eligible (F)	Roan Creek	Scientific Use
5ME.404	Sheltered camp		Eligible (F)	Grand Mesa Slopes	Scientific Use

Table I-4
Traditional Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Secondary Allocation
5ME.406	Sheltered camp		Eligible (F)	Grand Mesa Slopes	Scientific Use
5ME.407	Sheltered camp		Eligible (F)	Plateau Valley	Scientific Use
5ME.4433	Sheltered camp		Eligible (F)	Roan Creek	Scientific Use
5ME.4698	Sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.4716	Sheltered camp		Not eligible (F)	Glade Park	Scientific Use
5ME.6341	Sheltered camp		Need data (F)	Bangs Canyon	Scientific Use
5ME.687	Sheltered camp		Eligible (F)	Glade Park	Scientific Use
5ME.99	Sheltered camp		Need data (F)	Glade Park	Scientific Use
5GF.608	Sheltered camp, open camp		Not Eligible (O)	Book Cliffs	Scientific Use
5ME.7307	Sheltered camp, open camp		Eligible (O)	Plateau Valley	Scientific Use
5MN.1144	Sheltered camp, open camp		Eligible (F)	Gateway	Scientific Use
5ME.504	Trail	Trail	No assessment	Gateway	Public Use
5MN.1170	Trail	Mining	Need data (F)	Gateway	Scientific Use
5MN.7955	Trail		Need data (F)	Gateway	Public Use

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5GF.11859		Water control	Not Eligible (O)	Plateau Valley	Bluestone Valley Ditch, functioning ditch, mostly private
5GF.1510		Cadastral marker	Not Eligible (O)	Roan Creek	1924 cadastral monument
5GF.1511		Water control and a road	Not Eligible (O)	Roan Creek	This needs to be reevaluated and recorded as two distinct sites. The segment of the Gibler Ditch is on Clear Creek, the road is to the east.
5GF.1588		Road	Not Eligible (O)	Roan Creek	Conn Creek Road, modern use of historic alignment
5GF.2778		Water control feature	Not Eligible (O)	Big Salt Wash	Middle Camp Ditch No. 1, must be abandoned, current plot shows it in wash
5GF.282		Road	Not eligible (F)	Book Cliffs	Trail Canyon Trail, extant trail/road along modern alignment of Douglas Pass Road
5GF.3889		Communication	Need data (F)	Book Cliffs-Grand Valley	Two segments of abandoned telegraph line recorded on BLM
5GF.3982		Water control	Need data (F)	Roan Creek	Newman Ditch, functioning ditch, mostly private
5GF.4110		Water control	Not Eligible (F)	Roan Creek	Conwell Ditch, abandoned historic irrigation system
5GF.4220		Water control feature	Need data (O)	Clear Creek	Himebaugh Ditch - abandoned and possible active segments, mostly on Private
5GF.4221		Water control	Need data (F)	Roan Creek	Clear Creek Ditch, functioning ditch, mostly private
5GF.4222		Water control	Need data (F)	Roan Creek	Roan Ck. Ditch No.3, functioning ditch, mostly private
5GF.4224		Road	Not Eligible (F)	Roan Creek	Clear Creek Road, modern use of historic alignment
5GF.4245		Cadastral marker	Not eligible (F)	Grand Valley	Abandoned cadastral marker, documents error in Township Survey

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5GF.4259		Road	Not Eligible (F)	Roan Creek	Bowdish Gulch Pack Trail-modern use of historic alignment
5GF.621		Historic Wagon Road	Need data (O)	Baxter Pass	Baxter Pass - Roan Divide Wagon Road? abandoned. This alignment mapped at smaller scale by GLO in late 1800's
5GF.642		Railroad	Need data (F)	Book Cliffs	Historic Uintah railroad grade and Baxter Pass Road in Garfield County and associated sites (Atchee on private)
5GF.879		Water control feature	Not eligible (O)	East Salt Creek - Book Cliffs	Davenport Ditch - East Salt Creek abandoned irrigation ditch off
5GF.881		Fence	Not eligible (F)	Demaree WSA	Range fence at the end of the Demaree Cherry stem, assoc. with historic road 5GF.882
5GF.882		Road	No assessment	Grand Valley	Demaree cherry stem, portions of the historic alignment appear on aerial, modern use on remaining
5ME.1018		Mining	Need data (F)	Gateway	Loading chute on Hwy 141 near Gateway
5ME.11086		Mining	Not Eligible (O)	Gateway	Upper North Larsen Canyon Uranium Camp Historic mining on Tenderfoot Mesa
5ME.11696		Road	Eligible (O)	Grand Valley	Abandoned historic road assoc. with D&RGW abandoned RR grade at Utah border
5ME.11803		Road	Listed NR	Plateau Valley	Colorado River Bridge - CDOT No. G-04-A
5ME.11853		Road	Not Eligible (O)	Plateau Valley	Abandoned historic road south of Moffatt Gulch
5ME.1187		Trail	Not Eligible (F)	Grand Mesa Slopes	Two track road on BLM at USFS boundary
5ME.1194		Mining	Not Eligible (O)	Gateway	Outlaw Mines-Within Potential NRHP District-
5ME.1196		Mining	Not Eligible (O)	Gateway	Peach Mines Within Potential NRHP District-

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5ME.12225	Sheltered camp		Eligible (O)	Bangs Canyon	Experimental Use
5ME.12288		Mining	Eligible (F)	Gateway	Bonanza Claim Century Tunnel -Within Potential District-Contributing
5ME.12289		Mining	Not eligible (F)	Gateway	Newhiesel Mine- Within Potential District-Contributing
5ME.12480	Sheltered camp		Not Eligible (O)	Bangs Canyon	Experimental Use
5ME.12483		Water control feature	Within Potential District-Contributing	Roan Creek	Associated with Grand Valley Diversion Dam on the Colorado River
5ME.12484		Habitation/ homestead	Within Potential District-Contributing	Roan Creek	Associated with Grand Valley Diversion Dam on the Colorado River
5ME.12566	Open lithic	Mining	Not Eligible (O)	Gateway	Arrowhead Mine Landscape Within Potential NRHP District-
5ME.13044		Road	Eligible (F)	Unaweep Canyon	Highway 141 modern use in original alignment
5ME.13124		Mining	Eligible (O)	Gateway	Historic Mining landscape associated with the Climax Mines on Outlaw Mesa Within Potential NRHP District-
5ME.14048		Water control	Not Eligible (O)	Glade Park - Mud Springs	Fruita Aqueduct - abandoned segment of water supply pipe
5ME.14281		Rock feature	Not Eligible (O)	Bangs Canyon	Cadastral marker
5ME.14306		Mining	Not Eligible (O)	Gateway	Historic mining associated with the Maverick Mines Within Potential NRHP District-
5ME.15160	Open lithic	Mining	Not Eligible (O)	Gateway	Historic mining in the Blue Mesa area Within Potential NRHP District-
5ME.15161	Open lithic	Mining	Not Eligible (O)	Gateway	Historic mining in the Blue Mesa area Within Potential NRHP District-

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5ME.15176	Open lithic	Mining	Not Eligible (O)	Gateway	Historic mining associated with the Maverick Mines Within Potential NRHP District-
5ME.15177		Mining	Not Eligible (O)	Gateway	Maverick Mines-Within Potential NRHP District-
5ME.15178	Open camp	Mining	No assessment	Gateway	Arrowhead Mine Landscape Within Potential NRHP District-
5ME.15179		Mining	Not Eligible (O)	Gateway	Historic mining associated with the Calamity Mines
5ME.15370		Trail	Not Eligible (O)	Bangs Canyon	Historic abandoned trail-Rough Canyon ACEC
5ME.15463		Road	Not Eligible (O)	Plateau Valley	Horse Canyon Road, modern use of historic alignment
5ME.15499		Water control feature	Need data (O)	Grand Valley	Salinity Control Project retention dam in the N. Fruita Desert
5ME.15500		Road	Eligible (F)	Grand Valley	Hwy 139 - modern use in original alignment
5ME.1556		Brush Fence	Not Eligible (F)	Dolores Point	This historic sites needs to be reevaluated, recorded as a site, and photographed
5ME.15590.1		Water control	Not Eligible (F)	Grand Mesa Slopes	Laurent Ditch -functioning ditch, BLM & private
5ME.15882		Water control feature	Not Eligible (F)	south of the town of DeBeque	Abandoned irrigation ditch off an unnamed drainage
5ME.16136.1		Water control	Not Eligible (F)	Grand Mesa Slopes	Extension of the Bauer Ditch, abandoned ditch, mostly BLM in this segment
5ME.16137.1		Water control	Eligible (F)	Grand Mesa Slopes	Kannah Creek Aqueduct - buried historic water pipe, still in use
5ME.16155		Fence -Stone	Not Eligible (F)	Grand Mesa Slopes	Associated with cleared field at historic homestead
5ME.16535		Road	Not Eligible (F)	Grand Mesa Slopes	Lands End CCC Trail segment, abandoned section of Lands End Road near USFS boundary
5ME.16587.1		Historic powerline	Not Eligible (O)	DeBeque cut-off road	Abandoned powerline

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5ME.301		Water control feature	Listed NR	Colorado River DeBeque Canyon	Grand Valley Diversion Dam on the Colorado River
5ME.4022		Fence	Not eligible (F)	Roan Creek	Log fence, recorded as possible homestead boundary fence, on private BLM boundary
5ME.4436		Fence	Not Eligible (O)	Roberts Canyon Bunkwater Ridge	Range fence
5ME.4676		Water control feature	Eligible (O)	Grand Valley	Government Highline Canal, ditch and associated features, mostly on private land
5ME.4677		Water control feature	Eligible (O)	Grand Mesa Slopes	Old Mill Road aka in this location as Tabeguache Trail. Historic road, modern recreation use
5ME.4680	segment .3 is private and .15 is on BLM	Water control	Within District (Not Contributing)	Grand Valley	Kiefer Extention Canal, functioning ditch, mostly private
5ME.4846		Road	No assessment	Bangs Canyon	Historic road house associated with Unaweep Canyon wagon road
5ME.511		Mining	No assessment	Gateway	Copper Rivet Mine - Within Potential NRHP District-
5ME.513		Mining	No assessment	Gateway	Pyramid Copper Mine and Mills-Within Potential NRHP District-
5ME.5265	Open lithic	Mining	Eligible (O)	Gateway	Calamity Camp Within Potential NRHP District-
5ME.644		Historic Wagon Road	Eligible (O) with non contributing segments	Una Valley to Collbran	DeBeque & Upper Plateau County Wagon Road, abandoned wagon road
5ME.6840		Road	Not Eligible (O)	Grand Mesa Slopes	Abandoned historic spur road to the historic Hogback Road (5ME.923)
5ME.7022		Mining	Eligible (O)	Gateway	Rajah 30 Mine-Within Potential NRHP District-

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5ME.7023		Mining	Not Eligible (O)	Gateway	Rajah 30 Mine (Area B)-Within Potential District-
5ME.7024		Mining	Eligible (O)	Gateway	Cherokee Camp Within Potential NRHP District-
5ME.7025		Mining	Eligible (O)	Gateway	Pack Rat Mine - Within Potential NRHP District-
5ME.7026		Mining	Need Data (O)	Gateway	Hubbard Mine - Within Potential NRHP District-
5ME.7028		Mining	Not Eligible (O)	Gateway	New Verde Mine Within Potential NRHP District-
5ME.7351		Railroad	Eligible (O)	Grand Valley	Abandoned railroad grade, Dener & Rio Grande Western
5ME.7415.1		Historic Wagon Road	Not Eligible (O)	Plateau Valley	Plateau Creek Wagon Road, abandoned road, plotted segment is mostly on private
5ME.7428		Mining	Not Eligible (O)	Gateway	Liberty Bell No. 2 Mine Within Potential NRHP District-
5ME.7429		Mining	Not Eligible (O)	Gateway	Protector/Lincoln Mine Within Potential NRHP District-
5ME.751		Habitation/ homestead	Not eligible (F)	Roan Creek	Latham Cabin - Historic homestead
5ME.764		Water control feature	Eligible (O)	Grand Mesa Slopes	Redlands Hydroelectric Power Comples & Dam on the Gunnison River
5ME.767		Railroad	Eligible (O)	Grand Valley	Uintah RR grade along Mesa County Road 4
5ME.768		Railroad	Need data (O)	Grand Valley	Carpentar Railroad grade
5ME.8044		Water control	Not Eligible (O)	Grand Mesa Slopes	Lander Extension Ditch - abandoned historic ditch, private & BLM
5ME.8079		Water control		Grand Mesa Slopes	Long Mesa Ditch-abandoned historic ditch, this segment recorded on BLM
5ME.815	Trail	Road	Not eligible (F)	Plateau Valley	Scientific Use - Historic abandoned trail-this site needs a reevaluation to correct errors in the record

Table I-5
Public Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Description *(and secondary allocation if any)*
5ME.821		Mining	Not eligible (F)	Gateway	Chado Mines- Within Potential NRHP District-
5ME.923		Road	Eligible (F)	Palisade to Mesa, up Rapid Creek down Nate Creek	Hogback Road-modern use of historic alignment, no public access
5ME.924		Historic Road		Colorado River DeBeque Canyon	Roan Ck. Toll, functioning ditch, mostly private
5ME16588.1		Water control feature		DeBeque cut-off road	Abandoned irrigation ditch off an unnamed drainage
5ME775		Historic Routes	No assessment	Plateau Valley, Grand Valley, Grand Mesa Slopes	Needs reevaluation. This one number records five historic routes, the Whitman, Gunnison, and Pattie surveys, the N. Branch of the Old Spanish Trail (a Designated National Historic Trail), and the Salt Lake Wagon Road.
5MN.1171		Historic Trail		Dolores River Canyon - Sewemup Mesa	McCarty Canyon Trail, abandoned trail associated with local historic figure,
5MN.6048		Road	Eligible (F)	Gateway	Highway 141 modern use in original alignment

Table I-6
Experimental Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Allocation (Secondary)
5ME.13337	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13338	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13339	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13340	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13341	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13342	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13343	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13344	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13345	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13346	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13347	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13348	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13349	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13350	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13351	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13352	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13354	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13355	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.13356	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.11933	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.12785	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.12787	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.12791	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.12801	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.12803	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.12805	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.12807	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.15158	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.5116	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.5117	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.5902	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.11975	Open lithic		Not Eligible (O)	Glade Park	Scientific
5ME.12002	Open lithic		Not Eligible (O)	Glade Park	Scientific
5ME.12023	Open lithic		Not Eligible (O)	Glade Park	Scientific
5ME.12025	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12029	Open lithic		Not Eligible (O)	Glade Park	Scientific
5ME.12519	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12520	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12523	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12528	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12530	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12531	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12532	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12533	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12536	Open camp		Not Eligible (O)	Glade Park	Scientific

Table I-6
Experimental Use Sites

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Allocation (Secondary)
5ME.12545	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12555	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12556	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12557	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12558	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.12559	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.13657	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.13660	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.13662	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.13663	Open camp		Not Eligible (O)	Glade Park	Scientific
5ME.15502	Open lithic		Not Eligible (O)	Grand Mesa Slopes	Scientific
5ME.15504	Open lithic		Not Eligible (O)	Grand Mesa Slopes	Scientific
5ME.15507	Open lithic		Not Eligible (O)	Grand Mesa Slopes	Scientific
5ME.6027	Open lithic		Not Eligible (O)	Grand Valley	Scientific
5ME.6785	Open lithic		Not Eligible (O)	Grand Valley	Scientific
5ME.4781		Farm/ranch	Not Eligible (O)	Plateau Valley	Scientific
5ME.14944		Farm/ranch	Not Eligible (O)	Plateau Valley	Scientific
5ME.4954	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.14089	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.4864	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.4865	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.14947	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.14948	Open lithic		Not Eligible (O)	Plateau Valley	Scientific
5ME.11722	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.14423	Open camp		Not Eligible (O)	Gateway	Scientific
5ME.14435	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.14436	Open lithic		Not Eligible (O)	Gateway	Scientific
5ME.11919	Open camp		Not Eligible (O)	Bangs Canyon	Scientific
5ME.11921	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.14285		Camp	Not Eligible (O)	Bangs Canyon	Scientific
5ME.14262	Open lithic		Not Eligible (O)	Bangs Canyon	Scientific
5ME.14263		Camp	Not Eligible (O)	Bangs Canyon	Scientific
5ME.12926	Open camp		Not Eligible (O)	Bangs Canyon	Scientific
5ME.14286		Camp	Not Eligible (O)	Bangs Canyon	Scientific

Table I-7
Sites Discharged from Management

Site No.	Prehistoric Site Type	Historic Site Type	Eligibility	RMP Planning Area	Justification
5ME.4715	wooden fence		Not eligible (O) 2000	Gateway	burned in Cone Mountain Fire
5ME.239	Rock Art		Not eligible (O) 2008	Gateway	not relocated, likely destroyed by Hwy. construction
5GF.322	Open lithic		Not eligible (O) 2009	Roan Creek	destroyed by construction
5ME.3998	Open lithic		Not eligible (O) 2010	Glade Park	land exchange, retained in patent reservation, released by data recovery
5ME.5997	Open camp	Homestead	Not eligible (O) 2010	Glade Park	land exchange, retained in patent reservation, released by data recovery
5ME.6141	Open camp		Not eligible (O) 2010	Glade Park	land exchange, retained in patent reservation, released by data recovery
5ME.6144	Open camp		Not eligible (O) 2010	Glade Park	land exchange, retained in patent reservation, released by data recovery

I.7 REFERENCES

BLM. 2004. BLM Manual 8110: Identifying and Evaluating Cultural Resources. Rel. 8-73. BLM, Washington, DC. December 3, 2004. 42pp.

Appendix J

Allotments and Allotment Management Levels

APPENDIX J
ALLOTMENTS AND ALLOTMENT MANAGEMENT LEVELS

Additional detail regarding management actions and allowable uses for the livestock grazing program are provided in the Approved Resource Management Plan.

The following allotments are closed to livestock grazing:

- Baldridge Mesa: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Bevan: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Boulder Canyon: Category M allotment, conflicts with unfenced developed private land, recreation issues;
- Browns Place: Category C allotment, conflicts with unfenced developed private land;
- Brush Creek: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Charlesworth: Category C allotment with a small amount of isolated public land;
- Clifton: Category C allotment, conflicts with unfenced developed private land;
- Clover Gulch: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Coon Creek: Category C allotment with a small amount of public land, wildlife issues;

- Dead Horse: Category C allotment, conflicts with unfenced developed private land;
- Dry Kimball: Category C allotment with a small amount of public land, wildlife issues;
- Eby Point: Category C allotment with a small amount of public land, unsuitable for livestock;
- Erven; Category C allotment with a small amount of public land and riparian issues;
- Etcheverry: Category C allotment with a small amount of isolated public land, unsuitable for livestock;
- Fetters: Category C allotment with a small amount of isolated public land;
- Heely: Land Health and threatened and endangered species issues;
- Hight: Category C allotment with a small amount of public land;
- Horizon: Category C allotment with a small amount of public land;
- Hunter: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Logan Wash: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Parkes Place: Category C allotment with a small amount of isolated public land;
- Plateau Creek: Category C allotment with a small amount of public land and riparian issues;
- Red Mountain: Category C allotment with a small amount of public land;
- Webber: Category C allotment with a small amount of isolated public land, unsuitable for livestock, wildlife issues;
- Webb Isolated Tracts: Category C allotment with a small amount of isolated public land; and
- Whitewater Hill: Category C allotment, conflicts with unfenced developed private land.

Under the Approved RMP, the following criteria will be used to periodically evaluate whether to close other allotments or portions of allotments to livestock grazing:

- Areas identified as BLM disposal tracts;
- Lack of administrative access to public land;

- Small percentage of forage in allotment is contributed by BLM lands in allotment (less than 15 percent);
- Areas not accessible to livestock grazing (e.g., steep slopes);
- "C" category allotments that are relinquished and determined to be impractical for the administration of livestock grazing by the Authorized Officer;
- Major impact to wildlife or threatened and endangered species (e.g., competition for forage, winter range, sage-grouse habitat), or sensitive fish habitat, as determined by data analysis;
- Public health and safety;
- High intensity recreation areas or facilities;
- Resource objectives for municipal watersheds;
- Impacts to cultural resources; and
- Conflicts with adjoining private lands (development).

The following table provides a complete list of all allotments managed by the Grand Junction Field Office; their permitted AUMs, type of livestock, season of use, acreage, and management category.

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
28 Hole	06126	56	Cattle	11/10	1/20	663	0	663	I
				4/10	6/7				
4-A Individual	06756	22	Cattle	9/1	9/30	206	1	206	C
4-A Mountain	06725	308	Cattle	6/16	10/15	926	1,039	926	M
			Horse	6/16	10/15				
4-A Place	06755	12	Cattle	9/1	9/30	91	197	91	C
Ames	06413	21	Cattle	1/15	4/1	257	318	257	C
B. Hawkins	16825	45	Cattle	2/1	2/28	87	273	87	C
				3/1	4/30				
Badger Wash	06601	429	Cattle	3/1	4/30	7,688	289	7,688	I
				12/2	12/30				
Baker Canyon	06731	10	Cattle	4/25	5/24	171	0	171	C
				11/15	12/15				
Bald Hill Common	16802	100	Cattle	6/15	7/3	781	15	781	M
Baldridge Mesa	06851	0	Cattle	04/10	2/12	766	792	0	C
Bangs	06116	1,563	Cattle	3/1	5/29	23,072	875	23,072	I
				11/1	2/28				
Bar-X[3]	05808					8,667			
Battleship	06167	19	Cattle	5/20	6/20	1,090	2,572	1,090	C
				10/25	12/1				
Bear Gulch	06701	58	Cattle	5/25	7/20	1,163	1,672	1,163	C
				10/16	11/20				
Beaver Mesa	06404	40	Cattle	11/25	1/18	1,026	85	1,026	I
Beehive	16807	177	Cattle	5/16	6/30	3,932	382	3,932	I
				10/1	10/8				
		321	Cattle	5/16	6/30				
				10/1	10/8				
Beeman	06432	33	Cattle	4/16	5/31	853	807	853	C
				10/16	11/15				
Beezer	06165	251	Cattle	5/1	6/1	1,126	12	1,126	I
				11/16	11/30				
Berg's North Mesa	06424	202	Cattle	5/10	11/16	1,704	616	1,704	M

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Berry Homestead	06702	108	Cattle	5/1	5/31	2,913	124	2,913	I
				11/15	12/31				
		73	Cattle	5/1	5/31				
				11/15	12/31				
		37	Cattle	5/1	5/31				
				11/15	12/31				
Berthod Place	06848	19	Cattle	7/10	9/18	162	166	162	C
Bevan	16816	0	Cattle	6/15	9/15	196	1,007	0	C
Big Park	06843	759	Cattle	4/15	6/10	11,658	8,088	11,658	M
Big Salt	16501	1,299	Cattle	3/1	5/5	27,117	2,906	27,117	I
				5/1	11/15				
				11/15	2/28				
Blue Mesa	06406	1,114	Cattle	3/1	5/31	41,878	375	41,878	I
				11/1	02/28				
Boulder Canyon	06157	0	Cattle	5/16	6/15	2,473	10	0	I
Brink Pedigo Gulch	6703	111	Cattle	4/26	6/25	5,621	2,626	5,621	I
				11/20	12/30				
Browns Place	06850	0	Cattle	3/28	4/27	810	643	0	C
Brush Creek	06708	0	Cattle	4/1	5/1	856	3,253	0	C
Brush Mountain Comm.	06705	624	Cattle	7/1	9/30	1,869	86	1,869	I
		15	Cattle	7/1	9/30				
Buckhorn[3]	05863					2,438			
Bull Draw Comm.	06402	100	Cattle	4/26	5/26	4,857	121	4,857	I
				11/1	11/15				
Bull Hill-Mav Comm.	06407	564	Cattle	5/5	5/27	14,611	0	14,611	I
				10/16	11/15				
Burdick E. of Ranch	06706	90	Cattle	11/1	11/30	1,284	125	1,284	I
Burdick Homestead	06707	21	Cattle	6/27	11/1	75	714	75	C
Burford Individual	06153	29	Cattle	6/20	7/14	493	838	493	C
Carbon	06722	415	Cattle	5/31	10/31	1,363	912	1,363	M
Carns Point	06149	10	Cattle	6/1	6/7	50	37	50	C
				10/15	10/21				
Carr Creek	06709	145	Cattle	10/1	12/14	614	732	614	C

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Casto-Lines Comm.	06408	105	Cattle	4/16	5/15	1,694		1,694	I
				11/1	12/30				
		28	Cattle	11/1	12/31				
				4/16	5/24				
Cathedral Bluffs[4]									
Chalk Mountain	06845	70	Cattle	5/20	10/31	1,588	0	1,588	C
Charlesworth Iso. Tra.	06855	0	Cattle	4/16	7/30	117	0	0	C
Clarks Bench	06122	106	Cattle	5/9	6/15	2,467	603	2,467	I
Clifton	06817	0	Cattle	4/16	5/15	490	1,207	0	C
			Cattle	1/1	1/31				
Clover Gulch	06827	0	Cattle	4/16	6/16	714		0	C
Coal Gulch	16502	303	Cattle	6/15	10/15	23,528	160	23,528	I
Coates Creek	06161	26	Cattle	5/1	5/10	378	252	378	C
				11/15	11/22				
Collier[5]	06839	121	Cattle	6/8	6/30	945	249	945	C
				10/1	10/14				
Conn Creek/McCurdy	06710	136	Cattle	5/1	5/30	1,643	349	1,643	I
Conn Mtn Common	06711	70	Cattle	6/1	10/31	166		166	C
		10	Cattle	5/16	10/15				
		10	Cattle	6/1	10/30				
Cook Canyon	06159	18	Cattle	4/1	12/31	126	112	126	C
Coon Creek	16804	0	Cattle	5/25	6/18	357	18	0	C
Coon Hollow Common	06712	120	Cattle	4/15	6/10	19,219	1,059	17,965	I
		100	Cattle	4/15	6/10				
Corcoran Wash	06704	1,296	Cattle	5/1	6/15	9,972	1,357	9,972	I
				10/16	12/31				
Cottonwood	06431	222	Cattle	3/1	5/10	2,649	316	2,649	C
				1/11	2/28				
Cow Mountain	06751	686	Cattle	6/16	9/30	1,992	523	1,992	I
Davis	16818	35	Cattle	5/1	5/15	483	207	483	C
				9/25	10/9				
Davis Amp	06201	290	Cattle	4/15	5/20	4,274	1,134	4,274	I
				12/4	1/13				
Dead Horse	16119	0	Cattle	1/1	1/30	1,202	0	0	C

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Dierich Ranch	16112	54	Cattle	5/20	5/23	1,388	1,345	1,388	C
				11/10	11/19				
Dolores Point[6]	06429	821	Cattle	5/1	6/20	7,590	37	7,590	I
				10/17	10/31				
				11/1	12/20				
				12/20	12/31				
Dolores River	06411	160	Cattle	4/16	5/25	3,535	437	3,535	I
				11/25	1/5				
Dougherty Gulch	06714	140	Cattle	6/1	11/2	3,384	1,261	3,384	I
Dry Canyon-Demaree	16608	272	Cattle	1/1	2/28	10,419	591	10,419	M
Dry Fork	06715	564	Cattle	3/1	2/28	10,941	3,180	10,941	M
Dry Kimball	16834	0	Cattle	5/26	6/15	830	212	0	C
Dugway	06403	296	Cattle	4/15	5/9	6,097	41	6,097	I
				11/20	1/19				
Duval	16127	57	Cattle	10/24	11/7	658	0	658	M
Duvall Bottom	02777	29	Cattle	4/10	6/15	1,173	0	1,173	C
				10/15	2/28				
East End Cow Mtn	06716	101	Cattle	6/1	7/30	386	31	386	M
East of Collbran	6854	84	Cattle	5/1	11/30	642		642	C
East Salt[7]	16602	3,852	Cattle	3/1	2/28	110,366	6,137	110,366	I
East Toms Can Comm.	16106	137	Cattle	4/20	6/2	3,681	211	3,681	I
				11/15	12/9				
		68	Cattle	5/1	5/31				
				10/9	10/17				
Eby Gulch	06717	32	Cattle	5/6	5/16	1,546	172	1,546	C
				12/1	12/30				
Eby Point	06719	0	Cattle	6/16	10/14	639	8	0	C
EHL	06423	1	Cattle	2/1	2/28	193	123	193	C
Erven	16819	0	Cattle	5/1	10/31	24	0	0	C
Etcheverry	06720	0	Cattle	2/1	2/28	572	1,970	0	C
Fessler	16113	63	Cattle	5/1	6/1	888	166	888	C
Fetters[8]	16821	0	Cattle	5/1	10/30	44	306	0	C
Fish Canyon	06164	180	Cattle	5/1	5/31	3,659	24	3,659	I
				12/1	12/31				
Flat Rock	06139	114	Cattle	7/1	11/1	705	1,455	705	C

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
G-M-L Allotment	06420	132	Cattle	3/1	3/31	3,381	14	3,381	M
				12/1	12/31				
Gapter	06820	84	Cattle	5/1	6/15	576	49	576	C
				10/16	11/30				
Garr Mesa	16503	334	Cattle	3/1	5/1	6,224	3,932	6,224	M
				10/21	2/28				
Grassy Gulch Common	16803	17	Cattle	6/1	6/15	431	9	431	M
		25	Cattle	6/1	6/15				
		17	Cattle	6/1	6/15				
Guthrie Place	16814	18	Cattle	6/1	7/31	143	123	143	C
Halfway House	16823	54	Cattle	5/1	5/31	964	261	964	M
Hall	06162	15	Cattle	5/1	6/19	73	18	73	C
Hamilton	06433	49	Cattle	1/1	3/15	635	207	635	M
Hawxhurst Common	16805	166	Cattle	5/20	6/8	3,818	1,595	3,818	M
		89	Cattle	5/20	7/4				
		54	Cattle	5/20	7/4				
Head of Carr Creek	06721	250	Cattle	6/16	11/1	4,115	2,140	4,115	I
Heely	16837	0	Cattle	4/20	5/31	2,327	214	0	I
Henderson Ridge Comm.	06723	81	Cattle	6/16	10/30	1,153	385	1,153	M
		39	Cattle	6/16	10/13				
		99	Cattle	6/16	10/30				
Hight	16828	0	Cattle	6/1	7/30	39		0	C
Highway 50	16204	77	Cattle	5/20	5/25	885	308	885	C
				11/15	12/7				
Hill Creek-Flats	06166	710	Cattle	6/1	7/10	5,470	597	5,470	I
				11/1	11/15				
Hittle Place Ind.	06841	75	Cattle	5/16	10/15	433	20	433	C
Homestead	06740	210	Cattle	5/10	7/1	4,566	739	4,566	M
Horizon	16830	0		5/16	9/30	118		0	C
Horse Mountain	06726	100	Cattle	6/16	10/15	556	339	556	M
Hubbard[6]	06419	621	Cattle	4/1	11/1	25,183	5,297	25,183	I
Hunter	16829	0	Cattle	6/1	9/15	143	1	0	C
Hunter Wash	16504	1,411	Cattle	3/1	5/3	13,042	710	13,042	I
				12/1	2/28				

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
I.A.E. of Ranch	06727	147	Cattle	5/1	5/30	1,821	519	1,821	M
				11/1	12/15				
J.L.	06422	37	Cattle	3/1	5/15	165	164	165	C
				12/31	2/28				
Jerry Gulch	06847	151	Cattle	5/1	6/30	1,472	950	1,472	I
Kannah Creek Common	16202	2,349	Cattle	5/1	6/30	20,158	4,466	20,158	I
				10/15	11/30				
				12/15	1/15				
				1/16	1/23				
		664	Cattle	5/1	6/30				
				10/1	12/30				
		690	Cattle	5/1	6/30				
				10/1	12/30				
Kannah Creek Indiv.	06207	105	Cattle	9/1	2/28	952	1,992	952	C
Kelly Individual	06169	13	Cattle	8/1	9/2	226	0	226	C
Kimball Creek	06724	193	Cattle	3/1	5/30	13,876	9,413	13,876	M
				11/1	11/30				
Kimball Foothill Comm.	06728	31	Cattle	5/15	6/13	433	266	433	C
		18	Cattle	5/15	6/14				
Kimball Mtn.	06729	200	Cattle	6/1	10/31	695	8,158	695	M
King-Rogers	16118	121	Cattle	6/17	10/31	895	14,345	895	C
Kings Gap	16104	25	Cattle	4/1	4/30	453	510	453	C
Kinney	16833	79	Cattle	6/21	6/30	1,448	4	1,448	C
				10/1	10/3				
Ladder Canyon	06158	142	Cattle	2/15	5/15	3,388	1,790	3,388	I
Landini	16120	161	Cattle	3/14	5/1	2,166		2,166	M
Lapham-Post	16506	604	Cattle	5/2	11/15	8,052	863	8,052	I
Leon	16832	85	Cattle	6/15	10/15	291	1,439	291	C
Leslie-Bays	16131	48	Cattle	6/1	6/15	961	5,144	961	C
				12/1	2/1				
Little Dolores River	06134	85	Cattle	6/15	11/15	1,638	4,733	1,638	C
Little Salt	16507	2,734	Cattle	3/1	5/31	29,262	1,349	29,262	I
				12/1	2/28				
Lloyd	16835	113	Cattle	5/22	10/31	1,879	3,013	1,879	M
Logan End Common	06732	86	Cattle	6/1	10/31	1,653	2,913	1,653	M

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Logan Gulch	06733	255	Cattle	5/5	6/18	3,471	398	3,471	I
		169	Cattle	5/5	6/18				
		84	Cattle	5/5	6/18				
Logan Wash	06734	0	Cattle	4/5	5/31	1,560	423	0	M
Long	16836	45	Cattle	5/16	6/30	279	1,037	279	C
Lorimor	16838	20	Cattle	6/1	9/1	167	152	167	C
Lower 4-A	06738	488	Cattle	6/6	10/30	1,855	1,189	1,855	I
Lower Brush Mtn. Ind.	06735	128	Cattle	6/16	10/15	477	4,072	477	C
Lower Carr Creek	06736	30	Cattle	5/3	6/2	303	1,004	303	C
				10/1	10/31				
Lower Rapid-Cottonwood	06844	168	Cattle	4/15	5/14	4,087	32	4,087	M
				10/1	11/15				
Lower Roan Creek Comm.	06737	57	Cattle	5/15	6/5	2,709	1,278	2,709	I
				11/1	11/15				
		104	Cattle	6/1	6/15				
				10/16	10/22				
Lyons/Anderson	16811	218	Cattle	5/1	6/14	1,963	157	1,963	I
				10/16	11/30				
Mabie	06160	10	Cattle	6/1	10/31	65	729	65	C
Malone	16107	5	Cattle	12/1	4/30	86	394	86	C
Massey	06437	29	Cattle	3/1	5/31	691	372	691	C
				12/1	2/28				
McKay Fork	06746	985	Cattle	6/13	9/30	10,505	2,339	10,505	I
Meinhart	16150	80	Cattle	8/1	9/30	2,144	1,695	2,144	M
Milholland	06840	27	Cattle	5/1	6/15	272	464	272	C
Mogensen	16508	67	Cattle	4/20	5/20	1,397	160	1,397	M
Molina Place	06853	30	Cattle	4/1	5/31	93	148	93	C
Moore	06140	48	Yrling Cattle	6/1	9/27	336	1,031	336	C
Mormon Mesa[8]	06857	18	Cattle	5/11	5/15	198		198	C
		11	Cattle	6/1	6/14				
Mountain Island[9]	06154	1,612	Cattle	3/1	2/28	35,046	8,495	35,046	I
Mt. Garfield	16509	1,000	Cattle	3/1	4/30	26,124	4,549	26,124	I
				12/1	2/28				
Mule Trail Draw	06421	8	Cattle	12/11	1/10	180	195	180	C

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
N.E. Spear	06718	517	Cattle	4/16	5/31	6,411	1,316	6,411	I
				11/16	2/15				
		29	Cattle	4/16	5/31				
Nelson	06428	175	Cattle	4/25	7/1	2,386	2,449	2,386	M
				10/1	1/5				
North Creek	06416	99	Cattle	5/1	5/30	1,215	0	1,215	C
				12/1	1/15				
North East Creek	06156	81	Cattle	5/1	5/15	3,183	245	3,183	M
				11/1	12/16				
North Fork	06146	60	Cattle	6/1	11/14	1,259	1,531	1,259	C
North Fork Kannah Cr	06209	125	Cattle	4/20	6/1	2,022	338	2,022	I
				12/1	1/15				
Notch Spring	16121	271	Cattle	5/9	9/9	3,467	237	3,467	M
				11/1	11/9				
O. Hawkins	16826	46	Cattle	7/7	9/19	164	245	164	C
Paddock	06742	245	Cattle	5/15	10/13	1,723	717	1,723	M
Palisade Flats	16401	400	Cattle	10/21	2/28	8,962	383	8,962	I
Palisade Point	06145	91	Cattle	5/10	6/11	1,962	140	1,962	M
Parkes Place	06743	0	Cattle	5/16	6/15	106		0	C
				10/16	10/31				
Payne Wash	16132	26	Cattle	6/16	6/25	2,408	1,117	2,408	C
				11/16	12/5				
Pineridge	06151	93	Cattle	5/25	10/31	1,237	663	1,237	C
Plateau Creek	16810	0	Cattle	6/1	9/15	117	39	0	C
Prairie Canyon[6]	16616	318	Cattle	6/1	11/25	23,957	1,131	23,957	I
Red Mountain	16813	0	Cattle	5/1	10/31	428	199	0	C
Red Rock	06745	832	Cattle	4/25	6/25	12,421		12,421	I
				10/1	11/30				
Reservation	06133	154	Cattle	4/10	5/9	2,944	141	2,944	I
				12/18	2/22				
Roan Creek	06744	290	Cattle	6/7	11/1	9,275	3,315	9,275	I
Robbins	06846	61	Cattle	5/15	6/15	542	177	542	C
Round Knob	06152	342	Cattle	5/1	5/31	3,746	300	3,746	M
				1/1	1/31				

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
S.E. Spear	06739	320	Cattle	4/16	5/31	6,225	294	6,225	I
				11/1	12/15				
Salt Creek Comm.	16806	79	Cattle	5/15	6/15	2,372	522	2,372	M
Salt Wash	06430	55	Cattle	3/1	5/15	1,358		1,358	C
				12/1	2/28				
San Arroyo[3]	05845					13,510			
Sewemup[10]	N/A								
Sinbad Valley Comm.	06409	459	Cattle	3/1	5/15	10,099	2,369	10,099	I
				10/20	2/28				
		93	Cattle	3/1	4/1				
				1/15	2/28				
Skinner	06128	107	Cattle	5/1	6/29	1,498	2,218	1,498	M
				11/1	11/13				
Snyder Flats	16129	415	Cattle	4/24	6/15	3,223	2,099	3,223	I
				9/17	11/1				
South of the Road	16105	66	Cattle	4/20	5/17	1,329	697	1,329	M
				11/15	11/30				
Spring Creek[6]	16115	381	Cattle	5/20	7/2	5,779		5,779	I
				8/15	10/1				
Stoner-Walker	06749	204	Cattle	5/6	6/15	5,763	1,969	5,763	I
				10/1	11/21				
Sunnyside Common	06801	121	Cattle	4/16	5/31	5,723	810	5,723	I
				12/22	1/27				
		103	Cattle	4/16	5/31				
				12/22	1/27				
		78	Cattle	5/1	5/31				
Swamp Hill	06412	220	Cattle	4/1	5/15	3,916	3	3,916	M
				12/1	1/15				
Tater Hills	06747	177	Cattle	5/10	6/9	1,654	386	1,654	I
Thompson	06148	54	Cattle	5/20	6/20	5,282	1,138	5,282	M
				10/20	11/21				
Timber Ridge	06137	222	Cattle	6/15	7/14	1,391	27	1,391	I
				11/15	1/22				
Tom Casto	06415	6	Cattle	3/1	4/30	79	49	79	C

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Turner Gulch	06427	60	Cattle	4/25	7/10	1,188	277	1,188	C
				10/5	12/31				
Unaweep	06425	23	Cattle	3/1	5/31	404	534	404	C
				12/1	2/28				
Unaweep North Side	06417	60	Cattle	4/1	5/15	3,369	1,657	3,369	C
				10/1	10/31				
Unaweep South Side	06418	51	Cattle	4/1	5/31	1,092	2,636	1,092	C
				10/17	11/30				
Upper Brush Mtn.	06748	196	Cattle	6/10	10/10	741	2,467	741	M
			Horse	6/10	10/10				
Ute Creek Comm.	06410	260	Cattle	4/26	5/26	6,944	97	6,944	M
				10/16	10/30				
Van Loan Individual	06194	25	Cattle	4/1	6/1	347	303	347	C
				10/1	1/1				
Webb Isolated Tracts	16815	0	Cattle	4/16	9/30	185		0	C
Webber	06750	0	Cattle	5/1	5/30	171		0	C
				11/1	11/30				
West Creek	06414	1	Cattle	3/1	3/31	131		131	C
West Logan Wash	06752	28	Cattle	5/25	5/30	427	38	427	M
West Salt Common	16603	8,099	Cattle	3/1	8/31	74,971	12,063	74,971	I
				9/1	2/28				
		159	Cattle	7/1	11/1				
West Spears	06753	470	Cattle	5/1	6/13	6,594	679	6,594	I
				11/1	12/15				
West Toms Canyon	06163	110	Cattle	5/1	5/31	3,481	6	3,481	I
				12/1	12/31				
White Mountain	16808	402	Cattle	4/16	6/15	3,111	167	3,111	I
				5/2	6/30				
Whitewater Common	16203	651	Cattle	4/20	6/1	22,499	10,351	22,499	I
				12/1	1/15				
		79	Cattle	4/20	6/1				
				12/1	1/15				
		1,692	Cattle	4/20	6/1				
				12/1	1/15				

Allotment Name	Allotment Number	Permitted AUMs[1]	Type of Livestock	Begin Date	End Date	Public Acres	Private Acres	Public Acres Available[1]	Management Category[2]
Whitewater Hill	16205	0	Cattle	5/1	5/30	980	2,512	0	C
				12/1	12/30				
Wildhorse[10]	06799								
Wild Country	16809	177	Cattle	4/15	6/15	9,180	3,234	9,180	I
		351	Cattle	4/15	6/15				
		100	Cattle	4/15	6/15				
		131	Cattle	5/10	6/15				
Winter Flats- Deer Pk	06713	575	Cattle	4/15	6/10	31,777	1,859	31,777	I
				11/15	1/28				
Wiretrap[11]	00017	16	Cattle	12/1	1/14	510		510	C
Woodring	26304	75	Cattle	5/5	6/1	1,110	1,013	1,110	M
				10/15	11/15				
Woods	06124	120	Cattle	7/1	10/20	402	943	402	C
			Sheep	7/10	7/19				
Wright Draw	06405	138	Cattle	4/24	5/24	4,094	15	4,094	I
				10/16	12/31				
Total		60,716						960,500	

Dark gray shading indicates allotment acres and AUMs available for livestock grazing are are currently unallotted.

[1] Portions of certain allotments are outside of the planning area, either within the BLM White River Field Office, McInnis Canyon NCA, the Dominguez-Escalante NCA or the BLM Moab Field Office of Utah. Where this occurs, the AUMs or acres for the allotment represents the AUMs and acres covered under this RMP.

[2] Maintain (M), Improve (I), or Custodial (C).

[3] Allotment is within the GJFO planning area but is managed and covered under the BLM, Moab Field Office RMP regarding grazing.

[4] Allotment is within the GJFO planning area but is managed and covered under the BLM, White River Field Office RMP regarding grazing.

[5] Combined with Collier Creek allotment.

[6] Involved in Interdistrict Agreement with Moab Field Office.

[7] East Salt allotment combined East Salt, Corral Canyon and Sphinx-Mitchell allotments.

[8] On Bureau of Reclamation land; not included in total.

[9] Mountain Island allotment is a consolidation of Brush Hole, Fish Park, Haystack, Little Dolores Canyon, Longshore Above Rims, Longshore Below Rims, Lost Horse, McKenzie, and Sieber Canyon allotments. Fish Park is part of Interdistrict Agreement with Moab Field office.

[10] The Little Book Cliffs Wild Horse Range (Wildhorse Allotment) and Sewemup are closed to livestock grazing.

[11] Formerly a pasture of Files allotment.

Appendix K

Recreation and Visitor Services Management Framework

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
ACEC	area of critical environmental concern
BLM	United States Department of the Interior, Bureau of Land Management
BMP	best management practice
ERMA	extensive recreation management area
GJFO	Grand Junction Field Office
IRMA	intensive recreation management area
NEPA	National Environmental Policy Act of 1969
OHV	off-highway vehicle
R&VS	Recreation & Visitor Services
RMA	recreation management area
RMP	resource management plan
RMZ	recreation management zone
ROS	recreation opportunity setting
ROW	right-of-way
RSC	recreation setting characteristics
SRMA	special recreation management area
SRP	special recreation permit
VRM	Visual Resource Management
WSA	Wilderness Study Area

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INTRODUCTION

This appendix presents the SRMA and ERMA designations and supporting information for the Approved Resource Management Plan (RMP).

KEY RECREATION PLANNING TERMS AND DEFINITIONS

Special Recreation Management Area (SRMA)

Definition. The SRMAs are administrative units where the existing or proposed recreation opportunities and desired recreation setting characteristics are recognized for their unique value, importance, and/or distinctiveness, especially as compared to other areas used for recreation.

Management Focus. The SRMAs are managed to protect and enhance a targeted set of activities, experiences, benefits, and desired recreation setting characteristics. The SRMAs may be subdivided into recreation management zones (RMZ) to further delineate specific recreation opportunities. Within SRMAs, R&VS management is recognized as the predominant land management focus, where specific recreation opportunities and recreation setting characteristics are managed and protected on a long-term basis.

Requirements. The SRMAs/RMZs must have measurable outcome-focused objectives. Supporting management actions and allowable use decisions are required to: 1) sustain or enhance recreation objectives, 2) protect the desired recreation setting characteristics, and 3) constrain uses, including non-compatible recreation activities that are detrimental to meeting recreation or other critical resource objectives (e.g. cultural or threatened and endangered species).

Supporting Information (Rationale for SRMA Designation)

Documentation of the rationale for inclusion of the SRMA in the Approved RMP.

SRMA/RMZ Outcome Objective

The outcome objective is a ***clear, measurable, and agreed-upon guide for decision making and evaluation of management effectiveness.*** SRMA/RMZ objectives must define the specific recreation opportunities (i.e. activities, experiences and benefits derived from those experiences) which become the focus of R&VS management.

Recreation Outcomes

Recreation outcomes consist of experiences and benefits and are defined as:

Experiences:

Recreation experiences are immediate states-of-mind resulting from participation in recreation opportunities that result in benefits.

Benefits:

Recreation benefits accrue from having a satisfying recreation experience that leads to (a) an improved condition or (b) maintenance of a desired condition. These accrue from recreation participation, are both short- and long-term, and are realized on and off site. Benefits are identified in one of four categories and are described as:

- Personal/Individual Benefits: Recreation and leisure contributes to personal well-being and human development. It contributes to better physical and mental health for all individuals.
- Social/Community Benefits: Recreation contributes to the quality of life within communities by encouraging positive lifestyles choices, building social skills, reducing crime, and fostering a sense of community pride.
- Economic Benefits: Investments in recreation represent an investment in our economies through diversifying our economies, by attracting new businesses and by generating employment opportunities.
- Environmental Benefits: Participation in recreation and outdoor education programs can help protect the quality of the environment through improved understanding and stewardship of our natural, cultural, and historic resources.

Extensive Recreation Management Area (ERMA)

Definition. The ERMAs are administrative units that require specific management consideration in order to address recreation use, demand, or R&VS program investments.

Management Focus. The ERMAs are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA.

Management of ERMAs is commensurate with the management of other resources and resource uses.

Requirements. The ERMAs must have measurable objectives. Supporting management actions and allowable use decisions must facilitate the visitors' ability to participate in outdoor recreation activities and protect the associated qualities and conditions. Non-compatible uses, including some recreation activities, may be restricted or constrained to achieve interdisciplinary objectives.

ERMA Objective

ERMA objectives must define the recreation activities and the associated qualities and conditions that become the focus for R&VS management.

Supporting Management Action and Allowable Use Decisions

Management actions and allowable use decisions are generally described as land use plan level decisions needed to achieve program objectives or constrain non-compatible land uses. Supporting management action and allowable use decisions are selected in terms of their ability to help achieve the recreation objectives (i.e., recreation opportunities), maintain or enhance the recreation settings, or guide recreation implementation.

Implementation-level Decisions Included in this RMP Revision.

Implementation decisions allow site-specific (on-the-ground) actions needed to achieve land use plan decisions (see Land Use Planning Handbook H-1601-1, p. 30-31). If implementation-level decisions are included in the land use planning document to achieve R&VS program objectives, they must be clearly distinguished as implementation decisions that are appealable to the Interior Board of Land Appeals.

Best Management Practices to Guide Implementation-level Management

Recreation management areas with complex implementation issues may require a subsequent implementation-level recreation area management plan tiered to land use plan decisions. Subsequent site-specific National Environmental Policy Act (NEPA) analysis will be required to implement some types of actions. Other actions that involve education, information, interpretation, and monitoring may not require site-specific NEPA analysis. The subsequent best management practices for implementation-level planning guidance is presented to illustrate opportunities for active stakeholder collaboration and to provide a suite of possible implementation-level actions that could be adaptively performed to ensure management effectiveness in meeting recreation and visitor services goals and objectives.

Table 1
Summary of RMA/RMZ Designations

RMA/RMZ Name	RMA/RMZ acreage
SRMAs	
Bangs SRMA	47,800
RMZ 1 – Lunch Loop Community Recreation Area	3,900
RMZ 2 – Magellan-Tabeguache OHV Trails	10,600
RMZ 3 – Mica Mine/Rough Canyon Outdoor Classroom	1,100
RMZ 4 – Bangs Primitive Backcountry Zone	32,200
Dolores River SRMA	16,100
Grand Valley OHV SRMA	9,700
North Fruita Desert SRMA	11,600
Palisade Rim SRMA	2,000
ERMAs	
Barrel Springs ERMA	24,700
Gateway ERMA	78,100
Grand Valley Shooting Ranges ERMA	750
Gunnison River Bluffs ERMA	800
Horse Mountain ERMA	5,100
RMZ 1 – Horse Mountain Trails	4,700
RMZ 2 – C Road OHV Open Area	180
RMZ 3 – Target Shooting Zone	240
North Desert ERMA	107,900

RECREATION SETTING CHARACTERISTICS

Table 2
Recreation Setting Characteristics Matrix

PHYSICAL – Qualities of the Landscape

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Remoteness (approx. distance from routes)	More than ½ mile from any kind of a man-made trail	More than ½ mile from any kind of a man-made ATV or full-sized vehicle route	More than ½ mile from improved gravel roads	More than ½ mile from paved roads and railroad tracks.	More than ½ mile from municipal streets or roads within towns or cities.	Municipal street and roads within towns or cities.
Naturalness (modifications to the landscape)	Undisturbed natural landscape.	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (e.g. stock ponds, trails).	Character of the natural landscape retained. A few modifications contrast with character of the landscape (e.g. fences, primitive roads).	Character of the natural landscape partially modified but none overpower natural landscape (e.g. roads, structures, utilities).	Character of the natural landscape considerably modified (agriculture, residential or industrial).	Urbanized developments dominate landscape.
Visitor Facilities	No structures. Foot/horse trails only.	Developed trails made mostly of native materials such as log bridges. Structures are rare and isolated.	Maintained and marked trails, simple trailhead developments and basic toilets.	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundry, restaurants, and groceries.

SOCIAL – Qualities Associated with Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Contacts (avg. with any other group)	Fewer than 3 encounters/day at camp sites and fewer than 6 encounters/day on travel routes.	3-6 encounters/day off travel routes (e.g., campsites) and 7-15 encounters/day on travel routes.	7-14 encounters/day off travel routes (e.g., staging areas) and 15-29 encounters/ day en route	15-29 encounters/day off travel routes (e.g., campgrounds) and 30 or more encounters/day in route.	People seem to be generally everywhere.	Busy place with other people constantly in view.
Group Size (average - other than you own)	Fewer than or equal to 3 people per group.	4-6 people per group.	7-12 people per group	13-25 people per group.	26-50 people per group.	Greater than 50 people per group.
Evidence of Use	No alteration of the natural terrain. Footprints only observed. Sounds of people rare.	Areas of alteration uncommon. Little surface vegetation wear observed. Sounds of people infrequent.	Small areas of alteration. Surface vegetation showing wear with some bare soils. Sounds of people occasionally heard.	Small areas of alteration prevalent. Surface vegetation gone with compacted soils observed. Sounds of people regularly heard.	A few large areas of alteration. Surface vegetation absent with hardened soils. Sounds of people frequently heard.	Large areas of alteration prevalent. Some erosion. Constantly hear people.

OPERATIONAL – Conditions Created by Management and Controls over Recreation Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Access (types of travel allowed)	All travel is restricted to foot and horse travel.	Mountain bikes and perhaps other mechanized use, but all is non-motorized.	Four-wheel drives, all-terrain vehicles, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use.	Two-wheel drive vehicles predominant, but also four wheel drives and non-motorized, mechanized use.	Ordinary highway auto and truck traffic is characteristic.	Wide variety of street vehicles and highway traffic is ever-present.
Visitor Services (and info)	None is available. Staff rarely present.	Basic maps, staff infrequently present (e.g. seasonally, high use periods) to provide on-site assistance	Area brochures and maps, staff occasionally (e.g. most weekends) present to provide on-site assistance.	Information materials describe recreation areas & activities, staff periodically present (e.g. weekdays & weekends).	Information described to the left, plus experience and benefit descriptions, staff regularly present (e.g. almost daily).	Information described to the left, plus regularly scheduled on-site outdoor demonstrations and clinics.
Management Controls	No visitor regulations or ethics signing on-site. No use restrictions.	Basic user regulations at key access points. Minimum use restrictions	Some regulatory and ethics signing. Moderate use restrictions. (e.g. camping, human waste).	Rules, regulations and ethics clearly posted. Use restrictions, limitations and/or closures.	Regulations strict and ethics prominent. Use may be limited by permit, reservation, etc.	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage.

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BANGS SPECIAL RECREATION MANAGEMENT AREA

SUPPORTING INFORMATION FOR SRMA ALLOCATION

The Bangs SRMA has four distinct recreation management zones (RMZs). Overall, the Bangs SRMA provides opportunities for: mountain biking, hiking and trail running on world class singletrack trails; OHV use on a network of motorcycle, ATV, 4X4 and rock crawling routes; discovering and learning about the area's natural and cultural history; and exploring primitive undeveloped canyon country on foot or horseback. This SRMA includes the Tabeguache (Lunch Loops), Little Park, Bangs Canyon, and Ribbon Trailheads. The area has scenic views of the Colorado National Monument, Grand Valley, Grand Mesa, and Book Cliffs. The area is in close proximity to the population center of the Grand Valley, which makes it an important community resource for local recreation and quality of life, well as tourism. Portions of the SRMA are managed in partnership with the City of Grand Junction, with shared responsibility for access and facilities.

GOAL SRMA-WIDE

The Bangs SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality recreational opportunities that will continue to add to area residents' quality of life by contributing to the local economy and enhancing stewardship and protection of the area's natural and cultural resources.

OBJECTIVE SRMA-WIDE

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

Action (Rec-SRMA-A4)

Manage the Tabeguache Trail from Little Park Road to Highway 141 as a high-clearance full-sized 4-wheel drive route to provide long-distance OHV recreation opportunities spanning portions of the Bangs SRMA, Dominguez-Escalante NCA, and Uncompahgre National Forest.

Bangs SRMA RMZ 1 – Lunch Loops Community Recreation Area

3,900 acres

Objective (REC-SRMA-O2)

Through the life of the plan, manage RMZ 1 targeting a local/regional market, providing non-motorized mixed-use trail opportunities, accommodating a range of skill levels (beginner, intermediate and advanced). Encourage community-based recreation that can be marketed as an urban interface recreation asset of the Grand Valley. Manage the zone for the following targeted recreation activities and outcomes:

Activities: The targeted activities of the RMZ are mountain bicycling, trail running, dog walking, and hiking.

Outcomes and Experiences:

1. Visitors experience or seek to experience frequent access to outdoor physical activity, often in groups of friends and family, for fitness and stress reduction, to increase endurance, and to develop outdoor skills and abilities through recreation in this zone.

2. Visitors realize personal benefits of easy access to the outdoors, improved fitness and health maintenance (physical and mental), development of technical competence (e.g., mountain biking skills), and development of stronger social bonds with friends and family.

3. The local community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier community.

4. The area economy is strengthened through recreation-related revenue and increased desirability of the community as a place to live.

Resource Values

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), Grand Junction Milk Vetch (*Astragalus linifolius*), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

Resource Uses
Minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: lands and realty.

Action (REC-SRMA-A5)
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): This is a non-motorized, urban interface zone that is bounded by county and city roads. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, houses and other man-made developments. Due to topography and area scenery, the natural landscape is mostly retained despite the density of trails and proximity to the City of Grand Junction. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and shade shelters. Throughout the unit, a designated singletrack trail system with a spectrum of trails (varied level of difficulty) is marked and maintained to achieve defined trail management objectives that support overall RMZ objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than15 other groups on designated trails. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are frequent throughout the RMZ, but more prominent near trailheads. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized singletrack trails with easy access from several trailheads in close proximity to the Grand Valley. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite

staff and/or volunteers, local businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence prominent at trailheads, and less prominent away from trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.)

Allowable Use (REC-SRMA-AU7)

VRM Class: Manage the RMZ under VRM Class II objectives.

Allowable Use (REC-SRMA-AU8)
Minerals: Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales, with the exception of the community bentonite pit on Little Park Road.
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU9)
ROW: Designate as a ROW avoidance area.

Action (REC-SRMA-A6)
Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

Allowable Use (REC-SRMA-AU10)
Forestry and Vegetation: Close the RMZ to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

Allowable Use (REC-SRMA-AU11)
Camping restrictions: Close the RMZ to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

Allowable Use (REC-SRMA-AU12)
Firearm use restrictions: Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns due to the high volume of use and

density of designated routes in this area. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU13)

Special Recreation Permits

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Class IV SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

Allowable Use (REC-SRMA-AU14)

Comprehensive Trails and Travel Management

- Close the RMZ to motorized travel, with the exception of trailhead access and administrative access to range improvements and other facilities.
- Limit mechanized travel to designated routes throughout the RMZ with the exception of small designated corridors where open travel is allowed (e.g., Free Lunch Trail play areas).
- Limit foot and horse travel to designated routes north of Little Park Road and Andy's Loop (core Lunch Loop trail system - see travel maps) due to the high volume of use and density of designated routes in this area.

.

Action (REC-SRMA-A8)

Comprehensive Trails and Travel Management

- Construct new system trails to accommodate activity-specific trails (e.g., limited to hiking).
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives. Reroute/repair unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management

designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Action (REC-SRMA-A9)

Special Recreation Permits
All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Bangs Canyon SRMA RMZ 2 – Magellan-Tabeguache OHV Trails

10,600 acres

RMZ Objective (REC-SRMA-O3)
Through the life of this plan, manage RMZ 2 targeting a local/regional market, and providing a broad range of motorized OHV trail opportunities, accommodating a range of skill levels (beginner, intermediate and advanced) for varying distances, including route connections that create long-distance OHV recreation opportunities spanning portions of the Bangs SRMA, Dominguez-Escalante NCA, and Uncompahgre National Forest. Encourage community-based recreation that can be marketed as an urban interface recreation asset to the Grand Valley. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the RMZ are motorized OHV trail riding (motorcycles, ATV/UTV, 4x4 full-size vehicles, rock crawling).

Outcomes and Experiences

1. Visitors experience or seek to experience easy access to adventure and exploration with family and friends in a natural landscape. Visitors also value the opportunity to test their equipment and driving/riding skills.

2. Visitors generally realize personal benefits of having easy access to outdoor recreation in a natural environment, development of technical competence (driving/riding skills), and development of stronger social bonds with friends and family.

3. The community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier populous.

4. The area economy is strengthened through recreation-related revenue, and increased desirability of the community as a place to live.

Resource Values
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), Grand Junction Milk Vetch (Astragalus linifolius), Canyon Tree Frog (*Hyla arenicolor*), Northern Leopard Frog (*Rana pipiens*), desert bighorn sheep, deer and elk winter range, water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers), soils, riparian resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses
Through the life of the plan, minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: livestock grazing.

Action (REC-SRMA-A10)
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics:

Physical (remoteness, naturalness, facilities): This area is moderately remote in character with singletrack, ATV, and jeep trails that offer motorized recreation opportunities bound by state and county roads. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, houses and other man-made developments. Due to the topography, vegetative screening and area scenery, the natural-appearing landscape is retained despite the proximity to the City of Grand Junction. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and other signs. Throughout the unit, a designated trail system with a range of trail opportunities (variety of use designations and varied levels of difficulty) is marked and maintained to achieve defined trail management objectives that support overall RMZ objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than six other groups on designated routes. Groups are generally small to medium-sized (3-6 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are relatively infrequent throughout the RMZ, but more prominent near trailheads. Other users are more likely to be heard than seen due to the focus on motorized recreation. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): This RMZ is focused on motorized OHV use with trails and trailheads designed specifically for motorcycles, ATVs and full-size 4x4 vehicles. Access on the Tabeguache Trail through this zone, and continuing through RMZ 4, provides long-distance riding opportunities by linking the Tabeguache Trail through the Bangs SRMA, Dominguez-Escalante NCA and Uncompahgre National Forest. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local OHV businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence is prominent at trailheads, and less prominent away from trailheads. Rules, regulations, and land-use ethics are clearly posted at trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.)

Allowable Use (REC-SRMA-AU15)

VRM Class: Manage the RMZ under VRM Class II objectives.

Allowable Use (REC-SRMA-AU16)

Minerals: Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU17)

ROW: Designate as a ROW avoidance area.

Action (REC-SRMA-A11)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or

adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

Allowable Use (REC-SRMA-AU18)

Forestry and Vegetation: Allow harvest of forest and woodland products if the RMZ is determined suitable for harvest. Close the RMZ to collection of vegetative material under a wilding permit.

Allowable Use (REC-SRMA-AU19)

Camping restrictions

- Allow camping and campfires only in designated sites in the portion of the RMZ north of the drainage at the bottom of Rough Canyon. In this portion of the RMZ, require the use of firepans and portable toilet systems, and prohibit firewood collection, to minimize camping impacts.
- Allow undeveloped camping and campfires in the portion of the RMZ south of the drainage at the bottom of Rough Canyon. In this portion of the RMZ, allow collection of only dead and down wood for campfires.

Allowable Use (REC-SRMA-AU20)

Firearm use restrictions: Prohibit the discharge of firearms (including any devices that propel a projectile, including but not limited to, bow and arrow, sling shots, paint ball guns and air guns) for recreational target shooting within the RMZ for the safety of other recreation users in this area of concentrated trail use. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU21)

Special Recreation Permits

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Class IV Commercial and Competitive SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Allow non-motorized events that have been coordinated with, and endorsed by, local OHV organizations, and do not significantly interfere with the SRMA's targeted activities, experiences and outcomes.

- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

Allowable Use (REC-SRMA-AU22)

Comprehensive Trails and Travel Management

- Limit motorized and mechanized travel to designated routes throughout the RMZ with the exception of small designated corridors where open travel is allowed (e.g., Tabeguache Rough Canyon slickrock play area.)
- Manage that part of the Tabeguache Trail that is south of the zone, to Highway 141 as a high clearance full-sized 4-wheel drive route. This action is outside of the Magellan-Tabeguache OHV Zone (RMZ 2) but provides an essential trail link through the adjacent Bangs Primitive Backcountry Zone (RMZ 4) for meeting the RMZ 2 objective for long-distance OHV opportunities.

Action (REC-SRMA-A13)

Comprehensive Trails and Travel Management

- Work with stakeholders/partners to design and construct new system trails to create additional motorized OHV recreation opportunities that help achieve RMZ objectives.
- Work with stakeholders to create new access points and trailheads if necessary to accommodate increased use, and/or achieve RMZ objectives.
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives.
- Reroute/repair unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Action (REC-SRMA-A14)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Action (REC-SRMA-A15)

No similar action.

Allowable Use (REC-SRMA-AU23)
Prohibit new trail development in the portion of the RMZ which overlaps the Rough Canyon ACEC unless impacts to ACEC relevance and importance criteria can be mitigated.

Bangs Canyon SRMA RMZ 3 – Mica Mine/Rough Canyon Outdoor Classroom

1,100 acres

Zone Objective (REC-SRMA-O4)
Through the life of this plan, manage RMZ 3 targeting a local/regional market, providing hiking and educational outdoor classroom learning opportunities consistent with Rough Canyon ACEC management objectives to enhance the appreciation and protection of those values (geology, wildlife habitat, sensitive plants and cultural resources). Encourage community-based use of the area as an outdoor classroom. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the RMZ are hiking/walking and experiential learning.

Outcomes and Experiences

1. Visitors experience or seek to experience the enjoyment and appreciation of the area's wildlife, scenery, views and aesthetics while learning more about the area's history, ecology and geology.

2. Visitors realize personal benefits of a closer relationship with the natural world.

3. The community benefits from an increased awareness and protection of natural landscapes and cultural resources on a community-wide basis.

Resource Values
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), Grand Junction Milk Vetch (*Astragalus linifolius*), Significant plant communities: West Slope Pinyon Woodland (*Pinus edulis-Juniperus osteosperma/Coleogyne ramosisima* Woodland); Canyon Tree Frog (*Hyla arenicolor*), Northern Leopard Frog (*Rana pipiens*), desert bighorn sheep, deer and elk winter range, water quality (non-point source erosion/sedimentation into the Gunnison and Colorado Rivers), soils, riparian resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses
Minimize impacts from other resource uses to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified

for management consideration in this RMZ during the planning process: mineral collecting, livestock grazing, lands and real estate.

Action (REC-SRMA-A16)

Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): This is a non-motorized/non-mechanized zone with easy access from Grand Junction via Little Park Road. The character of the landscape is mostly natural in appearance with few modifications that detract from naturalness. Evidence of past mining activities and developments are present in portions of Rough Canyon and Ladder Canyon. Due to topography, vegetative screening and area scenery, the natural landscape is mostly retained. The recreation facilities at trailheads may include, but are not limited to, vault toilets, informational kiosks and other signs. Trails in the zone are designed and maintained to facilitate defined experiential learning objectives. Interpretive and educational displays can be expected at trailheads and along primary trails.

Social (contacts with other groups, group size, evidence of use): On developed trails (Mica mine, Rough Canyon trails), visitors are likely to encounter multiple groups per day with a fairly high potential of seeing large groups like school groups and scouts. Throughout the rest of the unit, encounters with other groups would be infrequent. On developed trails, the sounds of other people are frequently heard. In the rest of the unit, depending on location in the zone and proximity to trailheads, the sounds of other people are infrequent. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized/non-mechanized trails provide easy access from the Bangs Trailhead which lies in close proximity to the Grand Valley. The large trailhead accommodates buses that transport school groups to the area. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Mesa County School District 51, Colorado Mesa University, local clubs/organizations, and

enforcement patrols) provide information and services that help visitors achieve RMZ objectives. Management presence prominent at trailheads, and less prominent away from trailheads. Staff or volunteer trail hosts or guides may be on primary trails providing education/interpretation services. Rules, regulations, and land-use ethics are clearly posted at trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.)

Action (REC-SRMA-A17): ACECs

Manage the portion of the RMZ which overlaps the Rough Canyon ACEC consistently with the ACEC management objectives.

Allowable Use (REC-SRMA-AU24)

VRM Class: Manage the RMZ under VRM Class II objectives.

Allowable Use (REC-SRMA-AU25)

Minerals: Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU26)

ROW: Designate as a ROW exclusion area with an exception to allow consideration of ROW applications for access to private inholdings within the RMZ.

Action (REC-SRMA-A18)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

Allowable Use (REC-SRMA-AU27)

Forestry and Vegetation: Close the RMZ to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

Allowable Use (REC-SRMA-AU28)

Camping restrictions: Close the RMZ to overnight camping and campfires to reduce impacts to sensitive biological and cultural resources.

Allowable Use (REC-SRMA-AU29)

Firearm use restrictions: For the safety of other recreation users and protection of sensitive resources, prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU30)

Rock Climbing

- Allow technical rock climbing to continue where it does not create conflicts with targeted recreation uses and outcomes.
- With partners (climbing clubs, retail service providers, etc.), close climbing routes that are causing resource concerns; identify and improve primary access trails to and between climbing routes to protect biological and cultural resources.
- To reduce resource impacts on the top of routes, encourage placement of permanent rappel anchors.
- Develop education program with partners to teach climbing resource ethics (LNT for climbing.)
- To protect visual resources, require all permanent anchors to match the color of the rock surface (fixtures, hardware and webbing, etc.)

Management Action (REC-SRMA-A19)

To protect the learning opportunities associated with the area's mica and quartz mining history, develop educational messages that encourage visitors to leave mica and quartz onsite. If monitoring shows significant loss of mica and quartz from the area, implement collection restrictions (e.g., prohibit collection of mica and quartz, requiring special permits for the collection of small quantities for classroom study).

Allowable Use (REC-SRMA-AU31)

Special Recreation Permits: Issue Class I-II Commercial, Competitive and Organized group SRPs that are consistent with RMZ objectives. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.

Allowable Use (REC-SRMA-AU32)

Comprehensive Trails and Travel Management

- Close the RMZ to motorized and mechanized travel.
- Close the Mica Mine trail and Rough Canyon trail to equestrian use to protect sensitive biological and cultural resources. Equestrian use is allowed elsewhere in the RMZ.

Action (REC-SRMA-A21)

Comprehensive Trails and Travel Management

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of RMZ objectives.
- Connect/reroute routes to make loop opportunities that help achieve RMZ objectives.
- Reroute/repair unsustainable and eroding routes.

Action (REC-SRMA-A22)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Bangs Canyon SRMA RMZ 4 – Bangs Primitive Backcountry Zone

32,200 acres

Zone Objective (REC-SRMA-O5)

Through the life of this plan, manage RMZ 4 targeting local/regional visitors, providing primitive backcountry hiking, horseback riding, hunting, and wildlife viewing opportunities in a largely undeveloped natural setting. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the RMZ are primitive cross-country hiking, horseback riding, hunting and wildlife viewing.

Outcomes and Experiences

1. Visitors experience or seek to experience quiet adventures to enjoy the area's wildlife, scenery, views and undeveloped natural landscapes while exploring the area by foot or horseback.

2. Visitors generally realize personal benefits of physical exercise, stress reduction, and a closer relationship with the natural world.

3. The community benefits from an increased awareness and stewardship of natural landscapes on a community-wide basis.

Resource Values
Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/ mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), deer and elk winter range, water quality (non-point source erosion/ sedimentation into the Colorado River), soils, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses
Minimize impacts from other resource use to recreation to ensure those uses support RMZ recreation objectives. The following resource uses were identified for management consideration in this RMZ during the planning process: livestock grazing.

Action (REC-SRMA-A23)
Manage the desired recreation setting characteristics described below to support RMZ outcome objectives. If monitoring indicates RMZ outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of RMZ outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA/RMZ objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): This is a remote backcountry zone bisected by the Tabeguache Trail which provides a through route for motorized and mechanized users to traverse the area between Bangs RMZ 1 and Highway 141. Apart from the Tabeguache Trail there are few signs of man-made developments in the interior of this zone. Developments of man are visible in the distance from parts of the zone, and are more prominent near the perimeter of the zone. There are no developed recreation facilities in the zone with the exception of the Tabeguache Trail.

Social (contacts with other groups, group size, evidence of use): Except along the Tabeguache Trail, visitors to this zone can expect contacts with other groups to be infrequent (0-3 per day) and group sizes are small (1-6 people.) Evidence of other recreation activities is minimal. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Motorized and mechanized vehicle access is limited to the perimeter of the zone, and the Tabeguache Trail that bisects the zone. Foot and horse travel and camping

utilizes primitive, undeveloped trails, or cross-country route-finding employing Leave No Trace travel and camping principles. Visitor services and management presence are minimal. There are no developed/maintained trails, with the exception of the Tabeguache Trail. Basic signs showing rules, regulations and land-use ethics may be posted at primary access points. BLM staff or volunteer field patrols in this zone are generally infrequent.

Allowable Use (REC-SRMA-AU33)
Allow motorized and mechanized vehicle use on the Tabeguache Trail through RMZ 4.

Action (REC-SRMA-A24)

Lands with Wilderness Characteristics: Manage the portion of the RMZ which overlaps the Bangs Canyon LWC unit consistently with the LWC unit management objectives. This includes the management actions and allowable uses shown below for the RMZ in addition to the following:

Allowable Use

STIPULATION *LANDS WITH WILDERNESS CHARACTERISTICS NSO CO*. No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan. Standard exceptions apply; see Appendix B.

Allowable Use (REC-SRMA-AU34)

VRM Class: Manage the RMZ under VRM Class II objectives.

Allowable Use (REC-SRMA-AU35)

Minerals: Close the RMZ to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU36)
Manage as a ROW exclusion area with an exception to allow consideration of ROW applications for access to private inholdings within the RMZ.

Action (REC-SRMA-A25)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

Allowable Use (REC-SRMA-AU37)

Forestry and Vegetation: Close the RMZ to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

Allowable Use (REC-SRMA-AU38)

Camping restrictions: Allow overnight camping and campfires using Leave No Trace camping principles.

Allowable Use (REC-SRMA-AU39)

Special Recreation Permits

- Issue Class I and II Commercial and Organized Group SRPs that are consistent with zone objectives.
- Prohibit Competitive SRPs except on the Tabeguache Trail.

Allowable Use (REC-SRMA-AU40)

Comprehensive Trails and Travel Management:

- Limited to designated routes for motorized and mechanized travel.
- Limited to designated routes for motorized over-the-snow travel.

Action (REC-SRMA-A26)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Action (REC-SRMA-A27)

If monitoring indicates that foot or horse travel in the zone is causing resource damage, consider limiting recreation use and/or limited trail development/maintenance to address the resource concern. Trail work, including but not limited to, signage/marking, reroutes, construction, should only be considered after other adaptive management strategies (group size limits, permitting, area closures, etc.) have been implemented to resolve resource concerns.

DOLORES RIVER CANYONS SPECIAL RECREATION MANAGEMENT AREA

SUPPORTING INFORMATION FOR SRMA ALLOCATION

The Dolores River Canyons SRMA encompasses scenic canyon country along the lower Dolores River west to the Utah Border, portions of West Creek, and lands adjacent to the Town of Gateway. It also includes a portion of the Unaweep-Tabeguache Scenic and Historic Byway. This SRMA will be directly affected by the development of the Gateway Canyons Resort and their partnership with BLM.

GOAL SRMA-WIDE

Dolores River Canyons SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality recreational opportunities that will continue to add to area residents' quality of life by contributing to the local economy and enhancing stewardship and protection of the area's natural and cultural resources.

OBJECTIVE SRMA-WIDE

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

Objective (REC-SRMA-O7)

Through the life of this plan, manage the Dolores River Canyons SRMA targeting a regional, national and international market providing educational opportunities for visitors to experience the history, culture, geology and scenic diversity of this region. Encourage stewardship and environmental and cultural appreciation through education and experiential learning. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the SRMA are automobile/motorized scenic touring, mountain biking, day hiking, float boating (canoes, kayaks, rafts), and environmental learning.

Outcomes and Experiences

1. Visitors experience or seek to experience the area's wildlife, scenery, views, aesthetics and culture by learning about this area during self-exploration or guided tours.

2. Visitors generally realize personal benefits of gaining greater appreciation of the area's natural and cultural heritage through education and improved mental well-being.

3. The community benefits by having an enhanced appreciation of public lands and the associated economic benefits of a more robust tourism market.

4. Visitor experiences will likely result in enhanced resource stewardship of the area's natural, scenic and cultural resources.

Resource Values

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: rare plants, including Kachina daisy (*Erigeron kachinensis*), Eastwood's monkeyflower (*Mimulus eastwooodiae*), San Rafael milkvetch (*Astragalus rafaelensis*), Fisher milkvetch (*Astragalus piscator*),Dolores River skeleton plant (*Lygodesmia doloresensis*), horseshoe milkvetch (*Astragalus equisolensis*), Grand Junction milkvetch (*Astragalus linifolius*), Tufted frasera (*Frasera paniculatum*), Osterhout's cryptantha (*Cryptantha osterhoutii*), and Gypsum catseye; Significant plant communities: Foothills Riaprian Shrubland (*Forestiera pubescens shrubland*), Narrowleaf Cottonwood Riparian Forest (*Acer negundo – Populus angustifolia/ Celtis reticulate* Forest); (*Cryptantha gypsophila*); invasive non-native vegetation including Russian knapweed (*Acroptilon repens*) and tamarisk(*Tamarix spp*.); bald eagle (*Haliaeetus leucocephalus*); peregrine falcon (*Falco peregrinus*); deer and elk winter range; riparian resources, visual resources, paleontological resources, and cultural (historic and prehistoric) resources.

Resource Uses

Minimize impacts from other resource use to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: gold prospecting, lands and realty (ROW corridor), livestock grazing. In the portions of this SRMA that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

Action (REC-SRMA-A30)

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are

not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): This area is a corridor along Colorado State Highway 141, which is also a state scenic and historic byway (Unaweep-Tabeguache) and along county dirt roads paralleling the Dolores River. Despite its proximity to the highway, ranching development, and the small town of Gateway, this unit remains largely natural in appearance due to the area's topography and scenic integrity. Few facilities currently exist, but trailheads and other interpretive exhibits will likely be developed over time.

Social (contacts with other groups, group size, evidence of use): The majority of visitors use the scenic byway to explore this unit, with a smaller percentage of visitors floating the river or using the trails. Contacts with other groups are moderate to high (15-25) along the highway, and low (3-6) on the river and trails. Group sizes for all activities are variable. The evidence of use is low in regards to alteration of the natural landscapes, but sights and sounds of other users are common along the highway, and less prominent along the river, county roads, and trails. Use is highest during the spring, summer and fall months.

Operational (access, visitor services, management controls): Rural highway auto, truck and motorcycle traffic is characteristic in the majority of this unit. The highway affords easy access to the river and trails. Information and environmental education are prevalent along the highway corridor and at trailheads. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Town of Gateway, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. BLM staff or volunteers may occasionally be onsite, but most visitor use is supported by services in Gateway, or is self-guided, relying on signage or web-based information. Regulatory and educational information and use ethics are clearly signed to educate visitors and reduce resource damage.

Allowable Use (REC-SRMA-AU45)

VRM Class: Manage a portion of the SRMA under VRM Class II objectives (13,600 acres) and a portion under VRM Class III objectives (2,400 acres).

Allowable Use (REC-SRMA-AU46)

Minerals: Close the SRMA to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales (exception for area near Niche Road).
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU47)

ROW: Designate as a ROW avoidance area.

Allowable Use (REC-SRMA-AU48)

Consider increased bonding for projects within the Unaweep Corridor and along the Dolores River to ensure that reclamation, visual, and other objectives are met.

Action (REC-SRMA-A31)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.

Allowable Use (REC-SRMA-AU49)

Camping restrictions: Limit camping and campfires to designated developed campgrounds and designated undeveloped campsites. Require the use of firepans and portable toilet systems at undeveloped campsites.

Allowable Use (REC-SRMA-AU50)

Special Recreation Permits

- Prohibit Class III and IV Commercial and Competitive SRPs. Allow an exception for historical, reoccurring events (e.g., Gateway Dynamite Shoot).
- Only issue vending permits in conjunction with event SRPs.

Allowable Use (REC-SRMA-AU51)

Comprehensive Trails and Travel Management: Limit motorized and mechanized travel to designated routes.

Action (REC-SRMA-A32)

Comprehensive Trails and Travel Management: Work with Colorado Department of Transportation and the Unaweep-Tabeguache Scenic and Historic Byway to design and develop access from Highway 141 to interpretive sites and other recreation sites along the Dolores River.

Allowable Use (REC-SRMA-AU52)

Special Recreation Permits

- Issue Class I and II Commercial, Competitive, and Organized Group SRPs that are consistent with SRMA objectives.
- Allow only SRPs that support management objectives of BLM and stakeholders (e.g., environmental and cultural education).

Action (REC-SRMA-A33)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Action (REC-SRMA-A34)

Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of SRMA objectives.

Action (REC-SRMA-A35)

Connect/reroute routes to make loop opportunities that help achieve SRMA objectives. Reroute/repair unsustainable and eroding routes.

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GRAND VALLEY OHV SPECIAL RECREATION MANAGEMENT AREA

SUPPORTING INFORMATION FOR SRMA ALLOCATION

The Grand Valley OHV SRMA is located northeast of the Grand Junction Regional Airport and encompasses approximately 15 square miles of desert-like terrain bounded by 27 ¼ Road on the west, the 32 Road alignment on the east, and the Little Book Cliffs on the northeast. The barren hills of Mancos shale offer challenging rides for all types of vehicles and all rider skill levels. 27 ¼ Road and 29 Road provide relatively easy access from the Grand Valley, and offer opportunities for development of recreation support facilities such as parking/unloading areas, informational signage, restrooms, campsites, and event venues. Existing roads, property boundaries and prominent topographic features provide distinct area boundaries that could be signed and/or fenced to clearly define the areas open for cross-country OHV travel.

GOAL SRMA-WIDE

The Grand Valley OHV SRMA, through recreation program management and stakeholder involvement, will produce opportunities for visitors to experience the freedom to participate in a variety of motorized OHV recreation activities which lead to a variety of beneficial recreation and economic outcomes for participants and Grand Valley communities.

OBJECTIVE SRMA-WIDE

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

Objective (REC-SRMA-O8)

Through the life of this plan, manage the SRMA to provide local and regional visitors the freedom to participate in unconfined motorized OHV recreation

activities in close proximity to the urban amenities of the Grand Valley. Manage the zone for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the SRMA are all forms of motorized OHV recreation, and undeveloped camping

Outcomes and Experiences

1. Visitors experience or seek to experience the freedom of cross-country riding and risk-taking adventure while testing their equipment and building their skills often in groups of friends and family.

2. Visitors generally realize personal benefits of a greater sense of adventure that tests their endurance and equipment, and an improved capacity to engage in motorized OHV recreation.

3. The Grand Valley community benefits from increased local tourism and tax revenue, and an enhanced sense of community ownership in the area's recreation resources.

Resource Values

Manage this area to minimize recreation impacts in areas adjacent to the SRMA, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), Grand Junction suncup (*Camissonia eastwoodiae*), Grand Junction buckwheat (*Eriogonum contortum*), water quality (salinity, non-point source erosion/sedimentation into the Colorado River), Mancos soils.

Resource Uses

Minimize impacts from other resource use to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: lands and realty (ROW corridor, land acquisitions, private property trespass) and livestock grazing. In the portions of this SRMA that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

Action (REC-SRMA-A36)

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like group size limits, issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): The area's proximity to the Grand Valley, Interstate 70 and the Grand Junction Regional Airport creates an urban interface setting at the primary access points, with more remote settings available in the interior of the area. The character of the natural landscape has been largely altered by nearby development and cross country travel that has been the dominant use of the area for many years. Developed recreation facilities currently do not exist, but will likely be prominent in the future along the perimeter of the SRMA to direct and focus use within the open area. The recreation facilities at primary access points may include, but are not limited to, parking/staging areas that accommodate OHV-hauling rigs, OHV loading/ unloading ramps, vault toilets, informational kiosks and shade shelters. Additional recreation facility developments within the area may include event/festival/ vending areas, and OHV race tracks (e.g., motocross track).

Social (contacts with other groups, group size, evidence of use): This SRMA is generally a busy place, with other people constantly in view, traveling or congregating in large groups at trailheads and throughout the unit. Large disturbed areas are present, with sights, sounds, and tracks of other targeted users prominent throughout the SRMA, but more prominent near staging areas. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Access to the southern and western periphery of the area is on regularly-maintained paved or gravel roads. Access into the interior of the SRMA is unrestricted by vehicle size or type. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local OHV businesses, City of Grand Junction, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Maps, signs and physical barriers (e.g., fences) delineate area boundaries. Management presence prominent at trailheads, and less prominent away from trailheads. Federal, state and local personnel are frequently present for information, education and law enforcement efforts. Portions of the area are designated for camping, festivals, equipment demonstrations, food vendors, and motorized events and competitions. Visitor use fees may be charged to support infrastructure and services (staging/event/camping area facilities, field patrols, EMS, law enforcement, maps, information, etc.)

Allowable Use (REC-SRMA-AU53)

VRM Class: Manage the SRMA under VRM Class IV objectives with the exception of the portion of the SRMA along the face of the Little Book Cliffs managed under VRM Class II objectives.

Allowable Use (REC-SRMA-AU54)

Minerals: Close the SRMA to the following:

- Mineral material sales.

Allowable Use (REC-SRMA-AU55)

ROW: Designate as a ROW avoidance area except for existing ROW corridor.

Action (REC-SRMA-A37)

Lands and Realty

- Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.
- Adjust SRMA boundary to match future land tenure adjustments related to expansion of the Grand Junction Regional Airport.

Allowable Use (REC-SRMA-AU56)

Camping restrictions

- Allow dispersed undeveloped camping throughout the SRMA as long as it does not interfere with frequently used OHV routes.
- Camping emphasis areas may be designated to direct and focus camping activities in areas that reduce interference with OHV use, and/or provide desirable camping opportunities.

Allowable Use (REC-SRMA-AU57)

Firearm use restrictions: Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU58)

Special Recreation Permits

- Issue Class I, II, III and IV Commercial, Competitive and Organized Group SRPs that are consistent with SRMA objectives.

- Throughout the year, issue vending SRPs that achieve SRMA objectives and support local outdoor recreation businesses or organizations.
- In association with permitted competitive events, issue vending SRPs to vendors that support the authorized event.
- Do not issue vending SRPs for alcohol sales in the SRMA.
- Actively promote this area for motorized OHV events and activities.
- Allow non-motorized events that have been coordinated and endorsed by local OHV organizations, and do not significantly interfere with the SRMA's targeted activities, experiences and outcomes.

Allowable Use (REC-SRMA-AU59)

Comprehensive Trails and Travel Management: Allow unrestricted travel for all types of use within the SRMA, with the exception of small designated camping areas, special use areas (e.g., motocross track) and vending/event areas.

Action (REC-SRMA-A38)

Comprehensive Trails and Travel Management: To provide navigational assistance to visitors, consider providing directional signing on some primary arterial routes that traverse the SRMA and access primary staging areas.

Action (REC-SRMA-A40)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

Action (REC-SRMA-A41)

Clearly identify OHV open area boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to contain use along portions of an open OHV area boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.

Action (REC-SRMA-A42)

Continue to comply with the Federal Pollution Control Act regulations to minimize point sources of pollutants to navigable waters by obtaining (or requiring project proponents through conditions of approval to obtain) National Pollutant Discharge Elimination System (NPDES) permits where necessary to reduce impacts from stormwater runoff.

NORTH FRUITA DESERT SPECIAL RECREATION MANAGEMENT AREA

SUPPORTING INFORMATION FOR SRMA ALLOCATION

The North Fruita Desert SRMA is located at the base of the Book Cliffs north of the City of Fruita and encompasses a singletrack trail network that has gained international attention as a mountain bike riding destination. The trail system, and associated camping opportunities, provides a variety of unique opportunities for visitors to experience the diverse terrain of the desert environment along the base of the Book Cliffs. The area's close proximity to the City of Fruita makes it an important community resource for local recreation as well as tourism.

GOAL SRMA-WIDE

The North Fruita Desert SRMA, through recreation program management and stakeholder involvement, will produce a diversity of quality mountain bicycling opportunities that add visitors' quality of life while contributing to the local economy and fostering stewardship of natural and cultural resources.

OBJECTIVE SRMA-WIDE

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

Objective (REC-SRMA-O10)

Through the life of this plan, manage the SRMA to be a tourism-based recreation area, providing singletrack bicycling trail opportunities accommodating a range of skill levels (beginner, intermediate and advanced) that can be marketed by stakeholders and partners as a family-focused mountain biking destination with close proximity to camping. Manage the SRMA for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the SRMA are mountain bicycling and camping.

Outcomes and Experiences

1. Visitors experience or seek to experience the closeness of family and friends while developing their riding skills and abilities.

2. Visitors realize personal benefits of easy access to the outdoors, improved fitness and health maintenance (physical and mental), development of technical competence (i.e., mountain biking and camping skills), and development of stronger social bonds with friends and family.

3. The community benefits from improved quality of life with higher levels of public land stewardship, stronger community relationships and a healthier community.

4. The area economy is strengthened through recreation-related tourism revenue, and increased desirability of the community as a place to live.

Resource Values

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: mule deer and elk winter range, water quality (non-point source erosion/sedimentation into the Colorado River) and soils.

Resource Uses

Minimize impacts from other resource use to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: livestock grazing.

Action (REC-SRMA-A45)

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): This is primarily a singletrack mountain biking trail network that is easily accessed from county roads, developed trailheads and campgrounds. More remote settings are available in the interior of the area. The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails, campground facilities, fences, livestock developments and other man-made structures. Due to topography and area scenery, the natural landscape is mostly retained despite the density of trails. The recreation facilities at trailheads and campgrounds may include, but are not limited to, parking lots, vault toilets, picnic tables, fire grates, informational kiosks and shade shelters. Throughout the unit, a designated singletrack trail system with a spectrum of trails (varied level of difficulty) is marked and maintained to achieve defined trail management objectives that support overall SRMA objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than15 other groups on designated trails, and 25 or more other groups in developed campgrounds during peak seasons. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights, sounds, and tracks of other targeted users are frequent throughout the area, but more prominent near trailheads and camping areas. Use is generally be highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Mountain bicycle singletrack trails provide easy access from trailheads off of county roads. A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local bicycle shops, City of Fruita, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Portions of the area are designated for camping, festivals, mountain bike events and races. Maps, signs and physical barriers (e.g., fences) delineate area boundaries. Management presence prominent at trailheads and camping areas, and less prominent away from trailheads. Campground host onsite at campground during peak seasons. Visitor use fees may be charged to support infrastructure and services (trailhead, campground and event facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.)

Allowable Use (REC-SRMA-AU66)

VRM Class: Manage the SRMA under VRM Class II objectives.

Allowable Use (REC-SRMA-AU67)

Minerals: Close the SRMA to the following:

- Mineral material sales
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU68)

ROW: Designate as a ROW exclusion area, with an exception for recreation projects requiring electric or water utilities, or for minimally intrusive access/utility ROWs to private inholdings within the SRMA.

Action (REC-SRMA-A46)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.

Allowable Use (REC-SRMA-AU69)

Forestry and Vegetation: Close the SRMA to the following:

- Timber harvest, fire wood cutting and special forest product harvest.
- Collection of vegetative material under a wilding permit.

Allowable Use (REC-SRMA-AU70)

Camping restrictions: To reduce resource impacts and conflicting user interactions,

- Limit camping to designated campgrounds and campsites.
- Limit the number of people and/or vehicles allowed at each campsite.
- Require the use of portable toilet systems and firepans at designated undeveloped sites.

Allowable Use (REC-SRMA-AU71)

Firearm use restrictions: For the safety of trail users and campers, prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU72)

Special Recreation Permits

- Issue Class I – IV Commercial, Competitive and Organized Group SRPs that are consistent with SRMA objectives.

- In association with Competitive events, issue vending SRPs to vendors that support the authorized event.
- Do not issue vending SRPs for alcohol sales in the SRMA.

Allowable Use (REC-SRMA-AU73)

Comprehensive Trails and Travel Management: Limit motorized and mechanized travel to designated routes throughout the SRMA.

Action (REC-SRMA-A48)

Comprehensive Trails and Travel Management

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of SRMA objectives, including promotion of the area as a regional, national and international mountain biking tourism destination.

Action (REC-SRMA-A49)

Comprehensive Trails and Travel Management

- Design and construct an event staging area and trail system to accommodate large-scale mountain bike races/events.

Action (REC-SRMA-A50)

Comprehensive Trails and Travel Management

- Construct new system trails to accommodate activity-specific trails (e.g., mountain bike racing, directional travel trails, constructed technical trail features).

Action (REC-SRMA-A51)

Comprehensive Trails and Travel Management

- Connect/reroute routes to make loop opportunities that help achieve SRMA objectives. Reroute/repair unsustainable and eroding routes.

Action (REC-SRMA-A52)

Comprehensive Trails and Travel Management

- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Action (REC-SRMA-A53)

Construct additional developed camping opportunities to address camping demand.

Action (REC-SRMA-A54)

Special Recreation Permits: All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

PALISADE RIM SPECIAL RECREATION MANAGEMENT AREA

SUPPORTING INFORMATION FOR SRMA ALLOCATION

The Palisade Rim SRMA encompasses the rim and bench lands east of the Town of Palisade. Public lands and trails in the area are popular close-to-home recreation destinations for the community of Palisade, neighboring communities and seasonal tourism. The area offers outstanding views of the Grand Valley, the Colorado River, the Little Book Cliffs and the Grand Mesa. It also contains significant cultural and wildlife resources.

GOAL SRMA WIDE

The Palisade Rim SRMA, through recreation program management and stakeholder involvement, will produce quality recreation and learning opportunities that will continue to enhance area residents' quality of life, contribute to the local economy, and provide stewardship and protection of natural and cultural resources. The area's close proximity to the Town of Palisade makes it an important community resource for local recreation as well as tourism.

OBJECTIVE SRMA WIDE

The objective is that participants in visitor/community assessments report an average of 4.0 realization of the targeted experience and benefit outcomes listed below. (4.0 on a probability scale where 1 = not at all realized to 5 = totally realized). Visitor assessments will be administered as funding allows.

Objective (REC-SRMA-O12)

Through the life of this plan, manage the SRMA to be a community-based recreation area, providing intermediate to advanced non-motorized trail-based recreation with an emphasis on the area's scenery, cultural heritage educational opportunities and stewardship of cultural and natural resources. Manage the

SRMA for the following targeted recreation activities, experiences and outcomes:

Activities: The targeted activities for the SRMA are hiking, dog walking, trail running, mountain biking and horseback riding.

Outcomes and Experiences

1. Visitors experience or seek to experience outdoor physical activity for fitness and stress reduction, as well as experiencing and learning about the area's scenic vistas, wildlife and cultural resources, often in small groups of family members and/or friends.

2. Visitors realize personal benefits of having recreation, outstanding scenery, cultural appreciation opportunities and wildlife viewing opportunities close to home. Individuals also benefit from improved fitness and health maintenance (physical and mental), development of technical competence (e.g., mountain biking skills), and development of stronger social bonds with friends and family.

3. The community benefits from improved quality of life with higher levels of public land stewardship, increased awareness of the area's natural, historic and cultural resources, stronger community relationships and a healthier community.

4. The area economy is strengthened through recreation-related tourism revenue, and increased desirability of the community as a place to live.

Resource Values

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, Colorado Hookless Cactus (*Sclerocactus glaucus*), water quality (non-point source erosion/sedimentation into the Colorado River), soils, paleontological resources, and cultural resources.

Resource Uses

Minimize impacts from other resource use to recreation to ensure those uses support SRMA recreation objectives. The following resource uses were identified for management consideration in this SRMA during the planning process: lands and realty (access across BOR withdrawal parcel), land acquisition, private property trespass). In the portions of the SRMA that overlap the ROW corridor, manage recreation to achieve ROW corridor management objectives.

Action (REC-SRMA-A56)

Manage the desired recreation setting characteristics described below to support SRMA outcome objectives. If monitoring indicates SRMA outcomes are not being achieved, settings will be incrementally adapted to facilitate

achievement of SRMA outcomes. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.), issuance of permits, law enforcement patrols, etc. Only implement adaptive management measures if: 1) they are consistent with SRMA objectives and 2) sufficient funding and long-term management commitments are secured from internal BLM sources and/or external managing partners.

See Table 2 above.

Desired Recreation Setting Characteristics

Physical (remoteness, naturalness, facilities): The character of the landscape is largely natural in appearance, with some viewsheds that include roads, trails railroads, canals, houses, farms and other man-made developments. Due to topography and area scenery, the natural landscape is mostly retained despite the area's proximity to the Town of Palisade, Interstate 70 and the Grand Valley. The recreation facilities at trailheads (adjacent to the SRMA on CDOT property) may include, but are not limited to, vault toilets, informational/interpretive kiosks and shade shelters. Throughout the unit, a designated singletrack trail system is marked and maintained to achieve defined trail management objectives that support overall SRMA objectives.

Social (contacts with other groups, group size, evidence of use): Visitors generally directly encounter fewer than seven other groups on designated trails. Groups are generally small to medium-sized (1-8 people) with occasional encounters with larger groups. Sights and sounds of other targeted users are moderately frequent throughout the SRMA, but more frequent near the trailhead. Use is generally highest during the spring and fall seasons, with lighter use during summer and winter months.

Operational (access, visitor services, management controls): Non-motorized singletrack trails and use are predominant with primary access from a single trail and trailhead on non-BLM land (CDOT and BOR withdrawal). Bicycles may access the SRMA starting from locations in the nearby Town of Palisade. Secondary access from adjacent BLM, Forest Service and municipal lands to the south and east (depending on potential future development of connector trails.) A variety of communication tools (e.g., information/education kiosks, brochures, maps, signs, web content) and service providers (i.e., onsite staff and/or volunteers, local businesses, Town of Palisade, local clubs/organizations, and enforcement patrols) provide information and services that help visitors achieve SRMA objectives. Management presence is moderate at trailheads, and less prominent away from trailheads. Visitor use fees may be charged to support infrastructure and services (trailhead facilities, trail construction and maintenance, trail patrols, EMS, law enforcement, maps, information, etc.)

Allowable Use (REC-SRMA-AU83)

VRM Class: Manage the SRMA under VRM Class II objectives.

Allowable Use (REC-SRMA-AU84)

Minerals: Close the SRMA to the following:

- Fluid mineral leasing and geophysical exploration
- Mineral material sales
- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-SRMA-AU85)

ROW: Designate as a ROW avoidance area with the exception of the ROW corridor that crosses the SRMA. Recognize and grant priority status to utility developments in the ROW corridor. Utilize BMPs to minimize impacts to targeted recreation activities.

Action (REC-SRMA-A57)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the SRMA that enhance public access and recreation opportunities consistent with SRMA objectives.

Allowable Use (REC-SRMA-AU86)

Forestry and Vegetation: Close the SRMA to the following:

Timber harvest, fire wood cutting and special forest product harvest.

Allowable Use (REC-SRMA-AU87)

Camping restrictions: Close the SRMA to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

Allowable Use (REC-SRMA-AU88)

Firearm use restrictions: Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

Allowable Use (REC-SRMA-AU89)

Special Recreation Permits

- Prohibit all Class III and IV SRPs.
- Only issue event permits that support and celebrate Grand Valley communities. Event permits should be coordinated with the local community and should result in minimal displacement of regular recreation use.
- Prohibit vending permits.

Allowable Use and Management Actions (REC-SRMA-AU90)

Comprehensive Trails and Travel Management

- Close the SRMA to motorized travel.
- Limit mechanized travel to designated routes throughout the SRMA.
- With partners (e.g., user groups, local municipalities, retail shops, service providers) develop connective trails to adjoining BLM lands, and the Horse Mountain ERMA, that are consistent with SRMA objectives.
- Limit new trail development to the minimum necessary to achieve SRMA objectives.

Action (REC-SRMA-A58)

Comprehensive Trails and Travel Management:

- Work with stakeholders to design and construct any new system trails, access points or facilities identified as necessary for achievement of SRMA objectives.
- Reroute, repair, or close and restore unsustainable and eroding routes.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Allowable Use (REC-SRMA-AU91)

Special Recreation Permits:

- Issue Class I and II Commercial, Competitive, and Organized Group SRPs that are consistent with SRMA objectives.
- Require organized group SRPs for groups exceeding 12 participants

- All SRPs will be evaluated using Permit Evaluation Factors and Permit Classification System (see Appendix L).

BARREL SPRING EXTENSIVE RECREATION MANAGEMENT AREA

Objective (REC-ERMA-O2)

Through the life of the plan, provide visitors with opportunities to participate in long-distance ATV/UTV riding/touring activities, and big game hunting in the upper East Salt Creek and Barrel Spring Creek drainages, with access from 16 Road. The ERMA provides a recreation setting with a relatively unchanged, natural-appearing landscape.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing, livestock grazing, lands and realty.

Allowable Use (REC-ERMA-AU3)

VRM Class: Manage the ERMA under VRM Class III objectives.

Allowable Use (REC-ERMA-AU4)

ROW: Designate as a ROW avoidance area.

Allowable Use (REC-ERMA-AU5)

Forestry and Vegetation: Allow timber harvest, fire wood cutting, and special forest product harvest if the ERMA is determined suitable for harvest.

Allowable Use (REC-ERMA-AU6)

Special Recreation Permits

- Issue Class I-II Commercial and Organized Event SRPs that meet ERMA objectives.
- Do not issue Competitive SRPs in the ERMA.

Allowable Uses (REC-ERMA-AU7)

Comprehensive Trails and Travel Management

- Maintain public access for ATVs and UTVs from 16 Road to the upper East Salt Creek and Barrel Spring Creek drainages.
- Limit motorized and mechanized travel to designated routes.

Action (REC-ERMA-A2)

To achieve recreation outcomes under Comprehensive Trails and Travel Management:

- Establish specific Trail Management Objectives for primary recreation routes.
- Work with partners to repair/reroute/close and maintain travel routes to reduce resource impacts and achieve ERMA objectives.
- Mark trail system route intersections with signs showing trail names/numbers, and allowable uses. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Objective (REC-ERMA-O3)

Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: deer and elk winter range, fragile and slumping soils, riparian habitat, paleontological resources, rare plants - Piceance Bladderpod (*Lesquerella parviflora*), and the following Significant plant communities: Montane Riparian Woodland (*Populus balsamifera* Woodland), Emergent Wetlands (*Eleocharis rostellata* Herbaceous Vegetation), Foothills Riparian Shrubland (*Betula occidentalis / Maianthemum stellatum* Shrubland).

Allowable Use (REC-ERMA-AU8)

Close to motorized and mechanized vehicles the portion of the ERMA within designated big game winter range from December 1 to April 30 (TL - 20).

GATEWAY EXTENSIVE RECREATION MANAGEMENT AREA

Objective (REC-ERMA-O5)

Through the life of the plan, provide visitors with opportunities to participate in motorized exploration, scenic touring and heritage tourism along the Mesas and side canyons surrounding the Dolores River and the town of Gateway. Visitors to the ERMA have the opportunity to explore and connect to other public lands managed by Grand Junction Field Office, Uncompahgre Field Office and Moab Field Office, as well as the Uncompahgre National Forest and Manti-La Sal National Forest. The ERMA provides a recreation setting with a relatively unchanged, natural-appearing landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: scenic values; wilderness characteristics; geological features; plant species of concern - Gypsum Valley cateye (*Cryptantha gypsophila*), San Rafael milkvetch (*Astragalus rafaelensis*), Naturita milkvetch (*Astragalus naturitensis*), Grand Junction milkvetch (*Astragalus linifolius*); two Significant Plant Communities - Fremont's Cottonwood Riparian Forests (*Populus deltoides ssp. wislizeni /Rhus trilobata* Woodland), and Emergent Wetlands (*Eleocharis rostellata* Herbaceous Vegetation); deer and elk winter range; cliff-nesting raptors; cultural resources; and paleontological resources. The resources listed above are also identified for special management and protection in one or more of the following areas that the ERMA overlaps, or is immediately adjacent to: Palisade WSA, Sewemup WSA , Maverick LWC unit, Unaweep Canyon LWC unit, Dolores River Riparian ACEC, Juanita Arch ACEC, The Palisade ACEC, Sinbad Valley ACEC, Unaweep Seep ACEC, Blue Mesa wildlife emphasis area, Bull Hill wildlife emphasis area, Calamity Camp National Historic Register site, and Dolores River Riparian SRMA.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: uranium exploration and mining, mineral material sales, livestock grazing.

Allowable Use (REC-ERMA-AU10)

VRM Class: Manage the ERMA under VRM Class II and III objectives (as described in the VRM section).

Allowable Use (REC-ERMA-AU11)

ROW: Designate as a ROW avoidance area.

Action (REC-ERMA-A4)

Lands and Realty: Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA that enhance public access and recreation opportunities consistent with ERMA objectives.

Allowable Use (REC-ERMA-AU12)

Forestry and Vegetation: Allow timber harvest, fire wood cutting and special forest product harvest if the ERMA is determined suitable for harvest.

Allowable Use (REC-ERMA-AU13)

Special Recreation Permits: Issue only Class I, II, and III SRPs in the ERMA.

Allowable Uses and Management Actions (ERMA-AU14)

Comprehensive Trails and Travel Management: Limit motorized and mechanized travel to designated routes.

Action (REC-ERMA-A5)

Comprehensive Trails and Travel Management

- Establish specific Trail Management Objectives for primary recreation routes.
- Work with stakeholders to identify opportunities to connect/reroute routes to create loop opportunities that help achieve ERMA objectives.
- Work with partners to repair/reroute/close and maintain travel routes to reduce resource impacts and achieve ERMA objectives.

- Mark trail system route intersections with signs showing trail names/numbers, and allowable uses. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.

Allowable Use (REC-ERMA-AU15)

Special Recreation Permits: Issue Class I-III Commercial, Competitive, and Organized Group SRPs that are consistent with ERMA objectives.

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GRAND VALLEY SHOOTING RANGES EXTENSIVE RECREATION MANAGEMENT AREA

Objective (REC-ERMA-O6)
Through the life of the plan, provide visitors with opportunities to participate in recreational target shooting at a developed shooting range in close proximity to Grand Junction. The ERMA provides a recreation setting with a significantly altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), water quality (lead contamination, non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing, fluid mineral leasing.

Action (REC-ERMA-A6)
Physically delineate the boundaries of the ERMA using signage, fencing and other appropriate markers/barriers.

Action (REC-ERMA-A7)
Develop run-on/run-off control plan to mitigate lead contamination to surface and ground water.

Action (REC-ERMA-A8)
Develop a regular lead recovery program to mitigate soil and water contamination.

Allowable Use (REC-ERMA-AU16)

VRM Class: Manage the ERMA under VRM Class IV objectives.

Allowable Use (REC-ERMA-AU17)
ROW: Designate as a ROW avoidance area.

Action (REC-ERMA-A9)

Lands and Realty: Identify area for disposal to stakeholder(s) who would manage the area with similar objectives.

Allowable Use (REC-ERMA-AU18)

Camping restrictions: Close the ERMA to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism to recreation facilities. Exceptions to this restriction may be granted in order to accommodate training exercises or other special events.

Management Actions and Allowable Uses (REC-ERMA-AU19)

Special Recreation Permits

- Do not issue Class IV SRPS in the ERMA.
- Allow vending SRPs only in conjunction with event SRPs.

Allowable Uses and Management Actions (REC-ERMA-AU20)

Comprehensive Trails and Travel Management: Allow travel within the ERMA only for the placement and retrieval of targets. Motorized and mechanized vehicles must remain on designated routes.

Action (REC-ERMA-A11)

Comprehensive Trails and Travel Management: Work with stakeholders to maintain adequate access to shooting range facilities, consistent with ERMA objectives.

Allowable Use (REC-ERMA-AU21)

Special Recreation Permits: Issue Class I-III Commercial, Competitive and Organized Group SRPs that are compatible with ERMA objectives.

GUNNISON RIVER BLUFFS EXTENSIVE RECREATION MANAGEMENT AREA

Objective (REC-ERMA-O7)

Through the life of the plan, support local community partnerships to protect and promote trail-based hiking, dog walking, trail running, mountain bicycling, horseback riding and other non-motorized recreation activities between Orchard Mesa and Whitewater along the Gunnison River bluffs. The ERMA provides an urban interface recreation setting with a moderately altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), cliff-nesting raptors, paleontological resources, and cultural resources.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: livestock grazing, lands and realty.

Action (REC-ERMA-A12)

Lands and Realty: With partners (Mesa County, private landowners, Old Spanish Trail Association and City of Grand Junction), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA that enhance public access and recreation opportunities consistent with ERMA objectives.

Allowable Use (REC-ERMA-AU22)

Comprehensive Trails and Travel Management: Close the ERMA to motorized travel. Limit all other travel (including foot and horse) to designated routes in order to accommodate targeted recreation activities in a concentrated urban interface area while protecting sensitive biological and cultural resources.

Allowable Use (REC-ERMA-AU23)

Firearm use restrictions: Prohibit recreational target shooting using any devices that propel a projectile, including but not limited to, firearms, bow and arrow, sling shots, paint ball guns and air guns. This does not apply to the lawful taking of game.

Objective (REC-ERMA-O8)

Through community partnerships, protect the scenic views of the Gunnison River and Pinyon Mesa, support trail connectivity between communities and public land resources, and provide opportunities to learn about the Old Spanish National Historic Trail.

Action (REC-ERMA-A13)

Partnerships

- Work with partners (Mesa County, private landowners, Old Spanish Trail Association (OSTA) and City of Grand Junction) to connect/reroute routes to make loop and/or through-route trail opportunities as necessary; reroute or close and naturalize unsustainable and eroding routes.
- Work with partners (OSTA, Mesa County, City of Grand Junction) to create and/or support education/interpretation of Old Spanish Trail resources.

Allowable Use (REC-ERMA-AU24)

VRM Class

- Manage the ERMA under VRM Class III objectives.
- Landscapes in the viewshed to the south and west of the ERMA lie within the Bangs Canyon SRMA and are managed under VRM Class II objectives.

Allowable Use (REC-ERMA-AU25)

Minerals: Close the ERMA to the following:

- Fluid mineral leasing and geophysical exploration.
- Mineral material sales.

- Non-energy leasable mineral exploration and/or development.

Allowable Use (REC-ERMA-AU26)

ROW: Designate as a ROW avoidance area.

Allowable Use (REC-ERMA-AU27)

Camping restrictions

- Close the ERMA to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.
- Allow exceptions for overnight camping and campfires only when those activities support the ERMA objectives (e.g., historical reenactments.)

Allowable Use (REC-ERMA-AU28)

Special Recreation Permits

- Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with ERMA objectives (i.e., support partnership efforts).
- Prohibit Class IV SRPs.
- Only issue event permits that have been coordinated with the local community and that result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the ERMA.

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HORSE MOUNTAIN EXTENSIVE RECREATION MANAGEMENT AREA

The Horse Mountain ERMA has three distinct recreation management zones (RMZs). Those zones include: the Horse Mountain Trails RMZ (RMZ 1) featuring opportunities to participate in mountain biking, hiking, trail running, motorcycle riding, ATV riding and 4x4 vehicle driving; the C Road OHV Open Area (RMZ 2) offering an open OHV play area; and the C Road Target Shooting Area (RMZ 3) offering recreational target shooting opportunities. Overall, the ERMA provides a diverse mix of recreation activity opportunities in the urban interface zone along the eastern edge of the Grand Valley. The specific management objectives and actions for each RMZ are described below.

Horse Mountain ERMA RMZ 1 – Horse Mountain Trails

4,700 acres

Objective (REC-ERMA-O9)

Through the life of the plan, support local community partnerships to plan, develop and promote a trail system for a variety of motorized and non-motorized trail-based recreation activities. The trail system should provide easy access to the Horse Mountain area, and trail connectivity to/from the Town of Palisade, East Orchard Mesa, the Palisade Rim SRMA and other BLM-managed lands along the Grand Mesa Slopes. Targeted activities include, but are not limited to, hiking, dog walking, trail running, mountain bicycling, horseback riding, ATV riding and motorcycle riding. The RMZ provides a recreation setting with a moderately to significantly altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), water quality (non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. Consider the following resource uses: fluid mineral leasing and livestock grazing. In the portions of this RMZ that overlap the ROW corridor and Wind Energy Emphasis Area, manage recreation to achieve management objectives for those designations.

Allowable Use (REC-ERMA-AU29):
VRM Class: Manage the eastern portion of the RMZ under VRM Class III objectives, and the western portion under VRM Class IV objectives (See VRM section.)

Management Actions and Allowable Uses (REC-ERMA-AU30)

Lands and Realty

- Recognize and grant priority status to utility developments in the ROW corridor and the Wind Energy Emphasis area that overlap the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- With managing partners (Town of Palisade, Mesa County, City of Grand Junction, private landowners), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.
- Work with adjacent landowners, including the City of Grand Junction to minimize recreation conflicts and/or trespass on private property.

Allowable Use (REC-ERMA-AU31)

Camping restrictions: Close the RMZ to overnight camping and campfires to reduce impacts to this intensively used area that lies in close proximity to private residences.

Allowable Use (REC-ERMA-AU32)
Close the portion of the RMZ west of Sink Creek to overnight use (sunset to sunrise) to reduce occurrences of vandalism and resource damage.

Allowable Use (REC-ERMA-AU33)

Firearm use restrictions: Close to recreational target shooting the portion of the RMZ west of Sink Creek for the safety of adjacent residents, and recreationists using the C Road OHV Open Area, the C Road Target Shooting Area, and the connector trails leading to Horse Mountain.

Allowable Use (REC-ERMA-AU34)

Special Recreation Permits

- Only issue event permits that have been coordinated with the local community and that result in minimal displacement of regular recreation use.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

Allowable Use (REC-ERMA-AU35)

Comprehensive Trails and Travel Management: Limit motorized and mechanized travel to designated routes.

Action (REC-ERMA-A15)

Comprehensive Trails and Travel Management: If monitoring indicates conflicting interactions between recreation users, promote positive interactions between visitors by implementing strategies that separate incompatible recreation uses in either time or space (e.g., different uses on different trails on different days, designating directional travel on system trails, etc.)

Allowable Use (REC-ERMA-AU36)

Special Recreation Permits: Issue Class I, II and III Commercial, Competitive, and Organized Group SRPs that are consistent with RMZ objectives (i.e., support partnership efforts).

Horse Mountain ERMA RMZ 2 – C Road OHV Open Area

180 acres

Objective (REC-ERMA-O10)

Through the life of the plan, this RMZ will provide visitors with opportunities to participate in unconfined day-use motorized OHV recreation activities in close proximity to the urban amenities of the Grand Valley. The RMZ will also provide an OHV practice/play area serving as a gateway to the designated route system on adjoining public lands to the east. The RMZ provides a recreation setting with a significantly altered natural landscape due to intensive motorized OHV use, and nearby residential and agricultural development.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), water quality (non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: lands and realty (ROW corridor), fluid mineral leasing. In the portions of this RMZ that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

Action (REC-ERMA-A16)
Physically delineate the boundaries of the RMZ using signage, fencing and other appropriate markers/barriers.

Allowable Use (REC-ERMA-AU37)

VRM Class: Manage under VRM Class IV objectives.

Management Actions and Allowable Uses (REC-ERMA-AU38)

Lands and Realty

- Recognize and grant priority status to utility developments in the ROW corridor that overlaps the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.

Allowable Use (REC-ERMA-AU39)

Camping restrictions: Designate the RMZ as a day-use only area. Close the RMZ to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism, dumping, resource damage and disturbance of nearby residents.

Allowable Use (REC-ERMA-AU40)

Firearm use restrictions: Close the RMZ to recreational target shooting for the safety of adjacent residents, recreationists using the OHV area and recreationists using the connector trails leading to Horse Mountain.

Allowable Use (REC-ERMA-AU41)
Special Recreation Permits: Do not issue SRPs in this RMZ. Exception: Allow event staging in the RMZ for events outside of the RMZ.

Management Actions and Allowable Uses (REC-ERMA-AU42)

Comprehensive Trails and Travel Management

- Allow unrestricted travel for all types of motorized OHV use within the RMZ.
- Ensure connectivity between the RMZ and the Horse Mountain Trails RMZ (RMZ 1).

Horse Mountain ERMA RMZ 3 – Target Shooting

240 acres

Objective (REC-ERMA-O11)
Through the life of the plan, provide visitors with opportunities to participate in day-use recreational target shooting in close proximity to Grand Junction, Clifton and Palisade, while protecting the property and personal safety of private residences in the area. The RMZ provides a recreation setting with a significantly altered natural landscape due to intensive recreation use in the area.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), water quality (lead contamination, non-point source erosion/sedimentation into the Colorado River).

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: fluid mineral leasing, livestock grazing. In the portions of this RMZ that overlap the ROW corridor, manage recreation to achieve management objectives for the ROW corridor.

Action (REC-ERMA-A17)
Physically delineate the boundaries of the RMZ using signage, fencing and other appropriate markers/barriers.

Action (REC-ERMA-A18)
Clearly identify BLM-managed lands adjacent to the RMZ that are closed to target shooting (900 acres) for the protection of the property and personal safety of nearby private residences in the area.

Allowable Use (REC-ERMA-AU43)

VRM Class: Manage the ERMA under VRM Class IV objectives.

Management Actions and Allowable Uses (REC-ERMA-AU44)

Lands and Realty

- Recognize and grant priority status to utility developments in the ROW corridor that overlaps the RMZ. Utilize BMPs to minimize impacts to targeted recreation activities.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.
- Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within

or adjacent to the RMZ that enhance public access and recreation opportunities consistent with RMZ objectives.

Allowable Use (REC-ERMA-AU45)

Camping restrictions: Designate the RMZ as a day-use only area. Close the RMZ to overnight use and campfires from sunset to sunrise to reduce occurrences of vandalism, dumping, resource damage and disturbance of nearby residents.

Management Actions and Allowable Uses (REC-ERMA-AU46)

Special Recreation Permits

- Issue Class I, II and III Commercial, Competitive and Organized Group SRPs that provide financial or in-kind support for ongoing maintenance of the RMZ facilities.
- Do not issue Class IV SRPS in the ERMA.
- Allow vending SRPs only in conjunction with event SRPs.
- Do not issue vending SRPs for alcohol sales in the RMZ.

Allowable Uses and Management Actions (REC-ERMA-AU47)

Comprehensive Trails and Travel Management: Allow travel within the RMZ only for the placement and retrieval of targets. Motorized and mechanized vehicles must remain on designated routes.

Action (REC-ERMA-A19)

Comprehensive Trails and Travel Management: Work with stakeholders to maintain adequate access to facilities, consistent with RMZ objectives.

NORTH DESERT EXTENSIVE RECREATION MANAGEMENT AREA

Objective (REC-ERMA-O12)

Through the life of the plan, provide visitors with opportunities to participate in motorized OHV recreation (motorcycle, ATV, UTV, full-sized 4x4 vehicles) on a variety routes designated for different motorized uses (e.g., motorcycle, ATV/UTV, full-size vehicles) that link the desert terrain on the north side of the Grand Valley from Grand Junction and Fruita to Rabbit Valley and the Utah Rims trails and provide multiple long-distance motorized loop opportunities. The ERMA provides a recreation setting with a moderately altered natural landscape.

Manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado Hookless Cactus (*Sclerocactus glaucus*), Grand Junction buckwheat (*Eriogonum contortum*), Grand Junction suncup (*Camissonia eastwoodiae*), Dolores River skeletonplant (*Lygodesmia doloresensis*); Significant plant communities: Saline Bottomland Shrublands (*Sarcobatus vermiculatus / Suaeda moquinii* Shrubland), Western Slope Grasslands (*Achnatherum hymenoides* Shale Barren Herbaceous Vegetation), Cold Desert Shrublands (*Atriplex confertifolia / Achnetherum hymenoides* Shrubland), Gardner's Mat Saltbush Shrublands (*Atriplex gardneri / Leymus salinus* Dwarf-shrubland), Skunkbrush Riparian Shrubland (*Rhus triloblata* Shrubland); water quality (non-point source erosion/sedimentation into the Colorado River), Mancos Shale, saline soils, deer and elk winter range, pronghorn.

Manage recreation in this area to ensure a balance between protecting targeted recreation activities and settings with other resource uses. In this area, consider the following resource uses: coal leasing, mineral material sales, fluid mineral leasing and livestock grazing. In the portions of this ERMA that overlap the

ROW corridor and Solar Energy Emphasis Areas (Mitchell Road and 21 Road), manage recreation to achieve management objectives for those designations.

Allowable Use (REC-ERMA-AU48)

VRM Class: Manage the ERMA under VRM Class II, III and IV objectives (See VRM section.) The majority of the ERMA is VRM Class IV.

Management Actions and Allowable Uses (REC-ERMA-AU49)

Lands and Realty

- Designate as a ROW avoidance area with the exception of the ROW corridor that crosses the ERMA.
- Recognize and grant priority status to utility developments in the ROW corridor and Solar Energy Emphasis areas that overlap the ERMA (Mitchell Road and 21 Road). Utilize BMPs to minimize impacts to targeted recreation activities.
- With managing partners (City of Fruita, Mesa County, City of Grand Junction, private landowners), work to improve public access into and through the area. Pursue opportunities with landowners, either through purchase or exchange, for acquisition of private properties or easements within or adjacent to the ERMA that enhance public access and recreation opportunities consistent with ERMA objectives.
- Work with adjacent landowners to minimize recreation conflicts and/or trespass on private property.

Allowable Use (REC-ERMA-AU50)

Camping restrictions

- Allow camping and campfires in the ERMA where it does not interfere with targeted OHV recreation opportunities, and is compatible with the management of other resources and resource uses.
- Close the 18 Road Open OHV area to overnight camping.
- Allow collection of only dead and down wood for campfires.

Action (REC-ERMA-A20)

Camping Management: If monitoring indicates unacceptable impacts from camping and campfires, implement progressive measures to mitigate those impacts. Mitigation measures may include, but are not limited to: requiring the use of firepans and portable toilet systems; prohibiting firewood collection; limiting portions of the ERMA to designated campsites only; closing portions of the ERMA to camping and campfires.)

Allowable Use (REC-ERMA-AU51)

Firearm use restrictions: Close the 18 Road OHV Open area to recreational target shooting for the safety of OHV recreationists in this intensively used portion of the ERMA.

Allowable Use (REC-ERMA-AU52)

Special Recreation Permits

- Issue Class I – IV Competitive Special Recreation Permits that achieve ERMA objectives.
- Only issue vending SRPs in conjunction with Competitive Event SRPs.
- Do not issue vending SRPs for alcohol sales in the ERMA.

Allowable Use (REC-ERMA-AU53)

Comprehensive Trails and Travel Management:

- Limit motorized and mechanized travel to designated routes.

Action (REC-ERMA-A21)

Comprehensive Trails and Travel Management

- Work with stakeholders/partners to plan, develop and maintain a route system that helps achieve ERMA objectives while mitigating impacts to the area's sensitive resources and resource uses (listed in the ERMA objective above). This includes identifying appropriate existing routes, repairing or rerouting unsustainable routes, constructing connecting routes, and closing redundant routes.

Allowable Use (REC-ERMA-AU54)

Comprehensive Trails and Travel Management

- Designate the 18 Road Open OHV area (330 acres)

Action (REC-ERMA-A22)

Comprehensive Trails and Travel Management

- Ensure route connectivity between the ERMA and the Rabbit Valley area of McInnis Canyons National Conservation Area and the Utah Rims SRMA in Utah.

Action (REC-ERMA-A23)

Comprehensive Trails and Travel Management

- Ensure route connectivity between the ERMA and the Grand Valley OHV SRMA. To provide a transition zone between the high-use urban interface area directly north of Grand Junction, allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27 ¼ Road, with route density generally decreasing as the trail system extends to the northwest toward 25 Road and 21 Road (travel management Zone L.)

Action (REC-ERMA-A24)

Comprehensive Trails and Travel Management

- Identify a multi-use singletrack trail on BLM-managed lands that connects the City of Fruita to the North Fruita Desert SRMA. If monitoring indicates the need to separate uses to ensure visitor safety, construct a bicycle-only trail through the ERMA that directly connects from the City of Fruita to the North Fruita Desert SRMA.

Action (REC-ERMA-A25)

Comprehensive Trails and Travel Management

- Identify a multi-use singletrack trail on BLM-managed lands that connects Highline State Park to the North Fruita Desert SRMA. If monitoring indicates the need to separate uses to ensure visitor safety, construct a bicycle-only trail through the ERMA that directly connects from Highline State Park to the North Fruita Desert SRMA.

Action (REC-ERMA-A26)

Comprehensive Trails and Travel Management

- Work with stakeholders to create new access points and trailheads if necessary to accommodate increased use, and/or achieve ERMA objectives.
- Mark trail system route intersections with signs showing trail names, allowable uses, and difficulty ratings. Travel management designations (allowable uses) only need to be displayed at intersections where the allowable uses change from one route to another.
- Promote positive interactions between recreation users by implementing strategies that separate conflicting uses. For example, begin with visitor education, then, if necessary, progress to more intensive measures like use and timing limitations (e.g., different uses on different trails on different days, designating directional travel on

system trails, etc.), issuance of permits, law enforcement patrols, etc.

Allowable Use (REC-ERMA-AU55)

Special Recreation Permits

- Issue Class I, II and III Commercial and Organized Group SRPs that achieve ERMA objectives.

Action (REC-ERMA-A27)

Special Recreation Permits

- Develop an event staging area in the ERMA that helps achieve ERMA objectives.

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Appendix L

Special Recreation Permit Program Overview

APPENDIX L
SPECIAL RECREATION PERMIT PROGRAM OVERVIEW

The BLM will evaluate all commercial, competitive, and organized group special recreation permit (SRP) proposals on a case-by-case basis, and their approval or disapproval will be at the discretion of the authorized officer. All SRPs are considered undertakings under the National Environmental Policy Act (NEPA). Permit approval is dependent on conformance with all applicable land use planning documents and environmental review in accordance with NEPA. All existing permits will be analyzed for conformance to the Land Use Plan Revision.

In order to provide good customer service, to reduce unnecessary application submissions, and to ensure consistent consideration of permit proposals, all new SRP proposals will be evaluated using the process described below. The BLM will complete additional implementation guidance for activities in the GJFO, and this will provide applicants with specific information including but not limited to application deadlines, timelines for processing, application package requirements, fees, use reporting, and penalties.

1. PERMIT PROCESS

Pre-Application Consultation

The BLM will use a pre-application consultation to determine whether an SRP is required and allowed, and if so, what type of permit is required. Proposals will be evaluated to determine whether they are consistent with recreation objectives; whether the opportunity is already available under an existing permit; whether there is adequate market competition; and whether the event would create conflict with the public and/or other existing permitted activities; among other factors. Additionally, during the pre-application consultation, permit proposals will be classified using the classification criteria described below. Once a class determination is made and the type of permit (competitive,

organized, or commercial) is established, the following guidelines and administration practices will apply:

1. **Commercial Administration**: If a proposed activity conforms to the BLM's land use planning decisions, will not exceed the carrying capacity of the proposed area, and is within the deadlines described in the GJFO permit policy, the applicant will be asked to fulfill all the required SRP application package requirements and pay applicable fees.
2. **Competitive Event Administration**: If a proposed activity conforms to the BLM's land use planning decisions and is submitted at least 180 days prior to the event date, the applicant will be asked to fulfill all the required SRP application package requirements and pay applicable fees.
3. **Vending**: If a proposed activity conforms to the BLM's land use planning decisions, will be held in conjunction with a competitive event sponsored by an organized group, and the proposal is submitted at least 180 days prior to the event date, the applicant will be asked to fill out the required paperwork and pay applicable fees.
4. **Organized Group Permit Administration**: Organized group/event permits are for group outdoor recreational activities or events that are neither commercial nor competitive. The authorized officer determines when a permit is required on the basis of planning decisions, resource concerns, user conflicts, public health and safety, and/or the need for monitoring.

Organized groups above the group size limit of 12* in the WSAs and lands with wilderness characteristics or above 25 in the remaining GJFO at a single location for more than two hours are required to contact the BLM prior to their event to determine whether an SRP is required. After reviewing the activity and location with the organizers, the BLM will determine whether or not a permit is required (see Section 1.3, Matrix for Determining Need for Organized Group SRP). If a permit is not required, the BLM may document this determination in the form of a *Letter of Agreement.*

General Permit Administration

All permit administration will be done in accordance with National Environmental Policy Act (NEPA), BLM Manual: H-2930-1-Recreation Permit Administration, BLM Colorado State SRP Handbook, and all associated BLM SRP instruction memoranda (IMs) and information bulletins (IBs).

2. APPLICATION EVALUATION

The authorized officer will evaluate the application using the permit application review criteria listed below. The criteria include specific objectives identified in

the land use plan for recreation management areas. The issuance or denial of SRPs will be made in accordance with these criteria:

Permit Application Review Criteria

Permit proposals described in business and operating plans will be evaluated using the following criteria. These criteria establish an objective framework for the evaluation of SRP applications. The authorized officer will use any or all of the criteria to approve or deny a permit (subject to potential modifications):

1. **Compliance History**: Applicant must be in compliance, and have a history of compliance, with local, State and Federal regulations. Applicant or authorized representatives must not have been convicted of a Federal, State, or local violation in connection with the proposed activities within the last three years.
2. **Safety and Safety History**: Applicant must demonstrate that they have a history of providing an acceptable level of safety for clients and the affected public.
3. **Consistency with Land Use Planning documents**: Proposals will be evaluated for consistency with current planning documents, including but not limited to the most current revision of the GJFO resource management plan and other applicable implementation plans. All activities in the wilderness study areas must be consistent with BLM Manual 6330, Management of Wilderness Study Areas.
4. **Conflicts:** Permits will not be issued in areas where conflicts exist between permittees or between permittees and the public or landowners. Valid conflicts include but are not limited to the following:
    - Overlapping use areas where the same type of use is currently permitted
    - Conflicts with livestock grazing
    - Limited public land ownership and/or related access
    - Camps; location, number, and distance between camps
    - Types of activities permitted
    - Overcrowding and/or use levels during specific time periods, supporting infrastructure at capacity
    - Enforcement/compliance problems
    - Improper conduct by permittee or employees
    - Unacceptable resource impacts
5. **Diversity of Services**: Applicants must demonstrate that their activity will enhance the diversity of recreational opportunities available for visitors and that the services are needed by the public.

6. **Low Percentage of BLM Public Lands:** Applications may be refused where public lands comprise a low percentage of the total area and recreational management goals are already being met.
7. **Adjoining Lands and Joint Permits:** Preference will not be given to applicants who own or lease private land adjacent to BLM public lands. Preference will not be given to permittees that have a joint permit issued by another land management agency.

These criteria are a means to analyze applications and offset potential problems. Many complex issues are best addressed through an ongoing dialogue between the permittees and the BLM.

If the proposal meets the application review criteria, the appropriate NEPA document will be completed. Permits may be denied as a result of issues identified during the NEPA process. Any stipulations identified during the NEPA process will be included on approved permits.

3. MATRIX FOR DETERMINING NEED FOR AN ORGANIZED GROUP SRP

Organized Group SRPs are for group outdoor recreational activities or events that are neither commercial nor competitive. The authorized officer determines when a permit is required on the basis of planning decisions, resource concerns, user conflicts, public health and safety, and/or the need for monitoring. This matrix is to guide a decision process to determine whether a SRP is needed. When determining if an SRP is needed, first determine if the activity is recreational. If it is not recreational, it may need a lands permit. Second, determine if the proposal is consistent with recreation program goals and objectives. If the proposal is not consistent with recreation program goals and objectives, the proposal should be denied. If the proposal is recreational and it is consistent with recreation program goals and objectives, consider the criteria in the matrix to help determine if a permit is needed. If a permit is not needed, consider using a Letter of Agreement to document that if the outing is conducted as proposed, a permit is not needed.

Criteria	Decision Guidance		
	Permit Not Required	**Permit Required**	**Deny as proposed**
Is the use appropriate to the site? Is there a management concern for cultural or natural resources or facilities on public land?	Yes; site very conducive to the proposed use; provided for in planning.	Site is appropriate for group size and activity; not specifically provided for in plan.	No; site is not appropriate for use as proposed; does not conform with recreation planning goals; violates ROS class or experience prescriptions.
Is monitoring needed?	Nothing beyond one simple site visit.	Monitoring beyond a one-time site visit is required.	Long term monitoring of one or more resources is required.
Are there any health and safety concerns?	None	The health and safety of event participants	Unmitigated, high risk to human health and safety;

Criteria	Decision Guidance		
	Permit Not Required	**Permit Required**	**Deny as proposed**
		or other public land users may be jeopardized.	unreasonable risk, especially to non-participants.
Is bonding desirable to cover reclamation or damage to government property or resources?	No	Bonding is desirable or required.	
Is insurance desirable to protect the U.S. Government from claims by group participants or third parties?	No, liability exposure is negligible.	Insurance is desirable due to possible claims for personal injury or property damage.	
Are special services required, such as law enforcement, fire protection, exclusive use of public lands, reserved sites, etc?	No	Yes	

4. DETERMINING PERMIT CLASSIFICATION

The purpose of classifying SRPs is to screen proposals to ensure they are consistent with and support planning objectives.

All permit proposals will be evaluated using the classification criteria in Table I.1 and will be assigned to one of the classes in the classification matrix (Table I.2). The classification criteria table includes factors to determine the potential impacts to resources as a result of the proposed activities. Each factor is evaluated as either present or not present or along a continuum ranging from low to moderate or high for each resource.

After permit proposals have been evaluated using the classification criteria table, the results will be applied to the classification matrix to determine whether the proposal is either Class I (low impact), Class II (medium impact), Class III (moderate impact), or Class IV (high impact). Different proposed activities and outings will have different impacts to the various resources. Not all proposed activities will clearly be classified as I, II, III, or IV. In many situations, there will be one or two resources where impacts are higher than impacts to the other resources. In these cases, the BLM may deny the application, require modification to the proposal, or mitigate the resource concern through permit stipulations.

Table. Permit Classification Criteria

Resource		Anticipated Impact	Description of Impact
Wildlife	**Visual**	No	Artificial lighting system will not be used or will be less than 1000 candle power.
		Yes	Artificial lighting system will be 1000 candle power or greater.
	Audio	No	A loudspeaker or other broadcasting device will not be used.
		Yes	A loudspeaker or other broadcasting device will be used.
Water Quality		No	Proposed activity will not fall within a water quality impaired stream segment or won't affect stream.
		Yes	Proposed activity will fall within a water quality impaired stream segment, and the activity would affect the stream.
Cultural Sensitivity Zones		Low	Proposed activity will be within area classified as low in the Class 1 cultural survey.
		Moderate	Proposed activity will be within area classified as medium in the Class 1 cultural survey.
		High	Proposed activity will be within area classified as high in the Class 1 cultural survey.
Paleontological		Low	Surface geology consists of PFYC Class 1-3 formations.
		Moderate	Surface geology consists of PFYC Class 4-5 formations.
		High	Known vertebrate fossil site(s) can be seen.
Soils/Vegetation		Low	Site and associated features demonstrate resilience and resistance to anticipated activity or are sufficiently disturbed that they would not be affected.
		Moderate	Site and associated features demonstrate some ability to resist/recover from impacts.
		High	Site and associated features demonstrate limited ability to resist/recover from impacts.
Desert Shrub/Saltbush Vegetation Type		Low	Proposed activity will be outside of desert shrub/saltbush community.
		Moderate	Proposed activity will be within desert shrub/saltbush community but outside intact desert shrub/saltbush vegetation.
		High	Proposed activity will be within intact desert shrub/saltbush vegetation.
Riparian Vegetation, Perennial Waters, Seeps and Springs		Low	Proposed activity will be more than 100 meters from the edge of riparian vegetation and wetlands.
		Moderate	Proposed activity will include use within 100 meters of riparian vegetation on designated trails that cross riparian vegetation or camping at designated campsites.
		High	Proposed activity will include use within riparian vegetation off designated trails or outside designated campsites.

Resource	Anticipated Impact	Description of Impact
Bighorn Sheep	Low	Proposed activity will be outside bighorn sheep production and summer concentration areas.
	Moderate	Proposed activity will be outside bighorn sheep production areas and within summer concentration areas.
	High	Proposed activity will be within bighorn sheep production areas.
Special Status Species (Colorado Hookless Cactus, Special Status Raptors, Kit Fox, Bats, Prairie Dogs, Gunnison Sage-Grouse, DeBeque phacelia and Parachute penstemon)	Low	Proposed activity will be greater than 200 meters from sensitive species.
	Moderate	Proposed activity will be greater than 100 meters from sensitive species.
	High	Proposed activity will be less than 100 meters from sensitive species.
Timing for Wildlife	Low	Proposed activity will not occur between November 1 and April 30 or between May 15 and July 15.
	Moderate	Proposed activity will occur between November 1 and April 30 or between May 15 and July 15 and will not affect wildlife.
	High	Proposed activity will occur between November 1 and April 30 or between May 15 and July 15 and will affect wildlife.
Within Existing Disturbance (Designated Routes, Staging Areas, Designated Campsites, etc.)	Low	< 5 acres
	Moderate	5 to 40 acres
	High	> 40 acres
Duration of Use	Low	One day or less
	Moderate	Two to six days
	High	> Six days
Anticipated Number of Participants	Low	< 12
	Moderate	13-25
	High	25+
Anticipated Number of Vehicles	Low	1-6
	Moderate	6-10
	High	10+
Competitive Event	Yes	The event or activity will be competitive in nature.
	No	The event or activity will be noncompetitive.
Motorized/Mechanized Support	Yes	Vehicles or other mechanized equipment will be required to support activity.
	No	No vehicles or other mechanized equipment will be required.

Resource	Anticipated Impact	Description of Impact
BLM Monitoring and Inspection Requirements	Low	No significant pre- or post-permit oversight activities will be required
	Moderate	Pre- or post-permit activities will require up to eight hours of BLM oversight.
	High	Pre- or post-permit activities will require more than eight hours of BLM oversight.

Table. Permit Classification Matrix
Evaluation Factors

	Permit Class			
	I	**II**	**III***	**IV***
Wildlife (Visual)	No	Yes	Yes	Yes
Wildlife (Audio)	No	Yes	Yes	Yes
Water Quality	No	Yes	Yes	Yes
Cultural	Low	Moderate	Moderate	High
Paleontological	Low	Moderate	Moderate	High
Soils/Vegetation	Low	Moderate	Moderate	High
Desert Shrub/Saltbush Vegetation	Low	Moderate	Moderate	High
Riparian Vegetation	Low	Moderate	Moderate	High
Bighorn Sheep	Low	Moderate	Moderate	High
Sensitive Species	Low	Moderate	Moderate	High
Timing for Wildlife	Low	Moderate	Moderate	High
Within Existing Disturbance	Low	Low	Moderate	High
Duration of Use	Low	Moderate	Moderate	High
Anticipated Number of Participants	Low	Moderate	Moderate	High
Anticipated Number of Vehicles	Low	Low	Moderate	High
Competitive Event	No	No	Yes	Yes
Motorized Support	No	No	Yes	Yes
Monitoring and Inspection Requirements	Low	Low	Moderate	High

**Class III and IV events are more likely to require cost recovery, because these events will probably need more than 50 hours of BLM staff time for permit administration.*

Appendix M

Travel Management Plan

United States Department of the Interior
Bureau of Land Management

Grand Junction Field Office
Travel Management Plan

Grand Junction Field Office
2815 H Road
Grand Junction, Colorado 81506

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
ATV	all-terrain vehicle
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
GJFO	Grand Junction Field Office
NEPA	National Environmental Policy Act
OHV	off-highway vehicle
RMP	Resource Management Plan
RMZ	Recreation Management Zone
ROD	Record of Decision
SHPO	State Historic Preservation Office
SRMA	Special Recreation Management Area
TMP	Travel Management Plan
WEPP	Water Erosion Prediction Program

1. Introduction

Travel management is the process of identifying the system of roads, primitive roads, and trails that are designated/authorized for continual use. These roads and trails will provide for various access needs and uses of the public lands, from recreation to oil and gas and livestock management operations, into the future. When completed, the travel management plan becomes the approved system of roads and trails that the BLM commits to maintaining into the future. New routes will be added as needed to accommodate use and provide for recreation opportunities. The approved travel network will continue to evolve and change over time.

During travel management planning, the BLM considers the needs and desires for the public to get to various destinations and locations on the public lands, while also considering the ways that roads and trails affect or "impact" the sensitive resources that must be protected under various natural resources law that also guide the decisions of the BLM under the concepts of multiple use and sustained yield and many other environmental laws.

Due to the sometimes competing needs for use and protection of the public lands, and given that the current roads and trail system developed over time, travel management planning fulfills dual purposes. The general goal is to identify those existing routes that should become part of the long-term system of approved roads and trails because they access a needed or valuable destination or experience, while not causing unacceptable impacts to another feature. In addition to creating a commitment to future access, travel management plans also function as restoration plans, in that they remove from the permanent system those roads and trails that have developed over time and, through improper placement or design, are causing unacceptable impacts to other features or natural resources. Once this initial weighing is done of what should remain open and what must be closed, new routes can be added over time, with the kind of proper design that protects other resources while still ensuring that the route system as a whole functions for its intended uses.

This Travel Management Plan (TMP) supplements travel management land use allocations and planning decisions to be made in the Grand Junction Field Office (GJFO) Record of Decision (ROD) and Approved Resource Management Plan (RMP). Decisions and implementation actions not made in the RMP will be addressed in this TMP and the subsequent, associated ROD. This document will set forth a plan to manage GJFO's designated system of roads, primitive roads and trails, access and uses. Specifically, the TMP summarizes the proposed area designations outlined in the PRMP, followed by an outline of the criteria used for designation of routes across the field office, outlines the implementation-level route designations, and explains the implementation process and standard operating procedures (including the zone-specific guidance for Zone L). Attachments provide additional plans on signing, educational efforts, rehabilitation, and engineering of the established travel network.

The project area for the GJFO TMP includes approximately 1.06 million acres of public lands administered by the GJFO, Northwest District Office of the Bureau of Land Management. Travel management is the process of planning for and managing access and travel systems on public lands. The Grand Junction Field Office (GJFO) Travel

Management Plan (TMP) is written in conformance with the *Grand Junction Field Office Proposed Resource Management Plan* (PRMP).

The GJFO TMP is based upon extensive public participation and workshops, as well as structured interdisciplinary team analysis. The BLM recognizes the importance of access for public visitation, scientific studies, and administrative uses, while providing for the protection of natural and cultural resources. The evaluation process incorporated the four minimization criteria set forth by 43 Code of Federal Regulations (CFR) 8342.1 (a-d), as well as additional planning criteria established in the GJFO RMP, and created a designated route system consistent with land use allocations.

Outcomes-based recreation management, the approach adopted by the GJFO, is a recreation management philosophy that focuses on the positive and beneficial outcomes derived from recreational activities, rather than emphasizing the recreation activities themselves. It promotes quality recreation experiences from the visitors' or users' perspectives. Outcomes-based provides the conceptual recreation framework to view, plan, and collaboratively deliver recreation services as a means to a larger end – an end in which outcomes benefit individuals, communities, economies, and the environment. By conducting outcomes-based analysis, recreational settings can be better delineated and managed. In outcomes-based analysis, priority is given to resource dependent recreation. Resource dependent recreation is that which can only be done where the natural resource or setting exists. An example is running for fitness versus nature hiking. Fitness running can be done on a treadmill or anywhere a suitable surface exists. Nature hiking requires a natural setting and things to observe along the way. Hiking would not be suitable indoors or in unnatural settings, thus it is a resource dependent recreation.

Approved transportation routes identified for recreation purposes will include opportunities and quality experiences for all user groups, including hikers, backpackers, equestrians, bicycles, ATVs, four-wheel-drive vehicles, motorcycles, backcountry aircraft pilots, hunters, and fishers. However, one should not interpret that all users will be accommodated in all areas.

1.1 Background

Approximately 42 percent of the planning area is currently designated as open to cross-country off-highway vehicle (OHV) use, 44 percent is limited to existing or designated roads and trails, 11 percent has seasonal limitations, and three percent is closed to OHV use.

Areas with designated routes typically do not contain trails built with consideration for sustainability, resource concerns or conditions, or recreation experiences. Most routes either follow historic routes, such as those for grazing, mining, or administrative access, or they were user created. In either case, the trails do not always provide desirable recreation experiences and have unmitigated impacts to natural or cultural resources.

Travel management historically focused specifically on motor vehicle use. A shift in the accepted paradigm has caused the BLM to develop a more comprehensive travel management process which encompasses all forms of transportation, including travel by foot, horseback, and mechanized vehicles such as bicycles, as well as the numerous forms

of motorized vehicles from two-wheeled (motorcycles) and four-wheeled all-terrain vehicles (ATVs) to cars and trucks.

Many routes within the GJFO were constructed to create access to public land improvements, timber and vegetation management projects, gas and mineral development, range management, and various ROWs. Of these routes, many were not necessarily intended to be left behind or open for recreational use, but have become popular routes for visitors engaged in mechanized and motorized recreation activities. Some routes were created or pioneered by visitors. Open travel designations that permit cross-country mechanized and motorized use, high levels of use, and improvements in mechanized and motorized vehicle technology have allowed public land users to gain access to and through more terrain. These routes are not typically maintained by the BLM; rather, it is the repeated passage of vehicles that maintains these routes. Not designed, but created, these routes are often rutted and eroded.

1.2 Laws, Regulations, Policies and Program Guidance

The process of considering and providing appropriate access is guided by a complex series of more than fifteen major individual laws, as well as additional regulations and policies defining the type of access and recreational experiences that should be provided while protecting the sensitive resources (e.g., fish, wildlife, plants, and archaeology) that the federal government is also required to protect and conserve on the public lands. The trade-offs required by these individual laws are not always straightforward or linear, and in some cases, they may even conflict. The process of finding this balance, between present-day use and enjoyment and conservation for future generations, is known as multiple use management, and is one of the defining factors of the BLM's mission.

Currently, the Code of Federal Regulations (CFR) establishes the criteria for designating public lands with respect to OHVs and for establishing controls governing the use and operation of OHVs. Non-motorized and non-mechanized uses have been addressed in this planning effort, and decisions made will be incorporated into supplemental rules for enforcement purposes.

Laws and regulations that influence or direct travel management planning include:

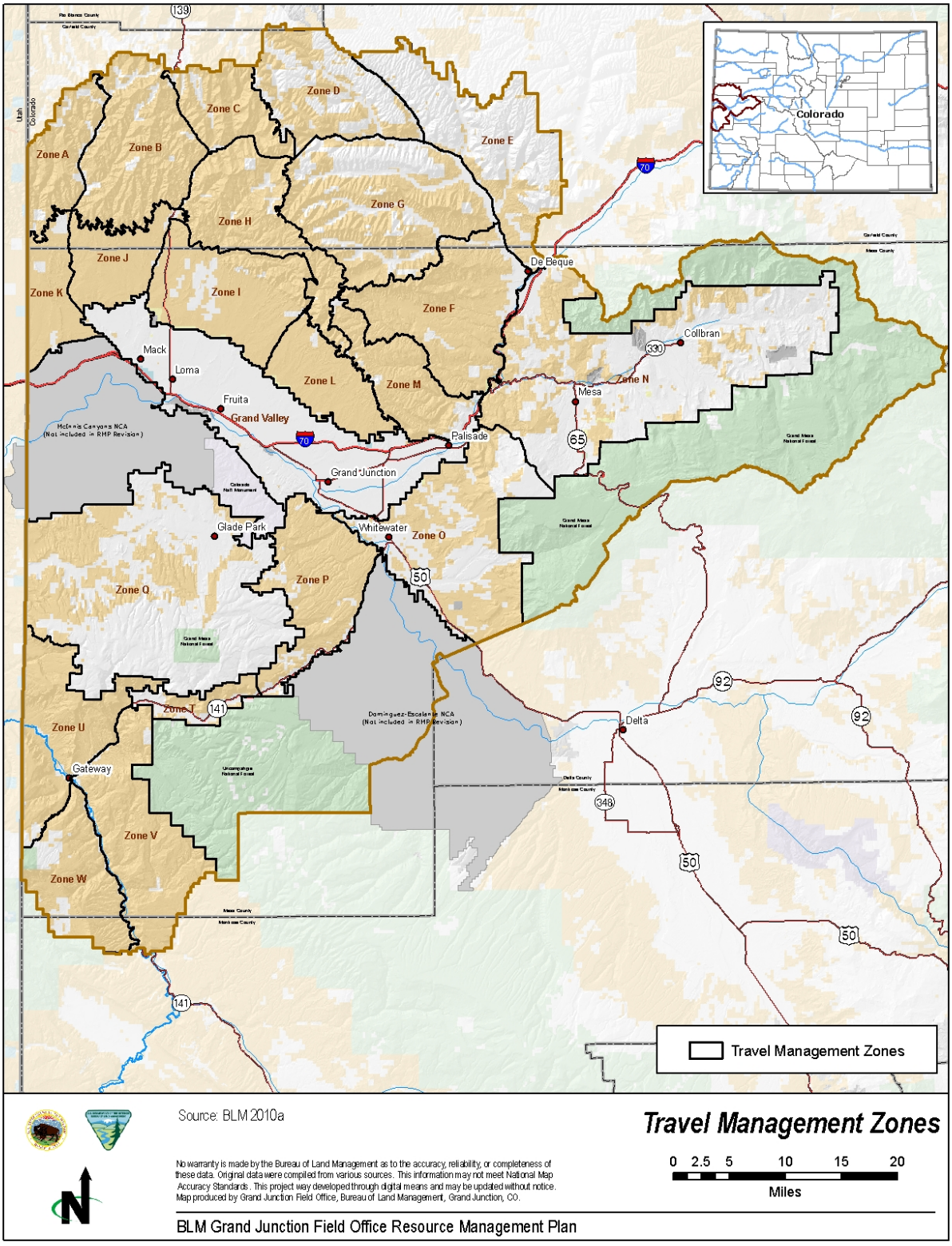
- National Environmental Policy Act (NEPA)
- Endangered Species Act (ESA)
- Wilderness Act
- National Historic Preservation Act
- Antiquities Act of 1906, including Monument Proclamations
- Wild and Scenic Rivers Act
- Clean Air Act
- Clean Water Act
- Taylor Grazing Act
- Mining Act of 1872 (and subsequent mining acts)
- Federal Land Policy and Management Act (FLPMA) BLM
- Code of Federal Regulations (CFR)

Management of OHV use and mountain biking will be consistent with the guidance in BLM's National Strategy for Motorized Off-Highway Vehicle Use on Public Lands

(USDI-BLM 2001) and the National Mountain Bicycling Strategic Action Plan (USDI-BLM 2002).

The National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands (Strategy), finalized by the Bureau of Land Management (BLM) in January 2001, was the first step in developing a proactive approach to determine and implement better on-the-ground management solutions designed to conserve soil, wildlife, water quality, native vegetation, air quality, heritage resources, and other resources, while providing for appropriate recreational opportunities. It provides agency guidance and offers recommendations for future actions to improve motorized vehicle management. This priority was re-emphasized by the BLM's M-1626 Travel and Transportation Manual and H-8342 Travel and Transportation Handbook, BLM's Priorities for Recreation and Visitor Services (Purple Book), and Colorado's Recreation and Visitor Services Strategy. The Colorado State Director has given specific policy direction found in Instruction Memorandum No. CO-2007-020, which explicitly directs BLM Colorado to accomplish comprehensive travel planning.

As identified in BLM Colorado's Recreation and Visitor Services Strategy, comprehensive travel planning is integral to maintaining and managing the character of recreation settings. Travel management decisions support the fulfillment of planning objectives (which include desired recreation setting objectives) to protect and/or enhance landscape character. This is facilitated by working closely with communities, sister agencies, interest groups, and interested individuals to balance protecting the health of the land with providing needed and desired levels of public and administrative travel and access.



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Travel Management Zones

0 2.5 5 10 15 20
Miles

BLM Grand Junction Field Office Resource Management Plan

2 Travel Management Planning Process

2.1 Overview

Travel management issues are considered sequentially at three levels:

- Land Use Planning – GJFO PRMP
- Activity or Implementation Level Plans – GJFO TMP
- Plan Implementation – Project Plans and on-the-ground actions

FLPMA requires that the BLM "develop, maintain, and, when appropriate, revise land use plans" (43 United States Code 1712 (a)). BLM has deemed it necessary to revise the existing RMP for the GJFO based on a number of new issues that have arisen since preparation of the initial RMP in 1987.

This document addresses the designation criteria, planning criteria, data collection, and route designation process by which the GJFO Interdisciplinary (ID) Team developed the Final Resource Management Plan/Final Environmental Impact Statement (Approved RMP/FEIS) route designations for motorized, mechanized, and non-motorized uses for the Planning Area, including those related to the following management decisions:

- **Land Use Planning Decisions --** The land use planning decisions of the Travel Plan define the areas within the GJFO that are designated as "Open," "Limited," or "Closed" to various modes of travel; as well as the number of miles of designated routes under the Limited category.
- **Implementation Decisions --** Implementation decisions of the Travel Plan that are included in this document include the designations of routes within areas delineated as Limited to Designated Roads and Trails.

For Zone L, an area designation will be completed in the future to determine appropriate use after analyzing the distinct natural, cultural, recreational, and social factors of the area.

2.2 Inventory

GJFO initiated the travel management planning process in 2004, beginning with a route inventory that ended in 2010. This inventory provided the foundation and baseline for the TMP.

Inventory procedures were designed to collect information necessary for planning and management of the area. The inventory documented and mapped routes, route conditions, facilities, improvements, and public use areas accessed by the routes (range and wildlife improvements, recreation activity areas, gates, fences, trailheads, and other features). The inventory was conducted by BLM personnel on motorcycles, bicycles and foot. The inventory staff took steps to capture every linear feature that could be seen on the ground in the GJFO. This included features that were engineered (planned), as well as unplanned single-track and two-track linear features that are not part of the BLM's transportation network. In some areas the inventory also captured linear disturbances such as created during uranium exploration or construction of a pipeline, which were never intended to function as roads. Inventory procedures were designed to collect information necessary for planning and management of the area. Open areas, or areas that had an extremely high

density of routes, were screen digitized, field verified, and, in the North Desert, sampling was used to determine accuracy of route data and estimate mileage of routes.

The travel management inventory identified roughly 4,000 miles of roads, trails, and other features within the planning area, covering 1.06 million acres. In order to effectively communicate with the public, cooperating agencies, partners, user groups, and resource specialists and to track decisions, the planning area was broken into 19 zones, labeled A to W (see figure on preceding page). Each route was broken into segments (defined by intersections) and given a unique number that correlated with its zone (e.g., A102).

2.3 Public and Cooperator Participation

The GJFO Travel Plan is based upon extensive public and cooperating agency participation, including workshops and multiple comment periods.

2.3.1 RMP Scoping

The formal public scoping process for the GJFO RMP/EIS and TMP began on October 15, 2008, with the publication of a Notice of Intent in the Federal Register. Public scoping ended January 9, 2009. Public outreach during this scoping period included: 1) a newsletter mailed to over 600 agency contacts, organizations, and members of the public; 2) three scoping open houses in December 2008 (Grand Junction and Collbran, Colorado, and Moab, Utah); and 3) a public website, http://www.blm.gov/co/st/en/fo/gjfo/rmp, which provides access to materials distributed at scoping meetings as well as information on the public involvement process.

A total of 64 comment letters received during the scoping period addressed travel management. Most of the planning issue comments focused on travel management (23.7 percent), which were consolidated into one issue statement.

"How will motorized, non-motorized, and mechanized travel be managed to provide commodity, amenity, and recreation opportunities, reduce user conflicts, enforce route designations and closures, reduce fragmentation and habitat degradation, and protect natural and cultural resources?"

2.3.2 Travel Management Comment Period 1

GJFO hosted a series of "travel management data collection workshops" in February 2009 to give the public the opportunity to review its route inventory for completeness and accuracy, as well as offer suggestions for possible reroutes or new routes that would complement the existing system. The workshops were held in Delta, De Beque, Collbran, Gateway, Fruita, and Grand Junction, with over 200 participants. A total of 118 written comments were received during this comment period.

2.3.3 Travel Management Comment Period 2

GJFO identified the need and interest from public comments additionally in 2009 not only on the completeness and accuracy of the inventory but also to help evaluate the quantity and quality of the experiences and desired recreation setting available in the planning area. The GJFO received 178 written comments during this comment period. Viewpoints expressed in the comments reflected a wide spectrum of desires regarding desired levels of access.

2.3.4 Coordination with Partners, Cooperating Agencies, and Resource Advisory Council (Sub-group)

During the data collection and inventory phase of the planning process, BLM staff met with offices of the US Forest Service and BLM with contiguous acreage, with county and municipalities within the planning area, and Colorado Department of Wildlife and US Fish and Wildlife Service to verify the inventory data and collect additional information on resource concerns and access needs.

Throughout the process, GJFO staff made presentations at local user group meetings and to the Cooperating Agencies and Resource Advisory Council (Sub-group) on the defining law, policy, goals, and objectives associated with travel management and the process to be used in designating the travel management network.

During the route by route selection by alternative, the cooperating agencies were invited to participate in providing information to the resource specialists to aid in the alternative development. A complete list of attendees by date and area discussed is included as TMP Attachment 4.

2.3.5 Response to Travel Management Comments

Throughout the planning process, BLM has received thousands of comments which have been recorded and incorporated into the planning criteria that informed decisions for each alternative including the preferred. During the draft comment phase, GJFO received roughly 1,500 comments that were route specific. Each comment is captured in a travel related comment report that provides rational for decision making and compares the request of the commenter with the final decision. The BLM considered each comment received in the framework of its association with the GJFO route segment(s) or area(s) it addressed.

3 RMP Level Decisions

3.1 Area Designations

3.1.1 Open

Open areas are areas where cross-country motorized and mechanized travel is allowed. They are limited to a size that can be effectively managed and geographically identifiable to offer a quality, safe, and varied experience for participants. Open areas provide a different type of recreational experience as compared to trail riding, by giving the rider an opportunity to choose terrain that will challenge his or her skills and equipment. Open areas will be fenced or boundaries clearly signed, closed to shooting, and have parking and information portals. The size and number of open area(s) vary across the different alternatives.

3.1.2 Limited

“Limited to designated routes” is the primary allocation for motorized and mechanized use in the planning area. All areas outside of the open and closed polygons by alternative are limited. Limitations include modes of travel, seasons of use, and types of user.

Generally, horse and foot travel is not limited to designated routes. Certain areas with high use, sensitive resources, or potential negative interactions with other users require that foot and horse travel is limited to designated routes or, in some alternatives, excluded all together.

3.1.3 Seasonal Limitations

Five seasonal limitations for motorized and mechanized travel are proposed within certain areas limited to designated routes.

Wildlife limitation dates were recommended by Colorado Parks and Wildlife and are being incorporated into travel management planning throughout BLM Colorado, where appropriate. These limitations that include Winter Limitation (Big Game), Spring Limitation 1 (Sage Grouse), and Spring Limitation 3 (Elk Calving) were established to avoid critical periods for sensitive species. Open Rifle Hunting Season Limitation would be provided through easement agreements coordinated by CPW. Spring Limitation 2 for soils would take place during spring months when saturated soil conditions are most predictable (typically associated with spring melt-out) and targets soil mapping units particularly vulnerable to erosion. Spring melt-out typically occurs from the beginning of March through the middle of May in the GJFO planning area.

3.1.4 Closed

This designation closes an area to any and all travel, non-motorized and non-mechanized included. Areas are designated closed if closure to all types of transportation is necessary to protect resources, promote visitor safety, or reduce use negative interactions. These areas vary by alternative and include WSAs, ACECs, LWWCs, WSR segments, Critical Habitat and Research Areas, Wildlife Core Areas, and Municipal Watersheds.

4 Implementation Level Decisions – Route Designation

Implementation level decisions include the process of assigning route designations to each route within the limited polygons, in accordance with alternative themes, while balancing access and resource concerns. Route designation is an implementation level decision governed by the higher level RMP. Implementation decisions are subject to appeal. The range of alternatives developed in the route designation process for this TMP mirror the goals and objectives of each of the alternatives developed in the RMP revision. Future adjustments to the designated route network would be accomplished through plan maintenance (minor adjustments) or additional NEPA review and decision-making.

4.1 Draft Travel Plan Development

GJFO Interdisciplinary Team and cooperating agency representatives convened to consider each route and evaluate the access needs, public comments, and resource concerns of each. The planning team used a structured, consistent approach to consider the significant amount of data that went into the analysis process. In addition to cooperating agency representatives, the team included representatives of the interdisciplinary team and specialists representing every major program that the BLM administers (e.g., range management, archaeology, and wildlife). These specialists are knowledgeable about local data and the laws or regulations that influence each program.

Individual specialists had access to their own datasets so they could see the results of past surveys and inventories that had been done. Together, the team projected the map of the current route system and the route being considered and used Google Earth to maintain common assumptions and knowledge about terrain and human-made features present on the landscape. Each specialist represented their particular resource. Together, the team gave specific attention and value to maintaining access to public lands, providing for quality recreation, while also protecting sensitive resources that are affected by roads and trails, working together to balance those considerations toward a travel plan that reflected RMP guidance.

4.2 Final Travel Plan Development

In developing the proposed plan for the FEIS, GJFO Interdisciplinary Team and cooperating agencies convened for seven additional weeks to consider each route in the Proposed Alternative again in light of public comment. This resulted in measurable changes from the original Alternative B (Preferred Alternative) that appeared in the draft RMP.

In the development of the proposed BLM looked at routes that for various reasons would require some form of mitigation (bridge, reroute, public access, etc.) to allow for long term public or administrative access. These situations included issues like safety concerns from an operating well pad, no legal public access, impassable wash out or resource that needs to be avoided to name a few. In these instances, BLM is proposing mitigation measures to remedy the situation and allow for continued access. Route reports will have specific information on the issue, mitigation measure needed and any special instructions. Roughly 13% of routes have mitigation requirements that result in a change to the route designation. These routes are included below in Table 2 under the column header “Travel Designation Following Mitigation”.

4.3 Exceptions to Standard Route Designation Process

4.3.1 Recreation Management Areas with Existing Travel Plans

Within the planning area, Bangs Canyon SRMA and North Fruita Desert SRMA currently exist, and site-specific travel plans already exist for these areas. These travel decisions were not re-evaluated in this effort (Bangs Canyon SRMA and North Fruita Desert SRMA) unless:

1. new resource information was available;
2. public comment was received regarding the route; or
3. recreation staff thought it made a valuable contribution to the network.

4.3.2 Zone L – North Desert Area

Zone L (North Desert) proved to be one of the most challenging zones to consider, both for the BLM and for the public, due to its route density. Through public comment and further interdisciplinary consideration, the BLM determined that a different process was needed to make effective planning decisions for this zone.

Following completion of the rest of the TMP, the BLM will undertake a specific planning process for this area and will allow the use of existing routes within the boundary of this zone until individual routes are designated within this area. See Attachment G for additional guidance developed for route designations in Zone L.

4.3.3 Other considerations

4.3.3.1 Backcountry Airstrips

There are a number of locations throughout the GJFO that are commonly known and consistently used for aircraft landing and departure activities that, through such casual use, have evolved into backcountry airstrips (the definition contained in Section 345 of Public Law 106-914, the Interior and Related Agencies Appropriation Act of 2001). In accordance with that law, require full public notice, consultation with local and state government officials, the Federal Aviation Administration (FAA), and compliance with all applicable laws, including NEPA, when considering any closure of an aircraft landing strip.

In addition to compliance with applicable aviation regulations, backcountry airstrips will be designated and managed the same as travel routes for other forms of transportation. As such, management of backcountry airstrips would conform to all decisions, including those regarding route construction and maintenance, outlined in this travel management plan.

4.3.3.2 Dispersed Camping

Dispersed camping would be allowed in the planning area. Existing spur routes that lead to campsites would be designated and identified. No cross-country travel associated with dispersed camping is allowed outside the open areas, and dispersed camping was largely addressed in most zones. During the implementation of approved designations, some additional spur routes to potential campsites may be designated as open to accommodate use consistent with resource concerns and desired future outcomes of the recreation program.

4.4 Route Designation Evaluation Criteria

BLM established route designation criteria through scoping, internal issue development and RMP resource specific goals and objectives. For the evaluation of each route, route purpose was defined which included a study of current uses and legal or administrative agreements associated. Once route purpose was defined, each route was evaluated by the designation criteria established by 43 CFR Subpart 8342 and GJFO specific planning criteria identified in the RMP. All public comments were considered in route decisions. Attachment H provides a detailed list of resources considered in the process.

4.4.1 Designation Following Mitigation

During the structured analysis process, sensitive resources were identified requiring mitigation measures that would minimize effects to resources.

Generally, the alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures were defined and may be achieved by reroute, maintenance, additional resource surveys, remedying a safety issue or

securing public access. Some routes may change designation following the completion of prescribed mitigation. Routes with proposed designation changes are shown in Table 2.

4.5 Route Designations

The following designations were utilized in the route designation process.

- Open to all uses
- Seasonal Limitation
  - Winter Closure: December 1 – May 1
  - Spring Sage-grouse Closure: March 1 – June 30
  - Rifle Hunting Season Open: October 1 – November 30
  - Elk Calving Spring Closure: May 15 – June 15
- Limited to under 50" only
- Limited to under 50" only with winter seasonal limitation
- Limited to Foot, Horse, Bicycle and Motorcycle Only
- Limited to Foot, Horse, Bicycle and Motorcycle Only with winter seasonal limitation
- Limited to Foot, Horse and Bicycle Only
- Limited to Foot, Horse and Bicycle Only with winter seasonal limitation
- Limited to Horse Only
- Limited to Foot and Bicycle Only
- Limited to Bicycle Only
- Limited to Foot Only
- Closed and
- *Limited to Administrative and Permitted Uses Only

*Administrative routes are those that are limited to authorized users (typically motorized access). These are existing routes that lead to developments that have an administrative purpose, where the BLM or a permitted user must have access for regular maintenance or operation. These authorized developments could include such items as power lines, cabins, weather stations, communication sites, spring developments, corrals, or water troughs.- (H-8342 Travel and Transportation Handbook)

Administrative routes are managed for permitted/authorized uses only. In some cases, these routes may be open to foot and horse travel, but only in areas that are open to cross country travel for foot and horse.

4.6 Right-of-Way (ROW) and Needed Easements

Public lands authorized to be used or occupied for specific purposes pursuant to a right-of-way grant, which are in the public interest and which require ROWs over, on, under, or through such lands. Examples are roads, power-lines, pipelines, etc.
Acquisition of road or trail easements, or issuance of a right-of-way on an existing or historic physical access, would be pursued in areas where those actions would contribute to the protection and management of natural resources, such as access to range improvements/animal husbandry, and/or the enhancement of recreation opportunities. These methods of acquiring public access would only be available from willing landowners. BLM will work with partners, cooperators, landowners and other stakeholders to achieve access goals to public lands.

4.6.1 The primary areas identified as priorities for providing public access:

- De Beque area (southwest of the Town of De Beque)
- Roan Creek area (northwest of the Town of De Beque)
- ERMA and SRMAs to achieve recreation objectives
    - Bangs SRMA Clarks Bench and Tabeguache at Needem-Moore Seldom Feed Park
- Grand Mesa to Palisade Rim
- Palisade Rim to Horse Mountain
- Cheney Reservoir
- West side of North Desert ERMA to Rabbit Valley and Utah Rims SRMA

Table 2. Route Designations in Miles

Designation	Travel Plan	Travel Plan % of Total	Travel Plan Following Mitigation	Travel Plan Following Mitigation % of Total
Limited to under 50" Only	37	1%	48	1%
Limited to under 50" Only with Seasonal Limitation	7	<1%	7	<1%
Limited to Bicycle Only	1	<1%	1	<1%
County Maintained	309	8%	309	8%
Limited to Foot and Bicycle Only	6	<1%	8	<1%
Limited to Foot Only	7	<1%	7	<1%
Limited to Foot and Horse Only	47	1%	54	1%
Limited to Foot, Horse, Bicycle and Motorcycle Only	89	2%	84	2%
Limited to Foot, Horse, Bicycle and Motorcycle with Seasonal Limitation	3	<1%	3	<1%
Limited to Foot, Horse and Bicycle Only	99	2%	101	3%
Limited to Foot, Horse and Bicycle Only with Seasonal Limitation	14	<1%	14	<1%
Open to all uses	871	22%	1,004	25%
Open with a Seasonal Limitation	235	6%	237	6%
Open (in open areas)	291	7%	291	7%
Undesignated (Zone L)	545	14%	545	14%
Undesignated Deferred (Mesa County important recreation routes)	189	5%	189	5%
Limited to Administrative and Permitted Uses Only (332 miles with no public access before mitigation)	524	13%	330	8%
Closed (94 miles with no public access before mitigation)	723	18%	763	19%
Total**	**3,997**	**100.0%**	**3,995**	**100.0%**
Total Open to Non-motorized Only (sum of non-motorized categories)	174	4%	185	5%
Total Open to Motorized (sum of motorized categories and deferred)	2,576	64%	2,717	68%

*Designations were deferred on 219 miles of routes; however 30 of these miles have a designation from the 1987 RMP that remains in place until future designations are completed.

**Totals vary slightly due to rounding errors.

5 Implementation Strategy

Following approval of the proposed plan, a notice will be published in the Federal Register, in accordance with 43 CFR §8365, to establish new use restrictions needed to implement and enforce the plan.

5.1 Prioritization of Work

5.1.1 Prioritized Factors

Specific prioritization of work will be guided by the following priority factors. The highest priority would be given to areas for which all factors apply.

TABLE 3. PRIORITY FACTORS

Factor	Resource	Area
Regulatory resource concerns	Cultural	Castle Rocks Blue Creek
	T & E Plants and Wildlife	Whitewater Castle Rocks Pyramid Rocks South Shale Ridge Listed Fish including Critical habitat 1. Gunnison River 2. Colorado River 3. Greenback cutthroat trout habitat (if still listed) Gunnison Sage-Grouse 1. Critical Habitat
	Water quality and wetlands	Stream segments identified in regulation 93 Total Maximum Daily Load (TMDL) stream segments Conform with the salinity control act
	Wild Horse Area	Little Book Cliffs
RMP Areas of Priority Resource Concerns	ACECs	Pyramid Rock ACEC Indian Creek ACEC
	High recreation value and high resource concern	Bangs SRMA North Desert ERMA - 21 Road (Hunter Canyon) Barrel Springs ERMA Horse Mountain ERMA

Factor	Resource	Area
	BLM Special Status Species	Perennial Streams (cutthroat trout) North Fruita Desert (prairie dogs, antelope, burrowing owls, great basin spade foot, buckwheat) Greater Sage Grouse Occupied Habitat 1. Roan Creek Drainage (watershed) 2. Sunnyside Area
	Lands Management for Wilderness Characteristics	Bangs Canyon Maverick Unaweep
	Wildlife Emphasis Areas	Prioritize work in these areas based upon monitoring of recreational use. Prioritize work in areas with high use over areas with low use.
	Wild and Scenic Rivers	Dolores River
	Perennial streams, Riparian corridors and/or fish bearing streams	Barrel Springs Blue Creek North Mesa Creek Granite Creek Roan Creek and tributaries East Creek West Creek Dolores River Colorado River Gunnison River Kannah Creek North Fork Kannah Creek Little Dolores Cottonwood Creek and Rapid Creek
	Soils (Slump areas, fragile soils, saline soils)	Barrel Springs North Desert North Fruita Desert

Factor	Resource	Area
		Plateau Valley Area Roan Creek
Socioeconomic areas of importance	Special Recreation Management Areas (SRMAs)	Bangs North Fruita Desert Grand Valley OHV De Beque Area (unspecified) Palisade Rim
	Extensive Recreation Management Areas (ERMAs)	North Desert Gateway Barrel Springs Horse Mountain

5.2 Prioritized Actions

1. Sign the "open" route network and limit signing the "closed" route network (in priority order).
2. Develop and publish up-to-date, readily available, and easy-to-understand maps.
3. Initiate enforcement and visitor service patrols with the objective of securing funding to sustain new visitor service patrols for a period of at least two years. Additional funding will be sought through BLM channels and through partnerships to leverage grants or other available funds.
4. Pursue funding and contractual obligations for highest priority survey work.
5. Pursue funding for route and site rehabilitation.
6. Rehabilitation
    a. Areas with direct impacts to legally protected resources (federally listed plants, wildlife, fish, cultural, paleo)
        i. De Beque Area (including Castle Rock, South Shale Ridge and Pyramid Rock)
        ii. Whitewater
        iii. Riparian zones
        iv. Main road corridors
7. Install informational kiosks and signing where they would be most effective. Site these facilities where it would reach the greatest number of visitors and where it would target an audience that might be the most receptive to such facilities. For example such facilities might be most beneficial at major trailheads and campgrounds that are heavily visited by camping families and groups.
8. As enforcement efforts move into new areas, inappropriate use could migrate back to areas where it is not desired. Therefore, the enforcement strategy will need to be flexible and adaptive and may include education contacts by recreation staff and monitoring by volunteers to support the capacity of law enforcement.
9. Initiate monitoring plan.

5.3 Priorities for Site-specific Survey and Potential Analysis

5.3.1 New routes

1. New and existing routes paralleling and/or crossing stream channels supporting riparian communities. Typical survey work may include: collection of baseline morphologic data of stream channel, banks, and floodplain; site specific route information necessary to accurately input and run Water Erosion Prediction Program (WEPP) simulations, PFC evaluations and/or stream stability evaluations.

2. New/existing routes with multiple drainage crossings (specifically the ingress/regress to drainages) and/or routes which utilize dry washes as travel routes. Typical survey work may include: collection of baseline morphologic data of stream channel, banks, and floodplain; site specific route information necessary to accurately input and run WEPP simulations.

3. New/existing routes on mapped "Fragile soils". Survey data would be required to confirm existing or proposed routes are on mapped "Fragile soils".

5.3.2 Existing routes

1. Existing routes to be upgraded (widened and/or type of use changed from existing).
2. Existing routes with an expected increase in motorized use.
3. Existing routes with an expected increase in mechanized use.
4. Existing routes with an expected increase in pedestrian/ horseback use.

5.4 Funding Strategy

Operations funding for cultural surveys, land health assessments, wildlife surveys, transportation maintenance, and related costs will be determined on an ongoing project basis, and planned annually, subject to budget appropriations being available. BLM will strive to lower the costs through partnerships, in-house labor, and careful engineering.

Funds for labor, supplies and equipment will be pursued through the BLM budget process, and will be subject to appropriation of funds. Funding sources may include BLM Damaged Lands accounts, and grant monies available to non-profit groups. Funding will be pursued though Challenge Cost Share projects, an agency program that matches other funding sources, assistance agreements, or plans to leverage external contributions to the greatest extent possible. Grants from various sources will be pursued, including state, federal, and private funding sources. This may include the Federal Lands Transportation Program and Federal Land Access Program Routes for operating and maintaining roads that are for high use recreation sites and important economic generators. Appropriate agreements will need to be created.

5.5 Standard Operating Procedures

The following standard operating procedures will be implemented during all phases of plan implementation.

5.5.1 General

- A visitor access guide will be published and made available as full size hard copy maps for sale, smaller maps available for free and posted virtually on the internet.
- Appropriate NEPA analysis will be obtained prior to any ground disturbance not discussed in this plan, and impacts to cultural resources, or other resource values, that may be discovered will be mitigated or avoided.

5.5.2 Maintenance and Modifications to Route Network

- Standards and guidelines will be developed for BLM road and primitive road maintenance, new construction, or reconstruction. The standards and guidelines for primitive roads will be based on the functional requirements of the various types of recreational motorized users. BLM will not develop, endorse, or publish road or trail ratings. BLM will simply describe the physical aspects of a route or recreation site, such as those which only accommodate technical vehicles.
- Maintenance standards for each designated route will be documented and route modifications will be identified and recommended, if necessary. Maintenance will be completed only to the identified maintenance intensity level in order to support resource and public protection.

- Maintenance of routes may be done to minimize soil erosion and other resource degradation. This maintenance will be done on a case-by-case basis, depending upon annual maintenance funding.
- Maintenance procedures for physical barriers will be developed, once the number and type of barriers is determined.
- Modifications of the road network during implementation of the TMP would require project level NEPA, such as the construction of a new route involving new ground disturbance, except where new construction is necessary to avoid a cultural resource site or sensitive species.
- Minor realignments of the route network that have already been analyzed may not require additional NEPA. The term "minor realignment" refers to a change of no more than one quarter (1/4) mile of one designated route. It could include the opening of an existing, but previously "closed" route that serves the same access need as the "open" route that is to be "realigned." "Minor realignments" include the following:
- Minor realignments of a route where necessary to minimize effects on cultural resources.
- Minor realignments of a route necessary to reduce impact on sensitive species or their habitats.
- Minor realignments of a route that would substantially increase the quality of a recreational experience, while not affecting sensitive species or their habitat, or any other sensitive resource value.
- Minor realignment where valid ROWs or easements of record were not accurately identified in the route designation process.
- Minor realignments must be documented in the TMP. The reason for the alignment change shall be recorded and kept on file in the GJFO.

5.6 Lands Actions

5.6.1 Lands actions include the following:

- Improve legal access to public land, where appropriate and necessary.
- Identify needs and request funding for motorized and non-motorized access, exchanges, and acquisitions and incorporate them in the existing ranking system.

5.6.2 Easements, ROWs, and Permissive access license agreements include:

- Acquisition of road or trail easement or issuance of an ROW on an existing or historic physical access will be pursued only in areas where those actions will contribute to the protection of natural resources and not for the sole enhancement of recreation opportunity.
- Easements may be acquired through donation following the procedures set forth in BLM Manual 2100 - Acquisition.

5.7 Mitigation Measures

Best management practices such as, but not limited to, closures, relocations, drainage improvements, maintenance, hardening, change in motorized/non-motorized use, seeding, etc. shall be promptly implemented when monitoring or field reviews indicate such action is appropriate.

5.7.1 Soils and Hydrology

a. Stream Crossings/Drainage Issues:

i. Improve drainage crossings by constructing bridges, installing culverts, or improving low-water crossings where necessary to minimize impacts to water resources. Utilize BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design) for guidance on placement, design (sizing), and construction of bridges, culverts, and low-water crossings.

ii. Follow guidance outlined in BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design) to address road drainage issues outside of stream crossings (e.g., installation and spacing of water bars and drain dips).

iii. Where possible, reduce the number of drainage crossings on a given route.

iv. Stream crossings should be designed to accommodate passage for aquatic species.

v. Limit expansion of road/trail prism at drainage crossings by controlling ingress and regress points. Use physical barriers where use would be practical to protect the resource and safe for users.

vi. Re-locate stream crossings if necessary to minimize impacts to water quality and stream channel morphology.

vii. Utilize all other appropriate standard operating procedures and best management practices (and others as approved) outlined in Appendix H of the GJFO-RMP/FEIS to protect soil and water resources.

b. Route Placement and Evaluation:

i. Ensure use route designations, road type and maintenance levels are appropriate for the use. Follow guidance from BLM manual handbooks 9113 (Roads Design) and 9115 (Primitive Roads Design).

ii. Use BLM-GJFO Trail Design Criteria along with BLM Manual handbooks 9113-2 (Roads National Inventory & Condition Assessment Guidance & Instructions) and 9115-2 (Primitive Roads National Inventory & Condition Assessment Guidance & Instructions) to evaluate road conditions for maintenance and mitigation.

c. Consider construction of flood-water retention basins and/or sediment retention basins within and downstream of Open areas, intensive motorized use areas, areas identified

as not meeting land health standards, or as necessary to protect public health and safety and private property. Such facilities would be subject to all applicable regulatory permitting requirements.

d. For primitive routes or trails utilizing ephemeral drainages or crossing sensitive soils, provide educational information outlining resource/safety concerns and responsible use of such routes at trail heads, kiosks, area maps, and free pamphlets.

5.7.2 Cultural

a. The BLM GJFO will work with Colorado State Historic Preservation Office (SHPO) to develop agreements related to travel management and cultural resources which may include the use of strategic cultural resource survey sampling and modeling in portions of the GJFO. (See TMP Attachment 3)

b. Prior to any ground disturbing activity cultural resource surveys, in compliance with Federal laws, would be completed and the appropriate entities, such as SHPO and interested Native American tribes, would be consulted with prior to the activity occurring.

c. For trail and road construction projects and maintenance projects the BLM may choose one of the following options if significant (eligible or potentially eligible "needs data") cultural resources are discovered or known in the area:

    i. The BLM may choose to not perform construction or maintenance on areas that would directly impact sites,

    ii. The BLM might reroute roads, primitive roads, and trails to avoid significant cultural resources on existing and proposed construction. These reroutes would require surveys for cultural resources and would have to allow for other resource specialists to analyze the locations of the reroutes,

    iii. The BLM may choose to conduct evaluative testing to determine final eligibility on potentially eligible sites. The BLM would consult with SHPO on changes to site eligibility.

    iv. Eligible sites may be mitigated via data recovery through excavation to reduce the effects of the trail and road maintenance, reclamation, and construction. Both SHPO and interested Native American tribes would be consulted prior to any proposed data recovery mitigation on significant cultural resources.

5.7.3 Sensitive Status Species

a. To prevent the seeding and spread of invasive, non-native species, BLM-approved seed mix will be used during reclamation activities, and seed mixtures shall contain no noxious, prohibited, or restricted weed seeds. Where soil disturbance will occur, all equipment will be required to be cleaned and inspected prior to use within the planning area. Public education and signs promoting the use of clean vehicles to prevent the spread of weeds, shall be included in entry kiosks and on literature.

b. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat.

c. Reduce as much as practicable route density (miles/square mile) within 200 meters of known Threatened and Endangered plant occurrences throughout the field office. If occurrences are identified in the future that conflict with route designations, implement reroutes.

d. Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts to listed plant species habitat, and occupied habitat from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively effecting designated critical habitat.

e. Limit new road construction in Reeder Mesa, Sunnyside, Logan Wash Mine, and South Shale Ridge, and designate new roads associated with authorized uses as administrative (e.g., oil and gas and ROWs). Rehabilitate and close roads associated with authorized uses when no longer needed.

f. Existing plant location records will be consulted and site inventories will be conducted to identify suitable habitat[1] for these plants. Surveys for occupied suitable habitat will be performed prior to any ground disturbance. Surveys will take place when the plants can be positively identified. Surveys will be performed by qualified field botanists/biologists who will provide documentation of their qualifications, experience and knowledge of the species prior to starting work (**FWS-5**).

g. For Colorado hookless cactus and other Threatened (T), Endangered (E), Proposed (P), and Candidate (C) species surface disturbing activities will be avoided within 200 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible (**FWS-7**).

h. For BLM sensitive species surface-disturbing activities will be avoided within 100 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible (**FWS-8**).

i. Where development is allowed within 100 meters of occupied habitat for T, E, P and C species or BLM sensitive species, unauthorized disturbance of plant habitat will be avoided by on-site guidance from a biologist, and by fencing the perimeter of the disturbed area, or such other method as agreed to by the Fish and Wildlife Service. If detrimental effects are detected through monitoring, corrective action will be taken through adaptive management (**FWS-9**).

j. Surface disturbance closer than 20 meters to a listed plant will be considered an adverse effect. Mitigating measures within this narrow buffer are very important and helpful to individual plants, but we do not expect that all adverse effects can be fully mitigated within this distance. Some adverse effects due to dust, dust suppression, loss

of pollinator habitat, and toxic spills will likely remain. There are two possible exceptions to this rule of thumb: 1) The new disturbance is no closer to a listed plant than preexisting disturbance and no new or increased impacts to the listed plant are expected; or 2) the listed plant is screened from the proposed disturbance (e.g., tall, thick vegetation or a berm acts as a screen or effective barrier to fugitive dust and other potential impacts) (**FWS-10**).

k. Transplantation of potentially affected plants will not be used as a rationale to defend a "not likely to adversely affect" or a "no effect" determination for listed plant species (**FWS-11**).

5.7.4 Riparian

a. Road crossings that will be used for longer than one year on perennial streams will be engineered and/or approved by the BLM Authorized Officer (VRW-3).

b. Do not locate roads or other facilities immediately parallel to streams. Where roads or facilities must cross streams, cross perpendicularly and immediately exit the buffer zone (VRW-4).

c. Armor low water stream crossings, place properly sized culverts, or span streams as appropriate to protect the riparian zone (VRW-5).

d. If monitoring or PFC assessments indicate impacts to PFC then then consider re-route of roads and trails that parallel and/or cross functioning at risk or non-functioning riparian areas, and that are contributing to decline (sedimentation) of these systems.

e. Relocate existing roads away from riparian areas as feasible during requested permitting or authorization of these routes. Reclaim abandoned portions of relocated roads back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas (VRW-24).

f. Utilize the techniques and process for protection of floodplains as identified in Executive Order 11988 – Floodplain Management (VRW-2).

g. Roads and trails (off-highway vehicle, horse, bicycle, and hiking) will avoid wetlands and if avoidance is not possible will be designed and constructed in accordance with Technical Reference 2E22A68-NPS, Off-highway Vehicle Management (VRW-8).

h. Minimize route crossing of streams (intermittent and perennial) and wetlands.

i. Maintain appropriate vegetative/riparian buffer from routes of at least 200 meters around riparian and wetland areas to protect and enhance the health and function of these systems.

j. Locate project staging areas for refueling, maintenance equipment, materials, operating supplies in areas outside of riparian and wetland areas.

k. Reclaim abandoned routes after completing re-route of roads and trails that are impaction riparian function. Follow general reclamation guidance with special reclamation procedures for stream crossings (see hydrology section).

5.7.5 Recreation

a. Whenever possible, complete trail reroutes or route system additions/modifications prior to closure of non-system routes. Creating viable alternatives to closed routes reduces the impact to recreation opportunities and outcomes.

b. Utilize all other appropriate standard operating procedures and best management practices (and others as approved) outlined in Appendix H of the GJFO-RMP/FEIS to protect and enhance recreation resources. Applicable Recreation BMPs from Appendix H include:

    a. Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see Attachment 1 to this TMP) to create and maintain a sustainable recreational route system that helps achieve recreation and other resource use objectives while protecting natural and cultural resources. (BLM 2014 and 2005).

    b. Reroute or close trails that create resource damage and/or trespass on private property.

    c. Promote the seven standard principles of Leave No Trace (www.lnt.org) outdoor ethics through print and electronic media, and through personal communications with recreationists participating in non-motorized recreation activities on BLM-managed public lands.

    d. Promote the principles of Tread Lightly (www.treadlightly.org) outdoor ethics through print and electronic media, and through personal communications with recreationists participating in recreation activities on BLM-managed public lands.

c. Hand raking and disguise of prominent "closed" routes, including planting commonly found plants on "closed" routes, will be employed to help discourage use.

d. Proactive route rehabilitation work would be utilized where the other actions have not proven to be successful, or where route conditions were clearly beyond the capability of the first phase to address.

e. Focus on signing of the open route network so that it is highly visible, thus discouraging interest in closed routes. The signing of closed routes will be done very infrequently, since they have been found to be more of an attractant than a deterrent to unauthorized use.

5.8 Adaptive management

Adaptive management will be based on monitoring standards and identified resource concerns.

For example: If resource degradation is found through monitoring to be occurring due to type of use on route, consider changing use on route to mitigate concern.

5.9 Supplementary Rules

Supplementary rules will need to be established for those areas identified in an

RMP/TMP where non-motorized access is limited to designated routes or some other limitations on use. See 43 CFR 8365.1-6 for the supplementary rulemaking process.

Attachments

Attachment A

Sign Plan

Area and Route Signing

A sign plan is necessary to ensure that signs placed in an area are consistent with land use and other planning documents; that they are designed to be consistent with all applicable laws, regulations, and policies; and that all signs adhere to a consistent theme. A sign plan should include the goals, objectives, and responsibilities for the placement of signs, as well as an inventory of existing signs and may include a process for designing/locating new signs.

BLM Sign Guidebook covers location and placement, along with speed of travel in Chapter 4, Design Standards. Colorado Inter-Agency Travel Management Sign Standards have been developed and will be used in signing for the GJFO. (See TMP Attachment 2)

Sign Types

There are several types of signs that states should consider when developing state sign policy and implementing TMPs. Efforts should include identification and information signs at trailheads and entrances, and along trails, roads, primitive roads, intersections, authorized, and closed areas.

Trail Signs

There are two types of trail signs, allocation signs, and reassurance markers. Allocation signs show the permitted and not permitted uses of the trail. These signs are used at trailheads, where a trail begins, intersections, or anywhere there is a change in use type. Reassurance markers provided markers so trail users know they are still on the right trail. For example, symbols could be an arrow or the trail logo.

Road Signs

Road signs apply to signage for linear routes managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use. The Manual on Uniform Traffic Control Devices standards apply to these roads. There are cases where some roads will be open to unlicensed OHVs. Signs for these roads are marked in a manner that notifies or warns the public of mixed uses.

Primitive Road Signs

Primitive road signs apply to signage for linear routes managed for use by four-wheel drive or high-clearance vehicles. These routes do not normally meet any BLM road design standards.

Other Types of Signs

Trailhead or entry signs apply to signs used at entry to trails or access points to public lands. These signs are used to notify the public of the travel management strategy or designation of the area they are entering, such as “areas limited to designated routes,” “areas limited to exiting routes,” or “open areas.”

Sign Placement

Travel management signing and allocation information need not be on every trail sign along the trail corridor. Travel management signs should be placed at the trailhead and at trail junctions where travel management is changing or needs reinforcement.

Attachment B

Education Plan

An improved public outreach program will be initiated to instill and strengthen a more effective and responsible resource use ethic. For mapping and signing efforts, particularly at information kiosks, the GJFO will develop appropriate resource information and education. Legal penalties language will be included in all handouts, maps, and kiosks.

The BLM will work with cooperating associations and community groups to better distribute interpretive materials. In order to achieve outreach and education objectives, it is imperative to create sustainable partnerships with private groups and governmental organizations.

Established educational efforts related to trail use will be promoted, including Stay the Trail, Leave No Trace, and Tread Lightly.

Targeted Methods of Communication

- Podcasts: with downloadable items such as maps, land use ethics, rules, air quality alerts, fire prevention restrictions, emergency announcements, etc.
- Electronic Kiosks: downloadable items such trail track logs, audio storytelling for cultural, historic, natural interpretative information
- Web Video & Focus Surveys: interactive sites for user info and feedback to BLM
- Web site: updated regularly and designed to give viewers something new each time they view the page, including GIS data posted to the BLM website for self-service data acquisition.
- Public Service Announcements: via radio, newspaper, TV, etc.
- Traditional Brochures and Guides

Attachment C

Enforcement Plan

Currently, law enforcement coverage is provided by BLM Rangers. Enforcement actions are typically in response to complaints, and patrols are conducted on a periodic basis depending on priorities throughout the GJFO. Partnerships with local businesses and organizations will be encouraged to promote safe and responsible use of public lands. Volunteer groups may assist with monitoring, public education, and special events.

Goals for a successful enforcement plan include:

- Increasing the presence of BLM law enforcement staff and BLM law enforcement in the area. BLM park rangers will conduct high profile, routine patrols in the area to educate users about laws and regulations. They may initiate emergency or law enforcement response simply by being first on-scene;
- Improving and expanding interagency cooperation in the area;
- Concentrating efforts on high use periods, such as weekends and holidays;
- Focusing targeted enforcement in “hot spots;”
- Increasing enforcement capacity, including the use of new technology;
- Supporting volunteer efforts to educate the public on rules and etiquette; and
- Encouraging educational and monitoring efforts by volunteer user groups and citizen-based education groups, which can leverage formal law enforcement efforts. Volunteer user groups will educate users on rules and etiquette for the area.

Attachment D

Rehabilitation Plan

As determined as necessary, Rehabilitation actions will be determined according to the following considerations:

1. Where route use is currently visible -
    a. Sign as closed and allow to naturally re-vegetate, or
    b. Sign as closed and reclaim through appropriate reclamation methods, use native seed blend as a priority (assure that proper site specific survey has been complete), or
    c. Sign route as closed, place a berm or other barrier and leave to natural re-vegetation.
    d. Barriers will be placed in areas deemed necessary.
    e. Sign route as closed and reclaim the portion that is visible from open routes, and allow the rest to reclaim naturally.
    f. Sign route as closed and reclaim the entire route.
2. Where route use is not currently visible and appears to be naturally reclaiming -
    a. Leave route to natural re-vegetation
    b. Sign route as closed and leave to naturally reclaim.
3. Resource concerns (hydrology, cultural, etc.) are present and correlated with the disturbance, choose from the following options
    a. Sign route as closed, place a berm or other barrier and leave to natural re-vegetation.
    b. Barriers will be placed in areas deemed necessary.
    c. Sign route as closed and reclaim the portion that is visible from open routes, and allow the rest to reclaim naturally.
    d. Sign route as closed and reclaim the entire route.

Reclamation Standards

The following reclamation standards will be followed:

a. Routes identified for closure will not alter natural hydrologic function and condition of the affected watershed (e.g., closed routes will not divert runoff from natural drainage patterns).
b. Disturbed areas will be fully re-contoured and re-vegetated with BLM-preferred seed mixtures.
c. Seeding will be done where necessary to aid rehabilitation of closed routes. Appropriate native seed mixtures will be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and allow rain retention. Broadcast seeding will be done prior to winter. Some areas will be fenced to prevent disturbance and allow for grazing rest during the first two growing seasons. This technique is typically used near main roads where camping or parking may occur.

d. BLM will utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured stormwater structures (e.g., silt fence and straw waddles), and mechanical erosion control techniques (e.g., ripping and pocking) to minimize erosion and facilitate site stability.
e. Reclamation techniques for routes in Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics will be specifically planned to return the area to its original condition in the shortest amount of time.
f. Weed and vegetation treatment control measures will be implemented as needed to promote re-vegetation with native plants, prevent any new weed establishment, and control of existing weed sources.

Reclamation/Rehabilitation Techniques and Rationale for Selection

Reclamation/Rehabilitation actions will be undertaken according to the methods described below. Options are presented below in order of lowest to greatest level of ground disturbance, and are categorized between manual and mechanical techniques. Manual techniques can be implemented with basic hand tools while mechanical techniques require the use of mechanized or motorized equipment.

Manual Techniques:

- Passive: Allow the route to naturally reclaim without any signing, ground disturbance, or replanting of vegetation. This method is proposed in lightly used areas and on routes where restoration is already occurring. The goal is to avoid attracting attention by not signing or fencing these lightly used routes. This is the least obvious method of closure, least costly to BLM, and provides a high degree of naturalness when successfully implemented.

- Sign only: This method applies mainly to upland routes in lightly used areas and is proposed on routes in lightly used areas and/or in areas where compliance with signage is expected to be good. The signage can be removed to complete the rehabilitation process.

- Hand rake out tracks only: This applies mainly to sand washes where erasing the evidence of use in lightly used areas may be enough to prevent attracting future use. This is very light on the land and provides a high degree of naturalness when done. The goal is to avoid attracting attention, and thus use, on these lightly used routes. Monitoring and raking is required to ensure effectiveness and may be required for up to one year.

- Rake out tracks and sign: This method applies mainly to sand washes in lightly used areas. A sign reinforces the closure by placing physical notice for visitors and to assist law enforcement. This method is low cost to BLM and provides a moderate degree of naturalness when done. A downside to this method is the potentially high number of closed signs that can accumulate in a given area and the perception that many routes are being closed, leading to vandalism. Monitoring is required to ensure effectiveness. Signage can be removed to complete the rehabilitation process.

- Fence and sign/fence only: This method applies to both upland and dry wash routes. This type of closure has little ground disturbance and is used in areas where fence cutting would be expected to be minimal. Generally, the fence type would be T-post and four strand smooth wires with reflectors; however, the fence type could be increased to pipe rail/steel rail as needed while still maintaining a small footprint at the beginning or end of the route. Fencing and signs can be removed to complete the rehabilitation process.
- Vertical mulch with berm/fence and sign: This method works in upland areas where occasional use of the route in lightly used areas prevents natural restoration. A sign provides physical notice and assistance to law enforcement. A T-post and four strand smooth wire fence works best when the fence is placed in an area where bypassing it is difficult. Combined with a sign and/or fencing, actively placing cuttings of cactus, transplanted bushes, and scattering juniper duff in the wheel tracks may be enough to prevent use. Placement of plants in the closed route to the visible horizon minimizes cost and ground disturbance. Native seed mixtures may also be applied to enhance the effectiveness of rehabilitation.
- Barriers (fences, brush, plants, and boulders): Physical blockades constructed to prevent the passage of vehicles. The only manual type of fencing would be wire fencing.

Mechanical Techniques:

- Berm with signs: This method would be applied in upland areas where a berm cannot be bypassed. This type of closure has less ground disturbance since soil is only moved to create a berm at the beginning or end of the closed route. Signage provides physical notice to visitors and assistance to law enforcement. The berm stands as an indicator of closure if the sign is removed, providing additional notice to visitors. After the route has restored, berms can be removed or flattened to complete the rehabilitation process.
- Rip/harrow: A more expensive, but effective way to eliminate route use and expedite vegetation regrowth. These techniques are necessary in high use areas where use is likely to continue on a route if not made completely obvious that the route is being restored. One hundred percent of the closed route surface is disturbed by this method. A tractor-towed disc harrow or a finger-type winged ripper mounted on a tractor or bulldozer would be the typical equipment used. Benefits include reduced soil compaction and improved seed germination and establishment. Drawbacks to these methods are: (1) significant plant growth (20% cover) may take up to five years; (2) no regrowth may occur if barriers are bypassed and use continues on the ripped road bed; (3) the complete removal of existing vegetation resulting in a temporarily prominent disturbed area; (5) increased likelihood of invasive weed infestation, and (5) possible disturbance of undiscovered buried cultural resources. Under this method, soils would be ripped or harrowed to a depth of 18 – 24 inches. Preferably compacted soils will be ripped in two passes at

perpendicular directions to a minimum depth of 18-24 inches, at a furrow spacing of no more than 2 feet.

- Barriers: Physical blockades constructed to prevent the passage of vehicles. Types can be earthen mounds, wire fence, pipe rail fence, post and cable fence, concrete wall sections (also referred to as Jersey or K-rail barriers), or free standing steel structures commonly referred to as Normandy barriers.

Programmatic Objectives/Considerations – Reclamation/Rehabilitation Standards

The following reclamation/rehabilitation principles will be considered when determining the most effective reclamation/rehabilitation strategy:

a. Routes identified for closure will not alter natural hydrologic function and condition of the affected watershed (e.g., closed routes will not divert runoff from natural drainage patterns).

b. Where appropriate to meet visual, hydrologic, and soil objectives, disturbed areas would be fully re-contoured and re-vegetated with BLM-preferred seed mixtures.

c. Seeding will be done where necessary to aid rehabilitation of closed routes. Areas reclaimed with ground disturbing activities such as raking, berming, ripping, and harrowing would likely require seeding following disturbance, especially in low elevation areas (below 6,000 feet), or in areas with weed infestations. Appropriate native seed mixtures will be selected for each site based on site conditions. Reclamation techniques include ripping the surface with a tractor to break up compacted soil and allow rain retention. Before reseeding, all surfaces should be scarified and left rough. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step should be repeated within 24 hours before seeding to break up any soil crust. Broadcast seeding will be done prior to winter. Some areas will be fenced to prevent disturbance and allow for grazing rest during the first two growing seasons. This technique is typically used near main roads where camping or parking may occur. In areas of challenge or low reclamation potential on steep slopes, seedbed prep techniques may include pocking/pitting to form microbasins scaled to the site and materials. These microbasins should be constructed in irregularly spaced, irregularly aligned rows oriented perpendicular to the natural flow of runoff down a slope. Other than such depressions created to support reclamation success, no depressions should be left where water could pond, with the following exceptions: terminal stormwater containments designed to silt in over time; other stormwater/snow storage basins. BMPs such as hydromulch, blankets/matting, wattles, etc. may also be required.

d. BLM will utilize native material such as rock and large woody debris to the greatest extent practicable in combination with manufactured stormwater structures (e.g., silt

fence and straw waddles), and mechanical erosion control techniques (e.g., ripping and pocking) to minimize erosion and facilitate site stability.

e. Reclamation techniques for routes in Wilderness, Wilderness Study Areas, and Lands with Wilderness Characteristics will be specifically planned to return the area to its original condition in the shortest amount of time.

Weed Management Considerations

- All heavy equipment used for reclamation work should be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species.
- Evaluate the need for pre-closure roadside treatments to target invasive species in the roadbed or along the shoulders of roads.
- As needed, implement weed control measures on re-seeded routes to promote survivability and competition by seeded species.
- Prioritize reclamation weed treatments based on likelihood of success, available funding, and available treatment resources.
- Plant species that are good competitors against weeds (native or non-native).

Vegetative Community Considerations

- Lower elevation sagebrush
- Upper elevation sagebrush
- Desert shrub
- Pinyon
- Potentially rest or protect treated areas from grazing (example: temporarily fence seeded area)

Wildlife Habitat Considerations

For some wildlife species simply closing routes and reducing disturbance is sufficient to minimize impacts. For other species the physical presence of the route limits use by fragmenting habitat patches and creating edge effect which may encourage use by competing species or predators.

Rehabilitation efforts should be prioritized base on the sensitivity of species to the physical presence of the road, and the overall rarity of the species. The following priorities are expected in the short term, but may change over the life of the plan

- Occupied greater or Gunnison sage-grouse habitat
- Potential greater or Gunnison sage-grouse habitat
- Routes within designated critical habitat for federally listed species
- Routes within habitat for BLM sensitive species
- Routes that are unlikely to reclaim and return to usable habitat without human intervention

Aquatic Considerations

Simply closing routes does not necessarily reduce erosion and sedimentation impacts to aquatic habitats/species. In the absence of active rehabilitation, several factors play into closures benefitting aquatic habitats including:

- *Elevation*
  - Higher elevation areas generally have better natural rehabilitation capability based primarily on increased precipitation. Lower elevation areas are less likely to rehabilitate on their own and in the absence of active rehabilitation, might be prone to increased erosion/sedimentation vs. being left open with at least some potential for periodic maintenance.
- *Aspect*
  - North aspects generally have better natural rehabilitation capability based on moisture retention.
  - South facing aspects generally have less potential based on moisture retention.
- *Slope*
  - Slopes less than 30% have a better chance for natural rehabilitation.
  - Slopes greater than 30% have less chance for natural rehabilitation.
- *Proximity to drainage/stream*
  - Distance to aquatic habitats factors into erosion and sedimentation impacts and concerns - the further the route is away from drainages, the less impactful it is likely to be.
- *Upland and Riparian Vegetation Condition*
  - Upland vegetation located between routes and hydrologic features that are meeting Land Health Standards and are in good condition serve to help buffer erosion and sedimentation impacts.
  - Riparian vegetation that is meeting Proper Functioning Condition or preferably is in climax or late seral condition provides a buffer to the impacts of erosion and sedimentation associated with routes.
  - Otherwise, some level of rehabilitation to help reduce or eliminate erosion and sedimentation concerns is needed to really benefit aquatic species and habitats associated with the closure of routes.
  - Proper periodic maintenance is key to reducing the effects of erosion and sedimentation to aquatic habitats/species

Recreation Considerations

Effective reclamation of closed routes is important for meeting a variety of recreation management objectives, including:

- attainment and maintenance of physical and social settings that support prescribed recreation activities and outcomes in ERMAs and SRMAs;
- reduction of visitor confusion resulting from un-marked non-system routes;
- increased visitor safety through reclamation of unsafe non-system routes; and
- reduced sign installation and maintenance costs associated with un-rehabilitated closed routes.

In general, route closures for recreation are most effective when the designated route system provides the desired recreation activity and outcome opportunities, and closed routes are completely naturalized to eliminate the visual remnants of the former route. Therefore, route closures will be most effective when any route system redesigns or reroutes are completed prior to implementation of route rehabilitation efforts. Whenever possible, closed routes should be naturalized on all portions of the route visible from designated system routes. This reduces the need for signage, and the temptation for recreationists to use former routes. Naturalization of closed routes also enhances the naturalness component of an area's physical setting characteristics, which can be important in attainment of recreation outcomes in SRMAs.

While naturalization of closed routes is generally preferred, the full suite of route closure options should be considered to account for the variability of terrain and circumstances throughout the field office.

Prioritize rehabilitation in SRMAs and ERMAs.

Cultural Considerations

Standards:

- Rehabilitation of closed routes will only occur after Section 106 of the National Historic Preservation Act has been completed for the portions of the route where surface disturbing rehabilitation methods will be employed (versus portions of routes where natural re-vegetation will be allowed).
- In accordance with the rehabilitation options, cultural resource surveys will be conducted for the following:
    - At least 500 ft. of the length of the road (or section to be rehabilitated) will be inventoried where closure actions follow numbers 4, 5, and/or 7 of the rehabilitation actions.
    - Cultural inventories will be completed for closure sign posting locations.
    - Cultural resource surveys will be conducted for reclamation of an entire road when ground disturbing methods for reclamation will be used.
    - Before new proposed routes, open areas, and locations where concentrated travel may occur are designated, the Section 106 process will be completed.
- Areas for cultural resource inventory should be prioritized based on the proposed rehabilitation method; areas proposed for ground disturbing methods should be surveyed as a higher priority than areas where rehabilitation will not affect subsurface deposits.
- Routes that are planned for closure and qualify as eligible or potentially eligible historic trails should be rehabilitated in such a way as to not diminish the integrity of the resource.

Priorities:

1. Rehabilitate designated as closed routes that are directly and adversely impacting known eligible and potentially eligible cultural resources (route in or through site, site proximate to route, route terminus at site, area of Tribal significance, site on National Register of Historic Places, or historic trail).

2. Rehabilitate designated as closed routes that are indirectly impacting known eligible and potentially eligible cultural resources (site proximate to route, visible or nuisance sites, or area of Tribal significance).

Riparian Considerations

Reclaim abandoned portions of relocated roads that pass through or are adjacent to riparian zones back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas (VRW-24).

During reclamation activities locate project staging areas for refueling, materials, and operating supplies outside of riparian and wetland areas. Also minimize surface disturbance and vegetation removal and avoid damage or removal of large woody vegetation such as willows and cottonwoods.

Route closure fences should not be placed immediately on the edge of riparian areas. Place fences away from riparian or wetland areas and cross streams as close to perpendicular as possible.

Attachment E

Monitoring Plan

As required in 43 CFR §8342.3 (Designation changes): "The authorized officer shall monitor effects of the use of off-road vehicles. On the basis of information so obtained, and whenever the authorized officer deems it necessary to carry out the objectives of this part, designations may be amended, revised, revoked, or other actions taken pursuant to the regulations in this part."

A monitoring plan would be prepared and would include the measures for route closures and rehabilitation of impacted areas, levels, and types of uses. Natural resource conditions, such as soil erosion, spread of noxious weeds, and impacts to vegetation, would be monitored.

The success of the GJFO TMP is best determined through monitoring and evaluation. BLM will develop and implement a monitoring and evaluation program for the area. It will be designed to identify and address emerging issues that may adversely impact resources or visitor experience. The monitoring data will be used to evaluate implementation progress and the effectiveness of the TMP in achieving desired outcomes and conditions, and to identify adaptive measures should adverse impacts be discovered. The monitoring effort will identify specific actions, including timeframes, methods, and anticipated resource needs for environmental monitoring.

Consider seasons of use when monitoring.

The evaluation and monitoring program will be used for the following:

- To determine if resource and resource use objectives are being met;
- To determine visitor satisfaction;
- To determine use patterns and volumes;
- To determine the condition of roads and trails, the condition of public use areas, and compliance with planned designations and use restrictions; and
- To determine efficacy of cross-jurisdictional enforcement.

Limits of Acceptable Change indicators, or triggers, requiring adjustments to this management plan are as follows:

- Desired recreation experiences over a five year period are not being met as determined by surveys, visitor sign-in logs, or other data-gathering processes conducted in the planning area;
- Unauthorized routes, whether created by motor vehicle or non-motorized means, cannot be rehabilitated at the same rate as their creation with available funding or personnel;
- Priority or Special Status species habitat conditions are in a downward trend over a five year period, and it is determined to be a result of recreation or travel impacts;

    - Riparian condition trend is not improving over a five-year period, and it is determined to be a result of recreation or travel impacts; and
    - Visitor safety and assumed risk for non-shooters is determined by BLM to be unacceptable as determined by data collection and surveys conducted in the planning area.
- Riparian condition trend is not improving over a five-year period, and it is determined to be a result of recreation or travel impacts; and
- Visitor safety and assumed risk for non-shooters is determined by BLM to be unacceptable as determined by data collection and surveys conducted in the planning area.

Some features of the monitoring plan will include:

- BLM employees and volunteers will be trained in the use of monitoring tools (e.g., monitoring forms, mobile digital devices, GPS units, and cameras) and protocols necessary for the collection and documentation of needed monitoring data.
- Photo-monitoring points will be established in key locations to monitor implementation actions and their effectiveness. For example, photo points can be established to monitor where cross-country travel has occurred, activity on "closed" routes has occurred, success of rehabilitation projects, extent of erosion mitigation areas as well as areas of good road quality for future reference. Photo monitoring points will be documented using GPS, and a monitoring schedule will be established;
- The monitoring data collected will be used to assess the effectiveness of the plan and associated implementation actions;
- "Closed" routes would be monitored for indications of use, rehabilitated routes will be monitored to determine effectiveness of seeding and water drainage, and sign conditions will be monitored within the planning area. Modifications to the plan would be considered if monitoring indicates that the goals and objectives are not being met;
- Visitor use data will be collected, compiled and analyzed to determine representative use patterns and trends on routes throughout the GJFO. Visitor use data will be collected primarily through the use of electronic traffic counters placed along routes or at primary access points.
- Recreation demand and preference data will be assessed through visitor surveys as funding and staffing allow;
- Upland health assessments will be conducted as warranted;
- Riparian health assessments will be conducted every 3 to 5 years;
- To maintain simplicity, hard copy binders backed up with digital data will be created and stored for a period of ten consecutive years. After ten years, only select photos and data will be retained for long term monitoring; and

- Management changes may occur based on monitoring or related data. Several different kinds of limitations, including vehicle numbers, types, use times or seasons, permitted use, designated routes, and other limitations necessary to meet land use plan objectives, may be implemented as necessary. The public would be notified of such changes.

Attachment F

Engineering Plan

Transportation system roads and trails are classified by maintenance levels specified in BLM Manual Handbook H-9113-2.

BLM Route Maintenance Intensities provide guidance for appropriate "standards of care" to recognized routes within the BLM. Recognized Routes by definition include Roads, Primitive Roads, and Trails carried as assets within the BLM Facility Asset Management System (FAMS).

Facility Asset Management System

All roads, trails and related facilities and infrastructure will be entered into the FAMS. FAMS is a tabular engineering database that does not have a spatial component, but the attribute fields for BLM Roads in GJFO will be linked to attribute data stored in FAMS similar to the way it had been linked to Facility Information Management System data in the past.

Condition Assessments

Condition assessments will be conducted for roads and trails in the planning area on a priority basis and in accordance with standards and guidelines currently described in IB-2000-005, *Road and Trail Condition Assessments*. The results of these assessments will be reviewed by the state engineering staff and, if approved, will be used to update the FAMS database. These updates will be linked to the appropriate data in GIS.

Routes Defined

BLM transportation guidance provides definitions for transportation routes, including roads, primitive roads, and trails, and the maintenance intensity classes for transportation assets. These definitions are used in the Grand Junction TMP.

a. Road: A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use.

b. Primitive Road: A linear route managed for use by four-wheel drive or high-clearance vehicles. Primitive roads do not normally meet any BLM road design standards.

c. Trail: A linear route managed for human-powered, stock, or OHV forms of transportation, or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Functional Class

Functional classes indicate the relative importance of a route's transportation and access functions, and are the basis for geometric design standards and maintenance guidelines. The functional classifications are determined according to guidance in *BLM Manual 9113 Roads*. Functional class is defined by collector roads, local roads, and resource roads.

Collector Roads are the highest standard of BLM road. They provide primary access to large blocks of land and connect with or are extensions of a public road system. Collector roads accommodate mixed traffic and serve many uses. They generally receive the highest volume

of traffic within the BLM road system. User cost, safety, comfort, and travel time are primary road management considerations. Collector roads usually require application of the highest standards used by BLM. As a result, they have the potential for creating substantial environmental impacts and often require complex mitigation procedures.

Local Roads normally serve a smaller area than collector roads and connect to collector roads or public road systems. Local roads receive lower volumes, carry fewer traffic types, and generally serve fewer users. User cost, comfort, and travel time are secondary to construction and maintenance cost considerations. Low volume local roads in mountainous terrain, where operating speed is reduced by effort of terrain, may be single land roads with turnouts.

Resource Roads are usually spur roads that provide point access and connect to local or collector roads. They carry very low volume and accommodate only one or two types of uses. Use restrictions are applied to prevent negative interactions between users needing the road and users attracted to the road. The location and design of these roads are governed by environmental compatibility and minimizing BLM costs, with minimal consideration for user cost, comfort, or travel time.

Most of the routes in the planning area are designated as Resource Roads, unpaved, single lane, with very low traffic volume (Average Daily Traffic $\leq$150 vehicle passes) and very low traffic speeds.

Maintenance Intensities

- Maintenance Intensities provide consistent objectives and standards for the care and maintenance of BLM routes according to identified management objectives. Maintenance Intensities are consistent with land-use planning management objectives (for example, natural, cultural, recreation setting and visual).
- Maintenance Intensities provide operational guidance to field personnel on the appropriate intensity, frequency, and type of maintenance activities that should be undertaken to keep the route in acceptable condition and provide guidance for the minimum standards of care for the annual maintenance of a route.
- Maintenance Intensities do not describe route geometry, types of route, types of use, or other physical or managerial characteristics of the route. Those items are addressed as other descriptive attributes to a route.
- Maintenance Intensities provide a range of objectives and standards, from “identification for removal” through frequent and intensive maintenance.
- Level 0 routes are existing routes that will no longer be maintained and no longer be declared a route. Routes identified as Level 0 are identified for removal from the transportation system entirely.
- Level 1 routes require minimum, low intensity maintenance to protect adjacent lands and resource values. These roads may be impassable for extended periods of time.
- Level 3 routes require more moderate maintenance due to low volume use, such as seasonal or year-round for commercial, recreation, or administrative access. Maintenance Intensities may not provide year-round access but are intended to provide resources appropriate to maintain a usable route for most of the year.

- Level 5 routes require high, maximum intensity maintenance due to year-round needs, high-volume traffic, or significant use. The Level 5 designation may also include routes identified through management objectives as requiring high intensities of maintenance or to be maintained and kept open on a year-round basis.
- The proposed maintenance intensity class will be developed for each route in the planning area. These will provide the basis for updating the FAMS database for the project area. Under BLM policy, transportation maintenance and repairs may be conducted on BLM routes on a case by case basis depending on need and following NEPA analysis.

Attachment G

Zone L (North Desert) Route Designation Considerations

Zone L (North Desert) proved to be one of the most challenging zones to consider, both for the BLM and for the public, due to its route density. Through public comment and further interdisciplinary consideration, the BLM determined that a different process was needed to make effective planning decisions for this zone.

Following completion of the rest of the TMP, the BLM will undertake a specific planning process for this area and will allow the use of existing routes within the boundary of this zone until individual routes are designated within this area.

Maps will be made available that show the network of existing routes. These maps will be updated on a yearly basis until the designation process is completed. Thereafter, updates to the maps will be made available online as changes are made to the network, and new maps will be published periodically, as needed.

Designation Process:

Routes will be designated on the ground with the assistance of user groups once thresholds for sensitive resource values (soils, wildlife, special status plants) have been determined, after any necessary NEPA process has been completed. The following steps will need to be completed in order to move forward with route designations:

1. Highlight key avoidance areas or areas where route reductions in density would be necessary in order to move toward achieving biologic, ecologic, and cultural resource objectives.
    a. Close routes directly impacting sensitive areas.
2. Break Zone L into sub-zones and collect representative hill-slope and road erosion rates to run RHEM and WEPP models or similar model if technology improves (note that routes eliminated through step 1 would be included in this effort unless they were reclaimed prior to designation).
    a. Identify sub-zones needing route reductions based on modeling results.
    b. Identify zones where it would be appropriate for new routes to be added if other resource values and recreation objectives could also be achieved.
3. Inform user groups of the process for route designation and key resources that need to be protected (biology, soil, water, archaeology, and recreation experience).
    a. Work with user groups to identify user needs and prioritize routes in Zone L.
    b. Routes eliminated through step 1 would not be available routes for prioritization.
4. Priority routes identified by user groups that meet recreation objectives and do not conflict with resource values, and meet minimum BLM requirements for intended use would be designated.
    a. Maintenance on routes would be prioritized based on the intensity of degradation resulting from the route and by user group priority ranking.

Reclamation work for non-sustainable routes designated for closure would also be prioritized based on the intensity of degradation and to reduce confusion with open routes. Table 1, Route Designations in Miles by Alternative, summarizes the proposed route designations for motorized, Bicycle, horse, and foot travel by alternative. Detailed travel management zone maps that display each route's proposed designation by alternative are provided at http://www.blm.gov/co/st/en/fo/gjfo/rmp/rmp.html.

Additional Objectives to be used for Route Designation in Zone L

1. Meet Public Land Health Standards 1, 2, 3, 4 , and 5
    a. Standard 1: Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.
    b. Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.
    c. Standard 3: Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.
    d. Standard 4: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.
    e. Standard 5: The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.
2. Water
    a. Manage to maintain or contribute to long term improvement of surface and groundwater quality.
    b. Promote geomorphic balance.
    c. Minimize salt and sediment production to "natural" background rates.
    d. Preserve/promote soil productivity.
    e. Preserve watershed function in capture, retention, and release of water in quality, quantity, and time to meet ecosystem and human needs.
3. Wildlife and Plants
    a. Within Mule Deer Severe Winter Range and Pronghorn Antelope Winter Concentration area, reduce route density to less than or equal to 2 miles of road per square mile.
    b. Ensure that Public Land Health Standards 3 for plant and animal communities, and 4 for Special Status and Threatened & Endangered species, are being met or moving towards meeting Standards.
4. Cultural
    a. To minimize ongoing or potential impacts to cultural sites that are eligible or potentially eligible for listing on the National Register of Historic Places (NRHP), close and/or re-route routes that are inside or pass through eligible or potentially eligible cultural sites, or identify mitigation necessary to protect sites
    b. To minimize the potential for vandalism or surface collection, reduce number of routes in proximity to known cultural sites, minimize impacts to site integrity of setting and feeling.

   c. To minimize the potential for impacts to sites, reduce density of routes in areas known to be of high expected cultural resource density or areas of high value to the cultural program or Tribes
   d. Use VRM and recreation (or management) objectives to minimize impacts to site integrity (maintaining the visual, audible, and setting characteristics of sites
   e. To minimize ongoing or potential impacts to historic trails identified as eligible or potentially eligible for listing on the NRHP, identify mitigation to protect the historic integrity of routes, if necessary.
5. Recreation
   a. Provide visitors with opportunities to participate in motorized OHV recreation (motorcycle, ATV, UTV, full-sized 4x4 vehicles) on a variety routes designated for different motorized uses (e.g., motorcycle, ATV/UTV, and full-size vehicles) that link the desert terrain on the north side of the Grand Valley from Grand Junction and Fruita to Rabbit Valley and the Utah Rims trails and provide multiple long-distance motorized loop opportunities.
   b. Minimize the negative interactions between users and livestock operations through route designation and future new route design; providing appropriate access for rangeland management.
   c. Promote positive user interactions between user groups; providing appropriate access for public and commercial operations.
   d. Ensure route connectivity between the North Desert ERMA and the Grand Valley OHV SRMA (open OHV area). Allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27 ¼ Road, with route density generally decreasing as the trail system extends to the northwest toward 25 Road and 21 Road.

Attachment H

CULTURAL RESOURCES

BLM is satisfying the requirements of Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470f, for the travel and transportation management decisions relating to the Grand Junction Field Office Resource Management Plan pursuant to Attachment F to the *State Protocol Agreement Between the Colorado State Director [SD]of the Bureau of Land Management [BLM] and the Colorado State Historic Preservation Officer [SHPO] Regarding the Manner in which the BLM will Meet its Responsibilities Under the National Historic Preservation Act [NHP] and the 2012 National Programmatic Agreement [National PA] among the BLM, the Advisory Council on Historic Preservation [ACHP], and the National Conference of State Historic Preservation Officers [NCSHPO]* (Protocol). The Protocol, which supplements the National Programmatic Agreement between BLM, Advisory Council on Historic Preservation (ACHP), and the National Conference of State Historic Preservation Officers, adopts an alternate procedure for compliance with Section 106 of the NHPA as allowed under 36 C.F.R. § 800.14(b). Attachment F recognizes that BLM's designation of routes and areas is an undertaking triggering compliance with Section 106 of the NHPA, and that BLM must complete the Section 106 requirements as part of route designation during the planning process. Attachment F specifically outlines how BLM will comply with the requirements for Section 106 for Comprehensive Travel and Transportation Management Planning. As described in Attachment F, "selection of specific route networks and imposition of other use limitations, will avoid impacts on cultural resources where possible. In accordance with 43 CFR 8342, existing cultural resource information must be considered when choosing among the range of alternatives for the design of a planning area travel system, including the potential impacts on cultural resource when determining whether each of the routes or areas in a planning area should be designated as open, limited, or closed." During the designation process, existing cultural resource information is considered when choosing among the range of alternatives for the design of a planning area travel system. A large number of existing routes and areas are designated in these planning efforts (Land Use Plans and Resource Management Plans). "Designation provides a purposefully designed and clearly delineated travel network, reduces the potential for user caused route proliferation, and facilitates travel management law enforcement", all of which are helpful in reducing adverse effects to historic properties.

The steps set forth in Attachment F establish a phased process for the identification, evaluation, and resolution of potential adverse effects to historic properties eligible for or listed on the National Register of Historic Places. The area of potential effect (APE) that is subject to inventory will be determined by the cultural resource specialist as defined by 36 CFR 800.16(d). When defining the APE, the BLM will consider potential direct, indirect, and cumulative effects to historic properties. The Attachment's phased process for identification is broken down into three steps: 1) planning; 2) route development; and 3) route maintenance. During the planning phase, existing cultural resource data obtained from the most recent Class 1 overview of the planning area (Grand River Institute 2011) along with known areas of higher use or concentration of travel will be used to determine priority areas for Class III cultural resource inventory. The SHPO, interested Native American Tribes, and other consulting parties are consulted during planning and invited to participate in the development and implementation of identification, monitoring, and treatment options according to the Colorado State Protocol in association with the National Programmatic Agreement. During the route development phase when Class III inventory is being completed, if BLM identifies historic

properties that are eligible for or listed on the National Register of Historic Places that are affected, BLM will identify ways to avoid, minimize or mitigate such adverse effects, and outline treatment procedures. The types of avoidance, minimization or mitigation may include fencing, site testing or excavation, signing, route realignment, or possibly route limitation or closure. The third phase focuses on conducting Class III inventories, as necessary, for those areas identified during the planning phase as being the lowest priority inventory areas with designated routes.

For the GJFO RMP travel and transportation management planning process, BLM has identified existing routes throughout the field office and examined the routes to determine appropriate designation based on public need and known natural and cultural resource concerns. BLM utilized current cultural resource inventories and assessments to determine potential cultural resource concerns on a route-by-route basis. The designated routes identify cultural resource concerns along with any other issues or rationale for the route designation, which are reflected in the Route Designation Reports. During the GJFO RMP designation process, the type of use on 402 routes was changed based partially or completely on cultural resource concerns. BLM has withheld from public disclosure sensitive cultural resources associated with routes even though BLM considered such information during the designation process. During the RMP phase, the GJFO consulted with the SHPO and interested Native American tribes and incorporated the commented received into our Proposed RMP. Once the RMP is finalized the GJFO will move into the phased identification process to determine priority areas for Class III cultural resource inventory. A priority list of designated routes that require Class III cultural resource inventory will be completed based on the implementation plan and implementation priorities. The remaining phases will follow the steps of the Attachment as described above. For those routes that BLM determines may have adverse effects impacts on cultural resources eligible for or listed in the National Register of Historic Places, the GJFO will consult with the SHPO, interested Native American tribes, and other interested parties to determine means to avoid, minimize or mitigate such adverse effects on a case-by-case basis.

Attachment I

Trail Design Criteria

The following criteria are used to determine suitable locations for new trails and trail reroutes within the Grand Junction Field Office management area. This document utilizes terminology from the "Recommended Standardized Trail Terminology for Use in Colorado." (COTI 2005)

These criteria are to be followed as guidelines. Not all of the criteria can be met on every segment of every trail. Their purpose is to help create sustainable, low maintenance trails that provide quality recreation experiences based on predetermined trail management objectives (TMOs). Specialty trails requiring higher maintenance may be allowed in appropriate locations.

1. Know and understand trail management objectives. TMO's provide the framework for what the trail will look like, who will be using the trail, and how the trail will be managed. Different TMO's may allow different applications of the criteria below.

2. Create loops and avoid dead end trails. All trails should begin and end at a trailhead or another trail. A well-planned stacked loop trail system offers recreationists a variety of trail options. Easier, shorter loops are arranged close to the trailhead, with longer, more challenging loops extending further beyond the trailhead. Occasionally, destination trails to a point of interest will require an out and back trail, but only if they cannot be reasonably incorporated into a loop.

3. Identify control points and use them to guide trail design and layout. Control points are specific places or features that influence where the trail goes. Basic control points include the beginning and end of the trail, property boundaries, intersections, drainage crossings, locations for turns, and other trails.

> Positive control points are places where you want users to visit, including scenic overlooks, historic sites, waterfalls, rock outcroppings, lakes, rivers and other natural features or points of interest. If the trail does not incorporate these features, users will likely create unsustainable social trails to get to them.
>
> Negative control points are places you want users to avoid, such as low-lying wet areas, flat ground, extremely steep cross slopes or cliffs, unstable soils, environmentally sensitive areas, sensitive archaeological sites, safety hazards, and private property.

Knowing these control points provides a design framework. Try to connect the positive control points while avoiding the negative control points.

4. Use cross slope and avoid flat ground whenever possible. The trail tread should generally be aligned perpendicular to the cross slope and should utilize outsloped tread and frequent grade reversals to facilitate continuous drainage. This is the best way to keep water off the trail. However, outsloped tread is not always practical or desirable to meet recreation experience objectives. Use curvilinear design principles to create a trail that follows the natural contours of the topography, sheds water, blends with the surrounding terrain, and provides fun recreation opportunities.

The following grade guidelines will help determine appropriate tread locations.

- The Half Rule: "A trail's grade shouldn't exceed half the grade of the hillside or sideslope (cross slope) that the trail traverses. If the grade does exceed half the sideslope, it's considered a fall-line trail. Water will flow down a fall-line trail rather than run across it. For example, if you're building across a hillside with a (cross slope) of 20 percent, the trail-tread grade should not exceed 10 percent." (IMBA 2004) Steeper cross slopes allow more flexibility for sustainable tread grades while flat or low angle cross slopes can be problematic. There is an upper limit to this rule. Sustaining a 24 percent tread grade, even on a 50 percent cross slope is unlikely. Additionally, trail segments may break this rule on durable tread surfaces such as solid rock.

- The Ten Percent Average Guideline: The average trail grade over the length of the trail should be 10 percent or less for greatest sustainability. Short sections of the trail may exceed this, but the overall grade should remain at 10 percent or less.

- Maximum Sustainable Grade: This is the upper grade limit for those short trail segments that push the limits of the previous two guidelines. It is determined by a site-specific analysis based on TMO's, environmental conditions, and observations of existing trails – what's working, and what's not?

- Grade Reversals: Frequent changes in the direction of tread grade (gentle up and down undulations) will ensure that water is forced off the trail at frequent intervals.

5. Locate trails in stable soils. Avoid clays, deep loam and soils that do not drain rapidly. Consider season of use and type of use. A trail on a south aspect will have greater usability and sustainability for winter use. The capabilities of motorized vehicles to function in wet/muddy conditions make it imperative to avoid unstable or poorly drained soils. Trails that are less likely to be used when wet may be located in less-desirable soils if necessary. In western Colorado's arid environment, the best soil conditions for trails are those with high rock content. Utilize slick rock for trail tread when possible. Sand is acceptable in dry washes, but otherwise avoid sand.

6. Drainage crossings are key control points and should be selected carefully. Consider both the trail's impact on the drainage (erosion and sedimentation), and the drainage's impact on the trail (changing tread surface, water channeling onto trail). The trail should descend into and climb out of the drainage to prevent water from flowing down the trail. Avoid long or steep entries into drainages. Design grade reversals into the trail on each side of the approach to minimize water and sediment entering from the trail. Look for drainage crossings on rock.

7. Dry washes can be excellent travel ways. They are well defined, contain noise, and are periodically resurfaced by flowing water. As long as the wash does not support riparian vegetation and has no major safety problems, like water falls, they are well suited to be part of a recreational trail system.

8. Avoid switchbacks. Switchbacks are difficult, time-consuming, and expensive to construct, and require regular maintenance. Users often cut them, causing avoidable impacts. Utilizing curvilinear design principles eliminates the need for most switchbacks. Climbing turns are easier to construct and

maintain and utilize natural terrain features (benches, knolls, rock outcrops) to change the direction of a trail.

9. Avoid ridge tops. Ridge tops are often primary transportation corridors for wildlife, and were often used by Native Americans as travel routes. Noise from ridge top trails is broadcast over a wide area. Locate trails on side hills, off ridge tops, using ridges and watersheds as natural sound barriers to isolate noise.

10. Use vegetation and other natural features to conceal the trail and absorb noise. This can be difficult in a desert environment. Try to minimize the visual impact of the trail by following natural transitions in vegetation or soil type. A trail near the base of a slope or on rimrock is usually less visible than a mid-slope trail. Denser vegetation will hide a trail, lessen noise transmission, and can dissipate the energy of falling raindrops on the bare soil of the trail tread.

11. Carefully design intersections to avoid safety problems. When locating a bicycle or motorized vehicle trail be aware of sighting distance and sight lines. Collisions can be avoided if riders can see each other. Avoid four way intersections. Offsetting the cross traffic helps reduce speeds and reduces the risk of collisions.

Sources:

Off Highway Motorcycle and ATV Trails: Wernex,2nd edition, American Motorcycle Assoc. 1994

Off Highway Vehicle Trail and Road Grading Equipment, Vachowski, Maier, USDA Forest Service Missoula 9Technology and development Center 1998 Doc# 7E72A49

Mountain Bike Trails: Techniques for design, construction and Maintenance, McCoy Stoner, USDA Forest Service, Missoula Technology and Development Center

Recommended Standardized Trail Terminology for Use in Colorado, Colorado Outdoor Training Initiative (COTI). 2005

Tractor Techniques for Trailbed restoration, Hamilton, USDA Forest Service 1994

Trails 2000, Lockwood USDA Forest Service 1994

Trail Construction and Maintenance Handbook, Hesselbarth, Vachowski, USDA Forest Service (4E42A25-Trail Notebook) 2004

Trail Solutions, IMBA's Guide to Building Sweet Singletrack, International Mountain Bicycling Association (IMBA) 2004.

USDA Forest Service Travel Management Handbook, FS 2309.18

Attachment J

Trail Development Process

Introduction

The purpose of this document is to clearly define the process required to create new trails or modify existing trails across public lands managed by the BLM Grand Junction Field Office (GJFO), McInnis Canyons National Conservation Area (MCNCA), and Dominguez-Escalante National Conservation Area (DENCA.) Trails provide a wide range of recreational opportunities throughout these management units. Trails are also a tool used by the agency to provide those diverse recreational opportunities while minimizing impacts to natural and cultural resources. Following the background information below is a step-by-step summary of the process for planning, designing, constructing, maintaining and monitoring trails that are legal, fun, functional and sustainable.

The Process

For many years, the Bureau of Land Management has actively partnered with organizations and individuals in the Grand Junction area to design and construct many of the trails on public lands in and around the Grand Valley. These trails help support a strong recreation-based infrastructure that makes this area a recreation destination, and an excellent place to live and play. As the popularity of trail-based recreation has grown, so has the need to carefully manage those trails in order to protect recreation opportunities, as well as the many other resources found on local public lands. Effective stewardship of public lands requires collaboration and communication between and among land managers and the many people who use and enjoy those lands. To that end, the BLM recognizes the need to openly communicate the BLM's trail planning and construction process, as well as the BLM's current trail management strategy.

The BLM has worked with trail user groups to implement a trail planning and construction process which creates fun, functional and sustainable trail systems while protecting important natural and cultural resources. Each trail or trail system proposal presents unique opportunities and challenges, but the basic steps for successfully navigating the process are described below.

1. Formulate a trail proposal or concept. This is usually the easy part. You've got an idea for a great new trail opportunity, or know of an existing trail that really needs to be fixed. Avoid the temptation to grab a tool and start digging, or to simply start trampling in a new route. Remember these are public lands managed for multiple uses.

2. Share your idea with others. Find other user groups who may have an interest in the area. Introduce yourself to these other players and begin to develop a relationship of open communication and trust. A few key points to remember about building a constituency:

- **Look at the big picture.** Public lands contain many different resources and have many different values to many different people. Those differences require a broad and balanced management perspective.

- **Communicate effectively.** Ask questions if the process, or another person's perspective, is unclear. Listen carefully to others involved in the process.
- **Think creatively and collaboratively.** Look for ways to partner with the agency and other user groups to provide the time, talent and funding necessary to move a trail proposal through the process.

3. Identify the purpose and need for the trail. Think about why your trail idea is important and what purpose it would serve. The purpose of the trail is to …? The reason we need the trail is …? Write those ideas down.

4. Contact the BLM office (or other agency) that manages the land you're interested in. Call or e-mail to set up an appointment to talk with someone (usually someone from the recreation program staff) about your idea.

5. Know and understand the process. Take some time to learn the details of the process summarized in this document. A few key points to remember about the process:

- **Find the funding.** Trails aren't cheap. Use a trail project planning and budgeting worksheet to develop an accurate estimate of how much your project is likely to cost, then determine how those costs will be paid.
- **Be patient!** The trail development process takes time (sometimes years.) The end result will be worth it.
- **Be flexible.** Changes are often necessary to address issues that arise during the process.
- **Learn more about trails.** There are many great print and electronic media resources, as well as hands-on training opportunities, to learn more about trail planning, design, layout, construction, maintenance and monitoring. See the reference section at the end of this document.
- **Determine current management direction.** Work with BLM staff and/or other trail partners/organizations to identify laws, management plans, policies, and special designations that may affect the trail proposal. Some of the management components that will likely be involved with trail proposals include:

    - **National Environmental Policy Act (NEPA)** – the law that guides any proposed action on Federal lands.
    - **National Historic Preservation Act (NHPA)** – the law that guides land managers to consider and protect cultural resources.
    - **Endangered Species Act (ESA)** – the law that guides managers to protect listed threatened and endangered species.
    - **Resource Management Plan (RMP) –** provides general management guidance for all resources within the Field Office and NCAs. The recreation section of an RMP will define what types of recreation opportunities are targeted for different areas within the Field Office or NCAs.
    - **Recreation Management Plans –** provide specific recreation management direction for areas. Recreation Management Plans are based on the recreation objectives in the Resource Management Plan.
    - **Special area designations**

- **Recreation Management Areas (RMAs) –** areas where specific recreation management guidance has been developed in the Resource Management Plan. These include Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs).
- **Areas of Critical Environmental Concern (ACEC) –** areas where specific resource concerns have been identified, and management actions are implemented to protect those resources.
- **Wilderness and Wilderness Study Areas (WSA) –** undeveloped areas that are managed for "primitive and unconfined" recreation, and for other wilderness values.

6. Refine trail proposal and define Trail Management Objectives (TMOs). Based on management direction findings, adjust proposal to fit within current management objectives and guidelines. If the trail proposal in in a Recreation Management Area, be sure the TMOs are consistent with objectives for that area in the Resource Management Plan.

- **Trail Management Objectives** define what the trail looks like, and how it's managed. TMOs may include some or all of the following specifications:
  - Recreation objective from the Resource Management Plan
  - Trail name/number
  - Type of use
  - Trail type
  - Level of use
  - Use season
  - Level of difficulty
  - Tread width
  - Corridor width and height
  - Surface condition
  - Maximum sustainable grade
  - Operations and patrol
  - Maintenance requirements
  - Special features
  - Monitoring requirements

7. Design and lay out a sustainable trail alignment. This process is further defined by the document entitled **"Trail Design Criteria"** which is included in an appendix to the GJFO and D-E NCA RMPs. Trail design and layout requires special training and experience. Utilize a qualified trail designer to ensure a high quality sustainable trail alignment. Qualified trail designers may be agency employees, trained volunteers, or hired trail contractors.

8. Initiate NEPA Process. NEPA (National Environmental Policy Act) provides a framework for analyzing the impacts of a proposed project. It requires input from a wide range of resource specialists from the BLM, and often other agencies as well. NEPA analysis along with the associated field work and paperwork is performed by BLM staff, by a contractor, or by a combination of the two. The NEPA process is a public process and provides opportunities for public input regarding any proposed action on Federal lands. For more information about the NEPA process see the "Citizens Guide to NEPA" referenced at the end of this document.

In most cases, trail project proposals will require an **Environmental Assessment (EA).**

- **EA analyzes impacts on:***
  - BLM sensitive species
  - Fisheries/Aquatic organisms
  - Native American Religious Concerns

- Federally Threatened, Endangered, and Candidate Species
- Soils
- Water
- Geology and mineral resources
- Wildlife
- Vegetation
- Invasive, non-native species
- Cultural resources (historic and prehistoric)
- Paleontological resources
- Range management (livestock grazing)
- Visual resources
- Transportation and access
- Economy
- Recreation
- Wilderness and wild lands
- Wild and scenic rivers
- Special designations

* Note that this list is representative and does not list every resource analyzed in an EA.

- **EA includes:**
  - Proposed action – the trail proposal plus any associated actions (i.e. trailheads, fencing, etc.)
  - Alternatives – in addition to the proposed action, a no-action alternative is analyzed, and sometimes one or more alternative actions are analyzed. This provides a range of information on which to make a management decision.
  - Description of current situation
  - Description of purpose and need for the proposed action
  - Review of relevant laws, management plans and guidance
  - Detailed analysis of impacts to resources from the proposed action
  - Description of actions to mitigate resource impacts
  - Finding of No Significant Impact (FONSI) **–** statement that mitigated impacts from the proposed action will not be "significant." If the EA determines there will be significant impacts, an environmental impact statement (EIS) must be prepared.
  - Decision Record (DR) **–** a statement detailing the decision on how to proceed regarding the proposed action. **A decision will be made that will approve the proposal, deny the proposal, or approve it with modifications.** Once the DR is signed by the authorized officer (Field Manager or NCA Manager), the actions specified in the DR may be implemented.

- **Trail EAs often require special field surveys.** These surveys are often expensive and time consuming. **Partnerships to fund surveys are often critical to moving a trail proposal forward.**
  - Cultural surveys **–** on-the-ground assessment of historic and prehistoric human activity in the project area. Federal laws (NHPA and others) mandate the documentation and protection of cultural resources found on Federal lands.
  - Plant surveys - on-the-ground assessment of rare, sensitive, threatened or endangered plants in the project area. Federal and state laws mandate the documentation and protection of special status plants found on Federal lands.
  - Paleontological surveys - on-the-ground assessment of fossils and other evidence of prehistoric life. Federal laws mandate the documentation and protection of vertebrate fossil resources.

- Wildlife surveys – assessment of sensitive wildlife species or wildlife habitats in the project area. Federal and state laws mandate the documentation and protection of special status fish and wildlife species, and their habitat.

9. Modify the proposal if required by NEPA. Sometimes trail reroutes will be required to mitigate impacts to other resources.

10. Begin construction or maintenance of the trail following completion of the NEPA process. If the project is approved, and once the EA is signed, implementation of the decision can begin.

- Managing trail construction and maintenance requires special training and experience. Qualified trail builders may be agency employees, trained volunteers, or hired trail contractors.
- Well planned coordination and oversight is essential to ensure high quality sustainable trail construction and maintenance. See reference section for trail construction and maintenance resources.

Finally, once your trail is completed it's important to monitor the trail to ensure that TMOs are being met. Monitoring should include:

- Physical monitoring – is the trail maintaining the design and construction specifications identified in the TMO?
- Social monitoring – is the trail providing the recreational opportunities and experiences specified in the TMO and RMA objectives?

Modify the trail if it is not meeting objectives. Any modifications to the trail will require BLM approval.

References:

Citizens Guide to NEPA:

http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning_docs.Par.53208.File.dat/A_Citizens_Guide_to_NEPA.pdf

Trail Design References:

Off Highway Motorcycle and ATV Trails: Wernex,2nd edition, American Motorcycle Assoc. 1994

Off Highway Vehicle Trail and Road Grading Equipment, Vachowski, Maier, USDA Forest Service Missoula 9Technology and development Center 1998 Doc# 7E72A49

Mountain Bike Trails: Techniques for design, construction and Maintenance, McCoy Stoner, USDA Forest Service, Missoula Technology and Development Center

Recommended Standardized Trail Terminology for Use in Colorado, Colorado Outdoor Training Initiative (COTI). 2005

Tractor Techniques for Trailbed restoration, Hamilton, USDA Forest Service 1994

Trails 2000, Lockwood USDA Forest Service 1994

Trail Construction and Maintenance Handbook, Hesselbarth, Vachowski, USDA Forest Service (4E42A25-Trail Notebook) 2004

Trail Solutions, IMBA's Guide to Building Sweet Singletrack, International Mountain Bicycling Association (IMBA) 2004.

USDA Forest Service Travel Management Handbook, FS 2309.18

APPENDIX B: Trail Management Objective form

Trail Management Objective

Trail Name _____ **Trail Number** _____

Resource Management Plan Objective _____

Type of use:
Hiking/Running ____ Equestrian ____ Mtn. Biking ____ Motorcycle ____ ATV ____ 4x4 ____

Trail type:
Access ____ Destination ____ Point-to-Point ____ Loop ____

Level of use:
Recreational Heavy ____ Moderate ____ Light ____
Competition Yes ____ No ____
Commercial Yes ____ No ____

Use season:
Year round ____ Spring, Summer, Fall ____ Winter ____ Seasonal closure ____

Level of Difficulty:
Easiest ____ More Difficult/Intermediate ____ Most Difficult/Advanced ____ Experts Only ___

Trail Specifications:
Tread width _____ inches
Corridor
Width _____ feet
Height _____ feet

Surface
smooth ____ moderate ____ rough/technical ____

Maximum sustainable grade _____

Operations and Patrol:
Patrolled by:
BLM ____ Volunteer(s) ____ Adopt-a-Trail ____
Frequency of patrols:
Weekly ____ Monthly ____ Yearly ____
Type of patrol:
Law enforcement ___ Maintenance ___ Monitoring ____ Visitor services (information/education) ____

Maintenance:
Frequency:
Six months ____ Annual ____ Three years ____ As needed ____
Work performed by:
Agency ____ Contract ____ Volunteers ____
Method:
Mechanized ____ Hand work ____

Features:
Retaining walls ____
Bridges ____
Signing: interpretive and information ____
Drains (culverts, etc.) ____

Hardening ____
Drainage structures ____
Switchbacks ____
Other ____

Monitoring:
Photo points:
Yes ____ No ____ Frequency _____

Appendix N

Coal Screening Criteria in the Grand Junction Field Office

APPENDIX N
COAL SCREENING CRITERIA IN THE GRAND JUNCTION FIELD OFFICE

INTRODUCTION

The federal government provides for leasing of coal under the Mineral Leasing Act of 1920 (the Act), as amended. Regulations established under the Act outline procedures for considering development of coal deposits through a leasing system involving land use planning and environmental analysis. This document summarizes the federal coal management decisions for the US Department of the Interior, BLM, GJFO planning area and documents the unsuitability criteria applied to potential coal lands for future development. The identification of areas acceptable for further consideration for coal leasing is a major land use planning decision in the BLM's RMP, which guides the Secretary of the Interior on making coal leasing decisions. Planning decisions outlined in this document will guide the development of the federal coal resource in the planning area.

The lands suitable for further consideration for coal leasing in the GJFO planning area were identified using the first three of the four screening procedures outlined in 43 CFR 3420.1-4:

1. Identify only lands that have coal development potential;
2. Review federal lands during land use planning using the unsuitability criteria set forth in 43 CFR 3461 to determine which areas are unsuitable for all or stipulated methods of coal mining involving surface coal mining operations;
3. Evaluate multiple land use decisions (trade-offs) that could eliminate lands from leasing that contain resources presently deemed more important than coal; and

4. Consult with the surface owner for private surface lands overlying federal coal. (This screen was not applied to this planning process.)

COAL PLANNING PROCESS

The following section describes the screening procedures and criteria used to determine lands suitable for further consideration for coal leasing in the GJFO planning area.

Screen 1: Identification of Coal Development Potential

The coal potential area extends to a maximum development depth of 2,500 feet (Figure 2-11, Appendix A). Coal potential in the GJFO planning area is considered deep coal, with overburden depths too great to assume any surface mining potential. These lands constitute the coal development potential identified in the Approved Resource Management Plan and include current coal leases and unleased federal coal resources where development could occur by year 2032. These areas were brought forward for the coal unsuitability review outlined in Screen 2, below.

Screen 2: Unsuitability Review

As outlined in 43 CFR 3461, the BLM considered 20 criteria that were based mostly on resource values to determine whether those lands identified as having development potential (Screen 1) were suitable for development. Due to the depths of coal resources within the GJFO planning area, it is anticipated that all coal would be mined by underground mining techniques. Screen 2, as it applies within the GJFO, would therefore only be applicable to surface operations such as vent holes, portals, load out facilities, roads, and other surface disturbances related to underground coal mining.

In the GJFO planning area, the areas identified as having coal development potential represent deep coal deposits with no clearly defined areas where surface impacts would occur. As such, these coal resources are generally exempted from the restrictions of the unsuitability criteria.

Some criteria have exceptions or exemptions as listed in the regulations. If the exemption or exception for a specific criterion can be applied, the coal lands being evaluated were not considered unsuitable and could be considered for leasing.

The regulations outlining the procedures for unsuitability determinations provide that "federal lands with coal deposits that would be mined by underground mining methods shall not be assessed as unsuitable where there would be no surface coal mining operations" (43 CFR 3461.1 [a]). Surface coal mining operations are defined in 43 CFR 3400.0-5 as "activities conducted on the surface of lands in connection with a surface coal mine or surface operations and surface impacts incident to an underground mine." In other words, unsuitability criteria will be applied to all coal lands that are potentially recoverable by surface mining methods (i.e., where earthen material above the

coal beds is physically moved to access the coal beds and those areas where associated support facilities and structures are located).

"Surface operations and surface impacts" apply to the support facilities and structures built on the surface for underground mines and the surface disturbance that it causes; therefore, lands will generally be considered unsuitable if the expected mining activities would result in direct impacts on the surface.

Criterion 1

All federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Recreation Areas, land acquired with money derived from the Land and Water Conservation Fund, National Forests, and federal lands in incorporated cities, towns, and villages.

Analysis

No land systems or categories under this criterion exist in the potential coal development areas.

Criterion 2

Federal lands that are within rights-of-way or easements, or within surface leases for residential, commercial, industrial, or other public purposes on federally owned surface, shall be considered unsuitable.

Analysis

Numerous rights-of-way are present within the potential coal development areas. The lands within these rights-of-way are unsuitable for surface coal mining operations.

Criterion 3

Federal lands affected by Section 522(e) (4) and (5) of the Surface Mining Control and Reclamation Act shall be considered unsuitable. This includes lands within 100 feet of the outside line of the right-of-way of a public highway; within 100 feet of a cemetery; within 350 feet of any occupied public building, school, church, community, or institutional building or public park; or within 300 feet of an occupied building.

Analysis

Interstate 70, including the lands within 0.5-mile of either side of both rights-of-way, are unsuitable for coal mining operations.

Other public roads and facilities are also considered unsuitable for coal mining operations. An evaluation of public roads and facilities will be conducted when a coal lease is nominated and determined unsuitable for surface coal mining operations.

Criterion 4

Federal lands designated as WSA shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation.

Analysis

The Demaree Canyon (22,700 acres) and Little Book Cliffs WSAs (29,300 acres) are both within the potential coal development areas and have been determined unacceptable for coal leasing per Screen 3 (below). As such, a suitability determination under Screen 2 is not applicable.

Criterion 5

Scenic federal lands designated by visual resource management (VRM) analysis as Class I (an area of outstanding scenic quality or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable.

Analysis

VRM Class I areas within the GJFO planning area are unsuitable for surface coal mining operations. The Demaree Canyon and Little Book Cliffs WSAs are managed as VRM Class I areas but have been determined unacceptable for coal leasing per Screen 3 (below). As such, a suitability determination under Screen 2 is not applicable. Additional areas that are located outside of the WSAs and designated as VRM Class I are determined unsuitable for surface coal mining operations.

Criterion 6

Federal lands under permit by the surface management agency and being used for scientific studies involving food or fiber production, or natural resources or technology demonstrations and experiments shall be considered unsuitable for the duration of the study, demonstration, or experiment, except where mining could be conducted in such a way as to enhance or not jeopardize the purposes of the study, as determined by the surface management agency, or where the principal scientific user or agency give written concurrence to all or certain methods of mining.

Analysis

The ant research area and owl banding station is considered unsuitable for surface coal mining operations.

Criterion 7

All publicly owned places on federal lands that are included in the National Register of Historic Places shall be considered unsuitable. This criterion applies to any areas that the surface management agency determines, after consultation with the Advisory Council on Historic Preservation and the State Historic

Preservation Office, are necessary to protect the inherent values of the property that made it eligible for listing in the National Register of Historic Places.

Analysis
There are no publicly owned places on federal lands that are included in the National Register of Historic Places.

Criterion 8
Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

Analysis
No natural areas or National Natural Landmarks are designated within the potential coal development areas.

Criterion 9
Federally designated critical habitat for threatened or endangered plant and animal species, and habitat for federal threatened or endangered species, which is determined by the US Department of the Interior, US Fish and Wildlife Service (USFWS) and the surface management agency to be of essential value, and where the presence of threatened or endangered species has been scientifically documented, shall be considered unsuitable.

Analysis
Threatened or endangered habitat is unsuitable for surface coal mining operations. Underground coal mining operations may occur if, after consultation with USFWS, USFWS determines that reasonable and prudent measures included in the Biological Opinion will mitigate and/or minimize impacts to the species or its critical habitat. Threatened or endangered habitat areas that would be directly or indirectly impacted by surface facilities outlined in the mine plans will be surveyed prior to any mine plan approval. The mine plans will incorporate avoidance of the species and their habitat.

Criterion 10
Federal lands containing habitat determined critical or essential for plant or animal species listed as threatened or endangered by the state pursuant to state law shall be considered unsuitable.

Analysis
Species currently listed as threatened or endangered by the State of Colorado but not listed by USFWS shall be determined unsuitable for surface coal operations. Underground coal mining operations may occur if, after consultation with the State of Colorado, the State determines reasonable and prudent measures will mitigate and/or minimize impacts to the species or its critical habitat. State threatened or endangered habitat areas that would be directly or indirectly impacted by surface facilities outlined in any mine plan will be

surveyed prior to mine plan approval. Mine plans will incorporate avoidance of the species and their habitat.

Criterion 11

A bald or golden eagle nest or site on federal lands that is determined to be active and an appropriate buffer zone of land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with USFWS.

Analysis

Bald and golden eagle nests are unsuitable for surface coal mining operations. Several golden eagle nests are within the potential coal development areas, mostly along the Book Cliffs. Bald eagle habitat and one known nest site occur within the potential coal development areas.

No surface coal mining facilities that require daily human activities will be built within active areas or within buffer zones with active nests of bald or golden eagles.

Underground coal mining operations may occur if:

- They can be conditioned in such a way, either in manner or period of operation, that eagles will not be disturbed during breeding season; or
- The surface management agency, with the concurrence of USFWS, determines that the golden eagle nest(s) will be moved.

Buffer zones may be decreased if the surface management agency determines that the active eagle nests will not be adversely affected.

Criterion 12

Bald and golden eagle roost and concentration areas on federal lands used during migration and wintering shall be considered unsuitable.

Analysis

There are no known bald or golden eagle roosts or concentration areas within the potential coal development areas. Eagles do visit the area during winter, but no critical habitat areas have been identified.

Criterion 13

Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest and a buffer zone of federal land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with USFWS.

Analysis

Falcon nests are considered unsuitable for surface coal mining operations. Falcon nests that would be directly or indirectly impacted by surface facilities outlined in a mine plan will be surveyed prior to mine plan approval. The mine plan will incorporate avoidance of the species and their habitat.

Protections for bald and golden eagles are identified under Criterion 11.

Criterion 14

Federal lands that are high-priority habitat for migratory bird species of high federal interest on a regional or national basis, as determined jointly by the surface management agency and USFWS, shall be considered unsuitable.

Analysis

Critical habitat of migratory birds, listed on the USFWS list of Birds of Conservation Concern, is unsuitable for surface coal mining operations. Critical migratory bird habitat that would be directly or indirectly impacted by surface facilities outlined in the mine plan will be surveyed prior to mine plan approval. The mine plan will incorporate avoidance of the species and their habitat. Underground mining may occur where the surface management agency, after consultation with USFWS, determines that all or certain stipulated methods of coal mining will not adversely affect the migratory bird habitat during the periods when such habitat is used by the species.

Criterion 15

Federal lands that the surface management agency and the state jointly agree are fish and wildlife habitat for resident species of high interest to the state, and that are essential for maintaining these priority wildlife species, shall be considered unsuitable. Examples of such lands that serve a critical function for the species involved include: (i) active dancing and strutting grounds for sage-grouse, sharp-tailed grouse, and prairie chicken; (ii) winter ranges crucial for deer, antelope, and elk; (iii) migration corridor for elk; and (iv) extremes of range for plant species.

Analysis

This criterion includes sensitive fish, wildlife, and plants as designated by the BLM and Colorado Division of Wildlife, as well as high-value species such as deer, elk, moose, and bighorn sheep. Areas that contain these species are suitable for limited surface coal mining operations.

Surface coal mining operations may occur within deer and elk critical winter range. Construction or daily activity within elk calving areas will be allowed only if no reasonable alternative sites exist outside the critical habitat. Lease stipulations and conditions of approval, as determined by BLM and Colorado Division of Wildlife, will be required to minimize disturbance within the critical habitats.

Underground mining may occur if, after consultation with the State, the surface management agency determines that all or certain stipulated methods of coal mining will not have a significant long-term impact on the species being protected.

Criterion 16

Federal lands in riverine, coastal, and special flood plains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of mining.

Analysis

No coastal flood plains exist in the potential coal lease areas. One hundred-year flood plains exist along the drainages in the potential coal development areas, but only the Colorado River has been delineated. As such, the entire Colorado River corridor has been identified as unsuitable.

Criterion 17

Federal lands that have been committed by the surface management agency to use as municipal watersheds shall be considered unsuitable.

Analysis

The Palisade and Grand Junction municipal watersheds are within the potential coal development areas and are considered unsuitable for surface coal mining operations.

Criterion 18

Federal lands with national resource waters, as identified by states in their water quality management plans, and a buffer zone of federal lands 0.25-mile from the outer edge of the far banks of the water, shall be unsuitable.

Analysis

No national resource waters have been identified by the State of Colorado in the potential coal development areas.

Criterion 19

Federal lands identified by the surface management agency, in consultation with the state in which they are located, as alluvial valley floors according to the definition in 43 CFR 3400.0-5 (a) of this title, the standards in 30 CFR Part 822, the final alluvial valley floor guidelines of the Office of Surface Mining

Reclamation and Enforcement when published, and approved state programs under the Surface Mining

Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude farming, shall be considered unsuitable. Additionally, when mining federal land outside and alluvial valley floor would materially

damage the quantity or quality of water in surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

Analysis
The Office of Surface Mining has tentatively identified approximately 2,400 acres in the potential coal development areas as alluvial valley floors. Most of these areas are undeveloped rangelands not presently significant to agriculture. They include:

- The alluvium of West Salt Creek from the headwaters to approximately two (2) miles south of the Book Cliffs.
- The alluvium of East Salt Creek from the headwaters to approximately two (2) miles south of the Book Cliffs.
- The alluvium of Big Salt Wash from the headwaters to approximately three (3) miles south of the Book Cliffs.
- Several sub-irrigated areas in the headwaters area of Middle Dry Fork, North Dry Fork, McKay Fork, and Kimball Creek.

Surface coal mining operations may occur within alluvial valley floors if no reasonable alternative sites exist outside these areas. Lease stipulations and conditions of approval, will be required to minimize disturbance and affects to water supplies within these areas.

Criterion 20
Federal lands in a state to which is applicable a criterion (i) proposed by the state or Indian tribe located in the planning area, and (ii) adopted by rulemaking by the Secretary, shall be considered unsuitable.

Analysis
There are no lands within the potential coal development areas that have been proposed by the State of Colorado or Indian tribes to be unsuitable.

Screen 3: Trade-offs

This screen requires evaluating multiple land use decisions (trade-offs) that could eliminate lands from leasing that contain resources presently deemed more important than coal. This screen has been applied as part of the land use conflict-resolution process. Where conflicts were identified between coal development and development or protection of other resources, a determination was made as to which resource was more important. The following have been determined to be areas where another resource is more important than coal and potential impacts could not be mitigated. These conflict areas are determined unacceptable for further coal leasing and development.

The Demaree Canyon (22,700 acres) and Little Book Cliffs (29,300 acres) WSAs are both within the potential coal development areas. Of these 52,000

acres, 2,156 acres are currently under coal lease. An estimated 277 million tons of in-place coal underlies the Demaree Canyon WSA, and an estimated 349 million tons of in-place coal underlies the Little Book Cliffs WSA. Both areas are unacceptable for leasing per Screen 3, pending Congressional decisions on wilderness recommendations. This determination is based on Section 308 of the Fiscal Year 1984 Interior Appropriations Act, which prohibits leasing. The WSAs could become acceptable for leasing if Congress does not designate them as Wilderness.

The following additional areas are unacceptable for further coal leasing and development under Screen 3.

- The Colorado River corridor, which is unacceptable for further coal leasing and development.
- The Grand Junction and Palisade municipal watersheds, which is unacceptable for further coal leasing and development.

Screen 4: Consultation with Private Surface Owners

Screen four, consultation with the surface owner for private surface lands overlying federal coal, was not completed for the Approved RMP.

Appendix O

Air Emissions Inventory

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O. AIR EMISSIONS INVENTORY

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APPENDIX O
AIR EMISSIONS INVENTORY

Emission inventories for development and production activities within the Planning Area were compiled for this analysis for total nitrogen oxides (NOx), sulfur dioxide (SO_2), carbon monoxide (CO), carbon dioxide (CO_2), particulate matter less than or equal to 10 microns in size (PM_{10}), particulate matter less than or equal to 2.5 microns in size ($PM_{2.5}$), volatile organic compounds (VOC), and hazardous air pollutants (HAPs). Lead emissions are negligible and were not calculated in the inventory. In addition, methane (CH_4), nitrous oxide (N_2O) and carbon dioxide (CO_2) emissions were included in the inventory for purposes of quantifying greenhouse gas (GHG) emissions.

Operational, production, and construction activity data used to estimate emissions for proposed emission sources were obtained from Grand Junction Field Office staff, the Reasonable Foreseeable Development Scenario for Oil and Gas for the Grand Junction Field Office (BLM 2012), the Mineral Potential Report (BLM 2010a), and from NEPA analyses currently being conducted for BLM actions within the planning area. Emission factors used to estimate proposed emissions were obtained primarily from the following sources: (1) EPA's *AP-42 Compilation of Air Pollutant Emission Factors* (USEPA 1995); (2) EPA's NONROAD2008a Emissions Model (USEPA 2009); (3) EPA's MOVES2010a Motor Vehicle Emissions Simulator (USEPA 2010); (4) API *Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Natural Gas Industry* (API 2009); (5) Colorado Department of Public Health and Environment (CDPHE); and (6) Western Governor's Association - Western Regional Air Partnership (WRAP). The inventory accounted for all applicable emissions controls such as CDPHE Regulation 7 and Federal New Source Performance Standards (NSPS).

The following tables provide additional details on the emissions that were analyzed to determine potential impacts to air quality. Tables are also provided that show the input parameters and assumptions used to calculate the

emissions. For additional details on the methods, data, and assumptions used to calculate emissions, the Air Quality Technical Support Document will be provided upon request.

O.1 BLM AUTHORIZED ACTIONS WITHIN THE PLANNING AREA EMISSIONS INVENTORY TABLES

- Oil and Gas Development
  - Combined Conventional, CBNG, Shale
- Solid Mineral Development
  - Coal
  - Uranium
  - Sand and Gravel
- Travel and Transportation Management
- Vegetation
  - Prescribed Fire and Mechanical Treatments
- Livestock Grazing
- Lands and Realty
  - Right of Ways

Table O-1
Oil and Gas – BLM Only – Base Year
(Conventional + Coal Bed Natural Gas + Shale)

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Base Year BLM								
Completion Engines	7.43	75.90	131.84	4.34	4.21	3.32	0.93	15,439
Completion Venting	1.57	0.00	0.00	0.00	0.00	0.00	0.08	308
Condensate Tanks	7.17	0.00	0.00	0.00	0.00	0.00	0.35	24
Construction Equipment	0.19	1.10	2.51	0.17	0.16	0.05	0.02	249
Dehydrators	32.47	0.00	0.00	0.00	0.00	0.00	17.01	957
Drilling Engines	3.86	39.42	68.47	2.25	2.18	1.72	0.48	8,018
Field Compressor Engines	5.53	694.98	412.88	3.63	3.63	0.11	0.61	6,954
Flaring	0.13	0.56	0.10	0.00	0.00	0.00	0.05	172
Fracing Engines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Fugitive Dust	0.00	0.00	0.00	20.56	2.09	0.00	0.00	0
Fugitive Leaks	416.40	0.00	0.00	0.00	0.00	0.00	20.14	83,619
Heaters	12.53	191.44	227.90	17.32	17.32	0.00	1.75	275,147
Midstream Compressor Engines	23.29	233.80	293.15	1.83	1.83	0.12	2.58	5,040
Other Midstream	66.27	16.84	27.79	0.60	0.60	0.06	18.83	39,898
Other Production	46.74	30.09	130.77	7.37	7.15	3.19	3.01	21,781
Pneumatic Devices	167.05	0.00	0.00	0.00	0.00	0.00	8.08	32,879
Pneumatic Pumps	15.57	0.00	0.00	0.00	0.00	0.00	0.75	3,064
Traffic	0.29	1.28	2.53	28.43	2.94	0.01	0.03	342
Water Injection Pumps	2.24	2.31	2.95	14.53	1.13	51.44	0.28	5,206
Well Blowdowns	4.03	0.00	0.00	0.00	0.00	0.00	0.20	794
BLM Totals	**812.75**	**1,287.71**	**1,300.90**	**101.01**	**43.24**	**60.02**	**75.18**	**499,890**

Table O-2
Oil and Gas – BLM Only – Alternative A
(Conventional + Coal Bed Natural Gas + Shale)

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	4.85	49.61	86.18	2.83	2.75	0.07	0.60	10,092
Completion Venting	0.52	0.00	0.00	0.00	0.00	0.00	0.02	103
Condensate Tanks	30.31	0.00	0.00	0.00	0.00	0.00	0.21	100
Construction Equipment	0.11	0.66	1.52	0.10	0.10	0.03	0.01	150
Dehydrators	26.97	0.00	0.00	0.00	0.00	0.00	14.06	1,181
Drilling Engines	3.77	38.49	66.86	2.20	2.13	0.05	0.47	7,829
Field Compressor Engines	4.96	404.57	233.36	2.26	2.26	0.07	0.55	4,342
Flaring	0.54	2.28	0.42	0.00	0.00	0.00	0.22	704
Fracing Engines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Fugitive Dust	0.00	0.00	0.00	12.69	1.29	0.00	0.00	0
Fugitive Leaks	260.42	0.00	0.00	0.00	0.00	0.00	12.57	60,614
Heaters	8.01	122.35	145.65	11.07	11.07	0.00	1.12	175,848
Midstream Compressor Engines	90.64	229.85	130.82	6.37	6.37	2.38	10.03	7,866
Other Midstream	110.08	32.92	28.54	1.48	1.48	1.31	14.72	31,647
Other Production	30.39	22.22	94.64	5.30	5.14	2.31	2.00	15,065
Pneumatic Devices	104.29	0.00	0.00	0.00	0.00	0.00	5.04	20,556
Pneumatic Pumps	9.60	0.00	0.00	0.00	0.00	0.00	0.46	1,892
Traffic	0.21	0.93	1.93	21.07	2.18	0.01	0.02	258
Water Injection Pumps	1.69	1.74	2.21	10.91	0.85	38.63	0.21	3,910
Well Blowdowns	2.52	0.00	0.00	0.00	0.00	0.00	0.12	496
Project Year 10 Totals	**689.87**	**905.61**	**792.13**	**76.29**	**35.63**	**44.85**	**62.44**	**342,651**
Project Year 20								
Completion Engines	4.77	48.72	84.63	2.78	2.70	0.07	0.59	9,910
Completion Venting	0.50	0.00	0.00	0.00	0.00	0.00	0.02	99
Condensate Tanks	38.23	0.00	0.00	0.00	0.00	0.00	0.19	126
Construction Equipment	0.11	0.65	1.49	0.10	0.10	0.03	0.01	148
Dehydrators	27.14	0.00	0.00	0.00	0.00	0.00	14.13	1,310
Drilling Engines	3.72	38.02	66.05	2.17	2.11	0.05	0.46	7,735
Field Compressor Engines	4.33	114.19	54.12	0.90	0.90	0.03	0.48	1,720
Flaring	0.66	2.80	0.51	0.00	0.00	0.00	0.26	864
Fracing Engines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
Fugitive Dust	0.00	0.00	0.00	12.45	1.27	0.00	0.00	0
Fugitive Leaks	103.84	0.00	0.00	0.00	0.00	0.00	4.98	37,491
Heaters	3.47	52.98	63.08	4.79	4.79	0.00	0.49	76,154
Midstream Compressor Engines	103.75	257.47	107.42	7.14	7.14	2.45	11.48	9,249
Other Midstream	119.14	37.58	32.58	1.69	1.69	1.49	15.12	34,279
Other Production	14.12	14.31	58.32	3.22	3.12	1.42	0.99	8,319
Pneumatic Devices	41.28	0.00	0.00	0.00	0.00	0.00	2.00	8,185
Pneumatic Pumps	3.61	0.00	0.00	0.00	0.00	0.00	0.17	716
Traffic	0.14	0.63	1.44	13.54	1.41	0.01	0.02	189
Water Injection Pumps	1.12	1.16	1.48	7.27	0.57	25.74	0.14	2,606
Well Blowdowns	1.00	0.00	0.00	0.00	0.00	0.00	0.05	198
Project Year 20 Totals	**470.95**	**568.51**	**471.12**	**56.06**	**25.80**	**31.29**	**51.58**	**199,295**

Table O-3
Oil and Gas – BLM Only – Alternative B
(Conventional + Coal Bed Natural Gas + Shale)

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	17.10	174.75	303.57	9.99	9.69	0.24	2.13	35,548
Completion Venting	1.81	0.00	0.00	0.00	0.00	0.00	0.09	359
Condensate Tanks	60.25	0.00	0.00	0.00	0.00	0.00	0.33	199
Construction Equipment	0.39	2.34	5.35	0.36	0.35	0.11	0.05	530
Dehydrators	45.80	0.00	0.00	0.00	0.00	0.00	23.85	2,209
Drilling Engines	13.29	135.86	236.02	7.76	7.53	0.19	1.66	27,638
Field Compressor Engines	9.85	471.93	255.92	3.00	3.00	0.09	1.09	5,751
Flaring	1.92	8.13	1.49	0.00	0.00	0.00	0.77	2,507
Fugitive Dust	0.00	0.00	0.00	44.69	4.55	0.00	0.00	0
Fugitive Leaks	345.75	0.00	0.00	0.00	0.00	0.00	16.64	96,979
Heaters	10.98	167.64	199.57	15.17	15.17	0.00	1.54	240,947
Midstream Compressor Engines	281.93	709.75	290.02	19.16	19.16	6.58	31.19	24,802
Other Midstream	319.41	100.77	87.36	4.54	4.54	4.00	40.52	91,901
Other Production	43.42	36.26	151.15	8.41	8.16	3.68	2.91	22,867
Pneumatic Devices	138.09	0.00	0.00	0.00	0.00	0.00	6.68	27,277
Pneumatic Pumps	10.77	0.00	0.00	0.00	0.00	0.00	0.52	2,129
Traffic	0.39	1.73	4.08	35.67	3.72	0.02	0.04	532
Water Injection Pumps	2.80	2.88	3.67	18.10	1.41	64.10	0.35	6,488
Well Blowdowns	3.34	0.00	0.00	0.00	0.00	0.00	0.16	659
Project Year 10 Totals	**1,307.29**	**1,812.05**	**1,538.20**	**166.84**	**77.26**	**79.01**	**130.52**	**589,322**
Project Year 20								
Completion Engines	10.10	173.86	173.86	1.99	1.93	0.24	1.26	35,364
Completion Venting	1.79	0.00	0.00	0.00	0.00	0.00	0.09	356
Condensate Tanks	77.83	0.00	0.00	0.00	0.00	0.00	0.35	258
Construction Equipment	0.40	2.35	5.38	0.36	0.35	0.12	0.05	533
Dehydrators	52.30	0.00	0.00	0.00	0.00	0.00	27.21	2,676
Drilling Engines	7.87	135.40	135.40	1.55	1.50	0.19	0.98	27,542
Field Compressor Engines	14.12	248.93	99.23	2.36	2.36	0.07	1.56	4,537
Flaring	2.46	10.41	1.91	0.00	0.00	0.00	0.99	3,211
Fugitive Dust	0.00	0.00	0.00	40.38	4.11	0.00	0.00	0
Fugitive Leaks	274.50	0.00	0.00	0.00	0.00	0.00	13.12	110,222
Heaters	9.40	143.57	170.92	12.99	12.99	0.00	1.32	206,351
Midstream Compressor Engines	353.61	872.24	308.11	24.04	24.04	8.00	39.12	31,628
Other Midstream	395.74	127.23	110.30	5.73	5.73	5.05	49.22	113,897
Other Production	39.08	42.38	171.34	9.44	9.16	4.17	2.79	23,919
Pneumatic Devices	108.88	0.00	0.00	0.00	0.00	0.00	5.27	21,628
Pneumatic Pumps	5.98	0.00	0.00	0.00	0.00	0.00	0.29	1,194
Traffic	0.39	1.73	3.74	37.34	3.88	0.02	0.04	497
Water Injection Pumps	3.35	3.45	4.40	21.65	1.68	76.68	0.42	7,761
Well Blowdowns	2.63	0.00	0.00	0.00	0.00	0.00	0.13	522
Project Year 20 Totals	**1,360.43**	**1,761.56**	**1,184.59**	**157.84**	**67.73**	**94.53**	**144.20**	**592,096**

Table O-4
Oil and Gas – BLM Only – Alternative C
(Conventional + Coal Bed Natural Gas + Shale)

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	2.88	49.61	49.61	0.57	0.55	0.07	0.36	10,091
Completion Venting	0.52	0.00	0.00	0.00	0.00	0.00	0.02	103
Condensate Tanks	9.45	0.00	0.00	0.00	0.00	0.00	0.12	32
Construction Equipment	0.11	0.67	1.53	0.10	0.10	0.03	0.01	151
Dehydrators	13.54	0.00	0.00	0.00	0.00	0.00	7.07	534
Drilling Engines	2.24	38.49	38.49	0.44	0.43	0.05	0.28	7,829
Field Compressor Engines	3.98	391.09	228.85	2.12	2.12	0.06	0.44	4,060
Flaring	0.54	2.28	0.42	0.00	0.00	0.00	0.22	704
Fugitive Dust	0.00	0.00	0.00	7.50	0.77	0.00	0.00	0
Fugitive Leaks	260.42	0.00	0.00	0.00	0.00	0.00	12.57	60,614
Heaters	8.01	122.35	145.65	11.07	11.07	0.00	1.12	175,848
Midstream Compressor Engines	90.64	229.85	130.82	6.37	6.37	2.38	10.03	7,866
Other Midstream	110.08	32.92	28.54	1.48	1.48	1.31	14.72	31,647
Other Production	30.39	22.22	94.64	5.30	5.14	2.31	2.00	15,065
Pneumatic Devices	104.29	0.00	0.00	0.00	0.00	0.00	5.04	20,556
Pneumatic Pumps	8.76	0.00	0.00	0.00	0.00	0.00	0.42	1,727
Traffic	0.20	0.91	1.83	20.74	2.15	0.01	0.02	247
Water Injection Pumps	1.69	1.74	2.21	10.91	0.85	38.63	0.21	3,910
Well Blowdowns	2.52	0.00	0.00	0.00	0.00	0.00	0.12	496
Project Year 10 Totals	**650.25**	**892.11**	**722.59**	**66.60**	**31.02**	**44.85**	**54.79**	**341,478**
Project Year 20								
Completion Engines	2.83	48.72	9.33	0.42	0.41	0.07	0.35	9,909
Completion Venting	0.50	0.00	0.00	0.00	0.00	0.00	0.02	99
Condensate Tanks	10.73	0.00	0.00	0.00	0.00	0.00	0.08	36
Construction Equipment	0.11	0.66	1.51	0.10	0.10	0.03	0.01	149
Dehydrators	9.88	0.00	0.00	0.00	0.00	0.00	5.15	469
Drilling Engines	2.21	38.02	7.28	0.33	0.32	0.05	0.28	7,734
Field Compressor Engines	2.41	87.73	45.26	0.61	0.61	0.02	0.27	1,166
Flaring	0.66	2.80	0.51	0.00	0.00	0.00	0.26	864
Fugitive Dust	0.00	0.00	0.00	7.11	0.73	0.00	0.00	0
Fugitive Leaks	103.84	0.00	0.00	0.00	0.00	0.00	4.98	37,491
Heaters	3.47	52.98	63.08	4.79	4.79	0.00	0.49	76,154
Midstream Compressor Engines	103.75	257.47	107.42	7.14	7.14	2.45	11.48	9,249
Other Midstream	119.14	37.58	32.58	1.69	1.69	1.49	15.12	34,279
Other Production	14.12	14.31	58.32	3.22	3.12	1.42	0.99	8,319
Pneumatic Devices	41.28	0.00	0.00	0.00	0.00	0.00	2.00	8,185
Pneumatic Pumps	1.97	0.00	0.00	0.00	0.00	0.00	0.10	392
Traffic	0.13	0.57	1.21	12.68	1.31	0.01	0.01	162
Water Injection Pumps	1.12	1.16	1.48	7.27	0.57	25.74	0.14	2,606
Well Blowdowns	1.00	0.00	0.00	0.00	0.00	0.00	0.05	198
Project Year 20 Totals	**419.15**	**542.00**	**327.97**	**45.37**	**20.79**	**31.28**	**41.77**	**197,460**

Table O-5
Oil and Gas – BLM Only – Alternative D
(Conventional + Coal Bed Natural Gas + Shale)

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	86.15	880.53	1,529.61	50.32	48.81	1.21	10.73	179,118
Completion Venting	8.44	0.00	0.00	0.00	0.00	0.00	0.41	1,682
Condensate Tanks	313.58	0.00	0.00	0.00	0.00	0.00	1.21	1,038
Construction Equipment	1.98	11.71	26.78	1.81	1.76	0.58	0.25	2,653
Dehydrators	182.31	0.00	0.00	0.00	0.00	0.00	94.72	9,988
Drilling Engines	68.60	701.12	1,217.94	40.06	38.86	0.96	8.55	142,621
Field Compressor Engines	35.02	818.40	371.92	6.77	6.77	0.21	3.87	12,995
Flaring	9.69	40.97	7.53	0.00	0.00	0.00	3.88	12,633
Fugitive Dust	0.00	0.00	0.00	224.21	22.80	0.00	0.00	0
Fugitive Leaks	785.71	0.00	0.00	0.00	0.00	0.00	37.60	303,652
Heaters	26.66	407.21	484.78	36.84	36.84	0.00	3.73	585,271
Midstream Compressor Engines	1,328.33	3,390.94	1,215.35	90.32	90.32	28.33	146.96	122,260
Other Midstream	1,451.85	483.33	419.01	21.75	21.75	19.19	173.71	418,098
Other Production	113.26	116.47	472.14	26.03	25.25	11.50	7.89	66,420
Pneumatic Devices	311.92	0.00	0.00	0.00	0.00	0.00	15.09	61,914
Pneumatic Pumps	19.28	0.00	0.00	0.00	0.00	0.00	0.93	3,837
Traffic	1.41	6.31	16.32	118.66	12.48	0.07	0.15	2,089
Water Injection Pumps	9.18	9.46	12.06	59.39	4.62	210.30	1.14	21,286
Well Blowdowns	7.53	0.00	0.00	0.00	0.00	0.00	0.36	1,495
Project Year 10 Totals	**4,760.90**	**6,866.44**	**5,773.43**	**676.17**	**310.26**	**272.33**	**511.19**	**1,949,050**
Project Year 20								
Completion Engines	51.10	879.64	879.64	10.05	9.75	1.20	6.37	178,925
Completion Venting	8.43	0.00	0.00	0.00	0.00	0.00	0.41	1,680
Condensate Tanks	412.32	0.00	0.00	0.00	0.00	0.00	1.52	1,364
Construction Equipment	2.00	11.80	27.06	1.83	1.77	0.58	0.25	2,684
Dehydrators	232.87	0.00	0.00	0.00	0.00	0.00	120.95	12,956
Drilling Engines	40.69	700.42	700.42	8.00	7.76	0.96	5.07	142,471
Field Compressor Engines	64.48	942.34	331.40	9.91	9.91	0.30	7.13	19,037
Flaring	13.93	58.89	10.82	0.00	0.00	0.00	5.57	18,159
Fugitive Dust	0.00	0.00	0.00	202.58	20.64	0.00	0.00	0
Fugitive Leaks	1,155.01	0.00	0.00	0.00	0.00	0.00	55.06	523,545
Heaters	40.79	622.94	741.59	56.36	56.36	0.00	5.71	895,327
Midstream Compressor Engines	1,719.00	4,297.12	1,471.26	118.08	118.08	36.77	190.18	160,374
Other Midstream	1,892.79	632.73	548.54	28.48	28.48	25.12	225.39	545,115
Other Production	172.73	202.79	813.28	44.69	43.35	19.80	12.59	111,011
Pneumatic Devices	456.80	0.00	0.00	0.00	0.00	0.00	22.09	90,949
Pneumatic Pumps	23.00	0.00	0.00	0.00	0.00	0.00	1.11	4,612
Traffic	1.85	8.28	18.05	177.15	18.41	0.08	0.20	2,391
Water Injection Pumps	16.11	16.60	21.16	104.22	8.11	369.06	2.01	37,354
Well Blowdowns	11.03	0.00	0.00	0.00	0.00	0.00	0.53	2,197
Project Year 20 Totals	**6,314.92**	**8,373.55**	**5,563.21**	**761.36**	**322.63**	**453.87**	**662.14**	**2,750,149**

Table O-6
Coal – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Construction Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0
Construction Combustion Sources	0	0	0	0	0	0	0	0	0	0	0	0
Production Fugitives (dust, methane)	0	0	0	0	0	0	0	0	0	0	0	0
Production Combustion Sources (mining, heavy equipment, vehicle exhaust)	0	0	0	0	0	0	0	0	0	0	0	0
Production Point Sources	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-7
Coal – Alternatives A and D, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Construction Fugitive Dust	30	9	0	0	0	0	0	0	0	0	0	0
Construction Combustion Sources	1	1	25	0	8	1	0	3,097	0	0	3,136	2,846
Production Fugitives (dust, methane)	23	7	0	0	0	0	0	0	106,389	0	2,234,164	2,027,372
Production Combustion Sources (mining, heavy equipment, vehicle exhaust)	4	1	101	0	13	5	0	13,079	0	1	13,317	12,085
Production Point Sources	3	1	91	0	0	0	0	0	0	0	0	0
Total	**60**	**19**	**217**	**0**	**21**	**6**	**1**	**16,176**	**106,389**	**1**	**2,250,618**	**2,042,303**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-8
Coal – Alternatives B and C, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Construction Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0
Construction Combustion Sources	0	0	0	0	0	0	0	0	0	0	0	0
Production Fugitives (dust, methane)	18	6	0	0	0	0	0	0	85,111	0	1,787,331	1,621,897
Production Combustion Sources (mining, heavy equipment, vehicle exhaust)	3	1	80.5	0	10	4	0	10,463	0	1	10,654	9,668
Production Point Sources	2	1	73	0	0	0	0	0	0	0	0	0
Total	**24**	**7**	**154**	**0**	**10**	**4**	**0**	**10,463**	**85,111**	**1**	**1,797,985**	**1,631,565**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-9
Coal – Alternatives A and D, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Construction Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0
Construction Combustion Sources	0	0	0	0	0	0	0	0	0	0	0	0
Production Fugitives (dust, methane)	32	10	0	0	0	0	0	0	148,944	0	3,127,829	2,838,321
Production Combustion Sources (mining, heavy equipment, vehicle exhaust)	6	2	141	0	18	7	1	18,310	0	1	18,644	16,919
Production Point Sources	4	1	128	0	0	0	0	0	0	0	0	0
Total	**42**	**12**	**269**	**0**	**18**	**7**	**1**	**18,310**	**148,944**	**1**	**3,146,474**	**2,855,239**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-10
Coal – Alternatives B and C, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Construction Fugitive Dust	0	0	0	0	0	0	0	0	0	0	0	0
Construction Combustion Sources	0	0	0	0	0	0	0	0	0	0	0	0
Production Fugitives (dust, methane)	18	6	0	0	0	0	0	0	85,111	0	1,787,331	1,621,897
Production Combustion Sources (mining, heavy equipment, vehicle exhaust)	3	1	81	0	10	4	0	10,463	0	1	10,654	9,668
Production Point Sources	2	1	73	0	0	0	0	0	0	0	0	0
Total	**24**	**7**	**154**	**0**	**10**	**4**	**0**	**10,463**	**85,111**	**1**	**1,797,985**	**1,631,565**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-11
Uranium – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Extraction and Processing	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-12
Uranium – Alternatives A, B, C, and D, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	222	26	107	0	102	11	1	14,093	1	0	14,178	12,866
Extraction and Processing	132	124	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	16	15	257	6	100	18	2	28,849	0	0	28,926	26,249
Total	**369**	**166**	**364**	**7**	**203**	**29**	**3**	**42,942**	**1**	**0**	**43,104**	**39,115**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-13
Uranium – Alternatives A, B, C, and D, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	444	52	214	1	205	22	2	28,185	1	0	28,356	25,731
Extraction and Processing	263	249	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	32	31	514	13	201	36	4	57,698	1	0	57,852	52,498
Total	**739**	**331**	**727**	**13**	**406**	**58**	**6**	**85,883**	**2**	**1**	**86,208**	**78,229**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-14
Sand and Gravel – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	208	21	10	0	7	1	0	1,294	0	0	1,299	1,179
Extraction and Processing	23	6	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	4	0	2	0	0	400	0	0	401	364
Total	**231**	**27**	**14**	**0**	**9**	**1**	**0**	**1,694**	**0**	**0**	**1,701**	**1,543**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-15
Sand and Gravel – Alternative A, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	208	21	10	0	7	1	0	1,294	0	0	1,299	1,179
Extraction and Processing	23	6	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	4	0	2	0	0	400	0	0	401	364
Total	**231**	**27**	**14**	**0**	**9**	**1**	**0**	**1,694**	**0**	**0**	**1,701**	**1,543**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-16
Sand and Gravel – Alternative B, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	52	5	3	0	2	0	0	323	0	0	325	295
Extraction and Processing	6	1	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	1	0	0	0	0	100	0	0	100	91
Total	**58**	**7**	**3**	**0**	**2**	**0**	**0**	**423**	**0**	**0**	**425**	**386**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-17
Sand and Gravel – Alternative C, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	52	5	3	0	2	0	0	323	0	0	325	295
Extraction and Processing	6	1	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	1	0	0	0	0	100	0	0	100	91
Total	**58**	**7**	**3**	**0**	**2**	**0**	**0**	**423**	**0**	**0**	**425**	**386**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-18
Sand and Gravel – Alternative D, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	208	21	10	0	7	1	0	1,294	0	0	1,299	1,179
Extraction and Processing	23	6	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	4	0	2	0	0	400	0	0	401	364
Total	**231**	**27**	**14**	**0**	**9**	**1**	**0**	**1,694**	**0**	**0**	**1,701**	**1,543**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-19
Sand and Gravel – Alternative A, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	208	21	10	0	7	1	0	1,294	0	0	1,299	1,179
Extraction and Processing	23	6	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	4	0	2	0	0	400	0	0	401	364
Total	**231**	**27**	**14**	**0**	**9**	**1**	**0**	**1,694**	**0**	**0**	**1,701**	**1,543**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-20
Sand and Gravel – Alternative B, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	52	5	3	0	2	0	0	323	0	0	325	295
Extraction and Processing	6	1	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	1	0	0	0	0	100	0	0	100	91
Total	**58**	**7**	**3**	**0**	**2**	**0**	**0**	**423**	**0**	**0**	**425**	**386**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-21
Sand and Gravel – Alternative C, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	52	5	3	0	2	0	0	323	0	0	325	295
Extraction and Processing	6	1	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	1	0	0	0	0	100	0	0	100	91
Total	**58**	**7**	**3**	**0**	**2**	**0**	**0**	**423**	**0**	**0**	**425**	**386**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-22
Sand and Gravel – Alternative D, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	208	21	10	0	7	1	0	1,294	0	0	1,299	1,179
Extraction and Processing	23	6	0	0	0	0	0	0	0	0	0	0
Heavy Equipment	0	0	4	0	2	0	0	400	0	0	401	364
Total	**231**	**27**	**14**	**0**	**9**	**1**	**0**	**1,694**	**0**	**0**	**1,701**	**1,543**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-23
Travel and Transportation Management – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.27	0.24
Maintenance Equipment	0.08	0.01	0.06	0.00	0.05	0.01	0.00	7.46	0.00	0.00	7.48	6.79
Recreational Vehicles	1,216.70	127.16	2.85	0.05	375.33	228.76	22.88	1,648.96	2.69	0.05	1,720.65	1,561.39
Total	**1,216.82**	**127.18**	**2.92**	**0.06**	**375.38**	**228.76**	**22.88**	**1,656.69**	**2.69**	**0.05**	**1,728.40**	**1,568.42**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-24
Travel and Transportation Management – Alternative A, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.34	0.31
Maintenance Equipment	0.10	0.02	0.08	0.00	0.07	0.01	0.00	9.62	0.00	0.00	9.65	8.76
Recreational Vehicles	1,568.87	163.97	3.68	0.07	483.96	294.97	29.50	2,126.25	3.47	0.06	2,218.69	2,013.33
Total	**1,569.03**	**163.99**	**3.76**	**0.07**	**484.03**	**294.98**	**29.50**	**2,136.21**	**3.47**	**0.06**	**2,228.68**	**2,022.39**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-25
Travel and Transportation Management – Alternative B, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	10	0	0	10	9
Recreational Vehicles	1,569	164	4	0	484	295	29	2,126	3	0	2,219	2,013
Total	**1,569**	**164**	**4**	**0**	**484**	**295**	**29**	**2,136**	**3**	**0**	**2,229**	**2,022**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-26
Travel and Transportation Management – Alternative C, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	7	0	0	7	7
Recreational Vehicles	1,166	122	3	0	360	219	22	1,580	3	0	1,649	1,496
Total	**1,166**	**122**	**3**	**0**	**360**	**219**	**22**	**1,587**	**3**	**0**	**1,656**	**1,503**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-27
Travel and Transportation Management – Alternative D, Year 10

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	10	0	0	10	9
Recreational Vehicles	1,569	164	4	0	484	295	29	2,126	3	0	2,219	2,013
Total	**1,569**	**164**	**4**	**0**	**484**	**295**	**29**	**2,136**	**3**	**0**	**2,229**	**2,022**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-28
Travel and Transportation Management – Alternative A, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0.07	0.01	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.42	0.38
Maintenance Equipment	0.12	0.02	0.10	0.00	0.08	0.01	0.00	11.88	0.00	0.00	11.91	10.81
Recreational Vehicles	1,936.56	202.40	4.54	0.09	597.38	364.10	36.41	2,624.56	4.28	0.08	2,738.66	2,485.17
Total	**1,936.75**	**202.43**	**4.64**	**0.09**	**597.47**	**364.11**	**36.41**	**2,636.86**	**4.28**	**0.08**	**2,750.99**	**2,496.37**

Table O-29
Travel and Transportation Management – Alternative B, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	12	0	0	12	11
Recreational Vehicles	1,937	202	5	0	597	364	36	2,625	4	0	2,739	2,485
Total	**1,937**	**202**	**5**	**0**	**597**	**364**	**36**	**2,637**	**4**	**0**	**2,751**	**2,496**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-30
Travel and Transportation Management – Alternative C, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	7	0	0	7	7
Recreational Vehicles	1,166	122	3	0	360	219	22	1,580	3	0	1,649	1,496
Total	**1,166**	**122**	**3**	**0**	**360**	**219**	**22**	**1,587**	**3**	**0**	**1,656**	**1,503**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-31
Travel and Transportation Management – Alternative D, Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	0	0	0	0	0	0	0	0	0	0	0	0
Maintenance Equipment	0	0	0	0	0	0	0	12	0	0	12	11
Recreational Vehicles	1,937	202	5	0	597	364	36	2,625	4	0	2,739	2,485
Total	**1,937**	**202**	**5**	**0**	**597**	**364**	**36**	**2,637**	**4**	**0**	**2,751**	**2,496**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-32
Prescribed Fire and Mechanical Treatments – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Fugitive Dust - Mechanical Treatment	468	70	0	0	0	0	0	0	0	0	0	0
Fugitive Dust - Prescribed Fire	5	1	0	0	0	0	0	0	0	0	0	0
Smoke - Prescribed Fire	3	3	1	0	36	2	0	0	2	2	532	483
Commuter Vehicles - Mechanical Treatment	0	0	0	0	0	0	0	21	0	0	25	23
Commuter Vehicles - Prescribed Fire	0	0	0	0	0	0	0	11	0	0	11	10
Maintenance Equipment - Mechanical Treatment	18	17	208	5	278	56	6	25,421	0	0	25,579	23,211
Maintenance Equipment - Prescribed Fire	0	0	8	0	5	1	0	942	0	0	948	860
Total	**494**	**91**	**217**	**6**	**319**	**59**	**6**	**26,397**	**2**	**2**	**27,095**	**24,587**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-33
Prescribed Fire and Mechanical Treatments – Alternative A, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Fugitive Dust - Mechanical Treatment	239	36	0	0	0	0	0	0	0	0	0	0
Fugitive Dust - Prescribed Fire	9	1	0	0	0	0	0	0	0	0	0	0
Smoke - Prescribed Fire	6	5	1	0	61	3	0	0	3	3	909	824
Commuter Vehicles - Mechanical Treatment	0	0	0	0	0	0	0	11	0	0	13	12
Commuter Vehicles - Prescribed Fire	0	0	0	0	0	0	0	20	0	0	20	18
Maintenance Equipment - Mechanical Treatment	9	9	106	3	142	29	3	12,982	0	0	13,063	11,854
Maintenance Equipment - Prescribed Fire	1	1	13	0	8	1	0	1,610	0	0	1,620	1,470
Total	**263**	**52**	**121**	**4**	**212**	**33**	**3**	**14,623**	**3**	**3**	**15,623**	**14,177**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-34
Prescribed Fire and Mechanical Treatments – Alternative B, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Fugitive Dust - Mechanical Treatment	239	36	0	0	0	0	0	0	0	0	0	0
Fugitive Dust - Prescribed Fire	9	1	0	0	0	0	0	0	0	0	0	0
Smoke - Prescribed Fire	6	5	1	0	61	3	0	0	3	3	909	824
Commuter Vehicles - Mechanical Treatment	0	0	0	0	0	0	0	11	0	0	13	12
Commuter Vehicles - Prescribed Fire	0	0	0	0	0	0	0	20	0	0	20	18
Maintenance Equipment - Mechanical Treatment	9	9	106	3	142	29	3	12,982	0	0	13,063	11,854
Maintenance Equipment - Prescribed Fire	1	1	13	0	8	1	0	1,610	0	0	1,620	1,470
Total	**263**	**52**	**121**	**4**	**212**	**33**	**3**	**14,623**	**3**	**3**	**15,623**	**14,177**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-35
Prescribed Fire and Mechanical Treatments – Alternative C, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Fugitive Dust - Mechanical Treatment	191	29	0	0	0	0	0	0	0	0	0	0
Fugitive Dust - Prescribed Fire	10	2	0	0	0	0	0	0	0	0	0	0
Smoke - Prescribed Fire	7	6	2	0	74	3	0	0	3	3	1,090	989
Commuter Vehicles - Mechanical Treatment	0	0	0	0	0	0	0	9	0	0	10	9
Commuter Vehicles - Prescribed Fire	0	0	0	0	0	0	0	23	0	0	23	21
Maintenance Equipment - Mechanical Treatment	7	7	85	2	114	23	2	10,386	0	0	10,450	9,483
Maintenance Equipment - Prescribed Fire	1	1	16	0	10	2	0	1,932	0	0	1,944	1,764
Total	**217**	**44**	**103**	**3**	**197**	**28**	**3**	**12,350**	**4**	**4**	**13,518**	**12,267**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-36
Prescribed Fire and Mechanical Treatments – Alternative D, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Fugitive Dust - Mechanical Treatment	299	45	0	0	0	0	0	0	0	0	0	0
Fugitive Dust - Prescribed Fire	6	1	0	0	0	0	0	0	0	0	0	0
Smoke - Prescribed Fire	4	4	1	0	46	2	0	0	2	2	681	618
Commuter Vehicles - Mechanical Treatment	0	0	0	0	0	0	0	14	0	0	16	15
Commuter Vehicles - Prescribed Fire	0	0	0	0	0	0	0	15	0	0	15	13
Maintenance Equipment - Mechanical Treatment	11	11	133	3	177	36	4	16,228	0	0	16,328	14,817
Maintenance Equipment - Prescribed Fire	1	1	10	0	6	1	0	1,208	0	0	1,215	1,102
Total	**321**	**61**	**144**	**4**	**230**	**39**	**4**	**17,464**	**3**	**2**	**18,255**	**16,566**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

Table O-37
Livestock Grazing – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Heavy Equipment	0.37	0.05	0.09	0.00	0.03	0.01	0.00	11.86	0.00	0.00	11.89	10.79
Commuting Vehicles	1.00	0.11	0.26	0.00	0.72	0.06	0.01	43.11	0.00	0.00	43.74	39.69
OHVs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,554.31	0.00	53,640.53	48,675.62
Total	**1.38**	**0.16**	**0.35**	**0.00**	**0.75**	**0.07**	**0.01**	**54.97**	**2,554.31**	**0.00**	**53,696.16**	**48,726.10**

Table O-38
Livestock Grazing – Alternative A, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Heavy Equipment	0.36	0.05	0.09	0.00	0.03	0.01	0.00	11.31	0.00	0.00	11.34	10.29
Commuting Vehicles	0.95	0.10	0.25	0.00	0.69	0.06	0.01	41.11	0.00	0.00	41.71	37.85
OHVs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,435.78	0.00	51,151.45	46,416.92
Total	**1.31**	**0.15**	**0.34**	**0.00**	**0.72**	**0.06**	**0.01**	**52.42**	**2,435.79**	**0.00**	**51,204.50**	**46,465.06**

Table O-39
Livestock Grazing – Alternative B, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Heavy Equipment	0.36	0.05	0.09	0.00	0.03	0.01	0.00	11.28	0.00	0.00	11.31	10.26
Commuting Vehicles	0.95	0.10	0.25	0.00	0.68	0.06	0.01	41.01	0.00	0.00	41.61	37.76
OHVs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,429.71	0.00	51,023.92	46,301.20
Total	**1.31**	**0.15**	**0.34**	**0.00**	**0.72**	**0.06**	**0.01**	**52.29**	**2,429.71**	**0.00**	**51,076.84**	**46,349.22**

Table O-40
Livestock Grazing – Alternative C, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Heavy Equipment	0.21	0.03	0.05	0.00	0.02	0.00	0.00	6.55	0.00	0.00	6.57	5.96
Commuting Vehicles	0.55	0.06	0.14	0.00	0.40	0.03	0.00	23.82	0.00	0.00	24.16	21.93
OHVs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,411.12	0.00	29,633.42	26,890.58
Total	**0.76**	**0.09**	**0.20**	**0.00**	**0.42**	**0.04**	**0.00**	**30.37**	**1,411.12**	**0.00**	**29,664.16**	**26,918.47**

Table O-41
Livestock Grazing – Alternative D, Year 10 and Year 20

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Heavy Equipment	0.36	0.05	0.09	0.00	0.03	0.01	0.00	11.31	0.00	0.00	11.34	10.29
Commuting Vehicles	0.95	0.10	0.25	0.00	0.69	0.06	0.01	41.11	0.00	0.00	41.71	37.85
OHVs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enteric	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,435.78	0.00	51,151.45	46,416.92
Total	**1.31**	**0.15**	**0.34**	**0.00**	**0.72**	**0.06**	**0.01**	**52.42**	**2,435.79**	**0.00**	**51,204.50**	**46,465.06**

Table O-42
Lands and Realty Right-of-ways – Base Year

Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	1.67	0.18	0.35	0.01	0.08	0.02	0.00	40.83	0.00	0.00	42.16	38.26
Heavy Equipment	0.35	0.09	0.68	0.02	0.32	0.05	0.01	72.11	0.00	0.00	72.30	65.61
Total	**2.02**	**0.27**	**1.03**	**0.02**	**0.40**	**0.08**	**0.01**	**112.94**	**0.01**	**0.00**	**114.47**	**103.87**

[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

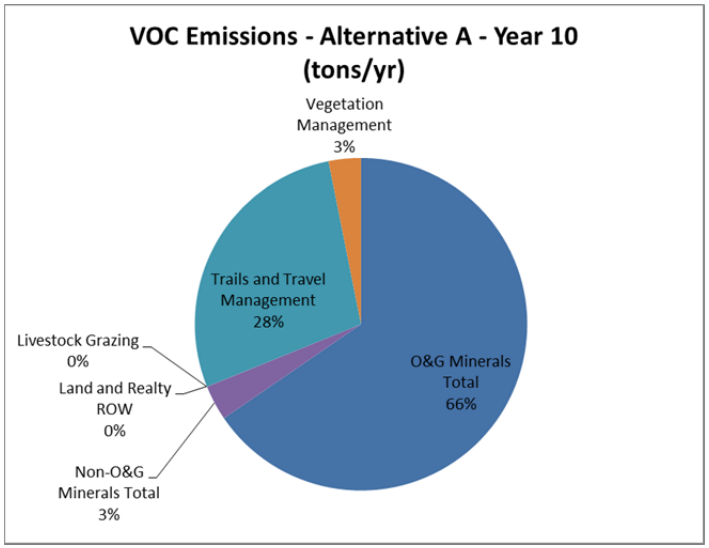
Table O-43
Lands and Realty Right-of-ways – Alternatives A, B, C, and D, Year 10 and Year 20

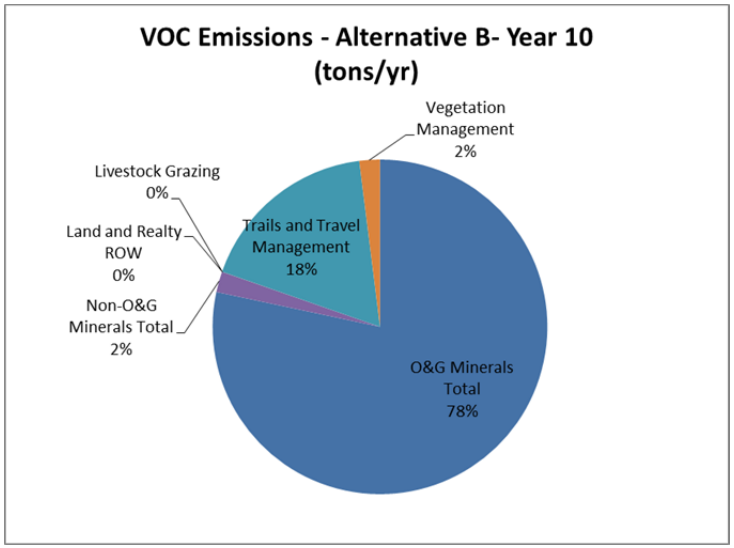
Activity	Annual Emissions (Tons)											
	PM10	PM2.5	NO_x	SO_2	CO	VOC	HAPs[a]	CO_2	CH_4	N_2O	CO_2eq	CO_2eq metric Tonnes
Commuter Vehicles	1.67	0.18	0.35	0.01	0.08	0.02	0.00	40.83	0.00	0.00	42.16	38.26
Heavy Equipment	0.35	0.09	0.68	0.02	0.32	0.05	0.01	72.11	0.00	0.00	72.30	65.61
Total	**2.02**	**0.27**	**1.03**	**0.02**	**0.40**	**0.08**	**0.01**	**112.94**	**0.01**	**0.00**	**114.47**	**103.87**

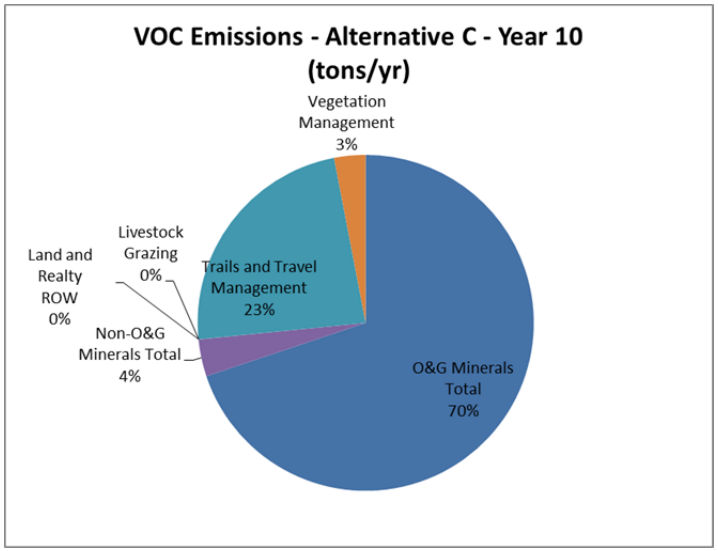
[a] HAPs = Hazardous Air Pollutants; assumed = VOCs * 0.1

O.2 BLM AUTHORIZED ACTIONS: PERCENT CONTRIBUTION TO BLM EMISSIONS BY ACTIVITY

Figure O-1
VOC Emissions







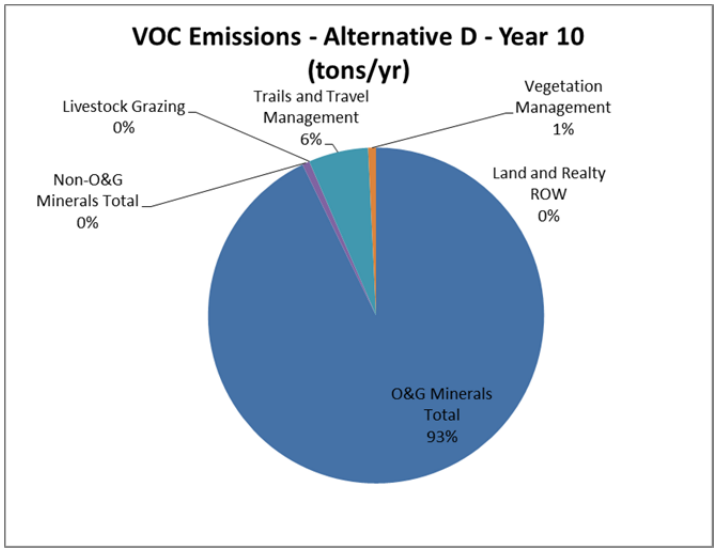
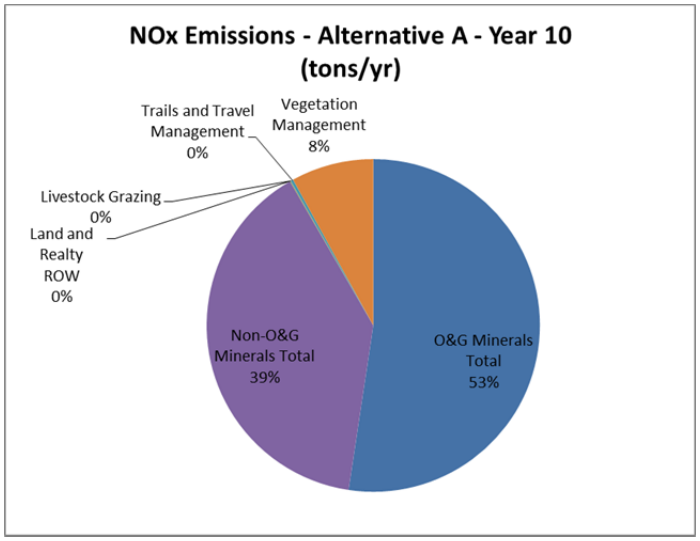
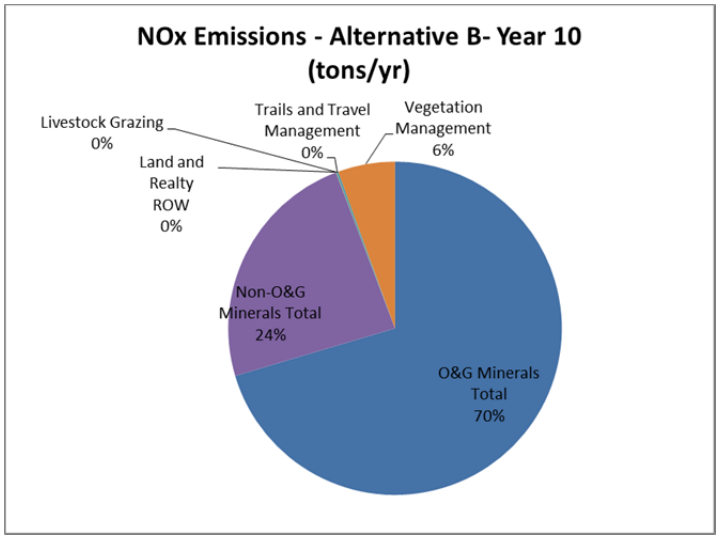
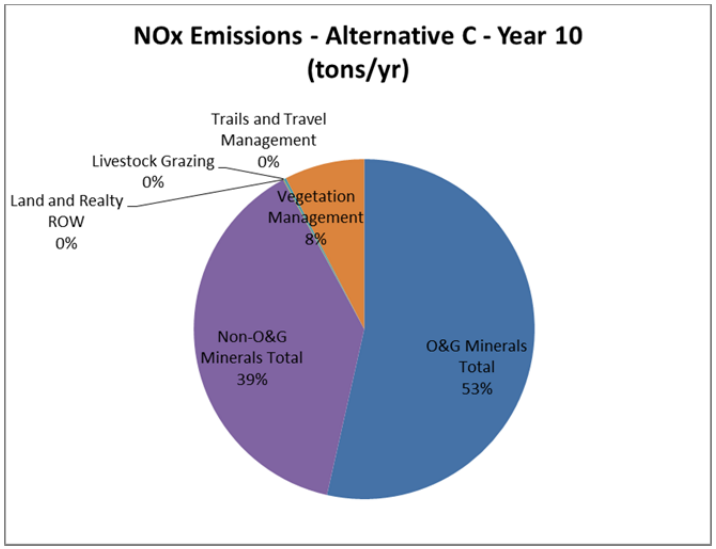


Figure O-2
NO_x Emissions







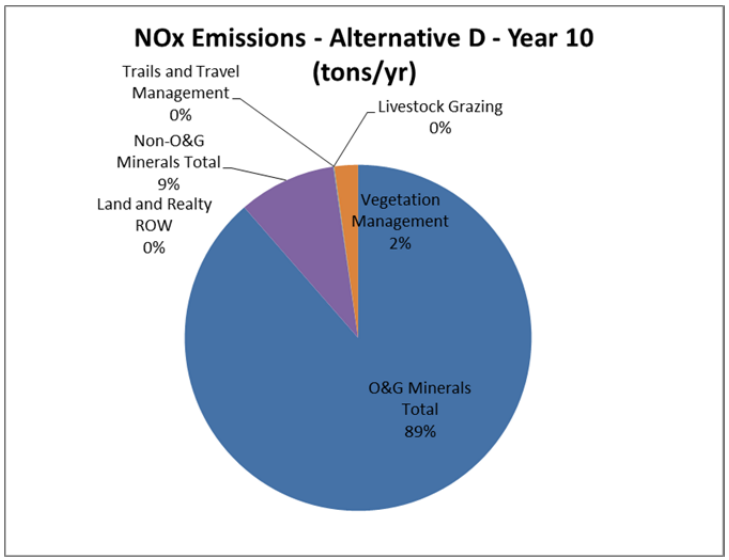
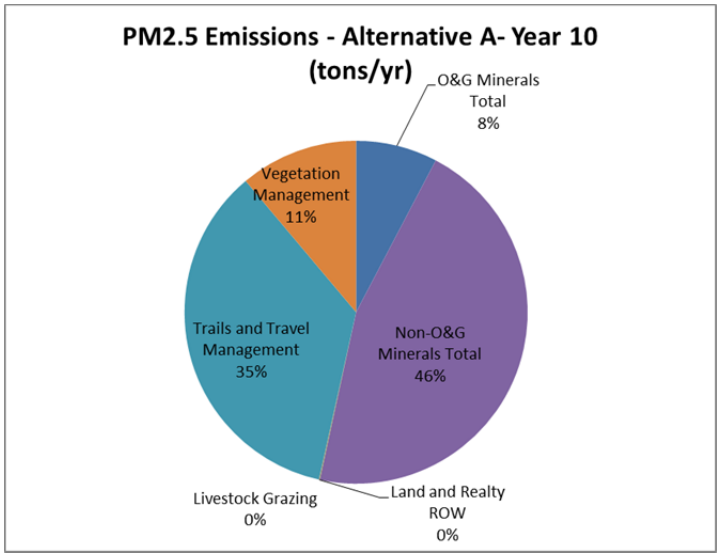
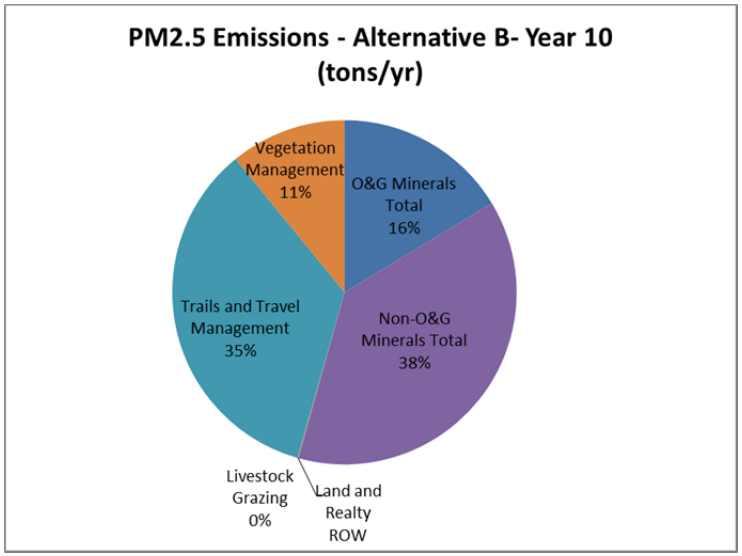
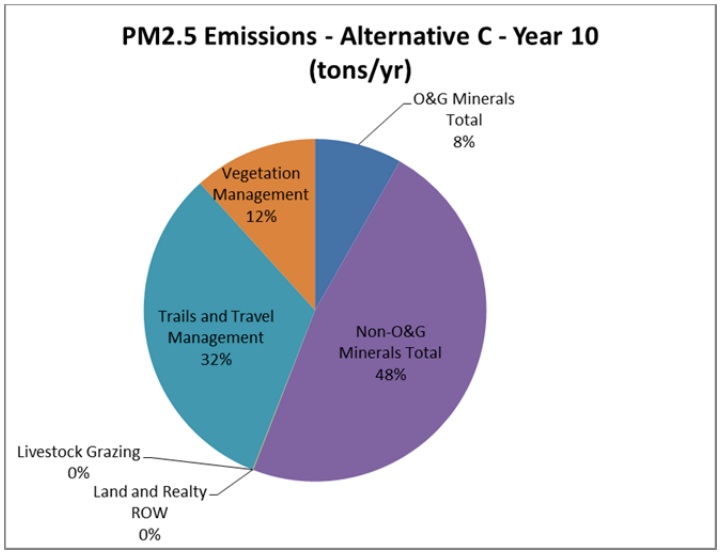
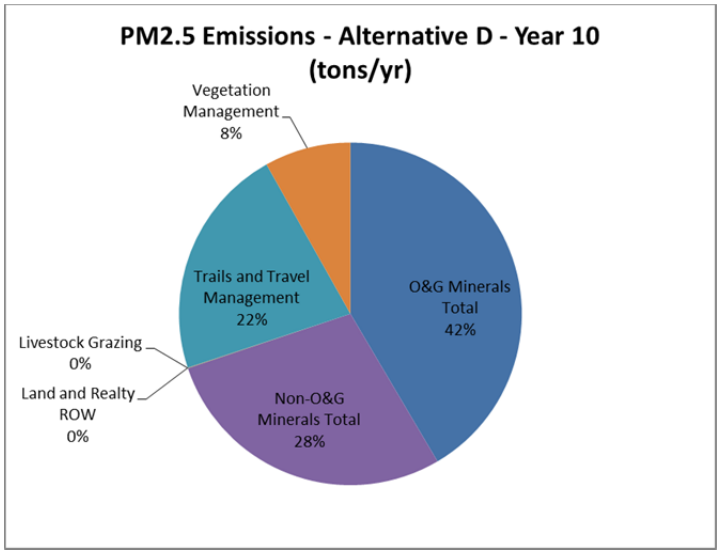


Figure O-3
$PM_{2.5}$ Emissions









O.3 BLM PLUS NON-FEDERAL OIL AND GAS ACTIONS WITHIN THE PLANNING AREA EMISSIONS INVENTORY TABLES

- Oil and Gas Development – BLM + Private/Fee
  - Combined Conventional, CBNG, Shale

Table O-44
BLM + Non-federal Oil and Gas, Alternative A

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	32	332	577	19	18	0	4	67,550
Completion Venting	3	0	0	0	0	0	0	682
Condensate Tanks	425	0	0	0	0	0	12	1,396
Construction Equipment	1	4	10	1	1	0	0	1,006
Dehydrators	96	0	0	0	0	0	50	5,433
Drilling Engines	25	258	449	15	14	0	3	52,540
Field Compressor Engines	22	1,344	752	8	8	0	2	15,400
Flaring	5	21	4	0	0	0	2	6,467
Fracing Engines	0	0	0	0	0	0	0	0
Fugitive Dust	0	0	0	85	9	0	0	0
Fugitive Leaks	925	0	0	0	0	0	45	237,913
Heaters	29	442	526	40	40	0	4	634,746
Midstream Compressor Engines	592	1,499	821	42	42	15	66	51,666
Other Midstream	713	215	187	10	10	9	95	205,137
Other Production	113	88	371	21	20	9	8	57,438
Pneumatic Devices	370	0	0	0	0	0	18	72,979
Pneumatic Pumps	34	0	0	0	0	0	2	6,644
Traffic	1	4	9	87	9	0	0	1,222
Water Injection Pumps	7	7	9	44	3	155	1	15,664
Well Blowdowns	9	0	0	0	0	0	0	1,763
Project Year 10 Totals	**3,403**	**4,215**	**3,714**	**370**	**174**	**189**	**311**	**1,435,646**
Project Year 20								
Completion Engines	32	331	575	19	18	0	4	67,369
Completion Venting	3	0	0	0	0	0	0	678
Condensate Tanks	456	0	0	0	0	0	11	1,498
Construction Equipment	1	4	10	1	1	0	0	1,004
Dehydrators	100	0	0	0	0	0	52	6,403
Drilling Engines	25	258	448	15	14	0	3	52,445
Field Compressor Engines	30	819	394	6	6	0	3	12,089
Flaring	6	27	5	0	0	0	3	8,392
Fracing Engines	0	0	0	0	0	0	0	0
Fugitive Dust	0	0	0	85	9	0	0	0
Fugitive Leaks	729	0	0	0	0	0	35	251,294
Heaters	24	368	438	33	33	0	3	529,366
Midstream Compressor Engines	697	1,723	699	48	48	16	77	62,101
Other Midstream	798	252	219	11	11	10	101	229,712
Other Production	98	96	391	22	21	10	7	56,339
Pneumatic Devices	290	0	0	0	0	0	14	57,490
Pneumatic Pumps	25	0	0	0	0	0	1	5,045
Traffic	1	4	10	91	9	0	0	1,277
Water Injection Pumps	7	8	10	48	4	171	1	17,357
Well Blowdowns	7	0	0	0	0	0	0	1,389
Project Year 20 Totals	**3,331**	**3,891**	**3,199**	**379**	**175**	**209**	**316**	**1,361,245**

Table O-45
BLM + Non-federal Oil and Gas, Alternative B

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	45	457	794	26	25	1	6	93,007
Completion Venting	5	0	0	0	0	0	0	938
Condensate Tanks	338	0	0	0	0	0	10	1,114
Construction Equipment	1	6	14	1	1	0	0	1,386
Dehydrators	94	0	0	0	0	0	49	4,984
Drilling Engines	35	356	618	20	20	0	4	72,348
Field Compressor Engines	27	1,411	775	9	9	0	3	16,808
Flaring	6	27	5	0	0	0	3	8,266
Fugitive Dust	0	0	0	117	12	0	0	0
Fugitive Leaks	1,010	0	0	0	0	0	49	274,278
Heaters	32	487	580	44	44	0	4	699,845
Midstream Compressor Engines	784	1,979	980	54	54	20	87	68,602
Other Midstream	923	283	245	13	13	11	120	265,391
Other Production	126	102	428	24	23	10	8	65,240
Pneumatic Devices	404	0	0	0	0	0	20	79,701
Pneumatic Pumps	32	0	0	0	0	0	2	6,349
Traffic	1	5	11	102	11	0	0	1,496
Water Injection Pumps	8	8	10	51	4	180	1	18,242
Well Blowdowns	10	0	0	0	0	0	0	1,925
Project Year 10 Totals	**3,880**	**5,121**	**4,460**	**461**	**215**	**223**	**366**	**1,679,920**
Project Year 20								
Completion Engines	27	456	456	5	5	1	3	92,819
Completion Venting	5	0	0	0	0	0	0	935
Condensate Tanks	340	0	0	0	0	0	8	1,125
Construction Equipment	1	6	14	1	1	0	0	1,400
Dehydrators	98	0	0	0	0	0	51	5,817
Drilling Engines	21	355	355	4	4	0	3	72,249
Field Compressor Engines	39	954	439	8	8	0	4	14,906
Flaring	8	35	6	0	0	0	3	10,734
Fugitive Dust	0	0	0	106	11	0	0	0
Fugitive Leaks	900	0	0	0	0	0	43	324,025
Heaters	30	459	546	42	42	0	4	659,563
Midstream Compressor Engines	947	2,338	900	65	65	22	105	84,480
Other Midstream	1,075	342	296	15	15	14	135	309,330
Other Production	123	124	504	28	27	12	9	71,939
Pneumatic Devices	358	0	0	0	0	0	17	70,933
Pneumatic Pumps	22	0	0	0	0	0	1	4,457
Traffic	1	5	11	110	11	0	0	1,428
Water Injection Pumps	10	10	13	63	5	222	1	22,512
Well Blowdowns	9	0	0	0	0	0	0	1,713
Project Year 20 Totals	**4,013**	**5,083**	**3,541**	**446**	**194**	**272**	**388**	**1,750,364**

Table O-46
BLM + Non-federal Oil and Gas, Alternative C

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	19	332	332	4	4	0	2	67,546
Completion Venting	3	0	0	0	0	0	0	682
Condensate Tanks	199	0	0	0	0	0	7	660
Construction Equipment	1	4	10	1	1	0	0	1,013
Dehydrators	47	0	0	0	0	0	24	2,200
Drilling Engines	15	258	258	3	3	0	2	52,536
Field Compressor Engines	16	1,254	722	7	7	0	2	13,528
Flaring	5	21	4	0	0	0	2	6,467
Fugitive Dust	0	0	0	50	5	0	0	0
Fugitive Leaks	925	0	0	0	0	0	45	237,913
Heaters	29	442	526	40	40	0	4	634,746
Midstream Compressor Engines	592	1,499	821	42	42	15	66	51,666
Other Midstream	713	215	187	10	10	9	95	205,137
Other Production	113	88	371	21	20	9	8	57,438
Pneumatic Devices	370	0	0	0	0	0	18	72,979
Pneumatic Pumps	28	0	0	0	0	0	1	5,547
Traffic	1	4	9	85	9	0	0	1,148
Water Injection Pumps	7	7	9	44	3	155	1	15,664
Well Blowdowns	9	0	0	0	0	0	0	1,763
Project Year 10 Totals	**3,092**	**4,125**	**3,248**	**305**	**143**	**189**	**277**	**1,428,632**
Project Year 20								
Completion Engines	19	331	63	3	3	0	2	67,364
Completion Venting	3	0	0	0	0	0	0	678
Condensate Tanks	157	0	0	0	0	0	5	524
Construction Equipment	1	4	10	1	1	0	0	1,016
Dehydrators	35	0	0	0	0	0	18	2,144
Drilling Engines	15	258	49	2	2	0	2	52,442
Field Compressor Engines	17	641	334	4	4	0	2	8,355
Flaring	6	27	5	0	0	0	3	8,392
Fugitive Dust	0	0	0	48	5	0	0	0
Fugitive Leaks	729	0	0	0	0	0	35	251,294
Heaters	24	368	438	33	33	0	3	529,366
Midstream Compressor Engines	697	1,723	699	48	48	16	77	62,101
Other Midstream	798	252	219	11	11	10	101	229,712
Other Production	98	96	391	22	21	10	7	56,339
Pneumatic Devices	290	0	0	0	0	0	14	57,490
Pneumatic Pumps	14	0	0	0	0	0	1	2,856
Traffic	1	4	8	85	9	0	0	1,093
Water Injection Pumps	7	8	10	48	4	171	1	17,357
Well Blowdowns	7	0	0	0	0	0	0	1,389
Project Year 20 Totals	**2,920**	**3,712**	**2,227**	**306**	**141**	**209**	**271**	**1,349,912**

Table O-47
BLM + Non-federal Oil and Gas, Alternative D

Category	VOC	CO	NOx	PM10	PM2.5	SO2	HAPs	CO2e
Project Year 10								
Completion Engines	199	2,038	3,540	116	113	3	25	414,480
Completion Venting	25	0	0	0	0	0	1	5,026
Condensate Tanks	1,074	0	0	0	0	0	28	3,550
Construction Equipment	5	28	63	4	4	1	1	6,280
Dehydrators	365	0	0	0	0	0	190	18,711
Drilling Engines	144	1,476	2,565	84	82	2	18	300,336
Field Compressor Engines	105	2,489	1,136	20	20	1	12	39,348
Flaring	36	151	28	0	0	0	14	46,443
Fugitive Dust	0	0	0	527	54	0	0	0
Fugitive Leaks	2,368	0	0	0	0	0	114	722,815
Heaters	76	1,167	1,389	106	106	0	11	1,676,763
Midstream Compressor Engines	3,419	8,211	2,804	222	222	86	378	269,343
Other Midstream	3,893	1,141	989	51	51	45	530	1,118,780
Other Production	316	272	1,126	62	61	27	21	166,815
Pneumatic Devices	944	0	0	0	0	0	46	186,766
Pneumatic Pumps	59	0	0	0	0	0	3	11,627
Traffic	3	15	38	282	30	0	0	4,883
Water Injection Pumps	21	22	28	137	11	484	3	49,038
Well Blowdowns	23	0	0	0	0	0	1	4,511
Project Year 10 Totals	**13,076**	**17,009**	**13,704**	**1,613**	**753**	**650**	**1,395**	**5,045,517**
Project Year 20								
Completion Engines	118	2,036	2,036	23	23	3	15	414,091
Completion Venting	25	0	0	0	0	0	1	5,023
Condensate Tanks	1,312	0	0	0	0	0	32	4,341
Construction Equipment	5	28	64	4	4	1	1	6,353
Dehydrators	456	0	0	0	0	0	237	23,949
Drilling Engines	86	1,475	1,475	17	16	2	11	300,035
Field Compressor Engines	196	3,110	1,161	31	31	1	22	59,984
Flaring	51	215	39	0	0	0	20	66,243
Fugitive Dust	0	0	0	485	49	0	0	0
Fugitive Leaks	3,616	0	0	0	0	0	173	1,220,816
Heaters	119	1,818	2,165	165	165	0	17	2,613,263
Midstream Compressor Engines	4,402	10,392	3,219	287	287	109	487	349,578
Other Midstream	4,999	1,474	1,278	66	66	59	677	1,436,726
Other Production	487	464	1,900	105	102	46	34	274,992
Pneumatic Devices	1,439	0	0	0	0	0	70	285,063
Pneumatic Pumps	75	0	0	0	0	0	4	15,015
Traffic	4	20	42	417	43	0	0	5,636
Water Injection Pumps	36	37	48	235	18	831	5	84,082
Well Blowdowns	35	0	0	0	0	0	2	6,885
Project Year 20 Totals	**17,461**	**21,068**	**13,427**	**1,835**	**805**	**1,052**	**1,806**	**7,172,075**

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O.4 BLM PLUS NON-FEDERAL OIL AND GAS ACTIONS WITHIN THE PLANNING AREA: EMISSION SUMMARIES BY POLLUTANT

Table O-48
Volatile Organic Compounds

	BLM Actions Only VOC Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	811	609	366	1,061	1,049	590	342	3,436	4,634
Oil and Gas - Shale	2	81	105	246	312	60	78	1,325	1,681
Fluid Minerals Total	***813***	***690***	***471***	***1,307***	***1,360***	***650***	***419***	***4,761***	***6,315***
Coal	0	6	7	4	4	4	4	6	7
Sand and Gravel	1	1	1	0	0	0	0	1	1
Uranium	0	29	58	29	58	29	58	29	58
Solid Minerals Total	***1***	***36***	***66***	***33***	***62***	***33***	***62***	***36***	***66***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	229	295	364	295	364	219	219	295	364
Vegetation –Prescribed Fire and Mechanical Treatment	59	33	33	33	33	28	28	39	39
Other Activities Total	***288***	***328***	***397***	***328***	***397***	***247***	***247***	***334***	***403***
TOTAL Alternative	1,102	1,054	934	1,669	1,820	931	729	5,131	6,784
	BLM + Non-Federal Oil and Gas within GJFO VOC Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	3,581	2,862	2,627	3,237	3,197	2,694	2,401	10,805	14,579
Oil and Gas - Shale	4	541	704	643	816	399	520	2,272	2,883
Fluid Minerals Total	***3,585***	***3,403***	***3,331***	***3,880***	***4,013***	***3,092***	***2,920***	***13,076***	***17,461***
Coal	0	6	7	4	4	4	4	6	7
Sand and Gravel	1	1	1	0	0	0	0	1	1
Uranium	0	29	58	29	58	29	58	29	58
Solid Minerals Total	***1***	***36***	***66***	***33***	***62***	***33***	***62***	***36***	***66***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	229	295	364	295	364	219	219	295	364
Vegetation –Prescribed Fire and Mechanical Treatment	59	33	33	33	33	28	28	39	39
Other Activities Total	***288***	***328***	***397***	***328***	***397***	***247***	***247***	***334***	***403***
TOTAL Alternative	3,874	3,767	3,794	4,241	4,473	3,373	3,230	13,447	17,931

Table O-49
Nitrogen Oxides

	BLM Actions Only NOx Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	1,295	630	280	976	650	598	215	2,752	2,696
Oil and Gas - Shale	6	162	191	563	534	125	113	3,021	2,867
Fluid Minerals Total	***1,301***	***792***	***471***	***1,538***	***1,185***	***723***	***328***	***5,773***	***5,563***
Coal	0	217	269	154	154	154	154	217	269
Sand and Gravel	14	14	14	3	3	3	3	14	14
Uranium	0	364	727	364	727	364	727	364	727
Solid Minerals Total	***14***	***594***	***1,010***	***521***	***884***	***521***	***884***	***594***	***1,010***
Lands and Realty ROW	1	1	1	1	1	1	1	1	1
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	3	4	5	4	5	3	3	4	5
Vegetation –Prescribed Fire and Mechanical Treatment	217	121	121	121	121	103	103	144	144
Other Activities Total	***221***	***126***	***127***	***126***	***127***	***107***	***107***	***149***	***150***
TOTAL Alternative	1,536	1,513	1,608	2,185	2,196	1,350	1,319	6,517	6,723
	BLM + Non-Federal Oil and Gas within GJFO NOx Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	8,703	2,643	1,931	2,988	2,143	2,426	1,483	8,520	8,508
Oil and Gas - Shale	27	1,071	1,268	1,472	1,398	822	744	5,184	4,919
Fluid Minerals Total	***8,730***	***3,714***	***3,199***	***4,460***	***3,541***	***3,248***	***2,227***	***13,704***	***13,427***
Coal	0	217	269	154	154	154	154	217	269
Sand and Gravel	14	14	14	3	3	3	3	14	14
Uranium	0	364	727	364	727	364	727	364	727
Solid Minerals Total	***14***	***594***	***1,010***	***521***	***884***	***521***	***884***	***594***	***1,010***
Lands and Realty ROW	1	1	1	1	1	1	1	1	1
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	3	4	5	4	5	3	3	4	5
Vegetation –Prescribed Fire and Mechanical Treatment	217	121	121	121	121	103	103	144	144
Other Activities Total	***221***	***126***	***127***	***126***	***127***	***107***	***107***	***149***	***150***
TOTAL Alternative	8,965	4,434	4,336	5,107	4,552	3,876	3,219	14,447	14,588

Table O-50
Particulate Matter - PM10

	BLM Actions Only PM10 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	100	58	32	104	88	54	27	344	386
Oil and Gas - Shale	1	18	24	62	70	13	18	332	375
Fluid Minerals Total	***101***	***76***	***56***	***167***	***158***	***67***	***45***	***676***	***761***
Coal	0	60	42	24	24	24	24	60	42
Sand and Gravel	231	231	231	58	58	58	58	231	231
Uranium	0	369	739	369	739	369	739	369	739
Solid Minerals Total	***231***	***661***	***1,011***	***451***	***820***	***451***	***820***	***661***	***1,011***
Lands and Realty ROW	2	2	2	2	2	2	2	2	2
Livestock Grazing	1	1	1	1	1	1	1	1	1
Travel and Transportation Management	1,217	1,569	1,937	1,569	1,937	1,166	1,166	1,569	1,937
Vegetation –Prescribed Fire and Mechanical Treatment	494	263	263	263	263	217	217	321	321
Other Activities Total	***1,715***	***1,836***	***2,203***	***1,836***	***2,203***	***1,386***	***1,386***	***1,894***	***2,262***
TOTAL Alternative	2,047	2,573	3,271	2,454	3,182	1,903	2,251	3,231	4,034
	BLM + Non-Federal Oil and Gas within GJFO PM10 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	904	251	219	297	262	222	188	1,042	1,191
Oil and Gas - Shale	4	119	160	163	184	83	119	571	644
Fluid Minerals Total	***909***	***370***	***379***	***461***	***446***	***305***	***306***	***1,613***	***1,835***
Coal	0	60	42	24	24	24	24	60	42
Sand and Gravel	231	231	231	58	58	58	58	231	231
Uranium	0	369	739	369	739	369	739	369	739
Solid Minerals Total	***231***	***661***	***1,011***	***451***	***820***	***451***	***820***	***661***	***1,011***
Lands and Realty ROW	2	2	2	2	2	2	2	2	2
Livestock Grazing	1	1	1	1	1	1	1	1	1
Travel and Transportation Management	1,217	1,569	1,937	1,569	1,937	1,166	1,166	1,569	1,937
Vegetation –Prescribed Fire and Mechanical Treatment	494	263	263	263	263	217	217	321	321
Other Activities Total	***1,715***	***1,836***	***2,203***	***1,836***	***2,203***	***1,386***	***1,386***	***1,894***	***2,262***
TOTAL Alternative	2,854	2,867	3,594	2,747	3,470	2,142	2,512	4,168	5,108

Table O-51
Particulate Matter – $PM_{2.5}$

	BLM Actions Only PM2.5 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	43	28	16	50	42	26	14	166	183
Oil and Gas - Shale	0	8	10	27	26	5	7	144	139
Fluid Minerals Total	***43***	***36***	***26***	***77***	***68***	***31***	***21***	***310***	***323***
Coal	0	19	12	7	7	7	7	19	12
Sand and Gravel	27	27	27	7	7	7	7	27	27
Uranium	0	166	331	166	331	166	331	166	331
Solid Minerals Total	***27***	***212***	***371***	***180***	***345***	***180***	***345***	***212***	***371***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	127	164	202	164	202	122	122	164	202
Vegetation –Prescribed Fire and Mechanical Treatment	91	52	52	52	52	44	44	61	61
Other Activities Total	***219***	***216***	***254***	***216***	***254***	***166***	***166***	***225***	***264***
TOTAL Alternative	289	463	651	473	667	377	532	747	957
	BLM + Non-Federal Oil and Gas within GJFO PM2.5 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	335	123	109	145	125	109	94	506	566
Oil and Gas - Shale	1	51	66	70	68	34	47	247	239
Fluid Minerals Total	***336***	***174***	***175***	***215***	***194***	***143***	***141***	***753***	***805***
Coal	0	19	12	7	7	7	7	19	12
Sand and Gravel	27	27	27	7	7	7	7	27	27
Uranium	0	166	331	166	331	166	331	166	331
Solid Minerals Total	***27***	***212***	***371***	***180***	***345***	***180***	***345***	***212***	***371***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	127	164	202	164	202	122	122	164	202
Vegetation –Prescribed Fire and Mechanical Treatment	91	52	52	52	52	44	44	61	61
Other Activities Total	***219***	***216***	***254***	***216***	***254***	***166***	***166***	***225***	***264***
TOTAL Alternative	582	602	800	611	793	489	653	1,190	1,439

Table O-52
Sulfur Dioxide (SO_2)

	BLM Actions Only SO2 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	59	36	16	53	45	36	16	137	194
Oil and Gas - Shale	1	8	15	26	49	8	15	135	260
Fluid Minerals Total	***60***	***45***	***31***	***79***	***95***	***45***	***31***	***272***	***454***
Coal	0	0	0	0	0	0	0	0	0
Sand and Gravel	0	0	0	0	0	0	0	0	0
Uranium	0	7	13	7	13	7	13	7	13
Solid Minerals Total	***0***	***7***	***14***	***7***	***14***	***7***	***14***	***7***	***14***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	0	0	0	0	0	0	0	0	0
Vegetation –Prescribed Fire and Mechanical Treatment	6	4	4	4	4	3	3	4	4
Other Activities Total	***6***	***4***	***4***	***4***	***4***	***3***	***3***	***4***	***4***
TOTAL Alternative	66	55	49	89	112	55	48	283	472
	BLM + Non-Federal Oil and Gas within GJFO SO2 Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	290	138	114	155	143	138	114	417	605
Oil and Gas - Shale	4	51	94	68	129	50	94	233	447
Fluid Minerals Total	***294***	***189***	***209***	***223***	***272***	***189***	***209***	***650***	***1,052***
Coal	0	0	0	0	0	0	0	0	0
Sand and Gravel	0	0	0	0	0	0	0	0	0
Uranium	0	7	13	7	13	7	13	7	13
Solid Minerals Total	***0***	***7***	***14***	***7***	***14***	***7***	***14***	***7***	***14***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	0	0	0	0	0	0	0	0	0
Vegetation –Prescribed Fire and Mechanical Treatment	6	4	4	4	4	3	3	4	4
Other Activities Total	***6***	***4***	***4***	***4***	***4***	***3***	***3***	***4***	***4***
TOTAL Alternative	300	199	226	234	289	199	225	661	1,070

Table O-53
Hazardous Air Pollutants (HAPs)

	BLM Actions Only HAPS Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	75	59	47	117	128	51	37	440	576
Oil and Gas - Shale	0	4	5	13	16	4	5	72	86
Fluid Minerals Total	***75***	***62***	***52***	***131***	***144***	***55***	***42***	***511***	***662***
Coal	0	1	1	0	0	0	0	1	1
Sand and Gravel	0	0	0	0	0	0	0	0	0
Uranium	0	3	6	3	6	3	6	3	6
Solid Minerals Total	***0***	***4***	***7***	***3***	***6***	***3***	***6***	***4***	***7***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	23	29	36	29	36	22	22	29	36
Vegetation –Prescribed Fire and Mechanical Treatment	6	3	3	3	3	3	3	4	4
Other Activities Total	***29***	***33***	***40***	***33***	***40***	***25***	***25***	***33***	***40***
TOTAL Alternative	104	99	98	167	190	83	73	548	709
	BLM + Non-Federal Oil and Gas within GJFO HAPS Estimated Emissions (tons/yr)								
Emissions Generating Activity	base year	A Year 10	A Year 20	B Year 10	B Year 20	C Year 10	C Year 20	D Year 10	D Year 20
Oil and Gas - Conventional/CBNG	342	286	284	331	347	253	241	1,273	1,659
Oil and Gas - Shale	0	25	32	35	42	24	30	123	147
Fluid Minerals Total	***342***	***311***	***316***	***366***	***388***	***277***	***271***	***1,395***	***1,806***
Coal	0	1	1	0	0	0	0	1	1
Sand and Gravel	0	0	0	0	0	0	0	0	0
Uranium	0	3	6	3	6	3	6	3	6
Solid Minerals Total	***0***	***4***	***7***	***3***	***6***	***3***	***6***	***4***	***7***
Lands and Realty ROW	0	0	0	0	0	0	0	0	0
Livestock Grazing	0	0	0	0	0	0	0	0	0
Travel and Transportation Management	23	29	36	29	36	22	22	29	36
Vegetation –Prescribed Fire and Mechanical Treatment	6	3	3	3	3	3	3	4	4
Other Activities Total	***29***	***33***	***40***	***33***	***40***	***25***	***25***	***33***	***40***
TOTAL Alternative	371	347	362	402	434	305	302	1,432	1,853

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O.5 INPUTS AND ASSUMPTIONS FOR EMISSIONS INVENTORY

Table O-54
Input Assumptions for BLM Actions and Non-federal Oil and Gas Development within the Planning Area

Key Assumption	A	A	B	B	C	C	D	D
	Year 10	Year 20	Year 10	Year 20	Year 10	Year 20	Year 10	Year 20
Oil and Gas Development BLM								
con. / cbm wells	56	110	196	390	56	110	916	1,831
shale wells	55	110	195	390	55	110	1,054	2,107
Shale Gas - compression (total Hp)	3,170	4,163	11,168	14,732	3,170	4,163	60,242	79,518
Conv/CBM lateral compression (total Hp)	1,671	662	2,213	1,745	1,671	662	4,999	7,320
Conv/CBM wellhead compression (total Hp)	2,035	806	2,695	2,125	2,035	806	6,087	8,913
Conv/CBM midstream scalar: Gas Production Growth	0.88	0.91	2.43	2.94	0.88	0.91	10.36	13.44
drilling rate (wells/yr)	11		39		11		197	
Oil and Gas Development non-BLM								
con. / cbm wells	316	632	316	632	316	632	1,836	3,671
shale wells	316	632	316	632	316	632	754	1,507
Shale Gas - compression (total Hp)	18,056	23,855	18,056	23,855	18,056	23,855	43,079	56,862
Conv/CBM lateral compression (total Hp)	4,256	3,989	4,256	3,989	4,256	3,989	10,137	15,747
Conv/CBM wellhead compression (total Hp)	5,182	4,857	5,182	4,857	5,182	4,857	12,343	19,174
Conv/CBM midstream scalar: Gas Production Growth	0.97	1.05	0.97	1.05	0.97	1.05	4.37	5.53
drilling rate (wells/yr)	63		63		63		259	
Coal								
tons produced (MMt/yr)	10	14	8		8		10	14
acres disturbed	940	1250	320		320		620	930
Uranium								
tons produced (MMt/yr)	0.7	1.5	0.7	1.5	0.7	1.5	0.7	1.5
Sand and Gravel								
Production	160,790		40,198		40,198		160,790	
Acres	8		2		2		8	
Fire								
Acres	396		396		476		297	
Comp.Travel and Trans mgmnt								
1000 vehicle miles traveled per year	9,081	11,210	9,081	11,210	6,748	6,748	9,081	11,210
Livestock Grazing								
AUMs	34093		34008		19751		34093	
Lands-ROWs and Realty								
# of sites	6		6		6		6	
Acres	12		12		12		12	

Note: "Fire" only includes prescribed fires. Mechanical treatment acreages include 1,023 acres for Alternatives A and B, 819 acres for Alternative C, and 1,279 acres for Alternative D.

Table O-55
Emissions Controls Assumptions for Oil and Gas Calculations

Emission Controls - Control Percentages				
Dust Control	50%	50%	50%	80%
	50%	50%	80%	80%
Drill Rigs (control from basline to higher Tier engine)	0% (NOx) 0% (PM) 0% (VOC)	0% (NOx) 0% (PM) 0% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)	0% (NOx) 0% (PM) 0% (VOC)
	0% (NOx) 0% (PM) 0% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)	-89% (NOx) -85% (PM) -41% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)
Completion Equipment (control from basline to higher Tier engine)	0% (NOx) 0% (PM) 0% (VOC)	0% (NOx) 0% (PM) 0% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)	0% (NOx) 0% (PM) 0% (VOC)
	0% (NOx) 0% (PM) 0% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)	-89% (NOx) -85% (PM) -41% (VOC)	-42% (NOx) -80% (PM) -41% (VOC)
Green Completions (combination flaring and closed loop)	88%	88%	88%	88%
	88%	88%	88%	88%
	45%	45%	45%	45%
	45%	45%	45%	45%
	45%	45%	45%	45%
	45%	45%	45%	45%
Liquids Removal System (haul traffic)	0%	0%	25%	0%
	0%	50%	50%	50%
Production Site Separator Heaters (consolidation)	0%	0%	0%	0%
	0%	0%	0%	0%
Production Site Tank Heaters (consolidation)	0%	0%	0%	0%
	0%	0%	0%	0%
Production Site Dehydrators (flaring)	10%	48%	76%	48%
	10%	48%	76%	48%
Production Site Condensate Tanks (flaring)	10%	48%	76%	48%
	10%	48%	76%	48%
Production Site Pneumatic Devices (percentage of devices that are low-bleed)	100%	100%	100%	100%
	100%	100%	100%	100%
Production Site Pneumatic Pumps (flaring)	10%	48%	76%	48%
	10%	48%	76%	48%
Production Site Pneumatic Pumps (electrification)	0%	0%	0%	0%
	0%	0%	0%	0%
Wellhead and Lateral Compressor Engines (electrification)	0%	0%	50%	0%
	0%	0%	50%	0%

Table O-56
Descriptions of Emissions Controls

Description	Alternative A	Alternative B	Alternative C	Alternative D
Emission Controls - Control Percentages				
Dust Control	watering	watering	watering	watering, chemical suppression, graveling or paving
	watering	watering	watering, chemical suppression, graveling or paving	watering, chemical suppression, graveling or paving
Drill Rigs (control from basline to higher Tier engine)	Tier II engines	Tier II engines	Tier IV engines	Tier II engines
	Tier II engines	Tier IV engines	Tier IV genset engine	Tier IV engines
Completion Equipment (control from basline to higher Tier engine)	Tier II engines	Tier II engines	Tier IV engines	Tier II engines
	Tier II engines	Tier IV engines	Tier IV genset engine	Tier IV engines
Green Completions (combination flaring and closed loop)	closed loop system and flaring control	closed loop system and flaring	closed loop system and flaring control	closed loop system and flaring control
	closed loop system and flaring control	closed loop system and flaring	closed loop system and flaring control	closed loop system and flaring control
Liquids Removal System (haul traffic)	none	none	pipeline system to elimate well site liquids storage and truck hauling	none
	none	pipeline system to elimate well site liquids storage and truck hauling	pipeline system to elimate well site liquids storage and truck hauling	pipeline system to elimate well site liquids storage and truck hauling
Production Site Separator Heaters (consolidation)	none	none	none	none
	none	none	none	none
Production Site Tank Heaters (consolidation)	none	none	none	none
	none	none	none	none
Production Site Dehydrators (flaring)	flaring control	flaring control	flaring control	flaring control
	flaring control	flaring control	flaring control	flaring control
Production Site Condensate Tanks (flaring)	flaring control	flaring control	flaring control	flaring control
	flaring control	flaring control	flaring control	flaring control
Production Site Pneumatic Devices (percentage of devices that are low-bleed)	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements
	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements	usage of low-bleed pneumatic devices per Colorado requirements
Production Site Pneumatic Pumps (flaring)	flaring control	flaring control	flaring control	flaring control
	flaring control	flaring control	flaring control	flaring control
Production Site Pneumatic Pumps (electrification)	none	none	none	none
	none	none	none	none
Wellhead and Lateral Compressor Engines (electrification)	none	none	electrification of compressor	none
	none	none	electrification of compressor	none
Wellhead, Lateral, Centralized Compressor Engines (CDPHE RICE and NSPS)	All engines required to meet Colorado RICE and Federal NSPS Standards			

Table O-57
Projected Well Numbers per Revised RFD (BLM 2012a)

Well Numbers By Alternative - Short Term and Long Term (Including Decline)									
	Baseline (2008)	Alternative A - No Action		Alternative B - Preferred		Alternative C - Conservation		Alternative D - Development	
		2018	2028	2018	2028	2018	2028	2018	2028
Total Cumulative Wells (New + Existing - decline)		***1,932***	***1,973***	***2,212***	***2,533***	***1,932***	***1,973***	***5,749***	***9,605***
Total BLM Wells (New + Existing - decline)		***499***	***293***	***779***	***853***	***499***	***293***	***2,358***	***4,011***
Total Non-BLM Wells (New + Existing - decline)		***1,433***	***1,680***	***1,433***	***1,680***	***1,433***	***1,680***	***3,391***	***5,594***
Cumulative New Wells		***743***	***1,484***	***1,023***	***2,044***	***743***	***1,484***	***4,560***	***9,116***
New BLM		***111***	***220***	***391***	***780***	***111***	***220***	***1,970***	***3,938***
New Non-BLM		***632***	***1,264***	***632***	***1,264***	***632***	***1,264***	***2,590***	***5,178***
- New BLM conv./dir.		51	101	179	357	51	101	837	1,674
- New BLM CBM		5	9	17	33	5	9	79	157
- New BLM shale gas		55	110	195	390	55	110	1,054	2,107
- New Non-BLM conv./dir.		308	616	308	616	308	616	1,789	3,578
- New Non-BLM CBM		8	16	8	16	8	16	47	93
- New Non-BLM shale gas		316	632	316	632	316	632	754	1,507
Cumulative Existing Wells (2008)	***1,891***	***1,189***	***489***	***1,189***	***489***	***1,189***	***489***	***1,189***	***489***
Existing BLM - decline	***704***	***388***	***73***	***388***	***73***	***388***	***73***	***388***	***73***
Existing Non-BLM - decline	***1,187***	***801***	***416***	***801***	***416***	***801***	***416***	***801***	***416***
- Existing BLM conv./dir.	661	358	56	358	56	358	56	358	56
- Existing BLM CBM	31	18	5	18	5	18	5	18	5
- Existing BLM shale gas	12	12	12	12	12	12	12	12	12
- Existing Non-BLM conv./dir.	1,155	777	399	777	399	777	399	777	399
- Existing Non-BLM CBM	15	7	0	7	0	7	0	7	0
- Existing Non-BLM shale gas	17	17	17	17	17	17	17	17	17
decline BLM conv./dir. (1999)		272	543	272	543	272	543	272	543
decline BLM conv./dir. (2000-2008)		31	62	31	62	31	62	31	62
decline BLM CBM (1999)		10	20	10	20	10	20	10	20
decline BLM CBM (2000-2008)		3	6	3	6	3	6	3	6
decline Non-BLM conv. (1999)		181	362	181	362	181	362	181	362
decline Non-BLM conv. (2000-2008)		197	394	197	394	197	394	197	394
decline Non-BLM CBM (1999)		8	15	8	15	8	15	8	15
decline Non-BLM CBM (2000-2008)		0	0	0	0	0	0	0	0
assume no decline of shale gas wells over 20 years		0	0	0	0	0	0	0	0

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Appendix P

Biologic Assessment for the Grand Junction Field Office

BLM

United States Department of the Interior
Bureau of Land Management

BIOLOGICAL ASSESSMENT

Grand Junction Field Office Resource Management Plan

Grand Junction Field Office
Bureau of Land Management
2815 H Road
Grand Junction, Colorado 81506
October 2014

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ACRONYMS AND ABBREVIATIONS

	Full Phrase
ACEC	Area of Critical Environmental Concern
AUM	animal-unit month
BA	biological assessment
BLM	United States Department of the Interior, Bureau of Land Management
BLM lands	surface acres administered by the BLM
BMP	best management practice
BO	biological opinion
CCR	Colorado Code of Regulations
CFR	Code of Federal Regulations
CHU	Critical Habitat Unit
CIAA	cumulative impacts analysis area
CNAP	Colorado Natural Area Program
CNHP	Colorado Natural Heritage Program
COA	Condition of Approval
CPW	Colorado Parks and Wildlife
CSU	controlled surface use
EIS	environmental impact statement
ERMA	Extensive Recreation Management Area
ESA	Endangered Species Act of 1973
FLPMA	Federal Land Policy and Management Act of 1976
FR	*Federal Register*
GJFO	Grand Junction Field Office
LBCWHR	Little Book Cliffs Wild Horse Range
NCA	National Conservation Area
NEPA	National Environmental Policy Act of 1969
NSO	no surface occupancy or surface-disturbing activities
OHV	off-highway vehicle
PGH	Preliminary General Habitat
PPH	Preliminary Priority Habitat
PRMP	proposed resource management plan
RMP	resource management plan
ROW	right-of-way (lands and realty)
SRMA	Special Recreation Management Area
SRP	Special Recreation Permit
SSR	site-specific relocation
T&E	threatened and endangered
TL	timing limitation

ACRONYMS AND ABBREVIATIONS

	Full Phrase
USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Department of the Interior, Fish and Wildlife Service
WSA	Wilderness Study Area
WSR	Wild and Scenic River

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SECTION 1
INTRODUCTION

1.1 BACKGROUND

The United States Department of the Interior, Bureau of Land Management (BLM) is preparing a Proposed Resource Management Plan (RMP)/Final Environmental Impact Statement (EIS). These combined documents provide direction for managing public lands administered by the Grand Junction Field Office (GJFO) in Colorado. The documents include an analysis of the environmental effects that could result from implementing the alternatives addressed in the RMP. The Proposed RMP (PRMP) is a refinement of the preferred alternative (Alternative B) from the Draft RMP, released on January 25, 2013. Public comments were taken into account in the PRMP, corrections were made where necessary, and parts were reworded for clarification. The PRMP will be published in late 2014.

The purpose of this biological assessment (BA) is to review the PRMP to determine the extent that its implementation may affect threatened and endangered (T&E) species. Because the RMP is a planning document, this BA focuses on the effect of management actions to be implemented.

Under provisions of the US Endangered Species Act (ESA) of 1973, as amended (16 USC, Section 1531, et seq.), federal agencies are directed to conserve T&E species and their habitats. Section 7(a)(1) states that all federal agencies shall "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species…." Thus, the conservation and recovery of T&E species is not simply the responsibility of the US Fish and Wildlife Service (USFWS), but of all federal agencies. To meet this requirement, the GJFO would implement protective stipulations, conditions of approval, conservation measures, best management practices (BMPs), mitigation, and habitat restoration. It also would implement protections afforded through the Area of Critical Environmental Concern (ACEC) designations for federally listed species.

Section 7(c) of the ESA requires the BLM to complete a BA to determine the effects of implementing the RMP on listed species. Section 7(c) of the ESA is based on compliance with Section 102 of the National Environmental Policy Act (NEPA). Federal agencies are required to consider, avoid, or prevent adverse impacts on fish and wildlife. Federal agencies are also required to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of T&E species or their critical habitat.

The ESA requires action agencies, such as the BLM, to consult or confer with the USFWS when there is discretionary federal involvement or control over the action. The ESA also requires agencies to ensure that resources are afforded adequate consideration and protection. Informal consultation occurs when the federal agency, after discussion with the USFWS, determines that the proposed action is not likely to affect any listed species in the action area, and the USFWS concurs. Formal consultation occurs after the agency determines that the proposed action is likely to adversely affect listed species or critical habitat, or when the aforementioned federal agencies do not concur with the action agency's finding (USFWS 1998a).

This BA provides documentation and analysis for the proposed action to meet the federal requirements and agreements set forth by the federal agencies. It addresses federally listed T&E species; it has been prepared under the 1973 ESA Section 7 regulations, in accordance with the 1998 procedures set forth by the USFWS and the National Marine Fisheries Service. Site-specific evaluations would be conducted for activities authorized under the RMP; the BLM would consult or confer with the USFWS for those activities that may affect T&E or proposed species. In addition, the BLM would evaluate site-specific activities that may affect BLM Colorado sensitive species, in compliance with BLM Manual 6840 (BLM 2008c).

The BLM requests informal consultation and concurrence for the effects of the PRMP on seven threatened, endangered, and proposed species in **Table 1-1**, List of Threatened, Endangered, and Proposed Species Addressed in Grand Junction Field Office RMP Biological Assessment. Formal consultation is requested for the Colorado hookless cactus, DeBeque phacelia, Colorado pikeminnow, razorback sucker, bonytail, humpback chub, and Gunnison Sage-Grouse due to the "may affect, likely to adversely affect" determination for these species and their habitat (DeBeque phacelia, and the Big River Fishes).

1.2 SPECIES ADDRESSED

The species addressed in the PRMP and in this BA include all listed T&E species that are known to occur or have suitable habitat within the GJFO planning area. Also included are those species that have been proposed or are candidates for listing under the ESA and could occur in the planning area (**Table 1-1**).

Table 1-1
List of Threatened, Endangered, and Proposed Species Addressed in Grand Junction Field Office RMP Biological Assessment

Common Name	Species Name	Federal Status[1]
Listed Species for Potential Consultation		
Plants		
Colorado hookless cactus	*Sclerocactus glaucus*	T
DeBeque phacelia	*Phacelia submutica*	T
Parachute penstemon	*Penstemon debilis*	T
Ute ladies'-tresses	*Spiranthes diluvialis*	T
Fish		
Colorado pikeminnow	*Ptychocheilus lucius*	E
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T
Razorback sucker	*Xyrauchen texanus*	E
Bonytail	*Gila elegans*	E
Humpback chub	*Gila cypha*	E
Birds		
Mexican spotted owl	*Strix occidentalis lucida*	T
Greater sage-grouse	*Centrocercus urophasianus*	C
Gunnison sage-grouse[2]	*Centrocercus minimus*	P
Western yellow-billed cuckoo[2]	*Coccyzus americanus*	T
Mammals		
Canada lynx	*Lynx canadensis*	T

Source: USFWS 2012a
[1]Status: E = Endangered; T = Threatened; P = Proposed for listing; C = Candidate for listing
[2]Critical habitat proposed

1.3 CONSULTATION HISTORY

The GJFO RMP/EIS will replace the 1987 Grand Junction RMP, as amended, (BLM 1987). Section 7 consultation was not completed for the previous RMP. The BLM has completed approximately 50 maintenance actions and 12 RMP amendments since the 1987 Record of Decisions was signed. Additionally, since completion of the 1987 Grand Junction RMP, several programmatic and project-specific consultations have been completed for activities in the planning area. The USFWS has been a cooperating agency on the GJFO RMP since the revision began in 2008.

1.3.1 Big River Fishes

In November 2008, The BLM prepared two Programmatic BAs for the four big river fishes (i.e., Colorado pikeminnow, bonytail, humpback chub, or razorback sucker). One BA addressed water depletions associated with the fluid mineral program in western Colorado, as administered by the BLM Colorado (BLM 2008b), and the other addressed all other water depleting BLM programs (BLM 2008a). After initiation of consultation, the USFWS issued two programmatic biological opinions (BOs) (USFWS 2008; 2009a). Both BOs found that water depleting activities were likely to adversely affect the four listed fish species and

their critical habitats. This consultation is valid until the following factors trigger the need for a reassessment:

- Any newly proposed critical habitat.
- New and relevant information regarding any of the four listed fishes or their habitats.
- Impacts not previously considered.
- Major changes in the Fluid Mineral Program (e.g., new or revised reasonably foreseeable developments, if higher than anticipated) or the program's implementation.

No reassessment factors have occurred since the USFWS issued the BOs. Therefore, this consultation remains valid.

1.3.2 Livestock Grazing

In 2012 the BLM prepared a BA (BLM 2012a) and an amendment containing revised conservation measures (BLM 2012b). The BA assessed the effects of the BLM's livestock grazing program on Colorado hookless cactus, clay-loving wild buckwheat, and *DeBeque phacelia* in the Uncompahgre, Grand Junction, and Colorado River Valley Field Offices. This BA determined that livestock grazing permitted by the BLM is likely to adversely affect these three listed species. The USFWS issued a programmatic BO for this consultation on November 15, 2012 (USFWS 2012b).

1.3.3 Integrated Weed Management Plan

On June 11, 2010, the BLM GJFO completed a BA which addressed the effects of integrated weed management on federally listed species including the Colorado hookless cactus, Canada lynx, greenback cutthroat trout, and four endangered Colorado River fishes and their designated critical habitat. An amended BA (July 12, 2010) requested conferencing on the impacts on the species proposed for Federal listing at the time: Parachute penstemon and DeBeque phacelia (BLM 2010b).

On July 27, 2010, the USFWS concurred with the BLM's determination that the Integrated Weed Management Plan may affect, but is not likely to adversely affect the Colorado hookless cactus, Canada lynx, greenback cutthroat trout, the four endangered Colorado River fishes (i.e., Colorado pikeminnow, razorback sucker, bonytail, and humpback chub), and their designated critical habitat. The USFWS also concurred with the BLM's determination that the Integrated Weed Management Plan may affect, but is not likely to adversely affect the two species proposed for federal listing at the time: the Parachute penstemon and the DeBeque phacelia. This BA tiers to the Programmatic Integrated Weed Management Plan BO. In 2014 the conference opinion for DeBeque phacelia and Parachute penstemon and their Critical Habitat was rolled into the consultation.

1.4 PURPOSE OF AND NEED FOR THE RMP/EIS

The purpose of this RMP revision is to ensure that public lands are managed in accordance with the intent of Congress, as stated in the Federal Land Management and Policy Act of 1976 (FLPMA), under the principles of multiple use and sustained yield. This will be accomplished by establishing desired goals, objectives, allowable uses, and management actions needed to achieve the desired conditions for resources and resource uses. The RMP incorporates new data, addresses land use issues and conflicts, specifies where and under what circumstances particular activities would be allowed on BLM-administered lands, and incorporates the mandate of multiple uses in accordance with the FLPMA. The RMP does not describe how particular programs or projects would be implemented or prioritized; rather, those decisions are deferred to more detailed implementation-level planning.

The FLPMA requires that the BLM "develop, maintain, and, when appropriate, revise land use plans" (43 USC 1712 [a]). The BLM-administered lands within the GJFO planning area are currently managed in accordance with the decisions in the 1987 Grand Junction RMP (BLM 1987). The BLM has completed approximately 50 maintenance actions and 12 RMP amendments since the 1987 Record of Decision was signed. There is a need to revise the GJFO RMP due to new issues that have arisen since the original plan was prepared. Major issues contributing to the RMP revision include the following (additional planning issues identified for this plan are outlined in Section 1.6.1 of the PRMP:

- Management of BLM-administered land to support numerous wildlife species and their habitats
- Management of BLM-administered lands containing both wilderness character and oil and gas potential, including areas not designated as Wilderness Study Areas (WSAs)
- Management of energy and mineral resources, including identifying areas and conditions in which mineral development can occur
- Management of increased visitation by way of off-highway vehicle (OHV) use and nonmotorized uses (e.g., mountain biking and hiking) that have led to increased concerns regarding resource protection and conflicting uses
- Completion of Wild and Scenic River (WSR) eligibility and suitability studies on river segments within the GJFO planning area
- Consideration of opportunities for land tenure adjustment to improve public land manageability
- Expansion of communities and the urban interface
- Consideration of right-of-way (ROW) exclusion areas and corridors
- The needs of local government and citizens to be heard on an array of issues regarding both traditional and emerging uses of BLM-

administered land and their potential social and economic effects on local communities and values

In addition, new resource assessments and scientific information is available to help the GJFO in revising previous decisions. Specifically, there may be a need to evaluate management prescriptions and resource allocations to address the increase in uses and demands on BLM-administered lands (such as natural gas development and recreation), as well as the interest in protecting natural and cultural resources. There is also the need to revise the RMP to allow for updated BLM management direction, guidance, and policy. Land use plan decisions may be changed only through the amendment or revision process

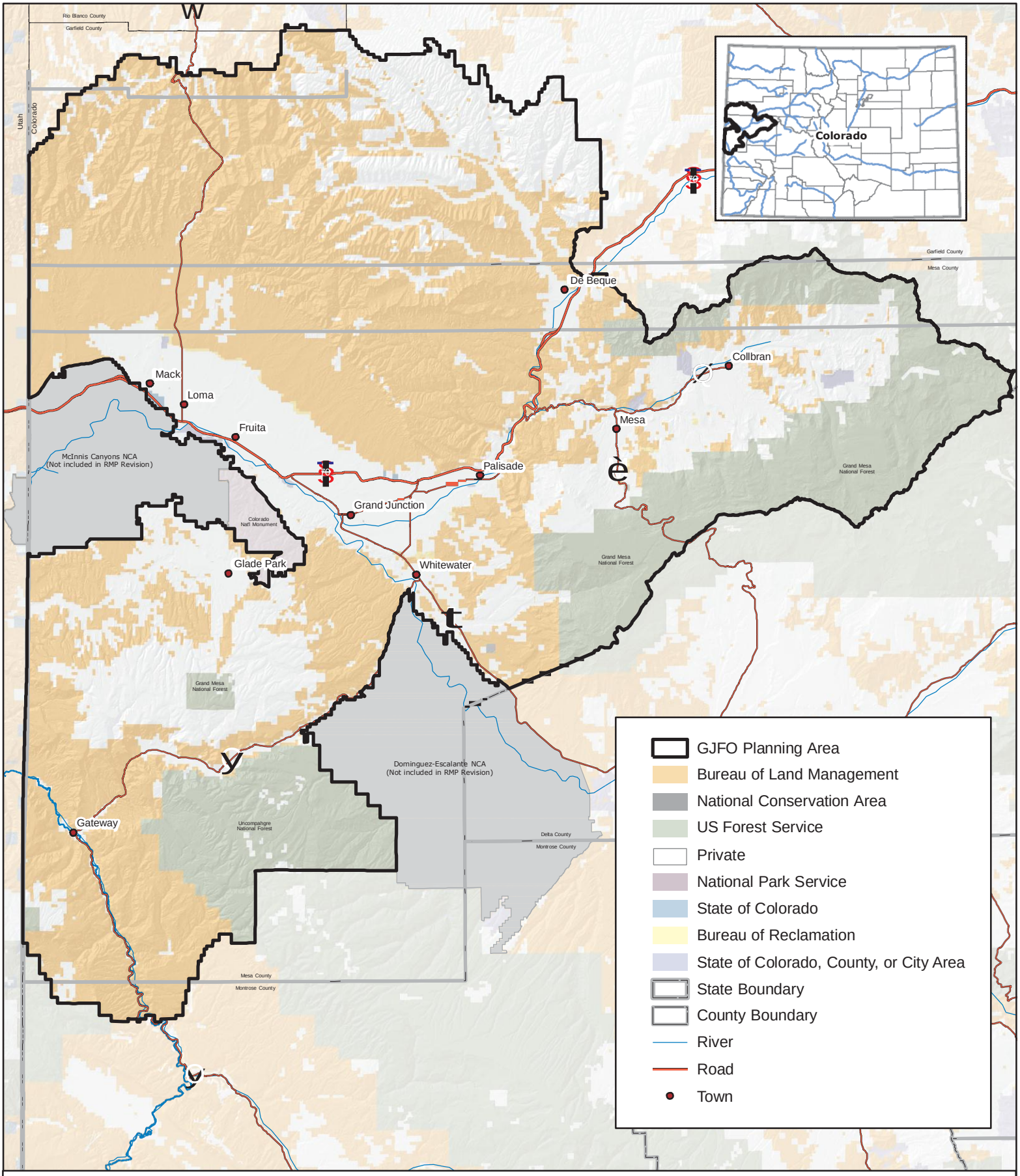
1.5 DESCRIPTION OF THE PLANNING AREA AND DECISION AREA

The GJFO planning area is composed of BLM; US Department of Agriculture (USDA), Forest Service (US Forest Service); US Department of the Interior, Bureau of Reclamation; and State of Colorado lands (**Table 1-2**, Land Status within the GJFO Planning Area) in Garfield, Mesa, Montrose, and Rio Blanco Counties in western Colorado. There are nearly 1.1 million acres of BLM-administered lands and 1.2 million acres of federal mineral estate in the planning area. The McInnis Canyons and Dominguez-Escalante National Conservation Areas (NCAs), while managed by the BLM and within the GJFO boundary, are or will be managed under separate RMPs. As such, these NCAs are not within the GJFO RMP decision area and are not part of this planning effort, with the exception of the portion of the Colorado River within the McInnis Canyons NCA that is being studied under the WSR Suitability Report. This is because the Colorado River is not part of the McInnis Canyons NCA (Public Law 106-353). If the segment is found suitable for inclusion in the National Wild and Scenic Rivers System, a separate activity-level plan will be prepared to provide for the management of the river as suitable. In addition, the Colorado National Monument, managed by the National Park Service, is within the GJFO boundary but is not included in the planning area or this RMP effort. A map of the planning area is provided as **Figure 1-1**, Project Planning Area.

Table 1-2
Land Status within the GJFO Planning Area

Land Status	Acres	Percentage of Planning Area
BLM	1,061,400	50
US Bureau of Reclamation	7,900	less than 1
Local (State, County, and City)	3,400	less than 1
Private	714,100	30
State Wildlife Areas and State Recreation Areas (Colorado Parks and Wildlife [CPW])	1,400	less than 1
US Forest Service	380,000	20
Other	370	less than 1
Total	**2,168,600**	**100**

Source: BLM 2010a



Source: BLM 2010a

Project Planning Area

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This project way developed through digital means and may be updated without notice. Map produced by Grand Junction Field Office, Bureau of Land Management, Grand Junction, CO.

0 2.5 5 10 15 20
Miles

Figure 1-1

The decision area for the RMP revision—those lands on which the RMP will make decisions—is composed of GJFO BLM-administered lands within the planning area (**Table 1-2**, Land Status within the GJFO Planning Area). Management direction and actions outlined in the RMP apply only to these BLM-administered lands in the planning area and to federal mineral estate under BLM jurisdiction that may lie beneath other surface ownership. Federal mineral estate under BLM jurisdiction is composed of mineral estate underlying BLM-administered lands, privately owned lands, and state-owned lands (**Table 1-3**, Mineral Status within the GJFO Planning Area by County). As such, federal mineral estate acres are greater than BLM-administered surface acres. No specific measures have been developed for private, state, or other federal lands, but given that these lands are interspersed with BLM-administered lands, they could be influenced or be indirectly affected by BLM management actions. BLM management authority on lands with a split estate (e.g., private surface but federal minerals) is limited to activities (both surface and subsurface) related to exploration and development of the minerals. The BLM adopts the leasing requirements determined by other surface-managing agencies when leasing the mineral estate under those lands with a split estate. National Forest System lands would have leasing decisions made in the appropriate US Forest Service Land and Resource Management Plan/EIS. In its plans, the US Forest Service analyzes impacts from oil and gas leasing and development on National Forest System Lands and describes where the US Forest Service will or will not consent to leasing.

Table 1-3
Mineral Status within the GJFO Planning Area by County

Land Status (acres)	Garfield County	Mesa County	Montrose County	Rio Blanco County	Total
BLM/Federal Minerals	322,600	721,700	17,100	0	1,061,400
Private Surface/Federal Minerals	33,300	132,700	200	400	166,600
State Surface/Federal Minerals	0	1,200	0	0	1,200
Local Surface/Federal Minerals	0	2,100	0	0	2,100

Source: BLM 2010a

SECTION 2
PROPOSED ACTION

2.1 PROPOSED RMP

The Proposed RMP (PRMP; the proposed action) is hereby incorporated by reference and summarized in this section. It would provide direction for managing the nearly 1.1 million acres of BLM-administered lands and 1.2 million acres of federal mineral estate within the GJFO planning area. This chapter details the PRMP; **Table 2-1**, Proposed Resource Management Plan—Goals, Objectives, and Management Actions by Resource and Resource Use, describes the goals, objectives, and actions of the PRMP which are relevant to the protection of biological resources. The full list of stipulations and BMPs in the Proposed RMP for other resource and resource use programs are included as appendices to this BA, and may provide additional protection to threatened, endangered, proposed and candidate species. For a complete summary of the goals, objectives, and management actions refer to Chapter 2 of the PRMP.

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Special Status Species
General
GOAL: Manage special status species habitats to provide for their conservation and restoration as part of an ecologically healthy system.
Objective (SSS-O1): Maintain or improve the quality of listed (i.e., threatened or endangered) and sensitive species habitat by managing public land activities to support species recovery and the benefit of those species.
Allowable Use (SSS-AU1): **STIPULATION** CSU-9: *BLM Sensitive Plant Species Occupied Habitat.* For plant species listed as sensitive by BLM, special design, construction, and implementation measures within a 100-meter (328 feet) buffer from the edge of occupied habitat may be required. In addition,

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

relocation of operations by more than 200 meters (656 feet) may be required. Standard exceptions apply.

Allowable Use (SSS-AU2):

STIPULATION CSU-10: *Wildlife Habitat.*

Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures would be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs. Standard exceptions apply.

Allowable Use (SSS-AU3):

LEASE NOTICE LN-3: *Biological Inventories.* The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, Sage-Grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy on that area is prohibited.

Special Status Species: Fish

Objective(SSS-F-O1):

Maintain or improve the quality of listed (threatened or endangered) fish and sensitive fish habitat by managing public land activities to support species recovery and the benefit of those species.

Implementation Action (SSS-F-A1):

Identify limiting habitat factors based on site characteristics and habitat capabilities using channel type and geology classifications (e.g., Rosgen). Upon identification of limiting factors, prioritize and implement proven river, stream, lake, and riparian practices (e.g., in-channel habitat structures to create pools, riparian plantings) or by changing management of other program activities (e.g., changing livestock grazing season use) to achieve desired future condition.

Action (SSS-F-A2):

Designate the following ACECs to protect habitat for unique, sensitive, and listed fish (see ACECs section for management prescriptions):

- Dolores River Riparian ACEC: flannelmouth *(Catostomus latipinnis)* and bluehead sucker *(Catostomus discobolus)*; and
- Roan and Carr Creeks: green lineage cutthroat trout *(Oncorhynchus clarkii)*.

Implementation Action (SSS-F-A3):

While maintaining desired levels of access, identify and reroute or close and rehabilitate redundant, duplicative, or poorly constructed routes to reduce point sources of erosion and resulting sedimentation and turbidity impacts within watersheds containing known Colorado River and green lineage cutthroat trout populations. Focus on routes within closest proximity to occupied streams.

Allowable Use (SSS-F-AU1):

STIPULATION TL-1: *Salmonid and Native, Non-Salmonid Fishes.*

Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures; however the following intervals generally apply in Colorado:

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

- Cutthroat trout (various subspecies): May 1-September 1
- Rainbow trout: March 1-June 15
- Brown trout: October 1-May 1
- Brook trout: August 15-May 1
- Sculpin: May 1-July 31
- Bluehead sucker: May 1-July 15
- Flannelmouth sucker: April 1-July 1
- Roundtail chub: May 15-July 15
- Speckled dace: May 1-August 31
- Mountain whitefish: October 1-November 30

Exception Criteria: This stipulation only applies to construction and drilling and does not apply to operations and maintenance. If competing species are involved, the BLM may select to implement species-specific dates for native fish versus nonnative species. Specific exceptions apply.

Allowable use (SSS-F-AU5):
STIPULATION *CO-NSO-Hydrology River:*
No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major river: Colorado, Dolores, and Gunnison. Standard exceptions apply.

Allowable Use (SSS-F-AU7):
STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.*
Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. Standard and special exceptions apply.

Allowable Use (SSS-F-AU9):
Manage the Roan and Carr Creeks ACEC as a ROW avoidance area to protect special status fish species' habitat.

Special Status Species: Plants and Terrestrial Wildlife

GOAL (SSS-PTW-G1):
Manage special status species and their habitats to provide for their conservation and restoration as part of an ecologically healthy system, and support the goals contained in Standard 4 of the Colorado Standards for Public Land Health (BLM 1997).

Objective (SSS-PTW-O1):
To conserve plants and animals (and their habitats) listed by federal and Colorado governments as threatened, endangered, sensitive or species of concern, and to conserve plants and animals that are candidates for these lists with the overall objective of improving their populations so that they can be removed from these lists.

Action (SSS-PTW-A1):
Manage threatened and endangered species' habitat as ROW avoidance areas. Relocate ROWs if a determination is made that the relocation action would benefit and promote recovery and would not further impact a threatened and endangered species.

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Action (SSS-PTW-A2):

Avoid authorizing 2920 permits (such as site facilities and commercial filming) within known threatened and endangered species' habitat. Allow permits only when there are shown to be no effects on threatened and endangered species habitat.

Allowable Use (SSS-PTW-AU1):

Manage the following ACECs as ROW exclusion areas to protect threatened and endangered species' habitat:

- Atwell Gulch (except for ROWs to existing oil and gas leases issues under the 1987 RMP without NSO lease stipulations);
- Pyramid Rock; and
- South Shale Ridge (except for ROWs to existing oil and gas leases issues under the 1987 RMP without NSO lease stipulations).

Action (SSS-PTW-A3):

Protect and maintain unique ecological values for the following habitat locations to improve the habitat for unique, sensitive, threatened, and endangered plants and animals.

- Atwell Gulch ACEC: Colorado hookless cactus, DeBeque milkvetch, and Naturita milkvetch *(Astragalus naturitensis)*;
- Badger Wash ACEC: grand buckwheat, Ferron's milkvetch, cliffdweller's cryptantha, and Gardner's saltbrush/salina wildrye;
- Dolores River Riparian ACEC: peregrine falcon *(Falco peregrinus),* bald eagle, Kachina daisy *(Erigeron kachinensis)*, Eastwood's monkeyflower, *(Mimulus eastwoodiae)*, San Rafael milkvetch, Dolores River skeleton plant, horseshoe milkvetch, Grand Junction milkvetch, and Gypsum catseye *(Cryptantha crassipes);*
- Juanita Arch ACEC: Grand Junction milkvetch;
- The Palisade ACEC: peregrine falcon, bald eagle, Dolores River skeleton plant, San Rafael milkvetch, horseshoe milkvetch, Fisher Tower's milkvetch, tufted green gentian, and Osterhout's catseye;
- Pyramid Rock ACEC: Colorado hookless cactus, DeBeque phacelia, DeBeque milkvetch, Naturita milkvetch, adobe thistle, and aromatic Indian breadroot;
- Rough Canyon ACEC: canyon treefrog, Gunnison Sage-Grouse, Grand Junction milkvetch, and Eastwood's desert parsley;
- Sinbad Valley ACEC: Gypsum catseye;
- South Shale Ridge ACEC: Colorado hookless cactus, DeBeque phacelia, Naturita milkvetch, and adobe thistle; and
- Unaweep Seep ACEC: Great Basin silverspot butterfly and giant helleborine.

Action (SSS-PTW-A4):

Pursue land tenure adjustments to facilitate the conservation or recovery of special status species. Avoid the disposal of occupied special status species' habitat.

Allowable Use (SSS-PTW-AU3):

LEASE NOTICE LN-4 *Threatened and Endangered Species.* This lease contains habitat for threatened and endangered species. Prior to undertaking any activity on the lease, including surveying and staking of well locations, the lessee may be required to perform botanical inventories on the lease. Special design and construction measures may also be required in order to minimize impacts on threatened and endangered species habitat from drilling and producing operations.

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Plants
Objective (SSS-P-O1): Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by CNHP.
Implementation Action (SSS-P-A1): Identify the following areas as core conservation populations for special status plant species: • Atwell Gulch; • Logan Wash Mine; • Pyramid Rock ACEC; • South Shale Ridge; • Sunnyside; and • Reeder Mesa. Manage identified habitat to maintain the population. Management tools include but are not limited to weed treatments, inter-seeding, route closures, fencing, and managing timing and intensity of grazing. Identify additional areas as populations are identified and species of concern are modified. Limit new road construction in Reeder Mesa, Sunnyside, Logan Wash Mine, and South Shale Ridge, and designate new roads associated with authorized uses as administrative (e.g., oil and gas and ROWs). Rehab and close roads associated with authorized uses when no longer needed.
Implementation Action (SSS-P-A2): Monitor special status plant populations to determine trends, impacts, and guide future management, with an emphasis on areas near surface-disturbing activities. Utilize monitoring data to determine and modify NSO stipulations applicable to current and historically occupied habitat of threatened, endangered, proposed, and candidate plants.
Implementation Action (SSS-P-A3): Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts on listed plant species habitat, and occupied habitat from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively effecting designated critical habitat.
Implementation Action (SSS-P-A4): Reduce as much as practicable route density (miles/square mile) within 200 meters of known Threatened and Endangered plant occurrences throughout the field office. If occurrences are identified in the future that conflict with route designations, implement reroutes.
Allowable Use (SSS-P-AU1): **STIPULATION** NSO-12: *ACECs.* Prohibit surface occupancy and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive plants. Standard exceptions apply. • Atwell Gulch (threatened and sensitive plants); • Badger Wash (sensitive plants); • Pyramid Rock (threatened and sensitive plants); • South Shale Ridge (threatened and sensitive plants); and • Unaweep Seep (sensitive plants).

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Allowable Use (SSS-P-AU2):

STIPULATION NSO-13: *Current and Historically Occupied and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species.*

Prohibit certain surface uses (as specified in Appendix B of the RMP), to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts on primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred.

Allowable Use (SSS-P-AU7):

STIPULATION *CO-CSU-Plant Community.*

Surface occupancy or use may be restricted within occupied habitat that meets BLM's criteria, as established in the Resource Management Plan, for significant and/or relict plant communities:

- all old growth forests and woodlands and
- plant communities that meet BLM's criteria for significant plant communities

Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit a plan of development that would demonstrate that habitat would be preserved to maintain the viability of significant or relict plant communities.

Yellow-billed Cuckoo

Objective (SSS-Y-O1):

Maintain and improve BLM lands for yellow-billed cuckoo habitat.

Action (SSS-Y-A1):

Where large stands of cottonwoods occur, develop management plans to restore or improve cuckoo habitat and increase canopy cover and mid-story tree and shrub cover.

Allowable use (SSS-Y-AU2):

STIPULATION *CO-NSO-Hydrology River:*

No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison**.** Standard exceptions apply.

Allowable Use (SSS-Y-AU4):

STIPULATION NSO-2: *Streams/Springs Possessing Lotic Riparian Characteristics.*

Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. Standard and special exceptions apply.

Gunnison and Greater Sage-Grouse

Objective (SSS-SG-O1):

Advance the conservation of Gunnison and Greater Sage-Grouse and their habitat in accordance with current national, state, and local working group recommendations and policy as well as the most current scientific literature and research.

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Implementation Action (SSS-SG-A1): Consistent with current guidance for sagebrush-dependent species, improve areas of poor quality nesting habitat by implementing the following actions, including but not limited to: • In areas where species diversity is low seed area with grasses and forbs, with an emphasis on forbs if brood-rearing occurs in the area, accompanied by light disking and interseeding, or drill seeding. • Where sage is decadent and does not meet habitat objectives, conduct thinning by roller-chopping, light disking, Dixie Harrow, Lawson Aerator or other methods. • Conduct vegetation treatments to retain residual cover through fall and winter into nesting season.
Implementation Action (SSS-SG-A2): When reseeding roads, primitive roads and trails, use appropriate seed mixes (appropriate for Sage-Grouse ecological conditions) and consider the use of transplanted sagebrush.
Implementation Action (SSS-SG-A3): Reduce routes through currently suitable or potentially suitable Gunnison and greater sage grouse habitat by reducing routes through sage brush parks, with an emphasis on routes that bisect sage brush parks.
Implementation Action (SSS-SG-A4): Improve brood-rearing habitats by implementing the following action: • Restore old ponds or construct new ponds in areas lacking water, while minimizing potential for promoting mosquito breeding habitat at elevations below 8,000 feet.
Implementation Action (SSS-SG-A5): Improve lek areas by mechanically treating historic lek areas where sagebrush density has increased.
Implementation Action (SSS-SG-A6): To reduce disturbance to Gunnison or Greater Sage-Grouse, close duplicative or redundant routes within Sage-Grouse habitat and within 4 miles of a lek.
Implementation Action (SSS-SG-A7): Remove/modify raptor perches, in Gunnison and Greater Sage-Grouse habitat (trees, fences, dry-hole markers, and power poles).
Implementation Action (SSS-SG-A8): Monitor measureable objectives and evaluate grazing management to assure that management actions are achieving Sage-Grouse habitat objectives.
Implementation Action (SSS-SG-A9): Design any new structural range improvements to conserve, enhance, or restore Sage-Grouse habitat through an improved grazing management system relative to Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, enclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments.
Action (SSS-SG-A10): To reduce Sage-Grouse strikes and mortality, remove, modify, or mark fences in high risk areas. When fences are necessary, require a Sage-Grouse-safe design.
Action (SSS-SG-A11): Locate supplements (salt or protein blocks) in a manner designed to conserve, enhance, or restore Sage-Grouse habitat.
Action (SSS-SG-A12): Offer temporary use on a case-by-case basis in allotments where grazing preference has been relinquished, or non-use warrants to rest other allotments that include important Sage-Grouse habitat.

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

Action (SSS-SG-A13): Apply TL-16 (Occupied Sage-Grouse Winter Habitat) or TL-17 (Sage-Grouse Leks) to vegetation management treatments according to the type of seasonal habitats present in a priority area.
Implementation Action (SSS-SG-A14): Monitor after vegetation treatments for success in meeting objectives and monitor and control invasive vegetation after vegetation treatments in Sage-Grouse habitat.
Action (SSS-SG-A15): Apply post-vegetation treatment management and monitoring to ensure long term persistence of seeded native plants. Outline temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain vegetation management objectives to benefit Sage-Grouse and their habitats.
Action (SSS-SG-A16): Design vegetation treatments in Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant seral stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design.
Action (SSS-SG-A17): Include Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, state and federal Sage-Grouse conservation and recovery plans and appropriate local information in habitat restoration objectives. Make maintaining these objectives within priority Sage-Grouse habitat areas a high restoration priority.
Action (SSS-SG-A18): Choose native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success, and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and Sage-Grouse habitat objectives.

Action (SSS-SG-A19):
Manage the following areas to benefit Sage-Grouse habitat:
• Wildlife Emphasis Areas:
  ○ Glade Park and
  ○ Sunnyside.
• ACECs:
  ○ Roan and Carr Creek

Allowable use (SSS-SG-AU2): Identify the following as ROW avoidance areas: • Sage-Grouse occupied habitat and • Within a 4-mile radius of Sage-Grouse leks.
Allowable Use (SSS-SG-AU3): **No Leasing:** *Sage-Grouse.* Close all occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) and Greater Sage Grouse habitat within one mile of an active lek to fluid mineral leasing and geophysical exploration.
Allowable Use (SSS-SG-AU4): **No Leasing:** *Split-estate.* Manage 12,200 acres of Private and State surface/federal fluid mineral estate in all occupied Gunnison Sage-Grouse habitat and Greater Sage Grouse habitat within one mile of an active lek as closed to fluid

Table 2-1
Proposed Resource Management Plan—Goals, Objectives, and Actions by Resource and Resource Use

mineral leasing and geophysical exploration.
Allowable Use (SSS-SG-AU5): **STIPULATION** TL-16: *Occupied Sage-Grouse Winter Habitat.* Prohibit surface occupancy and surface-disturbing activities in occupied Sage-Grouse winter habitat from December 16 to March 15.
Allowable Use (SSS-SG-AU6): **STIPULATION** NSO-25: *Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat.* Prohibit surface occupancy and surface-disturbing activities within 4 miles of an active lek or within Sage-Grouse nesting and early brood-rearing habitat. Standard and special exceptions apply.
Allowable Use (SSS-SG-AU8): **STIPULATION** TL-17: Sage-Grouse Leks. Prohibit surface occupancy and surface-disturbing activities within 4 miles of Sage-Grouse leks from March 1 to June 30. Standard and special exceptions apply.
Mexican Spotted Owl
GOAL (VFW-G2): Maintain forests and woodlands for a healthy mix of successional stages within the natural range of variation that incorporates diverse structure and composition.
Objective (VFW-O2): Manage ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii)*, aspen *(Populus tremuloides)*, and spruce/fir to mimic natural stand conditions and natural regeneration.
Action (VFW-A3): Use prescribed fire and mechanical, chemical, and biological treatments as necessary to reduce the risk of disease vectors and to increase the resilience to beetles and disease.
Objective (VDPC-O9): Emphasize perpetuating late- to mid-seral plant communities that provide suitable habitat for wildlife.
Special Status Species: Canada Lynx
Objective (SSS-CL-O1): Maintain and improve BLM-managed portions of Lynx Analysis Units for Lynx habitat.
Action (SSS-CL-A1): Within lynx *(Lynx canadensis)* habitat in Lynx Analysis Units: • Manage timber harvest consistent with the August 2013 Lynx Conservation Assessment and Strategy and • Limit the expansion of consistent snow compaction unless it serves to consolidate use and improve lynx habitat.

Relevant PRMP appendices are attached to this BA and include **Appendix H**, Best Management Practices and Standard Operating Procedures; and **Appendix B**, Stipulations Applicable to Fluid Mineral Leasing and Other Surface-Disturbing Activities. Relevant Best Management Practices, Standard Operating Procedures, and Stipulations are discussed further in the effects analysis of Chapter 4 in this BA; general context and applicability are discussed below:

BMPs are state-of-the-art mitigation measures applied on a site-specific basis to avoid, minimize, reduce, rectify, or compensate for adverse environmental or social impacts. They are applied to management actions to aid in achieving desired outcomes for safe, environmentally responsible resource development, by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. While BMPs for all resource programs could indirectly benefit listed species by protecting habitat, BMPs for soil resources (page H-6), water resources (page H-9), vegetation (page H-17), and fish and wildlife and special status species (page H-29) would be most likely to benefit listed species because these BMPs are targeted at listed species and/or are more likely to overlap with critical habitat.

Stipulations are mitigation measures which apply to select activities on lands overlying federal mineral estate, which includes mineral estate underlying BLM lands, privately-owned lands, and state-owned lands. Under the PRMP, three types of stipulations could be applied to new fluid mineral leases or other land use authorizations, except for those authorized under the realty program: 1) no surface occupancy (NSO) or other no surface-disturbing activities; 2) controlled surface use (CSU); and 3) timing limitation (TL). ROW authorizations are governed by avoidance and exclusion area restrictions.

> NSO/No Surface-disturbing Activities: Allows fluid mineral leasing, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, waiver, or modification is granted. Access to fluid mineral deposits would require directional drilling from outside the boundaries of the NSO/No Surface-disturbing Activities areas.
>
> CSU: Allows some use and occupancy of public land, while protecting identified resources or values. A CSU stipulation allows the BLM to require special operational constraints, or the surface-disturbing activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value.
>
> TL: Closes an area to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified time frames. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, completions, and other operations considered to be intensive in nature are not allowed.

In addition to those stipulations directed at protecting special status species (see pages B-9, B-13, and B-16), the Proposed RMP includes a broader suite of stipulations that would protect special status species by limiting or prohibiting surface-disturbing activities in areas where these species may occur. These include NSO stipulations that prohibit surface-disturbing activities, CSU stipulations that require site-specific avoidance of sensitive resources, and TL stipulations that seasonally prohibit or limit surface-disturbing activities.

Whether a stipulation is targeted at special status species or a different resource, the resultant reduction in surface-disturbing activities would benefit special status species. Under the Proposed RMP, there would be 647,900 acres of NSO stipulations, 599,300 acres of CSU stipulations, and 526,400 acres of TL stipulations. Note that acreages of NSO, CSU, and TL stipulations may overlap.

The entire stipulations appendix for the Proposed RMP/Final EIS is attached as an appendix to this BA. While all stipulations could indirectly benefit listed species by minimizing surface disturbance, stipulations for water resources (pages B-8 and B-13), soil resources (pages B-8 and B-13), vegetation (pages B-8 and B-13), special status species (pages B-9, B-13, and B-16), fish and wildlife (pages B-10, B-14, and B-17), and ACECs (pages B-11 and B-15) would be most likely to benefit listed species because these stipulations are targeted at listed species and/or are more likely to overlap with critical habitat.

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SECTION 3
EVALUATED SPECIES

3.1 INTRODUCTION

Eleven threatened or endangered species, two proposed threatened or endangered species, and one candidate species for listing are addressed in this BA (see **Table 1-1**). This chapter describes the following for each species:

- Species description
- Life history
- Status and distribution
- Environmental baseline
- Critical habitat
- Threats

The *environmental baseline* is defined by the regulations implementing the ESA (50 CFR, Part 402.02) as the following:

- Past and present impacts of all federal, state, and private actions and other human activities in the action area.
- The anticipated impacts of all proposed state or federal projects in the action area that have already undergone formal or early Section 7 consultation.
- The impact of state or private actions that are contemporaneous with the consultation process.

The *action area* is defined at 50 CFR, Part 402, to mean "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the purposes of this consultation, the action area includes lands administered by the BLM in the GJFO and those areas nearby that could be affected by the proposed action. In the case of water depletions and

the four endangered big river fish, the action area extends downstream for the entire range of each species in the Colorado River.

3.2 LISTED SPECIES

3.2.1 Colorado Hookless Cactus

Species Description

The Colorado hookless cactus was formerly part of a complex of cactus species called the Uinta Basin hookless cactus, with the taxonomic name *Sclerocactus glaucus*. The species ranged from western Colorado and into portions of eastern Utah. A taxonomic review of the species in 2007 determined that *Sclerocactus glaucus* is actually three separate species: *S. glaucus, S. wetlandicus,* and *S. brevispinus* (74 FR, 47112). *S. glaucus* occurs only in western Colorado and has been renamed Colorado hookless cactus. *S. wetlandicus* and *S. brevispinus* occur only in Utah.

The Colorado hookless cactus is barrel-shaped and typically ranges from 1.2 to 4.8 inches (3 to 12 centimeters) tall, with exceptional plants up to 12 inches (30 centimeters) tall. The flowers are usually funnel shaped but sometimes are bell shaped. They usually have pink to violet tepals (USFWS 2010a).

Life History

Populations of Colorado hookless cactus occur primarily on alluvial benches (soils deposited by water) along the Colorado and Gunnison Rivers and their tributaries. It generally occurs on gravelly or rocky surfaces on river terrace deposits, on mesa tops, and along the spines of ridges. Exposures vary, but Colorado hookless cactus is more abundant on south-facing slopes (USFWS 2010a). Soils are usually coarse, gravelly river alluvium above the river floodplains. They usually consist of Mancos shale, with volcanic cobbles and pebbles on the surface.

Elevations range from 3,900 to 6,000 feet (1,400 to 2,000 meters; USFWS 2010a). Associated desert shrubland vegetation is shadscale (*Atriplex confertifolia*), galleta grass (*Pleuraphis jamesii*), black-sage (*Artemisia nova*), and Indian rice grass (*Achnatherum hymenoides*; USFWS 2010a). Populations also exist in big sagebrush- (*Artemisia tridentata*) or greasewood- (*Sarcobatus vermiculatus*) dominated sites and in the transition zone from sagebrush (*Pinus edulis*) to pinyon-juniper (*Juniperus osteosperma*) communities (USFWS 2010a).

Pollinators include the honeybee and native bees in the genera *Eucera*, *Ashmeadiella*, *Heriades*, *Agapostemon*, and *Lasioglossum* (Rechel et al. 1999). Seed dispersal is primarily by means of ants, which are attracted by nutritious seeds which the Colorado hookless cactus produces (Rechel et al. 1999).

Status and Distribution

The Colorado hookless cactus was first listed as a threatened species in 1979 (44 FR 58868) as Uinta Basin hookless cactus (*Sclerocactus glaucus*). On September 15, 2009 (74 FR 47112), the USFWS officially recognized the taxonomic split of this species, as described above. Critical habitat has not been designated.

The Colorado hookless cactus is an endemic plant found in Delta, Montrose, Mesa, and Garfield Counties, Colorado. There are two population centers of Colorado hookless cactus. The first is on alluvial river terraces of the Gunnison River from near the City of Delta to southern Mesa County; the second is on alluvial river terraces and mesa slopes of the Colorado River, Plateau Creek, and Roan Creek drainages in the vicinity of DeBeque, Colorado (USFWS 2010a). The species has been documented at 93 occurrences, totaling approximately 23,000 individuals (CNHP 2014).

Environmental Baseline

Occurrence in the Action Area

Within the planning area, the Colorado hookless cactus occurs primarily near DeBeque (north and south of Interstate 70) and in the Whitewater area. The Denver Botanic Gardens, in collaboration with the BLM, conducts on-going cactus monitoring efforts, including several populations within the action area west of DeBeque and north of Mesa. Monitoring data indicates the species is stable throughout its range (DePrenger-Levin and Kao 2013).

Past and Present Impacts

Threats to the species within the GJFO include habitat degradation as a result of livestock trampling and grazing, nonnative halogeton and cheatgrass encroachment, energy development, recreation, and unauthorized collection. Predation by rabbits and cactus-borer beetle (*Moneilema semipunctatum*) may also be a significant source of mortality (USFWS 2010a).

Critical Habitat

Critical habitat has not been designated for Colorado hookless cactus.

Threats

The primary threats to Colorado hookless cactus are as follows (USFWS 2010a):

- Natural gas exploration and production
- Pipelines, utilities, and other rights-of-way (ROWs)
- Off-highway vehicle activity
- Livestock grazing and trampling
- Herbicides and pesticides

- Hybridization
- Illegal human collection
- Potential water developments
- Climate change

3.2.2 DeBeque Phacelia

Species Description

DeBeque phacelia is a rare annual plant. It is a low-growing, herbaceous, spring annual plant with a tap root. The stems are typically 0.8 to 3 inches (2 to 8 centimeters) long, often branched at the base and mostly lying flat on the ground as a low rosette. Stems are often deep red and more or less hairy. Leaves are similarly hairy, reddish at maturity, egg-shaped or almost rectangular with rounded corners, with bases abruptly tapering to a wedge-shaped point. Leaf margins are smooth or toothed. The tube-shaped flowers are yellowish white, on short stems (USFWS 2014b).

Life History

DeBeque phacelia is a rare annual plant endemic to nearly barren, clay soils derived from the Atwell Gulch and Shire members of the Wasatch Formation in Mesa and Garfield Counties, Colorado. These clay soils are found on moderately steep slopes, benches, and ridge tops adjacent to valley floors of the southern Piceance Basin in Mesa and Garfield Counties, Colorado. All occurrences consist of small patches of plants on uniquely textured, shrink-swell clay soil separated by larger areas of similar-appearing soils that are not occupied by DeBeque phacelia. DeBeque phacelia seeds usually germinate in early April and finish their life cycle by late June to early July after which time they dry up and disintegrate or blow away, leaving no indication that the plants were present (USFWS 2014b). The seed bank is the mechanism by which the populations survive. The seeds can remain dormant for 5 years (and probably longer) until the combination and timing of temperature and precipitation are optimal (USFWS 2011a).

Status and Distribution

The USFWS listed DeBeque phacelia as a threatened species under a final rule published on July 27, 2011 (76 FR 45054). Critical habitat for the species was designated on August 13, 2012 (77 FR 48367). The DeBeque phacelia is endemic to the southern Piceance Basin. Its range encompasses 82,231 acres, and as of 2012, the species occupied a total of 558.6 acres. Plants are found at elevations ranging from 5,000 to 7,150 feet (1,525 to 2,180 meters; USFWS 2013a).

The number of plants varies widely from year to year depending on climatic conditions. The fluctuation in numbers indicates that many seeds remain dormant in the seed bank during unfavorable years for germination. As such, it is difficult to estimate the total population size. Upper counts from surveys over

the past 30 years estimated a total of 68,731 individuals (USFWS 2013a). The final listing rule provides a thorough and up-to-date review of the status of the species.

Environmental Baseline

Occurrence in the Action Area

There are 19,600 acres of critical habitat within the action area. Of the nine designated Critical Habitat Units (CHUs), unit 2 (Pyramid Rock) is the largest at approximately 17,321 acres located west of the town of DeBeque.

Past and Present Impacts

DeBeque phacelia is especially vulnerable to habitat loss by virtue of being restricted to the barren and semibarren habitat of specific members of the Wasatch geological formation that has a limited distribution within the Piceance Basin (Ladyman 2003). Its habitat coincides with high potential natural gas reserves and has historically been affected by activities associated with resource extraction. Activities that lead to significant soil disturbance, or progressive soil erosion, eliminate or sharply reduce the seed bank, which appears to be the mechanism by which populations survive. Additionally, surface-disturbing activities can introduce and spread weeds resulting in altered plant communities that threaten DeBeque phacelia.

Impacts on DeBeque phacelia have also been documented from OHV use and livestock trampling (USFWS 2013a).

Critical Habitat

Critical Habitat for DeBeque phacelia was designated and finalized on August 13, 2012 (USFWS 2012c). A total of 25,484 acres of critical habitat were designated within nine CHUs: Sulphur Gulch, Pyramid Rock, Roan Creek, DeBeque, Mount Logan, Ashmead Draw, Baugh Reservoir, Horsethief Mountain, and Anderson Gulch. BLM-administered lands within the GJFO planning area cover 19,600 acres of these CHUs (USFWS 2012c).

Critical habitat primary constituent elements for the DeBeque phacelia, are described in **Table 3-1**, Primary Constituent Elements of DeBeque Phacelia Critical Habitat.

Table 3-1
Primary Constituent Elements of DeBeque Phacelia Critical Habitat

Features	Description
Suitable Soils and Geology	• Atwell Gulch and Shire members of the Wasatch formation. • Within these larger formations, small areas (from 10 to 1,000 square feet [1 to 100 square meters]) on colorful exposures of chocolate to purplish brown, light to dark charcoal gray, and tan clay soils are especially important. These small areas are slightly different in texture and color than the similar surrounding soils. Occupied sites are characterized by alkaline (pH range from 7 to 8.9) soils with higher clay content than similar nearby unoccupied soils. • Clay soils that shrink and swell dramatically upon drying and wetting and are likely important in the maintenance of the seed bank.
Topography	• Moderately steep slopes, benches, and ridge tops adjacent to valley floors. Occupied slopes range from 2 to 42 degrees with an average of 14 degrees.
Elevation and Climate	• Elevations from 4,600 to 7,450 feet (1,400 to 2,275 meters). • Climatic conditions similar to those around DeBeque, Colorado, including suitable precipitation and temperatures. Annual fluctuations in moisture (and probably temperature) greatly influences the number of *Phacelia submutica* individuals that grow in a given year and are thus able to set seed and replenish the seed bank.

Plant Community	• Small (from 10 to 1,000 square feet [1 to 100 square meters]) barren areas with less than 20 percent plant cover in the actual barren areas.
	• Presence of appropriate associated species that can include (but are not limited to) the natives *Grindelia fastigiata, Eriogonum gordonii, Monolepis nuttalliana,* and *Oenothera caespitosa*. If sites become dominated by *Bromus tectorum* or other invasive nonnative species, they should not be discounted because *Phacelia submutica* may still be found there.
	• Appropriate plant communities within the greater pinyon–juniper woodlands that include:
	  o Clay badlands within the mixed salt desert scrub, or
	  o Clay badlands within big sagebrush shrublands.

Maintenance of the Seed Bank and Appropriate Disturbance Levels	• Within suitable soil and geologies (see Suitable Soils and Geology above), undisturbed areas where seed banks are left undamaged. • Areas with light disturbance when dry and no disturbance when wet. Clay soils are relatively stable when dry but are extremely vulnerable to disturbances when wet.

Source: USFWS 2012c

Threats

The primary threats to DeBeque phacelia are as follows (USFWS 2013a):

- Oil and gas development
- Utility and energy corridors
- Livestock use and trampling
- OHV use
- Invasive nonnative plants

- Water reservoirs
- Climate change and drought

3.2.3 Parachute Penstemon

Species Description

Parachute penstemon, which is also known as Parachute beardtongue, is a mat-forming perennial herb with thick, succulent, bluish leaves, each about 0.8 inches (2 centimeters) long and 0.4 inches (1 centimeter) wide. Plants produce shoots that run along underground, forming what appear as new plants at short distances away. The funnel-shaped flowers are white to pale lavender (USFWS 2011a).

Life History

Parachute penstemon is endemic to sparsely vegetated, steep talus slopes on the southern escarpment of the Roan Plateau in Garfield County, Colorado. The species was first discovered in 1986. Plants are found on the oil-shale rich Parachute Creek Member of the Green River Formation between 8,000 and 9,000 feet (2,440 to 2,740 meters) in elevation, although a small population was recently found on Green River shale alluvium at elevations ranging from 5,500 to 5,800 feet (1,675 to 1,770 meters). Parachute penstemon is uniquely adapted to survive on steep and constantly moving talus slopes. The stems of Parachute penstemon elongate downslope from their initial rooting point as the leaves become buried by shifting shale shards. When these stems encounter a sufficiently stable surface, they may develop a new tuft of leaves, flower, and set seed. Vegetation on these talus slopes is generally quite sparse (less than 20 percent canopy cover), providing little competition for the Parachute penstemon (USFWS 2011a).

The species blooms between June and September, and the plants produce a small number of seeds that are dispersed by gravity. They require cross pollination, and have many different pollinators that vary between occurrences. None of the pollinators are specialists to this species or rare (USFWS 2011a).

Status and Distribution

The USFWS published a final rule on July 27, 2011 to list the species as threatened under the ESA effective August 26, 2011 (76 FR 45054). Critical habitat for the species was designated on August 13, 2012 (77 FR 48367).

The historical range and distribution for this species is unknown. All of the currently known occurrences occupy about 91.8 acres on the Green River geologic formation in Garfield County, Colorado (USFWS 2011a). Although this formation is located underground throughout most of the Piceance Basin, it is exposed on much of the southern face of the Roan Plateau, the area in which the plant is restricted. The total area of the plant's geographic range is about 2 miles (3 kilometers) wide and 17 miles (27 kilometers) long. Six occurrences of

Penstemon debilis were found between 1986 and 2005; two of them are no longer considered viable (USFWS 2014a). The total estimated population size consists of only 4,138 individuals (USFWS 2013b). It is likely that unknown occurrences exist, because many areas are inaccessible to surveyors due to cliff-side terrain or private lands.

Environmental Baseline

Occurrence in the Action Area

There are seven known occurrences of the Parachute penstemon, two of which are wholly or partially on BLM-administered lands within the GJFO planning area. These include the Mount Logan Road population and the Mount Logan Mine population. The Mount Logan Mine population has an estimated 533 plants, the majority of which occur on private lands. The Mount Logan Road population, which extends along a mining road, is nearly extirpated with 3 estimated occurrences (USFWS 2013b).

Scattered plants have also been found outside of the GJFO planning area in Smith Gulch, an outwash within the BLM's Colorado River Valley Field Office far below the expected elevation for this species. This may mean that there are more populations in the GJFO planning area at lower elevations. However, none are known at this time.

Past and Present Impacts

Maintenance and reclamation activities along Logan Wash Mine access road have resulted in plant mortality and habitat destruction. Oil and gas development and oil shale extraction also threaten the species (USFWS 2013b). Forty percent of occupied habitat and 69 percent of the plants are located on Oxy USA WTP LP (Oxy) property under a State of Colorado Natural Area Program (CNAP) agreement, where the plants are minimally disturbed. A proposal to designate the Logan Wash Mine site as a Natural Area would provide additional protection to the species and its habitat found in this area.

Critical Habitat

Four CHUs covering 15,510 acres have been designated for Parachute penstemon: Brush Mountain, Cow Ridge, Mount Callahan, and Anvil Points (USFWS 2012c). The Brush Mountain and Cow Ridge CHUs are not occupied; however, they contain the primary constituent elements sufficient to support the life-history needs of the species. The unoccupied CHUs were designated for future recovery efforts, that may include the creation of new Parachute penstemon populations. There are 7,100 acres of critical habitat within the planning area.

Critical habitat primary constituent elements for the Parachute penstemon are described in **Table 3-2**, Primary Constituent Elements of Parachute Penstemon Critical Habitat.

Table 3-2
Primary Constituent Elements of Parachute Penstemon Critical Habitat

Features	Description
Suitable Soils and Geology	• Parachute Member and the Lower part of the Green River Formation. • Appropriate soil morphology characterized by a surface layer of small to moderate shale channers (small flagstones) that shift continually due to the steep slopes and below a weakly developed calcareous, sandy to loamy layer with 40 to 90 percent coarse material.
Elevation and Climate	• From 5,250 to 9,600 feet (1,600 to 2,920 meters). Climatic conditions similar to those of the Mahogany Bench, including suitable precipitation and temperatures.
Plant Community	• Barren areas with less than 10 percent plant cover. • Presence of other oil shale endemics, including *Mentzelia rhizomata, Thalictrum heliophilum, Astragalus lutosus, Lesquerella parviflora, Penstemon osterhoutii,* and *Festuca dasyclada (*also *P. caespitosus)*.
Habitat for Pollinators	• Pollinator ground and twig nesting habitats. Habitats suitable for a wide array of pollinators and their life history and nesting requirements. A mosaic of native plant communities generally would provide for this diversity (see Plant Community above). These habitats can include areas outside of the soils identified in Suitable Soils and Geology. • Connectivity between areas allowing pollinators to move from one population to the next within units. • Availability of other floral resources. This would include other flowering plant species that provide nectar and pollen for pollinators. Grass species do not provide resources for pollinators. • To conserve and accommodate these pollinator requirements, USFWS has identified a 3,280-ft (1,000-m) area beyond occupied habitat to conserve the pollinators essential for reproduction.
High levels of natural disturbance	• Very little or no soil formation. • Slow to moderate, but constant, downward motion of the oil shale that maintains the habitat in an early successional state.

Source: USFWS 2013b

Threats

The primary threats to Parachute penstemon are as follows (USFWS 2013b):

- Oil and gas development
- Oil shale extraction and mine reclamation
- Vehicle access through occupied habitat
- Climate change, drought, and impacts on the vegetative community
- Invasive species

3.2.4 Ute Ladies'-tresses Orchid

Species Description

Ute ladies'-tresses orchid is a perennial, terrestrial orchid with erect, glandular-pubescent stems 6 to 20 inches (15 to 50 centimeters) tall arising from tuberous-thickened roots. Basal leaves are linear and persist at flowering time. Leaves become progressively reduced in size up the stem. The flower consists of a few to many small white to ivory flowers arranged in a spike formation at the top of the stem. The individual flowers are stout and ringent, and face directly away from the stalk (USFWS 1992).

Ute ladies'-tresses orchid first appears above-ground as a rosette of thickened grass-like leaves that can be difficult to distinguish from other plants. Some individuals remain under ground or do not flower each year and fluctuations in mature flowering adults do not necessarily correspond to population fluctuations or indicate habitat alterations (USFWS 1992).

Life History

Ute ladies'-tresses orchid habitat is found along freshwater streams emerging from the flanks of mountains where the streambed is beginning to level out and meander within a developing floodplain. These streams are very dynamic and may be subject to seasonal flooding from snowmelt and intermittent heavy thunderstorms. Due to variations in snowpack, these streams experience fairly frequent severe (overbank) flooding sufficient to cause movement of the stream channel within its floodplain (USFWS 1992).

The orchid colonizes early successional riparian habitats such as point bars, sand bars and low lying gravelly, sandy, or cobbly edges. As the stream channel changes location and depth, the orchid persists in those areas where the hydrology provides continual dampness in the rooting zone throughout the growing season. These areas include old oxbows, side channels, or older stream channels that have been filled in with alluvial material, but which still have a hydrologic connection, through groundwater, to the stream system (USFWS 1992). The orchid is tolerant of a mix of wetland forb and grass species, is not tolerant of long-term standing water and does not compete with emergent plant species (e.g., cattails) or aggressive species that form dense monocultures such as Canada thistle or reed canarygrass (USFWS 1992). Competition with exotic species is a threat to Ute ladies'-tresses, along with habitat conversion due to invasive weed species (USFWS 1995).

Bumblebees (*Bombus* spp.) along with solitary native bees *(Anthophora* spp.*)* are the primary pollinators for Ute ladies'-tresses orchid. Less frequently, non-native honeybees *(Apis mellifera)* also serve as pollinators (Sipes and Tepedino 1995).

Ute ladies'-tresses orchid reproduces by seed. The orchid may not flower every year and may remain dormant below ground during years of drought. Ute

ladies'-tresses produce cylindrical fruit containing numerous seeds (USFWS 2014c). Fruit maturation occurs in late August to September (USFWS 2014c). A single plant may produce tens of thousands of seeds per year, although it is hypothesized that a symbiotic mycorrhizal relationship may be necessary before a seed can begin germination (USFWS 2014c).

Status and Distribution

The Ute ladies'-tresses orchid was listed as a threatened species under a final rule published in 1992 (57 FR 2048). Critical habitat has not been designated. A draft recovery plan was published in 1995 (USFWS 1995). No final plan has been published. Populations of Ute ladies'-tresses orchids occur in three general areas of the western United States: near the base of the eastern slope of the Rocky Mountains in southeastern Wyoming and north-central and central Colorado; in the upper Colorado River Basin, particularly in the Uintah Basin; and in the Bonneville Basin along the Wasatch Front and westward in the eastern Great Basin, in north-central and western Utah and eastern Nevada (USFWS 1995). The species has been documented in Nebraska, Wyoming, Utah, Colorado, Nevada, Idaho, Washington, and Montana (USFWS 2004a).

Environmental Baseline

Occurrence in the Action Area

There are no known occurrences of the Ute ladies'-tresses orchid within the GJFO planning area. Potential habitat is present near the DeBeque area and Plateau Creek.

Past and Present Impacts

Population extirpation from urbanization has been documented along the Wasatch Front and the Front Range. The species depends on natural stream processes; therefore, reservoirs, dams, diversions, and other water depletions can easily affect habitat functionality (USFWS 1995). Invasion of exotic plant species has also affected the Ute ladies'-tresses. In populations near Boulder, Canada thistle growth was documented as prevented flowering and reproduction (USFWS 1995).

Critical Habitat

Critical habitat has not been designated for the Ute ladies'-tresses orchid.

Threats

The primary threats to Ute ladies'-tresses orchid are as follows (USFWS 1995):

- Habitat loss and modification
- Livestock use and grazing
- Stream and watershed alterations including water depletions
- Invasive species

3.2.5 Colorado Pikeminnow

Species Description

The Colorado pikeminnow (formerly the Colorado squawfish) is the largest cyprinid fish endemic to the Colorado River Basin. This species historically reached a maximum length of approximately 6 feet (1.8 meters) and a maximum weight of 80 pounds (36 kilograms; USFWS 2002b). Young are silvery and usually have a dark wedge-shaped spot at the base of the caudal fin. Adults are strongly counter-shaded, with a dark olive back and a white belly. Today's fish rarely exceed 3 feet (0.9 meters) in length or weigh more than 18 pounds (8 kilograms).

Life History

The Colorado pikeminnow is a long-distance migrator and top ecosystem predator. It lives in warm water reaches of the Colorado River main stem and larger tributaries. It requires uninterrupted stream passage for spawning migrations and young dispersal (USFWS 2002b). The species is adapted to a hydrologic cycle characterized by large spring peaks of snowmelt runoff and low, relatively stable base flows. High spring flows create and maintain in-channel habitats and reconnect floodplain and riverine habitats; this phenomenon is described as the spring flood-pulse.

Throughout most of the year, juvenile, subadult, and adult Colorado pikeminnow use relatively deep, low-velocity eddies, pools, and runs that occur in nearshore areas of main river channels. In the spring, Colorado pikeminnow adults use floodplain habitats, flooded tributary mouths, flooded side canyons, and eddies that are available only during high flows. Such environments may be particularly beneficial for Colorado pikeminnow because other riverine fishes gather in floodplain habitats to exploit food and temperatures and may serve as prey. Such low-velocity environments also may serve as resting areas for Colorado pikeminnow. River reaches of high habitat complexity appear to be preferred. Young pikeminnow feed on insects and plankton, adults feed on other fishes (USWFS 2002b).

Status and Distribution

The Colorado pikeminnow is listed as endangered under the ESA (16 USC, Section 1531 et seq.). It was included on the first list of endangered species issued by the Office of Endangered Species on March 11, 1967 (32 FR 4001) and was considered endangered under provisions of the Endangered Species Conservation Act of 1969 (16 USC, Section 668aa). The Colorado pikeminnow was included on the United States List of Endangered Native Fish and Wildlife issued on June 4, 1973 (38 FR 14678). It received protection as endangered under Section 4(c)(3) of the original ESA of 1973.

The current revised Colorado pikeminnow recovery plan was approved on August 1, 2002 (USFWS 2002b). The final rule for determining critical habitat

was published on March 21, 1994 (USFWS 1994), and the final designation became effective on April 20, 1994.

The Colorado pikeminnow is one of four endangered fish species addressed in a Recovery Implementation Program for the Upper Colorado River Basin (USFWS 1987). The program was initiated in January 1988 and is described in later in this section.

Colorado pikeminnow is currently restricted to the upper Colorado River Basin. It inhabits warm-water reaches of the Colorado, Green, San Juan, Yampa, and White Rivers and their associated tributaries. Most of Lake Powell is not suitable habitat for Colorado pikeminnow, so it is not designated critical habitat. Its 1,148 designated miles (1,847 kilometers) represent 29 percent of the historical habitat for the species.

Environmental Baseline

Occurrence in the Action Area

Colorado pikeminnow reside in the GJFO planning area in the Gunnison and Colorado Rivers. Colorado pikeminnow prefer larger river habitats but are known to use smaller tributary habitats throughout the Colorado River Basin. Adults require pools, deep runs, and eddies maintained by high spring flows; young require nursery habitats, including backwaters restructured by high spring flows and maintained by relatively stable base flows. The "15-Mile Reach" in Grand Junction, along the Colorado River, is a known congregation area for spawning Colorado pikeminnow.

Past and Present Impacts

The following factors contributed historically to the decline of the Colorado pikeminnow:

- Changes in flow regime (especially the timing and amplitude of high flows) associated with construction of dams and irrigation diversions.
- Reduced flow volumes that prevent effective or efficient movement of sediment. This has resulted in river channel constriction, reduced spawning habitat, loss of habitat complexity and diversity, and impacts on reproduction and recruitment.
- Elevated selenium concentrations due to watershed level inputs from the Mancos Shale-based soils upstream of the GJFO planning area.
- Interference with migration to and from spawning grounds from dams and other in-stream features.
- Competition or predation on eggs, larvae, and juvenile fish by introduced predatory game and non-game fishes.

The impoundment of water and water depletion from the Colorado River and its tributaries has also been a large factor in the decline of this species. Important micro-habitats such as backwaters can be dewatered or reduced in volume or lost due to reduced flows. The frequency of periodic flooding of river bottomlands located next to the river can be reduced. Flooded bottomlands are important for riparian regeneration and maintenance and as seasonal foraging habitat. Streamflow regulation includes main stem dams that have the following adverse effects on Colorado pikeminnow and its habitat:

- Block migration
- Change flow patterns (reduce peak flows, change timing of snowmelt runoff)
- Release cold water, making temperature regimes less than optimal
- Change river habitat into lake habitat
- Reduce flow volumes, which can prevent effective and efficient sediment movement

In the upper basin, 435 miles (700 kilometers) of Colorado pikeminnow habitat has been lost by reservoir inundation from Flaming Gorge Reservoir on the Green River, Lake Powell on the Colorado River, and Navajo Reservoir on the San Juan River. Coldwater releases from these dams have eliminated suitable habitat for native fishes, including Colorado pikeminnow, from river reaches downstream for approximately 50 miles (80 kilometers) below Flaming Gorge Dam and Navajo Dam.

In addition to main stem dams, many dams and water diversion structures occur in and upstream of critical habitat. This reduces flows and alters flow patterns, which adversely affect critical habitat. Diversion structures in critical habitat divert fish into canals and pipes where the fish are permanently lost to the river system. The number of endangered fish lost in irrigation systems is unknown, but in some years, in some river reaches, most of the river flow is diverted into unscreened canals. High spring flows that maintain habitat diversity have been reduced by dams regulating flow and by water diversions. Frequency and magnitude of peak flows have been reduced by dams, resulting in the loss of flushing sediments from spawning substrates, lowered invertebrate food production, lessened formation of gravel and cobble deposits important for spawning, and loss of backwater nursery habitats (McAda 2002; Muth et al. 2000).

Predation and competition from nonnative fishes have been clearly implicated in the population reductions or elimination of native fishes in the Colorado River Basin (Dill 1944; Osmundson and Kaeding 1989; Behnke 1980; Joseph et al. 1977; Lanigan and Berry 1979; Minckley and Deacon 1968; Meffe 1985; Propst and Bestgen 1991; Rinne 1992). Data collected by Osmundson and Kaeding (1991) indicate that during low-water years, the number of nonnative fish ,

capable of preying on or competing with larval endangered fishes, greatly increased.

More than 50 nonnative fish species were intentionally introduced in the Colorado River Basin before 1980. The nonnatives were intended for sport fishing, forage fish, biological control, and ornamental purposes (Minckley 1982; Tyus et al. 1982; Carlson and Muth 1989). Nonnative fishes compete with native fishes in several ways, resulting in smaller populations and species size. Because the capacity of a particular area to support aquatic life is limited by physical habitat conditions, increasing the number of species in an area usually results in a smaller population of most species. The size of each species population is controlled by the ability of each life stage to compete for space and food resources and to avoid predation. Some nonnative fishes during certain life stages appear to have a greater ability to compete for space and food and to avoid predation in the altered habitat than do some native fishes in certain life stages.

The Colorado pikeminnow is one of 4 endangered native fishes in the upper Colorado River Basin, including the endangered humpback chub, bonytail, and razorback sucker, which are found only in the Colorado River system. In 1988, the Upper Colorado River Endangered Fish Recovery Program was established to help bring these four endangered species back from the brink of extinction. The Recovery Program is a unique partnership of local, state, and federal agencies, water and power interests, and environmental groups working toward the recovery of endangered fish in the upper Colorado River Basin, while water development proceeds in accordance with federal and state laws and interstate compacts.

This major undertaking involves restoring and managing streamflows and habitat, boosting wild populations with hatchery-raised endangered fish, and reducing negative interactions with certain nonnative fish species. The goal of recovery is to achieve natural, self-sustaining populations of the endangered fish so they no longer require protection under the ESA.

The recovery program was initiated in 1988 with the signing of a cooperative agreement by the governors of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the administrator of the Western Area Power Administration. In 2013, these parties agreed to extend the cooperative agreement through September 30, 2023. The program provides ESA compliance for continued operation of federal water and power projects, in accordance with project purposes.

With its demonstrated successes, the Upper Colorado River Endangered Fish Recovery Program has become a national model for its collaborative conservation efforts to protect endangered species.

Critical Habitat

Critical habitat was designated in 1994 in the 100-year floodplain of the Colorado pikeminnow's historical range. Within the GJFO planning area, designated critical habitat for the Colorado pikeminnow includes the following two areas: the 100-year floodplain of the Colorado River from the eastern boundary of the GJFO to the Utah state line and beyond, and the 100-year floodplain of the Gunnison River from the southern GJFO boundary to the confluence with the Colorado River.

Critical habitat primary constituent elements for the four endangered big river fishes, including Colorado pikeminnow, are described in **Table 3-3**, Primary Constituent Elements of Critical Habitat for Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub.

Table 3-3
Primary Constituent Elements of Critical Habitat for Colorado Pikeminnow, Razorback Sucker, Bonytail, and Humpback Chub

Features	Description
Water	A quantity of water of sufficient temperature, dissolved oxygen, lack of contaminants, nutrients, and turbidity delivered to a specific location, in accordance with a hydrologic regime that is required for the particular life stage of each species.
Physical habitat	Areas of the Colorado River system that are inhabited or potentially habitable by fish for use in spawning, nursery, feeding, and rearing; it also refers to corridors between these areas. In addition to river channels, these areas include bottomlands, side channels, secondary channels, oxbows, backwaters, and other areas in the 100-year floodplain. When inundated, these areas provide spawning, nursery, feeding and rearing habitats or access to these habitats.
Biological Environment	Food supply, predation, and competition are important elements of the biological environment and are considered components of the biological environment. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components, are out of balance due to introduced nonnative fish species in many areas.

Source: USFWS 1994

Threats

The primary threats to Colorado pikeminnow are as follows:

- Streamflow reduction and regulation and habitat modification
- Competition with and predation by nonnative fishes
- Pesticides and other pollutants (BLM 2008a; USFWS 2002b)

3.2.6 Razorback Sucker

Species Description

The razorback sucker is a large catostomid fish endemic to the Colorado River Basin. It is the only sucker with a sharp-edged dorsal keel behind its head. In the lower Colorado River Basin, these fish have reached lengths of over 3 feet (0.9 meters) and a weight of as much as 10 pounds (4.5 kilograms). Fish in the upper Colorado River Basin tend to be smaller than those in the lower Colorado River Basin. They may live for over 40 years (USFWS 2002c).

Life History

Adult razorback suckers occupy different habitats seasonally. Spring habitats required by adults in rivers are deep runs, eddies, backwaters, and flooded off-channel environments; summer habitats are runs and pools, often in shallow water associated with submerged sandbars; and winter habitats are low-velocity runs, pools, and eddies. The species spawns in rivers during spring runoff, over bars of cobble, gravel, and sand substrates. Water flow range widely, and water temperatures are typically greater than 57 degrees Fahrenheit (13.9 degrees Celsius; USFWS 2002c). Razorback suckers breed in the spring, when flows in riverine environments are high typically. Their diet consists primarily of algae, plant debris, and aquatic insect larvae.

Status and Distribution

The razorback sucker is currently listed as endangered under the ESA, under a final rule published on October 23, 1991 (56 FR, 54957). A recovery plan was approved on August 1, 2002 (USFWS 2002c); a previous recovery plan was dated December 23, 1998 (USFWS 1998c). The final rule for determination of critical habitat was published on March 21, 1994 (USFWS 1994), and the final designation became effective on April 20, 1994. The species is also state-listed as endangered.

The razorback sucker is one of four endangered fish species addressed in the Recovery Implementation Program for the Upper Colorado River Basin (USFWS 1987). The program was initiated in January 1988 and is described in Section 3.2.5 of this BA.

Historically, razorback suckers were found in the main stem Colorado River and in its major tributaries in Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico. This species was reportedly once so numerous that it was commonly used as food by early settlers; commercially marketable quantities were caught in Arizona as recently as 1949. In the upper basin, razorback suckers were reported in the Green River to be very abundant near Green River, Utah, in the late 1800s (USFWS 1991).

In the upper Colorado River Basin, above Glen Canyon Dam, razorback suckers are currently found in limited numbers in both lentic (lake-like) and riverine environments. The largest populations of razorback suckers in the upper basin

are found in the upper Green and lower Yampa Rivers (Tyus 1987). In the Colorado River, most razorback suckers occur in the Grand Valley area near Grand Junction, Colorado, but they are increasingly rare.

Environmental Baseline

Occurrence in the Action Area
Razorback suckers reside in the Gunnison and Colorado Rivers within the GJFO planning area. The GJFO planning area contains designated critical habitat for this species.

Past and Current Impacts
The abundance and distribution of the razorback sucker have been dramatically reduced because of water developments, such as dams and water diversions. Dams have altered the timing, magnitude, and duration of flows that characterize the variation in annual runoff in unaltered, large rivers. Altered flows resulting from dam operation can also affect the abundance and distribution of spawning and rearing habitats preferred by the razorback sucker.

Historical water depletions and any new water depletions are likely to negatively affect population and habitat conditions downstream, although assessing the effects on species' viability may be difficult.

In addition, incidental catch by recreational anglers may pose a threat from stress-caused direct and delayed mortality (USFWS 2002c). The impoundment of water and water depletion from the Colorado River and its tributaries has been a large factor in the decline of this fish.

Critical Habitat
Critical habitat was designated in 1994 in the 100-year floodplain of razorback sucker historical range. Within the GJFO planning area, designated critical habitat for the razorback sucker includes the following two areas: the 100-year floodplain of the Colorado River from the eastern boundary of the GJFO to the Utah state line and beyond, and the 100-year floodplain of the Gunnison River from the southern GJFO boundary to the confluence with the Colorado River.

Threats
The primary threats to razorback sucker are as follows:

- Water developments, such as dams and water diversions and water depletions
- Habitat alterations and reductions or loss of important micro-habitats
- Introduction of nonnative fishes, which compete for resources and can hybridize with this species
- Pollutants and pesticides

3.2.7 Bonytail

Species Description

The bonytail is a large fish in the minnow family. It is endemic to the Colorado River Basin and can live for 50 years. Adult bonytail are gray or olive-colored on the back, with silvery sides and a white belly. The adult bonytail has an elongated body with a long, thin caudal peduncle (a stalk-like part). The head is small and compressed, compared to the rest of the body. The mouth is slightly overhung by the snout and there is a smooth low hump behind the head that is not as pronounced as that on humpback chub. Adults attain a maximum length of about 22 inches (55 centimeters) and maximum weight of about 2.4 pounds (1.1 kilograms; USFWS 2002a).

Life History

Little is known about the specific habitat requirements of bonytail because the species was extirpated from most of its historic range before extensive fishery surveys. The bonytail is adapted to main stem rivers, where it has been observed in pools and eddies. Similar to other closely related *Gila* species, bonytail in rivers probably spawn in spring over rocky substrates. Spawning in reservoirs has been observed over rocky shoals and shorelines. Based on available distribution data, flooded bottomland habitats are likely important growth and conditioning areas for bonytail, particularly as nursery habitats for young. Flow recommendations specifically consider flow-habitat relationships in historic habitat of bonytail in the upper basin. These recommendations were designed to enhance habitat complexity and to restore and maintain ecological processes (USFWS 2002a).

The bonytail's large fins and streamlined body are an adaptation to torrential flows. Of five specimens captured in the upper basin, four were captured in deep, swift, rocky canyon regions (Yampa Canyon, Black Rocks, Cataract Canyon, and Coal Creek Rapid); the fifth was taken in a reservoir (Lake Powell). All fish taken from the lower basin since 1974 were caught in reservoirs. Individuals found in reservoirs are believed to inhabit their former habitats now inundated by these impoundments.

Vanicek (1967), who handled numerous bonytail, detected no difference in their habitat selection from roundtail chub. These bonytail were generally found in pools and eddies in the absence of, although occasionally next to, strong currents and at varying depths, generally over silt and silt-boulder substrates. No quantitative habitat data are available for this species. Adult bonytail captured in Cataract Canyon and Desolation/Gray Canyons were sympatric (related species occurring in the same area) with humpback chub. Both were found in shoreline eddies, among emergent boulders and cobble and next to swift currents (USFWS 2002a).

Similarly, little is known of the food habits of the bonytail. They are reportedly largely omnivorous, with a diet of terrestrial insects, plant matter, and fish. Several chubs were observed feeding on floating debris washed by heavy rainfall. Vanicek (1967) reported that "Colorado chubs" fed mainly on terrestrial insects (mostly adult beetles and grasshoppers), plant debris, leaves, stems, and woody fragments (USFWS 2002a).

Status and Distribution

The bonytail is listed as endangered under the ESA under a final rule published on April 23, 1980 (45 FR 27710). A recovery plan was approved on September 4, 1990 (USFWS 1990a). Recovery goals were subsequently published in an amendment and supplement to the recovery plan dated August 1, 2002 (USFWS 2002a). The final rule for determination of critical habitat was published on March 21, 1994 (59 FR 13374), and the final designation became effective on April 20, 1994.

A Recovery Implementation Program for the four upper Colorado River Basin endangered fish species, including bonytail, was initiated in January 1988. The program is comprised of federal, state, and private cooperators. It provides specific goals for the recovery of endangered Colorado River fish, while promoting sustainable water development and use (USFWS 1987). In addition, critical habitat for all four species was designated on March 21, 1994 (59 FR 13374).

Until the 1950s, bonytail was historically common or abundant in warm-water reaches of large rivers, from Mexico to Wyoming. It was found far downstream in the main stem Colorado River near the Colorado-Utah border in the Black Rocks area (USFWS 2002a). The last known riverine area where bonytail were common was the Green River in Dinosaur National Monument. Here Vanicek (1967) and Holden and Stalnaker (1970) collected 91 specimens from 1962 to 1966. From 1977 to 1983, no bonytail were collected from the Colorado or Gunnison Rivers in Colorado or Utah. However, in 1984, a single bonytail was collected from Black Rocks on the Colorado River. Several suspected bonytail were captured in Cataract Canyon between 1985 and 1987.

Current stocking plans for bonytail identify the middle Green River and the Yampa River in Dinosaur National Monument as the highest priority areas in Colorado (USFWS 2002a).

Bonytail are so rare that it is not possible to conduct population estimates. A stocking program is being implemented to reestablish populations in the upper Colorado River Basin. From 1996 through 2004, 44,472 subadult bonytail were stocked in the Green and upper Colorado River subbasins. The recovery goals (USFWS 2002a) call for reestablished populations in the Green River and upper Colorado River subbasins, each with over 4,400 adults that are self-sustaining with recruitment.

Environmental Baseline

Occurrence in the Action Area
Bonytail likely reside in the GJFO planning area in the Gunnison and Colorado Rivers because of their preferences for larger main-stem rivers with pool and eddy habitats. It is also thought that flooded bottomland habitats are important growth and conditioning areas for the species, particularly as nursery habitats for young.

Past and Current Impacts
The past and current impacts on bonytail are similar to those described in Section 3.2.5 for Colorado pikeminnow.

Critical Habitat
Critical habitat was designated in 1994 in the 100-year floodplain of the bonytail's historical range. Within the action area, designated critical habitat is located along the Colorado River from Black Rocks adjacent to the McInnis Canyons Nation Conservation Area to the Utah state line and beyond to Lake Powell, Utah (USFWS 1994).

Threats
The primary threats to bonytail are as follows:

- Streamflow reduction and regulation and habitat modification
- Competition with and predation by nonnative fishes
- Pollutants and pesticides

3.2.8 Humpback Chub

Species Description
The humpback chub is a medium to large cyprinid fish endemic to the Colorado River Basin (Miller 1946). Adults have a pronounced dorsal hump, a narrow, flattened head, a fleshy snout, and small eyes. They are silvery, with a brown or olive back. Adults attain a maximum size of about 1.5 feet (48 centimeters) and a weight of about 2.5 pounds (1.2 kilograms; Valdez and Ryel 1997). They can live for 30 years.

Life History
The humpback chub is omnivorous, feeding on aquatic arthropods (insects), smaller fishes, and algae. Adults require eddies and sheltered shoreline habitats maintained by high spring flows. Young require low-velocity shoreline habitats, including eddies and backwaters. Humpback chub live and complete their entire life cycle in canyon-bound reaches of the Colorado River main stem and larger tributaries. These reaches are characterized by deep water, swift currents, and rocky substrates. Subadults use shallow, sheltered shoreline habitats, whereas adults use primarily offshore habitats of greater depths (USFWS 2002d).

Status and Distribution

The humpback chub is currently listed as endangered under the ESA. It was included on the first List of Endangered Species issued by the Office of Endangered Species on March 11, 1967 (32 FR 4001) and it was considered endangered under provisions of the Endangered Species Conservation Act of 1969 (16 USC, Section 668aa). The humpback chub was included in the United States List of Endangered Native Fish and Wildlife issued on June 4, 1973 (38 FR 14678). It received protection as endangered under Section 4(c)(3) of the original ESA of 1973.

The humpback chub recovery plan was approved on September 19, 1990 (USFWS 1990b). Recovery goals were subsequently published in an amendment and supplement to the recovery plan dated August 1, 2002 (USFWS 2002d). The final rule for determination of critical habitat was published on March 21, 1994 (59 FR 13374); the final designation became effective on April 20, 1994. The species is also state listed as endangered.

The humpback chub is one of four endangered fish species addressed in the Recovery Implementation Program for the upper Colorado River Basin (USFWS 1987). The program was initiated in January 1988 and is described in Section 3.2.5.

The historical distribution of the humpback chub is not well known because it was not described as a species until 1946; however, its original distribution was presumably limited to swift deep-water areas in the main stem Colorado River Basin, downstream to below the Hoover Dam site. In the upper basin in Colorado, the humpback chub has been found in the Yampa, Gunnison, Green, and Colorado Rivers. However, the greatest number of humpback chub in Colorado are found at the Black Rocks area of the Colorado River (in the GJFO planning area and also the McInnis Canyon NCA downstream of Grand Junction) and in Utah (along the Westwater Canyon of the Colorado River; BLM 2012c).

Today the largest populations of this species occur in the Little Colorado and Colorado Rivers in the Grand Canyon and in the Black Rocks and Westwater Canyon in the upper Colorado River. Hybridization with roundtail chub (*Gila robusta*) and bonytail (*G. elegans*) is recognized as a threat to humpback chub. A larger proportion of roundtail chub has been found in Black Rocks and Westwater Canyon during low-flow years (Kaeding et al. 1990; Chart and Lentsch 2000). This increases the chances for hybridization.

Environmental Baseline

Occurrence in the Action Area

The humpback chub is known to occur within the GJFO near the Black Rocks area in the Colorado River below the confluence with the Gunnison River.

Past and Current Impacts

The impoundment of water and water depletion from the Colorado River and its tributaries has been a large factor in the decline of humpback chub. The existing habitat has been modified to the extent that it impairs essential behavior patterns, such as breeding, feeding, and sheltering. Survival rates in young humpback chub (less than 2 years) are thought to be less than 1 in 1,000 (USFWS 2008).

Critical Habitat

Critical habitat was designated in 1994 in the 100-year floodplain of the humpback chub's historical range. Within the action area, designated critical habitat is located along the Colorado River from Black Rocks, adjacent to the McInnis Canyons Nation Conservation Area to the Utah state line and beyond to Lake Powell, Utah (USFWS 1994).

Threats

The primary threats to humpback chub are as follows:

- Streamflow reduction and regulation and habitat modification
- Competition with and predation by nonnative fishes
- Pollutants and pesticides

3.2.9 Greenback Cutthroat Trout

Species Description

The true greenback cutthroat trout is a salmonid native to the headwaters of the South Platte River drainage. Adult greenbacks are greenish brown to olive-colored on the back with silvery to yellow sides and a white belly (red during spawning). They have a crimson slash under each side of the lower jaw and low numbers of large spots concentrated toward the tail fin. Greenback, like all cutthroat subspecies, inhabits cold-water streams and lakes with adequate spawning habitat present in the spring of the year.

The status of cutthroat trout in Colorado has been in a state of flux for some time. However, new research on cutthroat trout genetics (Metcalf et al. 2007, 2012), and new research on cutthroat trout meristics (Bestgen et al. 2013) across the state of Colorado has emerged. With the advent of new genetic testing procedures, and new analysis, the picture has become clearer. Ever since the greenback cutthroat trout (*Oncorhynchus clarki stomias*) was listed as endangered under the Endangered Species Act in 1974, there has been strong interest in developing methods to distinguish them from closely related subspecies with confidence. Prior to recent molecular testing, phenotypic traits associated with greenback cutthroat trout were larger spots, and higher scale counts above the lateral line and in the lateral series when compared to Colorado River cutthroat trout (*O. c. pleuriticus*; Behnke 1992). However, these two subspecies cannot be separated consistently on the basis of those

characteristics (Behnke 1992). As a result, geographic range had become the default approach for establishing subspecies designation and occupation.

Based on geographic range, it was for years believed that Colorado contained four subspecies of cutthroat trout: the greenback cutthroat (*Oncorhynchus clarki stomias*) in the South Platte and Arkansas basins, the Rio Grande cutthroat (*Oncorhynchus clarki virginalis*) in the Rio Grande basin, the extinct yellowfin cutthroat (*Oncorhynchus clarki macdonaldi*) in the upper Arkansas River basin (Twin Lakes), and the Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) in all five major river basins west of the Continental Divide.

Early molecular work did not distinguish between the subspecies, but in 2007, Metcalf et al. used mitochondrial and nuclear molecular markers to suggest that indeed there was a genetic basis for separating greenback cutthroat trout from Colorado River cutthroat trout. The primary concern raised by that paper was five of the nine east slope greenback cutthroat trout populations they examined actually displayed genetic fingerprints more similar to Colorado River cutthroat trout of Trappers Lake (White River basin) origin than they did with many of the other greenback populations. This was particularly troubling since mechanisms were in place to deliver Colorado River cutthroat trout to the East Slope. From 1903 through 1938, at least 80 million pure Colorado River cutthroat trout were produced at Trappers Lake (Rogers 2012). Millions more were produced on the south slope of Pikes Peak (Rogers and Kennedy 2008). Although the fate of many of those fish remains a mystery, it is clear that they were stocked in virtually every county east of the Continental Divide that would support trout (Metcalf et al. 2012).

A finding of Metcalf et al. (2007) that attracted less attention was the discovery of a "greenback" cutthroat trout population west of the Continental Divide near Gunnison in West Antelope Creek. Intensive survey and genetics testing work since that time indicated that in fact the West Antelope Creek population is not unique, and that populations with similar genetic fingerprints are pervasive across Colorado's western slope (Rogers 2010). That finding lead the Greenback Cutthroat Trout Recovery Team to question whether the West Antelope Creek fish were really greenback cutthroat trout as suggested by Metcalf et al. (2007), or whether they simply represented diversity within Colorado River cutthroat trout (Rogers 2010). In an effort to avoid confusion, trout with this genetic fingerprint are hereafter referred to as green lineage cutthroat trout, while cutthroat trout displaying the genetic signature commonly associated with those from Trappers Lake (White and Yampa river basins) are referred to as Blue Lineage cutthroat trout.

Life History

Greenback, like all cutthroat subspecies, inhabits cold-water streams and lakes with adequate spawning habitat present in the spring of the year. Spawning generally occurs when water temperatures reach 5 to 8 degrees Celsius.

Greenback feed on a wide variety of organisms but their primary source of food is aquatic and terrestrial insects. Size and growth of greenbacks varies, based upon elevation and population size, typically 1 to 2 pounds maximum (USFWS 1998b).

Status and Distribution

Greenback distribution and numbers of fish declined rapidly beginning in the 1800s. By 1973, when the ESA was passed into law, greenbacks were believed to only exist in two small headwater streams (Como Creek and South Fork, Cache La Poudre River). The subspecies was listed under the ESA as endangered in 1973 and downlisted to threatened in 1978 (USWFS 1978). Cooperative efforts between the CPW, USFS, BLM, USFWS and Rocky Mountain National Park have led to a large recovery effort for the greenback cutthroat trout. Today, it appears that only one true greenback population exists in Bear Creek near Colorado Springs, CO (Metcalf et al. 2012).

In 2012, the native distribution of different lineages of cutthroat trout in Colorado was clarified greatly with work published by a University of Colorado led research team that examined DNA from 150 year old museum specimens collected prior to large-scale stocking activities (Metcalf et al. 2012). This work confirmed that indeed, green lineage cutthroat trout are at least native to the Colorado and Gunnison river basins. Additional work suggests they probably were found in the Dolores River basin as well (Rogers 2010), with every other remaining major basin represented by its own distinct lineage. Since the subspecies were described using phenotypic characters, and recent court cases have affirmed that visual characteristics should be central to the description of taxa (Kaeding 2003), the Recovery Team launched an additional research project with the Larval Fish Lab at Colorado State University to explore if distinct phenotypes can be predicted from these underlying genetic fingerprints. The results of this meristics study (Bestgen et al. 2013) largely support the genetic information that suggests six distinct lineages of cutthroat trout historically existed in Colorado.

Environmental Baseline

Occurrence in the Action Area

Based on recent genetic research (Metcalf et al. 2012), only one remaining population of true greenback cutthroat trout exists in Colorado. However, until such time as the genetic and physical characteristic research is interpreted and decisions are made, previously suspected greenback cutthroat trout (green lineage) populations in western Colorado will continue to be considered as greenbacks with regard to ESA compliance, per USFWS direction (USFWS 2012e). Currently, seven conservation populations of green lineage cutthroat occur in the GJFO planning area and they are found in Brush Creek, East Fork Brush Creek, West Fork Brush Creek (Buzzard Creek drainage), Carr Creek, Roan Creek, East Fork Big Creek, and Middle Fork Big Creek.

Past and Current Impacts
The introduction of non-native fish was a major factor in the decline of greenback cutthroat trout, primarily by salmonid species. Hybridization and competition has been documented across the species range; rainbow trout hybridize with native cutthroat trout and brook and brown trout tend to outcompete them in streams and rivers (USFWS 1998b).

Extirpation due to loss and degradation of habitat from mining, logging, grazing, and irrigation projects has also been documented (USFWS 1978).

Critical Habitat
Critical habitat has not been designated for the greenback cutthroat trout.

Threats
The primary threats to the greenback cutthroat trout are as follows (USFWS 1998b):

- Water diversions and reduced flows
- Livestock grazing
- Disease
- Toxicity
- Hybridization
- Competition with nonnative salmonids
- Overharvest
- Climate change
- Large wildfires

3.2.10 Mexican Spotted Owl

Species Description
Mexican spotted owls are identified by sight and sound. The spots of the Mexican spotted owl are larger and more numerous than in the other two subspecies, giving it a lighter appearance (USFWS 2012d). It is ashy-chestnut brown, with white and brown spots on its abdomen, back, and head; its brown tail is marked with thin white bands. The Mexican spotted owl is mottled, with irregular white and brown spots on its abdomen, back, and head. Young owls, less than five months old, have a downy appearance. Unlike most owls, spotted owls have dark eyes.

Females are larger than males (USFWS 2012d) and the sexes can be readily identified by voice. Juveniles, subadults, and adults can also be distinguished by plumage characteristics. It ranks among the largest owls in North America (USFWS 2014d).

Life History

The Mexican spotted owl is highly selective in roosting and nesting habitat, but it will forage in a wider array of habitats. Roosting and nesting habitat exhibit the following identifiable features:

- Large trees
- Uneven-aged tree stands
- Multistory canopy
- Tree canopy creating shade over 40 percent or more of the ground
- Standing dead trees

Canopy closure is typically mixed-conifer, dominated by Douglas fir, pine-oak, and riparian forests, with high tree diversity (USFWS 2012d).

Foraging habitat includes a wide variety of forest conditions, canyon bottoms, cliff faces, canyon rim tops, and riparian areas. It has been reported that Mexican spotted owls forage more frequently in unlogged forests than in managed forests. They eat a variety of prey, including small- to medium-sized rodents (such as wood rats, mice, and voles), bats, birds, lizards, snakes, and spiders (USFWS 2014d). The primary prey species are woodrats (*Neotoma* spp.), peromyscid mice (*Peromyscus* spp.) and microtine voles (*Microtus* spp.; USFWS 2014d).

Courtship begins in March and eggs are laid in late March or, more typically, early April. Nestling owls fledge from four to five weeks after hatching (commonly in early to mid-June). The young depend on their parents for food during the summer and will eventually disperse from the natal area in September and October (USFWS 2014d). Juvenile owls disperse into a variety of habitats ranging from high-elevation forests to pinyon-juniper woodlands and riparian areas surrounded by desert grasslands. Observations of long-distance dispersal by juveniles provide evidence that they use widely spaced islands of suitable habitat that are connected at lower elevations by pinyon-juniper and riparian forests.

As a result of these movement patterns, isolated populations may have genetic significance to the owl's conservation. Owls have been observed moving across open low desert landscapes between islands of suitable breeding habitat. It is likely that contiguous stands or islands of suitable mixed-conifer, pine-oak, and riparian forests are important (USFWS 2012d).

Status and Distribution

The Mexican spotted owl is a threatened species, listed on March 16, 1993 (58 FR 14248). A final rule designating critical habitat for the owl was published on June 6, 1995; this designation was successfully challenged in court (60 FR 29914). On August 31, 2004, the USFWS published a new final rule designating

critical habitat for the owl. Over 8.6 million acres of critical habitat is designated in Arizona, Colorado, New Mexico, and Utah (69 FR 53182).

A final recovery plan was published in September 2012 (USFWS 2012d) and replaces the previous plan dated October 16, 1995. The 1995 recovery plan subdivided the owl's range into 11 recovery units, six in the United States and five in Mexico. These were renamed in the September 2012 Final Recovery Plan as ecological management units, in accordance with current USFWS guidelines.

The Mexican spotted owl occurs in forested mountains and rocky canyonlands throughout the southwestern United States and Mexico (Gutierrez et al. 1995; Ward et al. 1995). It inhabits steep rocky canyons with exposed cliffs. It ranges from Utah, Colorado, Arizona, New Mexico, and the western portions of Texas, south into several states of Mexico. The Mexican spotted owl does not occur uniformly throughout its range but rather in disjointed areas that correspond with isolated mountain ranges and canyon systems. In the United States, most of the owls are found in national forests. In some areas of the Colorado Plateau Ecological Management Unit, owls are found only in rocky-canyon habitats, which primarily occur on US Forest Service, National Park Service, and BLM lands. In the United States, 91 percent of the owls known to exist between 1990 and 1993 occurred on lands administered by the US Forest Service, and 2 percent occurred on lands administered by the BLM (Ward et al. 1995).

The species' core range occurs in central Arizona and New Mexico. In Colorado, it occurs in lower-elevation forests, usually in deeply incised, rocky canyons in southern Colorado and along the Front Range.

Surveys conducted to locate spotted owls in northern Colorado near Fort Collins and Boulder, where historical records exist from the early 1970s and 1980s, have been unsuccessful. Surveys conducted in the Book Cliffs of east-central Utah, where owls were recorded in 1958, have also been unsuccessful (USFWS 2011b). When the species was listed as threatened in 1993, there were twenty historic records for Colorado, with occurrences ranging from the San Juan Mountains in southwestern Colorado and from the Front Range as far north as the vicinity of Denver (USFWS 1993).

Environmental Baseline

Occurrence in the Action Area

The Mexican spotted owl occurs in southwestern Colorado, but has never been recorded in the GJFO. Although potential habitat for the species does occur in the GJFO, the closest designated critical habitat for the species is approximately 30 miles southwest of the field office boundary in San Juan County, Utah. No known nests or Protected Activity Centers occur within the GJFO planning area.

Past and Current Impacts
The owl's extremely low numbers, exacting habitat requirements, and low productivity makes it susceptible to extirpation (CPW 2008).

Mexican spotted owls are especially threatened by habitat loss and disturbance from recreation (including birding), overgrazing, land and road development, catastrophic fire, timber harvest, and energy and mineral development. Historical and current uses of Mexican spotted owl habitat are both domestic and wild ungulate grazing, recreation, fuel reduction treatments, resource extraction (e.g., timber, oil, and gas), and development. These activities reduce the quality of Mexican spotted owl habitat (USFWS 1993). Currently the greatest threat to habitat is timber extraction in the southwestern United States.

Because the BLM believes that this subspecies does not currently exist in the GJFO planning area, it is likely not being impacted by any BLM actions in or adjacent the GJFO planning area. However, Mexican spotted owl surveys will be performed in areas of suitable habitat. In the event Mexican spotted owls are discovered in the GJFO planning area, measures would be adopted consistent with the current recovery plan to protect the species and its habitat. Stipulations (see Appendix B of the PRMP) will also be implemented in the event Mexican spotted owls are discovered in the GJFO planning area.

Critical Habitat
The USFWS first designated critical habitat for the Mexican spotted owl on February 1, 2001 (66 FR 8530). This designation was later revised and finalized on August 31, 2004 (69 FR 53182). There is no designated critical habitat in the GJFO planning area. Primary constituent elements for Mexican spotted owl critical habitat are described in **Table 3-4**, Primary Constituent Elements of Mexican Spotted Owl Critical Habitat.

Threats
In addition to habitat loss, the Mexican spotted owl is threatened by the following:

- Competition from other owl species
- Insects
- Overuse of habitat for commercial, recreational, scientific, or educational purposes
- Predation and disease
- Inadequacy of existing regulatory mechanisms
- Other natural or man-made factors, including fire (man-made or natural)
- Silvicultural treatments

- Intentional injury to the bird
- Climate change and noise disturbance
- Overgrazing
- Land and road development

Table 3-4
Primary Constituent Elements of Mexican Spotted Owl Critical Habitat

Features	Description
Forest structure	• A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30 to 45 percent of which are large trees with a trunk diameter of 12 inches (0.3 meters) or more when measured at 4.5 feet (1.4 meters) from the ground • A shade canopy created by the tree branches covering 40 percent or more of the ground • Large dead trees (snags) with a trunk diameter of at least 12 inches (0.3 meters) when measured at 4.5 feet (1.4 meters) from the ground
Maintenance of adequate prey species	• High volumes of fallen trees and other woody debris • A wide range of tree and plant species, including hardwoods • Adequate levels of residual plant cover to maintain fruits and seeds and to allow plant regeneration
Canyon habitats	• Presence of water (often providing cooler temperature and higher humidity than the surrounding areas) • Clumps or stringers of mixed conifer, pine-oak, pinyon-juniper, or riparian vegetation • Canyon wall containing crevices, ledges, or caves • High percent of ground litter and woody debris

Source: USFWS 2004b

3.2.11 Canada Lynx

Species Description

The Canada lynx is a medium-sized bob-tailed cat with long legs, large, well-furred paws, very long ear tufts, and a short, black-tipped tail. The winter pelage of the lynx is dense and has a grizzled appearance with grayish-brown mixed with buff or pale brown fur on the back, and grayish-white or buff-white fur on the belly, legs and feet. Summer pelage of the lynx is more reddish to gray-brown. They have large hind feet well adapted for moving across heavy snow. Adult males average 22 pounds (10 kilograms) in weight and almost 3 feet (0.9 meters) in length, with females being smaller, on average 19 pounds (8.6 kilograms) and slightly shorter in length. The lynx's long legs and large feet make it highly adapted for hunting in deep snow (USFWS 2014e).

Life History

The primary prey of the lynx is the snowshoe hare; their physical characteristics are highly specialized for this prey. In Colorado, their prey base includes small mammals such as other types of rabbits, squirrels, porcupine, beaver, and other rodents. Lynx also eat carrion (usually ungulates) and fish, and can capture ground-dwelling birds such as grouse (USFWS 2014e). This diversity in the diet of Colorado populations may make them more stable than those in Canada (National Wildlife Federation 2014). The typical hunting strategy is stalking prey or patient crouching in wait beside a trail followed by capture in a single bound.

Lynx are highly mobile and generally move long distances (greater than 60 miles [100 kilometers]). Lynx disperse primarily when snowshoe hare populations decline. Subadult lynx disperse even when prey is abundant, presumably to establish new home ranges (USFWS 2000). Individual lynx maintain large home ranges generally between 12 and 83 square miles (31 to 215 square kilometers). The size of lynx home ranges varies depending on abundance of prey, the animal's gender and age, season, and the density of lynx populations. When densities of snowshoe hares decline, for example, lynx enlarge their home ranges to obtain sufficient amounts of food to survive and reproduce. Lynx also make long-distance exploratory movements outside their home ranges (USFWS 2014e).

Lynx breed in late winter, and after a gestation period of about 9 weeks, females produce a litter of about four kittens in April or May. The male lynx does not assist with rearing young (USFWS 2014e). Yearling females may give birth during periods when hares are abundant. During periods of hare abundance in the northern boreal forest (taiga), litter size of adult females averages four to five kittens. Litter sizes are typically smaller in lynx populations in the contiguous US (USFWS 2014e).

Status and Distribution

The Canada lynx was listed as threatened throughout its range in the contiguous US under the ESA under a final rule published on March 24, 2000, and effective April 24, 2000 (65 FR 16053). A recovery plan outline was published on September 14, 2005 (USFWS 2005).

The distribution of lynx in North America is closely associated with the distribution of North American boreal forest and with snow conditions (USFWS 2005) since lynx are so highly adapted both morphologically and physiologically for hunting snowshoe hares and for surviving in areas with long, cold winters with deep, fluffy snow. In Canada and Alaska, lynx inhabit the classic boreal forest ecosystem known as the taiga. The range of lynx populations extends south from the classic boreal forest zone into the subalpine forest of the western United States, and the boreal/hardwood forest ecotone in the eastern United States. Forests with boreal features extend south into the contiguous United States along the North Cascade and Rocky Mountain Ranges in the west,

the western Great Lakes Region, and northern Maine in the east. Within these general forest types, lynx are most likely to be found in dense subalpine forest and willow-choked corridors along mountain streams and avalanche chutes, along with areas that receive deep snow (the likely location of its preferred prey species the snowshoe hare). Lynx are typically found in and have high-density populations of snowshoe hares (USFWS 2014e). Because of the patchiness and temporal nature of high quality snowshoe hare habitat, lynx populations require large boreal forest landscapes to ensure that sufficient high quality snowshoe hare habitat is available at any point in time and to ensure that lynx may move freely among patches of suitable habitat and among subpopulations of lynx (USFWS 2005).

Because the boreal forest landscape is patchy and transitional in the contiguous United States, snowshoe hare populations achieve lower densities compared to those of the expansive northern boreal forest in Canada. As a result, lynx generally occur at relatively low densities in the contiguous United States compared to the high lynx densities that occur in the northern boreal forest of Canada (USFWS 2005).

Lynx populations in the contiguous United States seem to be influenced by lynx population dynamics in Canada (USFWS 2014e). Many of these populations in Canada are directly interconnected to populations in the United States and are likely a source of emigration into contiguous United States lynx populations. Therefore connectivity with the larger lynx populations in Canada is important to ensuring long-term persistence of lynx populations in the United States (USFWS 2014e).

Environmental Baseline

Occurrence in the Action Area

In Colorado, lynx were virtually wiped out of the mountains in the early part of the twentieth century due to a variety of factors, including unregulated use of poisons, habitat destruction, and unregulated hunting. Evidence of individual animals continued to be noted in later years as scattered sightings in mountain areas. The last lynx sighting prior to recovery work in the 1990s occurred near Vail in 1973, although tracks unsubstantiated by biologists were reported there in 1991. A state-run reintroduction program begun in 1999 has restored the threatened cat to parts of its range as part of a design for the species' recovery in Colorado (CPW 2014).

Lynx analysis units have been mapped throughout the range of the species, and are intended to facilitate analysis and monitoring related to management actions on lynx habitat. These units do not depict actual lynx home ranges, but should approximate the size of a female's home range containing year-round habitat components (Interagency Lynx Biology Team 2013). Several lynx analysis units have been designated in the vicinity of Collbran; however, primary habitat for

the species occurs only in small pockets on high-elevation BLM lands, and suitable habitat within the planning area is limited. Canada Lynx have been recorded on US Forest Service-administered lands adjacent to the GJFO planning area.

Past and Current Impacts

The lynx population in the US is threatened by human alteration of forests, low numbers as a result of past overexploitation, expansion of the range of competitors, and elevated levels of human access into lynx habitat (USFWS 2009b).

Throughout its range, timber harvest, recreation, and their related activities, such as road construction, are the predominant land uses affecting lynx habitat. The primary listing factor was the lack of guidance for the conservation of lynx and snowshoe hare habitat in plans for federally managed lands. Landscape connectivity between lynx populations and habitats in Canada and the contiguous US is important to lynx success. Lynx movements may be negatively affected by high traffic volume on roads that bisect suitable lynx habitat, such as in the Southern Rockies, and in some areas, mortalities due to road kill are high (USFWS 2014e). Although the ESA bans the killing of lynx and requires road planners to consider lynx safety needs when planning new highways, immediate key threats to lynx recovery include road kill as well as illegal shooting.

Potential risk factors to lynx in the Southern Rockies include: conversion or alteration of native plant communities, fire suppression and hazardous fuels reductions, grazing, pre-commercial thinning, recreational uses, roads and trails, timber management, highways, predation, predator control, shooting and private land development (USFWS 2000).

Critical Habitat

The final rule designating critical habitat was published in the Federal Register on November 9, 2006 (71 FR 66008) and did not include lands in Colorado. In February 2008 the USFWS proposed to revise the amount of critical habitat designated under the ESA (73 FR 10860). The USFWS designated Critical Habitat for the Canada lynx on February 25, 2009 (74 FR 8616). On September 25, 2013, the USFWS announced a proposal to revise the critical habitat designation once again (78 FR 59429) as a result of two court orders from litigation over the 2009 critical habitat designation. No proposed critical habitat occurs within the GJFO planning area.

Primary constituent elements of Canada lynx critical habitat is described in **Table 3-5,** Primary Constituent Elements of Canada Lynx Critical Habitat.

Table 3-5
Primary Constituent Element of Canada Lynx Critical Habitat

Features	Description
Boreal forest landscapes supporting a mosaic of differing successional forest stages	• Presence of snowshoe hares and their preferred habitat conditions, which include dense understories of young trees, shrubs or overhanging boughs that protrude above the snow, and mature multistoried stands with conifer boughs touching the snow surface • Winter snow conditions that are generally deep and fluffy for extended periods of time; • Sites for denning that have abundant coarse woody debris, such as downed trees and root wads. • Matrix habitat (e.g., hardwood forest, dry forest, non-forest, or other habitat types that do not support snowshoe hares) that occurs between patches of boreal forest in close juxtaposition (at the scale of a lynx home range) such that lynx are likely to travel through such habitat while accessing patches of boreal forest within a home range.

Source: USFWS 2009b

Threats

Threats to Canada lynx, which are described in more detail under Environmental Baseline, include:

- Human alteration of forests
- Low numbers as a result of past overexploitation
- Expansion of the range of competitors
- Elevated levels of human access into lynx habitat
- Road kill
- Illegal shooting
- Global warming

3.2.12 Western Yellow-Billed Cuckoo

Species Description

The western yellow-billed cuckoo is brownish above and white below, with rust-colored flight feathers. The species has a slender long-tailed profile, with a fairly stout and slightly down-curved bill; the upper mandible is blue-black and the lower is yellow. The underside of the tail has pairs of large white spots.

This is a medium-sized bird of about 12 inches in length weighing about 2 ounces. The tail feathers are boldly patterned with black and white below. The legs are short and bluish-gray; adults have a narrow yellow eye ring. Juveniles resemble adults, except the tail patterning is less distinct and the lower bill may have little or no yellow. Males and females differ slightly. Males tend to have a slightly larger bill, and the white in the tail tends to form oval spots; in females the white spots tend to be connected and less distinct (USFWS 2011c).

Life History

Western yellow-billed cuckoos breed in large blocks of riparian habitats, particularly woodlands with cottonwoods (*Populus* spp.) and willows (*Salix* spp.). Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied in California (USFWS 2014f).

Clutch size is usually two or three eggs, and development of the young is rapid: 17 days from egg-laying to fledging. Although yellow-billed cuckoos usually raise their own young, they are discretionary brood parasites, occasionally laying eggs in the nests of other yellow-billed cuckoos or other bird species (USFWS 2011c).

Western yellow-billed cuckoos winter in South America. Unlike other insectivorous birds, with the possible exception of some raptors, they feed on larger insects (Laymon 1998). Yellow-billed cuckoos are primarily foliage gleaners, though they can catch flying prey or drop to the ground to catch grasshoppers or tree frogs.

Status and Distribution

The western yellow-billed cuckoo is a threatened species under the ESA. Those that occur in the western United States are a distinct population segment (USFWS 2014i).

This species historically occurred in portions of western Colorado, although it was likely never common. It is now extremely rare and is an uncommon summer resident. The available data indicate that cuckoos do not nest in this broad highlands region and there are few records of cuckoos in the mountainous region of the state (USFWS 2013c).

Since 2000, detections of the western yellow-billed cuckoo Distinct Population Segment have been limited in western Colorado, where consistent observations have been recorded at only two locations. The species has been detected annually in the San Luis Valley of south-central Colorado since 2001, specifically in Conejos County, where breeding is suspected but not confirmed (USFWS 2011c). Since 2003 the species has also been detected annually at the North Fork of the Gunnison River Valley of west-central Colorado in Delta County; breeding was confirmed in 2008 near Hotchkiss (USFWS 2011c).

Reports of single yellow-billed cuckoos have come primarily from the Grand Junction area and Mesa County in 2001, 2002, 2005, 2008, 2011, and 2014 with a report of more than one cuckoo at Orchard Mesa Wildlife Area in 2006 (USFWS 2013c). Additional reports are as follows:

- A cuckoo south of Montrose in Montrose County near the Uncompahgre River in 2009 (USFWS 2013c)

- A cuckoo along the Gunnison River near Gunnison in 2007 (USFWS 2013c)
- A cuckoo in the Grand Junction Wildlife Area, along the Gunnison River near the confluence of the Colorado River on July 5, 2013 (John Toolen, personal communication, September 4, 2014)
- Detections by the Rocky Mountain Bird Observatory along the Yampa River near Craig in 2007 and 2008 and in far western Colorado near Nucla in 2005 and 2008 (USFWS 2013c)
- A cuckoo sighted at the Bishop State Wildlife Area (south of the Colorado River near Palisade) by a FWS employee on July 1, 2014 (John Toolen, personal communication, September 4, 2014)
- A cuckoo sighted by a FWS employee at May Flats, near the Utah and Colorado border.

Environmental Baseline

Occurrence in the Action Area

Suitable western yellow-billed cuckoo habitat occurs along the Colorado, Gunnison, and Dolores Rivers within the GJFO planning area. Observations have been reported within the planning area near Palisade and near the confluence of the Colorado and Gunnison Rivers (John Toolen, Personal communication). However, the species is difficult to detect and may migrate through the area or remain in suitable cottonwood habitat in the GJFO planning area.

Past and Current Impacts

Western yellow-billed cuckoos have undergone catastrophic declines especially in western Colorado (Wiggins 2005). Direct loss and degradation of low-elevation riparian woodland habitats are considered a primary cause for declines in the western portion of their range.

Available breeding habitat for cuckoos has been substantially reduced in both area and quality. The causes are groundwater pumping and invasive nonnative plants, particularly tamarisk, replacing native riparian habitats (USFWS 2011c).

Most of the habitat for the cuckoo is on private lands and continues to be lost or significantly altered. The threats affecting the species and its habitat are ongoing; riparian habitat is continuing to be destroyed through land use conversion and grazing (Laymon 1998; Wiggins 2005; USFWS 2011c; USFWS 2014i).

Critical Habitat

Proposed critical habitat for the western yellow-billed cuckoo was designated in 2014 (USFWS 2014h), and includes portions of the planning area. The USFWS proposed designating 80 CHUs throughout the range of the species. Of these, one unit is located within the planning area along the Colorado River (CHU

Unit 55: CO-2). This unit encompasses 4,002 acres, of which is entirely located within the boundaries of the planning area.

Primary constituent elements for the yellow-billed cuckoo proposed critical habitat, are described in **Table 3-6**, Primary Constituent Elements of Yellow-Billed Cuckoo Proposed Critical Habitat.

Table 3-6
Primary Constituent Elements of Yellow-Billed Cuckoo Proposed Critical Habitat

Features	Description
Riparian Woodlands	• Riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 feet (100 meters) in width and 200 acres or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats.
Adequate Prey Base	• Presence of a prey base consisting of large insect fauna (for example, cicadas, caterpillars, katydids, grasshoppers large beetles, dragonflies) and tree frogs for adults and young in breeding areas during the nesting season and in post-breeding dispersal areas.
Dynamic Riverine Processes	• River systems that are dynamic and provide hydrologic processes that encourage sediment movement and deposits that allow seedling germination and promote plant growth, maintenance, health, and vigor (e.g. lower gradient streams and broad floodplains, elevated subsurface groundwater table, and perennial rivers and streams). This allows habitat to regenerate at regular intervals, leading to riparian vegetation with variously aged patches from young to old.

Source: USFWS 2014h

Threats

The primary threats to western yellow-billed cuckoo as described in the Threatened Status Final Rule (USFWS 2014i) are loss and degradation of low-elevation riparian woodland habitats from the following:

- Habitat loss from dams and alterations of hydrology
- Surface and ground water diversion
- Encroachment of levees and flood control and bank stabilization structures into the river channel and floodplain
- Transportation systems
- Gravel mining
- Habitat loss and degradation from agricultural activities
- Habitat loss and degradation due to conversion to nonnative vegetation
- Environmental impacts of cross border foot traffic in the southwest
- Climate change

Threats to proposed critical habitat as described in the Designation of Critical Habitat Proposed Rule (USFWS 2014h) include the following:

- Disruption of hydrological processes that are necessary to maintain a healthy riparian system
- Loss of riparian habitat regeneration caused by poorly managed grazing
- Loss of riparian habitat from development activities and extractive uses
- Degradation of riparian habitat as a result of expansion of nonnative vegetation
- Destruction of riparian habitat by uncontrolled wildfires
- Reduction of prey insect abundance by the application of pesticides

The loss of forested habitat on its wintering grounds in South America is also a substantial threat (Wiggins 2005).

3.3 PROPOSED SPECIES

3.3.1 Gunnison Sage-Grouse

Species Description

The Gunnison Sage-Grouse is a large, rounded-winged, ground-dwelling bird, up to 20 inches long and 18 inches (46 to 51 centimeters) tall, weighing from two to four pounds. It is about one-third the size of the Greater Sage-Grouse (*Centrocercus urophasianus*). The birds are found at elevations ranging from 4,000 to over 9,000 feet (1,220 to 2,740 meters) and are highly dependent on sagebrush for cover and food. Sage-Grouse require wide expanses of sagebrush, and the mere presence of sagebrush in small patches does not indicate that an area is suitable Sage-Grouse habitat (USFWS 2010c).

Life History

Sage-Grouse is a sage obligate species; it requires healthy, functioning sage ecosystems for year-round survival. Due to high levels of natural variation in sagebrush habitat composition, sage-grouse are adapted to a variety of habitats to support their annual cycle. While most Sage-Grouse do not migrate, some can move great distances to meet their dietary requirements and find their diverse seasonal habitats (Piñon Mesa Gunnison Sage Grouse Partnership 2000).

Adult Gunnison Sage-Grouse eat leafy vegetation and will also eat insects in summer. Although sage leaves are their preferred food, grouse will also eat succulent forbs in summer. The winter diet is completely sage based, requiring that some plants in winter habitat reach above the snow. Chicks consume insects and some forbs during brood rearing, and their diet shifts to sage in fall (Piñon Mesa Gunnison Sage Grouse Partnership 2000).

Status and Distribution

In January, 2013, the USFWS proposed to protect the Gunnison Sage-Grouse as an endangered species (USFWS 2013d). A final determination on the species is expected in November of 2014.

Historically, Gunnison Sage-Grouse were found in the southwestern portion of Colorado, southeastern Utah, northeastern Arizona, and northwestern New Mexico. Currently, approximately 5,000 breeding Gunnison Sage-Grouse occur among seven separate populations in southwest Colorado and southeast Utah. The largest population—about 4,000 birds—inhabits the Gunnison Basin. The separate populations in Colorado are Piñon Mesa, Crawford, San Miguel Basin, Gunnison Basin, Dove Creek, Cerro Summit-Cimarron-Simo Mesa, and Poncha Pass. The Utah population is near Monticello (USFWS 2010c).

Environmental Baseline

Occurrence in the Action Area

The Piñon Mesa population of Gunnison Sage-Grouse occurs entirely within the GJFO planning area in the Glade Park area. Historically, leks occurred on BLM-administered lands; however, currently the birds primarily use private land in the southwest corner of Glade Park. The CPW began augmenting this population in 2010, however immediate results of increased males in lek counts were not observed as males at leks dropped to 11 in 2012 but jumped to 31 in 2013. The large jump is partly due to finding a new lek with 8 birds on it but also to increased overall numbers that may be attributable to the transplant efforts. See **Table 3-7**, For Piñon Mesa Lek count information. A conservation plan for this population was completed in 2000 (Piñon Mesa Gunnison Sage-Grouse Partnership 2000), and a rangewide conservation plan for the species was completed in 2005 (Gunnison Sage-Grouse Rangewide Steering Committee 2005). The BLM has been actively managing public lands in the Glade Park area to improve Gunnison Sage-Grouse habitat through mechanical treatments and prescribed fire.

Table 3-7
Lek Count Piñon Mesa Population

Year	High Count Males on Lek
1995	16
1996	24
1997	23
1998	26
1999	29
2000	33
2001	31
2002	27
2003	25
2004	29

Table 3-7
Lek Count Piñon Mesa Population

Year	High Count Males on Lek
2005	34
2006	33
2007	26
2008	22
2009	16
2010	15
2011	13
2012	11
2013	31

[2]Source: CPW 2011

Critical Habitat

Proposed critical habitat for the Gunnison Sage-Grouse is located within the southwestern portion of the planning area near Glade Park.

Primary constituent elements for the Gunnison Sage-Grouse proposed critical habitat, are described in **Table 3-8**, Primary Constituent Elements of Gunnison Sage-Grouse Proposed Critical Habitat.

Table 3-8
Primary Constituent Elements of Gunnison Sage-Grouse Proposed Critical Habitat

Features	Description
Sagebrush plant communities	• Areas with vegetation composed primarily of sagebrush plant communities (at least 25 percent of primarily sagebrush land covered within a 1.5-km (0.9-mile) radius of any given location), of sufficient size and configuration to encompass all seasonal habitats for a given population of Gunnison sage-grouse, and facilitate movements within and among populations. • Breeding habitat and summer-late fall habitat composed of sagebrush plant communities with structural characteristics within the ranges as described in the proposed critical habitat rule (USFWS 2013e) • Winter habitat composed of sagebrush plant communities with sagebrush canopy cover between 20 and 40 percent and sagebrush height of 40 to 55 cm (15.8 to 21.7 inches). These habitat structure values are average values over a project area. • Alternative mesic habitats used primarily in the summer-late-fall season

USFWS 2013e

Threats

Factors affecting the continued existence of Gunnison Sage-Grouse include habitat fragmentation and severe weather during the nesting and early brood periods (Piñon Mesa Gunnison Sage Grouse Partnership 2000). Fire suppression also leads to changes in habitat from encroaching conifers and sagebrush habitat types becoming dominant old-aged stands. Other anthropogenic factors that affect sage-grouse are as follows (Piñon Mesa Gunnison Sage Grouse Partnership 2000):

- Continuous noise that impairs the acoustical components of males on leks
- Disturbance from construction or other projects
- Harassment from pets
- Disturbance, death, or habitat degradation from use of off-highway-vehicles

Specific threats as identified in the 2013 proposed listing for all populations of Gunnison Sage-Grouse (not just those which occur within the planning area) include: residential development, roads, powerlines, domestic grazing and wild ungulate herbivory, fences, invasive plants, fire, climate change, renewable energy development, nonrenewable energy development, pinyon-juniper encroachment, conversion to agriculture, and water development (USFWS 2013d).

3.4 CANDIDATE SPECIES

3.4.1 Greater Sage-grouse

The Greater Sage-grouse is a candidate for listing under the ESA and is considered in this BA for long-term planning purposes. The Greater Sage-Grouse is not considered part of the formal Section 7 ESA consultation; however, it is possible that it could be listed during the life of the RMP.

Greater Sage-Grouse do occur within the planning area. Conserving this species and its required habitat are key components of current, proposed, and future BLM goals, objectives, and management actions.

Species Description

The Greater Sage-Grouse is the largest grouse in North America (USFWS 2014g). This grouse is a large, rounded-winged, ground-dwelling bird, up to 30 inches long and two feet tall, weighing from two to seven pounds. It has a long, pointed tail with legs feathered to the base of the toes. Females are a mottled brown, black, and white. Males are larger and often weigh in excess of 4-5 pounds and hens weigh in at 2-3 pounds. Males have a large white ruff around their neck which conceal 2 large, bright, yellow-green skin sacs on their breasts which are used in courtship displays. These air sacks get inflated during mating displays. Both sexes have narrow, pointed tail feathers. Males also have yellow eyecombs (obvious in the spring during courtship displays). Female Sage-Grouse do not have these specialized structures used for courtship displays and otherwise resemble males in coloration. However, in comparison to males, their throats are buffy with blackish markings and the lower throat and breast are barred which presents a blackish-brown appearance. Immature birds (less than 1 yr. of age) can be distinguished from adults by their light yellowish green toes (adults have dark green toes).

Life History

Sage-Grouse require a diverse age-class of sagebrush and open grassland habitats. The birds rely on sagebrush for roosting, cover, and food. They are usually referred to as "sagebrush obligates," meaning that the birds cannot survive without sagebrush (Knick and Connelly 2011). Populations of sage-grouse may have distinct seasonal habitats or well-integrated seasonal habitats, depending upon if they are migratory or non-migratory populations. Sage-Grouse require different habitats for breeding, nesting, brood-rearing, and for winter survival. In general breeding occurs in open areas surrounded by sagebrush. For nesting, Sage-Grouse use areas of sagebrush with a canopy cover of 15 to 25 percent but can be as high as 30 to 40 percent, and a grass and forbs understory. For brood-rearing habitat, open stands of sagebrush (10 to 25 percent canopy cover) are preferable. Winter habitat consists of sagebrush areas with canopy cover of 10 to 30 percent (Knick and Connelly 2011).

Each year, male Sage-Grouse congregate in late winter through spring on leks to display their breeding plumage and to attract hens for mating. A lek is a traditional display area where two or more male Sage-Grouse have attended in 2 or more of the previous 5 years. The area is normally located in a very open site in or adjacent to sagebrush-dominated habitats. Generally, lek sites are traditional, with the same lek sites used year after year. Taller sagebrush on the outskirts of the leks is necessary as a food source, escape cover, nesting cover for females, and loafing cover during the day. Leks generally occur in sagebrush habitats on slopes (less than 15 per cent) with a south- to east-facing aspect (BLM 2004). Because leks are typically positioned within proximity of nesting and brood-rearing habitat, they are often considered an excellent reference point for monitoring and habitat protection measures.

Status and Distribution

The Greater Sage-Grouse is a federal candidate species for listing under the ESA, Colorado BLM sensitive species, and a Colorado species of concern. Considerable attention has been given to this species since the 1980s, as evidenced by the BLM's National Greater Sage-Grouse Planning Strategy.

The BLM is currently working on an EIS to analyze incorporating new Greater Sage-Grouse conservation measures into its RMPs for the five field offices within the Northwest Colorado District: the GJFO, the Colorado River Valley Field Office, the Kremmling Field Office, the Little Snake Field Office, and the White River Field Office. All five field offices in the District are either in an on-going land-use planning effort or have recently completed one. An interagency National Technical Team drafted conservation measures for the BLM's consideration during the planning process. The BLM is evaluating where the Greater Sage-Grouse conservation measures in each field offices' plans are consistent with these recommendations, and where BLM may need to consider Plan Amendments through the Sage-Grouse EIS.

The birds are found at elevations ranging from 4,000 to over 9,000 feet (1,220 to 2,750 meters) and are highly dependent on sagebrush for cover and food. They cannot survive in areas where sagebrush does not exist (UFWS 2014i). They are currently found in 11 states: California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. They also occur in the Canadian provinces of Alberta and Saskatchewan. They are native to the sagebrush steppe of western North America. Their distribution closely follows that of sagebrush, particularly big sagebrush (*Artemesia tridentata* subspecies) (USFWS 2014g).

Environmental Baseline

Occurrence in the Action Area

The Parachute-Piceance-Roan (PPR) population of the Greater Sage-Grouse occurs on the northeastern side of the GJFO planning area. The Colorado Greater Sage-Grouse Conservation Plan (Colorado Greater Sage-Grouse Steering Committee 2008) shows a larger portion of the GJFO planning area as potential pre-settlement habitat based on historic sagebrush distribution, encompassing everything above the Book Cliffs and portions of the Grand Mesa slopes (though the plan identifies this as an area where the species of sage-grouse is uncertain). Sixteen active and inactive Greater Sage-Grouse leks occur within the GJFO planning area; three occur on BLM-administered lands, and thirteen occur on private lands. Of these sixteen leks, seven are considered active; two of the active leks occur on BLM-administered lands. 49,300 acres of Preliminary Priority Habitat (PPH), and 29,300 acres of Preliminary General Habitat (PGH) occur within the planning area.

Past and Current Impacts

Habitat loss and degradation are the greatest concern related to Greater Sage-Grouse. Sagebrush habitats are becoming increasingly degraded and fragmented due to the impacts of multiple threats, including direct conversion, urbanization, infrastructure such as roads and power lines built in support of several activities, wildfire and the change in wildfire frequency, incursion of invasive plants, grazing, and nonrenewable and renewable energy development. Many of these threat factors are exacerbated by the effects of climate change, which may influence long-term habitat trends (Manier et al. 2013).

Agricultural conversion has resulted in large losses of sagebrush shrubsteppe habitats. Sagebrush habitat continues to be converted for both dryland and irrigated crop production. In some Colorado counties, fifty percent of sage-grouse habitat has been subdivided, while an estimated 3 to 5 percent of all historical habitat in Colorado has been converted into urban areas (USFWS 2010b). The construction of power lines, communication towers, fences, roads, and railroads has contributed to habitat fragmentation and degradation. Greater Sage-Grouse populations are also negatively affected by energy development

activities (primarily oil, gas, and coal-bed methane). Wildfires can result in the short or long-term loss of habitat (USFWS 2010b).

Livestock management and domestic grazing can seriously degrade Sage-Grouse habitat. Grazing can adversely impact nesting and brood-rearing habitat by decreasing vegetation concealment from predators. Grazing also has been shown to compact soils, decrease herbaceous abundance, increase erosion, and increase the probability of invasion of exotic plant species (USFWS 2010b).

Human recreation produces some threats to Greater Sage-Grouse, including from bird watching or tour groups visiting leks, impacts from general wildlife viewing, and/or photography. Also this species, the subject of many scientific research studies and field studies, can include capture, handling, subsequent banding, or banding and radio-tagging of Sage-Grouse, all of which can contribute directly or indirectly to increases in mortality rates. Finally, Greater Sage-Grouse are hosts for a variety parasites and diseases which can increase mortality rates, and predation is the most commonly identified cause of direct mortality for Sage-Grouse during all life stages (USFWS 2010b).

The BLM is currently operating under Instruction Memorandum 2012-043 – Greater Sage-Grouse Interim Management Policies and Procedures (BLM 2012f). This Instruction Memorandum provides interim conservation policies and procedures to be applied to ongoing and proposed authorizations and activities that affect the Greater Sage-Grouse and its habitat. This direction ensures that interim conservation policies and procedures are implemented when field offices authorize or carry out activities on public land while the BLM develops and decides how to best incorporate long-term conservation measures for Greater Sage-Grouse into applicable land use plans. This direction aims to promote sustainable Greater Sage-Grouse populations and conservation of its habitat while not closing any future options before the planning process can be completed.

Threats

The primary threats to the Greater Sage-Grouse, described in more detail under the Environmental Baseline, include:

- Agriculture conversion and urbanization
- Fire
- Invasive species
- Infrastructure development
- Recreation
- Livestock use and grazing
- Energy development

SECTION 4
EFFECTS OF PROPOSED ACTION

4.1 INTRODUCTION

This BA analyzes the impacts of a proposed discretionary federal action. A federal action is defined as anything authorized, funded, or carried out by a federal agency. The analysis of all impacts includes the effects of interrelated and interdependent actions. The proposed action is to implement the PRMP as described in Section 2. The proposed action is programmatic in nature, and as such, projects implemented under the jurisdiction of this RMP would be subject to Section 7 ESA consultation at the project-specific level.

4.1.1 Definitions

The effects of implementing the PRMP can be categorized into direct, indirect, and cumulative effects. These categories are defined differently under the ESA and NEPA, so that effects presented here will differ from those described in the RMP/EIS.

- **Direct effects** are those that are caused by the proposed action and occur at the time of the action.
- **Indirect effects** are those that are caused by the proposed action and occur later in time but are reasonably certain to occur.
- **Cumulative effects** include those of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BA. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis. This is because they will be subject to separate consultation, in accordance with Section 7 of the ESA.

The following definitions are used for effect determinations:

- **No effect**—This is the appropriate conclusion when the BLM determines its proposed action would not affect listed species. The

principal factor in this determination is that the species and its suitable habitat do not exist in the analysis area or that the proposed action would involve no surface disturbances or other disruption to the species. In this situation, no further contact with the USFWS is required.

- **May affect, is not likely to adversely affect**—This is the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. This type of effect requires informal Section 7 consultation with the USFWS and concurrence with the determination.
- **May affect, is likely to adversely affect—**This is the appropriate conclusion if any adverse effect on the listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects, the proper effect determination for the proposed action is "likely to adversely affect" the listed species. Such determination requires formal Section 7 consultation with the USFWS.

4.1.2 Methods of Analysis

Although data on known locations and habitats in the planning area are available, the data are neither complete nor comprehensive. Known and potential species and habitat locations were considered in the analysis; however, the potential for species to occur outside these areas was also considered. Impacts were quantified when possible. In the absence of quantitative data, best professional judgment based on scientific reasoning was used. Additionally, The GJFO RMP and this associated BA are programmatic documents, which do not address site-specific proposals or projects. As a result, some impacts are discussed in more general terms.

No decision would be approved in the RMP or authorized on BLM lands that would jeopardize the continued existence of species that are listed, proposed, or candidates for listing as threatened or endangered. Implementation of the BLM's special status species program is directed at preventing the need for listing of proposed or candidate species under the ESA, protecting special status species, and improving their habitats to a point where their special status recognition is no longer warranted (BLM 2008c).

The analysis is based on the following assumptions:

- Impacts on listed, proposed and candidate species can occur from actions that result in direct mortality, loss of habitat or modifications to habitat suitability, and actions that displace individuals or disrupt behavior. Because threatened, endangered,

proposed, and candidate species have specific habitat requirements, and their habitats are often diminishing, disturbance of the species or their habitat could result in population declines, which could adversely affect viability of local populations.

- Since threatened and endangered species populations are, by their nature, generally small and localized, the total area affected by other activities or restrictions is less important than where the activities or restrictions occur in relation to special status species and their habitat.
- The health of threatened, endangered, proposed and candidate species populations is directly related to the overall health and functional capabilities of upland, aquatic, riparian, and wetland resources, which in turn are a reflection of overall watershed health.
- Ground-disturbing activities could lead to positive or negative modification of habitat and loss or gain of individuals. This depends on the nature of the activity, the intensity of the surface disturbance, the amount of area disturbed, the location of the disturbance, and the species affected.
- Road density in a given watershed and the distance of roads from threatened, endangered, proposed, and candidate species habitat provides an indication of the potential for impacts on these species. For fish and aquatic wildlife, roads are a measure of lands available for accelerated water transport and potential erosion and offsite sediment transport. For plants, roads also contribute to increasing exposure to dust, reducing pollinator habitat, and providing a niche for the invasion of noxious weeds. However, the actual impacts and degree of impacts depend on additional variables, such as the class of road (dirt, gravel, paved), road condition (rutted, bar ditched, properly drained), the type of vegetation between the road and occupied or suitable habitat, the topography, the ecological condition of the suitable or occupied habitat, and soil characteristics.
- Species' health, population levels, and habitat conditions fluctuate in response to natural factors. Periods of drought or excessive moisture and outbreaks of diseases that affect species directly or impact habitat (e.g., Ips beetle) would likely impact threatened, endangered, proposed, and candidate species population levels.
- Implementation-level actions would be further assessed on an appropriate spatial and temporal scale. Additional field inventories would likely be needed to determine whether any such species could be present in the project area.

- Land uses would be managed to maintain or move toward meeting the Colorado Standards for Public Land Health (BLM 1997) on a landscape basis. Site-specific NEPA and ESA analysis would assess whether management actions would contribute to the maintenance or achievement of land health standards or risk causing a decline in land health conditions.
- All permitted activities that could affect federally threatened or endangered species would be required to undergo ESA Section 7 consultation with the USFWS. The activities would need to be mitigated to ensure that threatened or endangered species would not be jeopardized on a project-specific basis or at a cumulative level.
- The BLM would implement measures to conserve BLM sensitive species and their habitats to reduce the likelihood and need for such species to become listed (BLM 2008c).
- The BLM would implement the standard operating procedures and mitigation measures from the Programmatic Integrated Weed Management Plan for the BLM Grand Junction Field Office BA (BLM 2010b). These would mitigate the potential impacts from herbicide treatments.
- Success of mitigation depends on the specific protective measures employed and the assumption that these measures would be properly implemented. Adaptive management, such as changing techniques, would be used until success is achieved.
- Many of the resources and uses have NSO or CSU stipulations that extend beyond or overlap the NSO or CSU stipulations listed for protection of special status species. Although NSO or CSU stipulations for other resources and uses may offer additional benefits (e.g., reduced erosion, sedimentation, and weed invasion) and indirectly support special status species management, in most cases, these benefits would be negligible or redundant to the protections provided by stipulations for special status species. For these reasons, impacts on special status species from NSO or CSU stipulations associated with other resources will only be addressed if they are anticipated to provide substantial additional protection.

4.2 LISTED SPECIES

4.2.1 Plants

Assumptions and Methods of Analysis

Methods of analysis and assumptions are similar to those described above in Section 4.1.2. The following additional assumptions apply to listed plants:

Any disturbance of listed plant habitat, unless specifically designed for a particular listed plant species, would be detrimental to the listed plants. This includes sagebrush habitat improvement projects, such as juniper removal and prescribed fire. These projects might have long-term positive impacts but would result in listed plant mortality and habitat degradation in the short term.

Actions that affect listed plant species can result in the following general impacts:

- **Direct mortality.** Mortality can result from crushing, trampling, or physically removing plants. Contact with herbicides or other chemicals, can also cause direct mortality. Where occurrences of a plant are small, loss of a portion of the plants can compromise its viability. Loss of occurrences can compromise species viability due to reduced genetic diversity and a reduced ability to withstand natural or man-made disturbances.
- **Loss of vigor or reduced reproductive success.** Trampling and coming in contact with chemicals may not always result in direct mortality; however, it can reduce vigor, which affects the plant's ability to reproduce and sustain the population. The consumption of flowers, seeds, stems, and foliage of special status plants (herbivory) can reduce reproductive success, or in some cases, death. Dust deposited on special status plants may reduce their photosynthetic ability or the ability of pollinators to transfer pollen between plants.
- **Direct loss of potential or occupied habitat.** Direct habitat loss results when habitat is physically destroyed or converted to a form that is unsuitable for the impacted species. Direct habitat loss can be short term or permanent. Surface-disturbing activities, such as construction and use of roads, trails, parking lots, buildings, power poles, wind turbines, and ponds, may result in permanent loss of occupied or potentially occupied habitat. This would reduce the total habitat capable of supporting listed plant populations and fragment remaining populations.

  Short-term habitat loss can occur with habitat improvement projects, such as those addressing encroaching junipers in sagebrush or salt desert shrub habitats. Closure or reclamation of disturbed areas may eventually restore lost habitat; however, the disturbance can require years or decades for recovery to conditions before the disturbance. If reclamation does not result in habitat suitable for sustaining special status plants, habitat may be permanently lost.
- **Changes in habitat structure.** A canopy cover of shrubs offers habitat characteristics that appear to be favorable for several special status plant species, such as Colorado hookless cactus, to germinate and become established. Shrubs may protect some special status

plants from herbivory or trampling and may provide improved moisture availability or reduced moisture loss under the canopy. Surface-disturbing activities that significantly reduce the percent canopy cover of shrubs may allow increased herbivory or moisture loss, resulting in decreased vigor or mortality of special status plants.

- **Competition.** Changes in species composition also affect listed plant populations. Proliferation of noxious weeds or other invasive plants may render habitat unsuitable by outcompeting listed plants for water and nutrients or by preventing seedling germination and establishment. Occupied Colorado hookless cactus habitat that is dominated by cheatgrass appears to inhibit seedling cactus to germinate, thereby threatening the long-term viability of this population. In some cases, increases in canopy cover and density of native species, particularly grasses, can compete with listed plants for limited water and nutrients.

  Other species, such as Parachute penstemon, and DeBeque phacelia thrive in environments where vegetation is sparse and competition is low. Increases in vegetation cover (following disturbances, such as fire or seeding) may cause competition with special status plants, resulting in decreased vigor or mortality.

- Other species thrive in environments where vegetation is sparse and competition is low. Increases in vegetation cover, following such disturbances as fire, mechanical treatments, or seeding, may cause competition with special status plants, resulting in decreased vigor or mortality.

- **Loss of pollinators or pollinator habitat.** Actions that disturb pollinators or that destroy their habitat can have a detrimental impact on plant species. Long-term loss of pollinators can reduce the reproductive ability of these plant species and affect maintenance and genetic diversity of populations.

- **Habitat fragmentation.** Habitat becomes fragmented when contiguous habitat is broken into smaller blocks by surface-disturbing activities and distances between suitable habitat patches increase. Because pollinators fly only limited distances, they are less likely to use small and isolated patches of habitat. Habitat fragmentation can effectively isolate pollinators from special status plants. Smaller populations receive fewer pollinator visits, so seed production is lower in small populations.

  Small population size decreases reproductive success and increases inbreeding and loss of genetic variation. As a result, fragmentation may lower population viability and increase local population extinction risk (Kolb 2008). Herbivory does not decrease with

population size; instead, it enforces fragmentation by further reducing the number of flowering individuals (Kolb 2008). Closure and rehabilitation of roads in listed plant habitat may benefit the long-term survival of populations by decreasing habitat fragmentation.

- **Soil compaction.** Soil compaction resulting from heavy equipment or vehicle travel may reduce soil pore size, inhibit water infiltration, and restrict root penetration, thereby inhibiting maintenance and establishment of special status plants.
- **Erosion or sedimentation.** Special status plants may be washed away or their roots may be exposed by erosion from surface-disturbing activities, such as blading or bulldozing for roads. Special status plants may be buried by sedimentation resulting from disturbances upslope of special status plant populations.
- **Alteration of hydrologic conditions.** Some special status plant species (such as Ute ladies'-tresses orchid), which are dependent on seasonally flooded environments, subirrigated soils, or seeps, may be adversely affected by changes in surface or groundwater flow.
- **Changes in fire regime.** Changes in species composition, either in special status plant habitat or in adjacent plant communities, may alter the natural fire regime to which the plants are adapted. Cheatgrass, a highly flammable annual grass, may drastically increase the fire frequency in special status plant habitat, affecting the survivability and viability of the population.
- **Habitat restoration.** This can result from vegetation management projects, hydrologic function restoration, invasive species removal, historic fire regimes restoration, grazing management alteration, or other methods. However, any habitat restoration project for special status plants must be designed specifically for the individual plant species and its specific habitat and site conditions. Generalized habitat restoration projects that do not focus on special status plant needs can have negative effects on these species.

Conservation Planning (Section 7 [a][1] of the ESA)

The goals for biological resources management, including ESA-listed species, in the PRMP are summarized in **Table 2-1** of this BA. Additionally, **Table 2-1** includes the objectives, actions, and conservation measures proposed to achieve the goals. The PRMP is primarily a landscape-level, programmatic-level document. The stipulations, conservation measures, and BMPs described below for listed plants, are not comprehensive. New conservation measures may be developed at the project level.

Objectives

Two objectives directly related to listed plant species are included in the PRMP (**Table 2-1**):

- To conserve plants and animals (and their habitats) listed by federal and Colorado governments as threatened, endangered, sensitive or species of concern, and to conserve plants and animals that are candidates for these lists with the overall objective of improving their populations so that they can be removed from these lists.
- Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by CNHP.

Actions and Surface Disturbance Restrictions

Ten actions and surface disturbance restrictions directly related to listed plant species are included in the proposed plan (**Table 2-1**):

- Protect and maintain unique ecological values for the following habitat locations to improve the habitat for unique, sensitive, threatened, and endangered plants and animals:
    - Atwell Gulch ACEC: Colorado hookless cactus, DeBeque milkvetch, and Naturita milkvetch *(Astragalus naturitensis)*;
    - Pyramid Rock ACEC: Colorado hookless cactus, DeBeque phacelia, DeBeque milkvetch, Naturita milkvetch, adobe thistle, and aromatic Indian breadroot;
    - South Shale Ridge ACEC: Colorado hookless cactus, DeBeque phacelia, Naturita milkvetch, and adobe thistle; and
- Identify the following areas as core conservation populations for special status plant species:
    - Atwell Gulch;
    - Logan Wash Mine;
    - Pyramid Rock ACEC;
    - South Shale Ridge;
    - Sunnyside; and
    - Reeder Mesa.
- Manage identified habitat to maintain the population. Management tools include but are not limited to weed treatments, inter-seeding, route closures, fencing, and managing timing and intensity of grazing. Identify additional areas as populations are identified and species of concern are modified. Limit new road construction in Reeder Mesa,

Sunnyside, Logan Wash Mine, and South Shale Ridge, and designate new roads associated with authorized uses as administrative (e.g., oil and gas and ROWs). Rehab and close roads associated with authorized uses when no longer needed.

- Monitor special status plant populations to determine trends, impacts, and guide future management, with an emphasis on areas near surface-disturbing activities. Utilize monitoring data to determine and modify NSO stipulations applicable to current and historically occupied habitat of threatened, endangered, proposed, and candidate plants.
- Reduce redundancies in routes to minimize habitat fragmentation, and minimize direct impacts on listed plant species habitat, and occupied habitat from motorized and mechanized users of roads, routes and trails. Identify mitigation where open routes are negatively effecting designated critical habitat.
- Reduce as much as practicable route density (miles/square mile) within 200 meters of known Threatened and Endangered plant occurrences throughout the field office. If occurrences are identified in the future that conflict with route designations, implement reroutes.
- Prohibit surface occupancy and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive plants.
    - Atwell Gulch (threatened and sensitive plants);
    - Badger Wash (sensitive plants);
    - Pyramid Rock (threatened and sensitive plants);
    - South Shale Ridge (threatened and sensitive plants); and
    - Unaweep Seep (sensitive plants).
- Prohibit certain surface uses (as specified in Appendix B of the PRMP), to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts on primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred.

- For those plant communities that meet BLM's criteria for significant plant communities, special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Habitat areas include occupied habitat and habitat necessary for the maintenance or recovery of the species or communities.

Additional management actions indirectly related to the protection of the listed plant species are described in **Table 2-1** and incorporated by reference.

Colorado Standards for Public Land Health

The Colorado Standards for Public Land Health describe conditions needed to sustain public land health. They relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape (Appendix E of the PRMP). Of the five standards listed, standards 1, 3, and 4 would directly apply to the conservation of listed plant species. Specifically, standard 1 applies to the desire for upland soil moisture conditions to sustain optimal plant growth and vigor. Standard 3 promotes the health of native plants (and animals) at the community and population levels. Standard 4 establishes BLM standards for protecting and enhancing special status, threatened, and endangered federal and state species and other plants and animals.

BMPs for Management Actions

Appendix H of the PRMP includes a number of BMPs and standard operating procedures that would benefit special status plant species by protecting soils, vegetation, and suitable habitat. These BMPs include but are not limited to: closing selected routes to protect special status species and significant plant communities, placing pipelines and other ROWs within road corridors when feasible to minimize disturbance, and minimizing disturbance to soil and native vegetation as much as possible. Additionally, various other practices designed to prevent or limit noxious and invasive weed infestations are also included as BMPs.

Direct and Indirect Effects

There would be no effects on threatened and endangered plant species from air and climate resources; cultural resources; paleontological resources; visual resources; lands with wilderness characteristics; forestry; wild and scenic rivers; National Trails; national, state, and BLM byways; Native American tribal uses; public health and safety; Wilderness Study Areas; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Soils Resource Management

The goal of soil resource management in the GJFO RMP is to ensure upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for optimal plant growth and vigor, and minimizes runoff and erosion. Included within the PRMP are BMPs, stipulations, and other actions

which would protect vulnerable soils (e.g. erosive soils, steep slopes, fragile soils, and biologic soil crusts). Standard operating procedures and BMPs specific to soils include: avoiding vertical cuts, long or steep fill slopes and side cuts across steep slopes. An NSO stipulation which prohibits fluid mineral surface occupancy and use on lands with steep slopes greater than 40 percent would minimize erosion and protect special status plant species found on or bellow steep inclines. The seed bank of the DeBeque phacelia (which is the primary mechanism for which the species survives) is particularly vulnerable to soil disturbing activities, and would therefore benefit from the soil specific stipulations, BMPs, and other actions as described in greater detail in the PRMP.

Effects from Water Resource Management

To protect, preserve, and enhance watershed functions, the PRMP would implement NSO stipulations specific to riparian corridors. NSO-2 (covering streams/springs possessing lotic riparian characteristics) would prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, surface occupancy and use and surface-disturbing activities would be prohibited within the riparian zone. This measure would protect potential Ute ladies'-tresses habitat in the DeBeque area and near Plateau Creek. The Colorado hookless cactus, DeBeque phacelia, and Parachute penstemon are not known as riparian obligate species; however, this stipulation could provide protection for those species which happen to occur within riparian corridors. This stipulation would provide additional protection to the 200-meter fluid mineral NSO for listed plant species.

Effects from Vegetation Management

In general, vegetation management would emphasize improving and restoring vegetation and special status species habitats. This would be accomplished through actions such as controlling noxious and invasive weeds, implementing woody vegetation treatment projects (e.g. pinyon-juniper and conifer removal), replenished diminished native seed banks, and restrictions on surface-disturbing and disruptive activities in certain locations.

Potential impacts on listed plant species from vegetation treatments include crushing or trampling from heavy equipment, loss of vigor, reduced reproductive output, or mortality from herbicides. Herbicide treatment projects would adhere to the conservation measures and standard operating procedures identified in the Programmatic Integrated Weed Management Plan for the GJFO, which include distance buffer provisions between treatment sites and populations. Weed management impacts on the Colorado hookless cactus, DeBeque phacelia, and Parachute penstemon are analyzed in the BA for Programmatic Integrated Weed Management (BLM 2010b). The BA determined and the USFWS concurred that the Integrated Weed Management Plan may affect, but is not likely to adversely affect these species. This BA tiers to the

2010 Programmatic Integrated Weed Management Plan BO and the analysis therein.

Vegetation treatments would cause short-term disturbance of potential special status plant habitat by removing vegetation and exposing soil. Over the long-term these activities would improve habitats for special status plants by removing competitor species and restoring native species.

Effects from Fish and Wildlife Management

Fish and wildlife management under the PRMP would emphasize providing for aquatic and terrestrial habitats which support an abundance and diversity of fish and wildlife species with self-sustaining populations. In general, fish and wildlife management would improve and maintain habitat throughout the decision area. Applying stipulations to reduce or mitigate surface-disturbing activities within wildlife corridors and wildlife priority habitats would likely provide some additional protection to overlapping habitat for listed plants.

Effects from Special Status Species

The PRMP would work towards managing special status species habitats to provide for their conservation and restoration. Effects to listed plant species would be similar to those described under Fish and Wildlife Management. Core conservation population areas would be identified and managed to maintain the population. Management tools including but not limited to weed treatments, inter-seeding, route closures, fencing, and managing timing and intensity of grazing may be used to meet the goals and objectives for special status plant species.

Effects from Wild Horses

Under the PRMP, the BLM would continue to manage the 35,200-acre Little Book Cliffs Wild Horse Range (LBCWHR) located northwest of Palisade. DeBeque phacelia, Parachute penstemon, and Ute ladies'-tresses are not known to occur within this area; however, Colorado hookless cactus occurrences have been recorded, and effects from trampling and habitat degradation may occur. The LBCWHR would be managed at an appropriate management level, currently identified as 90-150 wild horses, although this number may be adjusted if warranted by range conditions. Additional stipulations and conservation measures specific to the LBCWHR would help protect the Colorado hookless cactus from other resource uses. For example, NSO-36 would prohibit surface occupancy and surface-disturbing activities, thereby protecting hookless cactus populations within the LBCWHR from energy development.

Effects from Wildland Fire Management

Depending on the extent, location, severity, and seral type affected, unplanned ignitions would have adverse impacts on special status species. Unplanned ignitions can remove or degrade habitat for some species and/or reduce population viability. Large or intense wildfires could damage large expanses of

habitat or kill established populations. Indirect effects could result from increased erosion, and increased potential for noxious and invasive weed establishment.

Species such as the Parachute penstemon and DeBeque phacelia are found in barren habitats where fires are uncharacteristic. However, cheatgrass infestations can result in fuel buildup, which could potentially carry fire into these populations. Because these species are not adapted to natural fire regimes, such events would likely result in mortality.

Increased human activity via wildland fire management and prescribed fire could increase the likelihood for injury to or death of special status plant species or changes to survival or reproduction. A large fire that would require extensive suppression, such as large-scale staging areas and fire-line construction, could result in long-term loss of Colorado hookless cactus occurrences and its habitats. However, smaller fires would require less extensive suppression operations and would generally avoid these long-term effects. Extensive staging areas and fire line construction are infrequent in the barren habitat which Parachute penstemon and DeBeque phacelia occupy, but may still occur. Fire and fire suppression activities in these areas could result in impacts to the species including loss of individuals and habitat disturbance.

The PRMP emphasizes a suite of fuels treatments which would provide management flexibility in meeting resource objectives. Fuel treatments would be prioritized to strategically reduce wildfire threat in areas of high risk, rather than areas with a low probability of fire and a longer natural post-fire recovery. All fires would be suppressed in Salt Desert Shrub communities to protect those species not adapted to fire, including the Colorado hookless cactus, and to reduce cheatgrass invasion.

Effects from Livestock Grazing Management

Effects from livestock grazing management tiers to the BA for Effects on Listed Plant Species from the Bureau of Land Management Livestock Grazing Program (BLM 2012a, 2012b). This BA addressed the impacts of the livestock grazing program on ESA-listed plant species, including Colorado hookless cactus.

The primary potential impacts on T&E plants from implementing the livestock grazing program can occur from trampling, alteration of habitat, applying herbicides, and from surface-disturbing actions related to range developments; examples are the construction of fences, water pipelines, cattle guards, and livestock ponds. Potential impacts of livestock grazing vary by plant species and their habitats. Impacts also depend on the class of livestock and the particular grazing system, with some species favored by particular systems and others responding negatively.

Parachute penstemon grows on sparsely vegetated steep talus slopes where livestock grazing use is uncommon. Additionally, most known occurrences

within the planning area occur on private lands where the BLM does not manage livestock grazing. As such, impacts on this species from grazing would be negligible, and the actions and allowable uses as described under the PRMP would have little effect on the species.

Ute ladies'-tresses is found in riparian habitats, such as point bars, sand bars and low lying gravelly, sandy, or cobbly edges. While these are areas which can receive heavy grazing, there are no known occurrences within the planning area, and therefore livestock grazing activities are unlikely to affect the species.

The DeBeque phacelia and Colorado hookless cactus are both susceptible to crushing or trampling, especially in areas of concentrated use such as near salt blocks and livestock ponds. Soils which have high clay content, such as those that support DeBeque phacelia, are especially susceptible to compaction when wet. Late winter and early spring grazing are likely to be most detrimental. Grazing in these habitats could cause injury or direct loss. Additionally, livestock grazing can reduce vegetation cover, affecting species composition, soil compaction, erosion, sedimentation, and increased potential for weed spread and establishment, all of which could reduce the health and vigor of these species communities.

By closing grazing in the entire Pyramid Rock ACEC (1,300 acres), and the majority of the Atwell Gulch ACEC (2,600 acres of 2,900 total acres), populations of listed plants within those designated boundaries would be protected from livestock use. Specifically, those populations of the Colorado hookless cactus found in both ACECs, and populations of the DeBeque phacelia found in the Pyramid Rock ACEC. However, grazing activities would continue to affect those populations found outside the designated ACEC boundaries. Adverse effects to both plant species are anticipated.

Even under proper management, livestock grazing could impact special status species to varying degrees. Impacts from poorly managed livestock grazing would be greater in magnitude and extent than those from properly managed grazing. Under the PRMP, the BLM would periodically evaluate possible livestock grazing closures on allotments or potions of allotments should major impacts on sensitive species occur.

Effects from Recreation and Travel Management

Direct impacts on listed plants from recreation include surface disturbing activities, such as construction of developed recreation facilities, motorized or off-road vehicle (OHV) use, and foot or horse travel. Dispersed recreation off existing roads or trails can result in direct mortality of listed plant species from crushing, trampling, or uprooting. Indirect effects may also occur from recreational use, such as soil compaction, changes in vegetation composition and structure, and loss of vegetative cover; all of which may degrade habitat. Additionally, increased disturbance can result in the spread and establishment of noxious weed populations. The levels of impact are related to the duration,

intensity, and expanse of recreation, and are expected to increase with increased visitation. The risk of impacts is greatest in areas where concentrated human activity, such as Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs), overlap with habitat for listed plant species. In general, SRMAs, and ERMAs would avoid much of the currently occupied habitats for special status plant species; however, in some areas the BLM would employ adaptive management to protect special status species if impacts were to occur. Impacts would be more likely to occur in areas that have not been previously inventoried. Travel routes would be planned to avoid known occurrences. However, adverse effects on the Colorado hookless cactus are still anticipated. Under the Proposed RMP, 56.4 miles of routes open to public use (including 11.2 miles of county-maintained roads) would be located within 200 meters of known Colorado hookless cactus occurrences. There would also be 47.9 miles of existing routes within 200 meters of known occurrences proposed for closure and rehabilitation. Within 20 meters of known Colorado hookless cactus occurrences, 4.1 miles of routes would be open to public use (including 0.3 miles of county-maintained roads) and 1.1 miles of routes would be restricted to administrative and permitted use only. There would be 5.8 miles of routes within 20 meters of known occurrences proposed for closure and rehabilitation. Impacts, in the form of trampling, could also occur from cross-country foot and horse travel.

Only 1.4 miles of routes open to public use (including 0.9 miles of county-maintained roads) occur within 200 meters of known DeBeque phacelia populations; no routes occur within 20 meters of known occurrences. Given the limited extent of nearby routes, travel related impacts on DeBeque phacelia would be negligible. No routes open to public use occur within 200 meters of known Parachute penstemon or Ute Ladies'-tresses occurrences. Therefore, no adverse impacts are anticipated for these species.

All Special Recreation Permits (SRPs) would contain standard stipulations appropriate for the type of activity and may include additional stipulations necessary to protect land or resources, including habitat for listed plants.

Effects from Lands and Reality Management

The goal of the GJFO lands and reality management is to meet resource needs while providing public use authorizations such as Rights-of-Way (ROW), renewable energy sources, permits, and leases. New ROWs can result in habitat fragmentation, degradation of habitat, and direct mortality. Land disposal (e.g. though sale or exchange) of listed plant species habitat could result in loss of populations, unless lands leaving public ownership are guaranteed protection though a conservation easement or other agreement. Any acquired lands which contain habitat for listed plants would benefit those species by affording the protection of BLM guidelines and regulations.

ROW exclusion and avoidance areas would minimize impacts on listed plant species and their habitats by prohibiting or limiting development. Under the PRMP, the BLM would manage 221,600 acres as ROW exclusion areas, which would not be available for ROW or other reality authorizations. This includes all occupied Parachute penstemon habitat and ACECs containing listed plant species habitat such as: Pyramid Rock, South Shale Ridge, and a portion of Atwell Gulch (2,600 acres). The BLM would manage 779,800 acres as ROW avoidance areas, which includes special status species occupied and suitable habitat.

Effects from Energy and Mineral Management

Energy development is widespread throughout the GJFO planning area, and oil and natural gas development in particular threaten populations of listed plants in the area. Direct impacts associated with fluid mineral development include habitat disturbance, fragmentation, and destruction; as well as direct mortality from construction equipment, land clearing activities, and vehicle use. The construction of access roads, well pads, pipelines, buildings, holding tanks, and other infrastructure associated with oil and gas development can fragment or degrade habitat, and result in indirect effects such as erosion, sedimentation, and establishment of noxious weeds.

Energy development threatens the Colorado hookless cactus, DeBeque phacelia, and Parachute penstemon, as described in detail within these species recovery plans. Energy development could potentially threaten the Ute ladies'-tresses as well; however, no known populations occur within the action area, and hydrology and riparian stipulations would protect potential habitat. For example, along streams and springs possessing lotic riparian characteristics, surface occupancy and surface disturbing activities would be prohibited with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Therefore no adverse impacts to the Ute ladies'-tresses are anticipated.

The GJFO planning area contains approximately 1,444,000 acres of federal mineral estate, of which 961,600 acres are currently open to leasing. The majority of designated critical habitat within the planning area for DeBeque phacelia (19,400 of 19,600 acres), Parachute penstemon (6,500 of 7,100 acres), and Colorado hookless cactus (2,700 of 3,200 acres) is currently leased for oil and gas development. Because stipulations in the Proposed RMP can only be applied to new leases, Condition of Approvals (COAs) would be more effective at limiting potential impacts associated with fluid mineral developments in these areas. For future leases, implementing stipulation NSO-13 would prohibit surface use within current and historically occupied habitat and critical habitat of threatened and endangered plant species.

Effects from Areas of Critical Environmental Concern Management

The BLM would designate 13 ACECs in the GJFO planning area under the PRMP, encompassing 123,400 acres. Of these, Atwell Gulch, Badger Wash, Dolores River Riparian, Juanita Arch, The Palisade, Pyramid Rock, Roan and Carr Creeks, Rough Canyon, Sinbad Valley, South Shale Ridge, and Unaweep Seep are valued for the rare plants (among other resources) which occur within the proposed designation boundaries. These designated areas would be closed to wood harvest, mineral materials sales, and non-energy leasable mineral exploration and development. Other restrictions include travel route closures or limitations, ROW avoidance or exclusion areas, recreation restrictions, surface disturbance stipulations, and fluid mineral leasing closures. As such, known and undiscovered populations of special status species would be protected from surface disturbance and associated impacts within these areas.

Cumulative Effects

Cumulative effects include those of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

The cumulative impacts analysis area (CIAA) for Colorado hookless cactus, DeBeque phacelia, Parachute penstemon, and Ute ladies'-tresses extends outside the planning area and follows fourth-order watershed boundaries that completely or partially overlap the planning area. The fourth-order watersheds were used as the basic unit of analysis because the scope of cumulative influence would be at the watershed scale and is not expected to extend beyond this scale. Noxious weeds can also be dispersed into the planning area by upstream waterways and carried downstream from the planning area.

The majority of the planning area occurs within Mesa County, which has experienced significant population growth since 1987, and population forecasts expect the growth trend will continue (Colorado Division of Local Government, State Demography Office 2013). As such, continued use and development within the planning area is expected to continue. Past, present, and reasonably foreseeable future actions and conditions in the CIAA, both on public and private land, that have affected and will likely continue to affect Colorado hookless cactus, DeBeque phacelia, Parachute penstemon, and Ute ladies'-tresses and other vegetation are as follows:

- Mineral exploration and development
- Agricultural development
- ROW and infrastructure development

- Water diversion and withdrawals
- Livestock Grazing
- Recreation
- Road construction
- Weed invasion and spread
- Prescribed and wildland fires
- Land planning
- Vegetation treatments
- Habitat improvement projects
- Insects and disease
- Drought
- Farming

In general, resource use activities have cumulatively caused habitat removal, fragmentation, increased human presence, and weed spread, whereas land planning efforts and vegetation, habitat, and weed treatments have countered these effects by improving habitat connectivity, productivity, diversity, and health. Surface disturbing activities on private lands are likely to have a disproportionate impact on listed plants, as these populations do not receive the same level of protection as federal lands. Conservation easements with private landowners would help protect these populations. For example, 40 percent of Parachute penstemon occupied habitat (and 69 percent of the plants) are located on designated State Natural Areas under a CNAP agreement between the State of Colorado and a private land owner (USFWS 2013b). This CNAP agreement serves as a significant mechanism for the species recovery. A proposal to designate the Logan Wash Mine site as a Natural Area would provide additional protection to the species and its habitat found in this area.

Continued ROW development on all land ownership types likely to impact the DeBeque phacelia and Colorado hookless cactus. A portion of the designated Westwide Energy Corridor crosses DeBeque phacelia habitat, and 13 percent of critical habitat occurs within this corridor (USFWS 2013a). The corridor also covers 70,142 acres of potential habitat for the Colorado hookless cactus (USFWS 2010a).

Many of these activities create conditions that cause vegetation changes. For example, wildland fire removes vegetation, which makes affected areas more susceptible to weed invasion and soil erosion. Droughts reduce vegetation health, leaving it prone to insect infestation or disease. In general, resource use activities have cumulatively caused vegetation removal, fragmentation, weed spread, soil compaction, and erosion; land planning and vegetation and weed treatments have been implemented to counter these effects by improving

vegetation connectivity, productivity, diversity, and health. Climate change in the CIAA could increase or decrease temperatures and precipitation. This would affect soil conditions, vegetation distribution, water flows, water quality, and water temperature (Ficklin et al. 2010; Lenihan et al. 2003; McKenney et al. 2007; Hamann and Wang 2006). Such changes would alter the conditions to which vegetation communities are adapted, potentially creating conditions that favor certain species or communities, weeds, or pests (Hellmann et al. 2007). Recreation has emerged as an ever-increasing pursuit in the planning area and is expected to increase. Popular and common pursuits in the planning area are rafting, boating, hunting, fishing, hiking, camping, skiing, rock climbing, mountain biking, and four-wheeling. Levels of impact are related to the duration, intensity, and expanse of recreation, and are expected to increase with increased visitation.

Under the PRMP impacts on listed plants and their habitat would be minimized to the extent practical and feasible through compliance with the ESA and BLM Manual 6840, restrictions, stipulations, closures to mineral exploration and development, recreation, motorized travel, designation of ACECs to protect certain special status species, COAs, and by concentrating development in previously disturbed areas. Habitat conditions would be improved through treatments, weed prevention and control, acquisition of water rights, use of prescribed and wildland fire, forestry management, and grazing management.

4.2.2 Fishes

The following analysis was combined to include all five listed fish species: Colorado pikeminnow, bonytail, humpback chub, razorback sucker, and green lineage cutthroat trout. Effects which may differ for individual species are clarified in the text.

Assumptions and Methods of Analysis

The following assumptions apply throughout the assessment of effects of the proposed action on the five listed fishes (Colorado pikeminnow, bonytail, humpback chub, razorback sucker, and green lineage cutthroat trout):

- Some actions may benefit one species while having a negative or beneficial impact on another.
- Maintaining high quality habitat conditions would have some influence on reducing the severity of outbreaks and subsequent losses from diseases. But the prevalence in the environment of various diseases could not be fully controlled, particularly at chronic levels of occurrence.
- Impacts on fish are based on the following cause and effect premise:
    - Exposure—The likelihood that a given stressor will affect a given species

  - Stressor—The portions of an action that may cause some sort of a reaction by the species
  - Response—The negative, positive, or neutral response of the species to the stressor

- Unless otherwise noted, short-term impacts are defined as impacts expected to last two years or less; long-term impacts are defined as impacts expected to last longer than 2 years.

- Although recent studies distinguish true greenback cutthroat trout populations from green lineage cutthroat trout populations, both are treated the same in terms of management and protection. As such, if an action may affect a green lineage cutthroat trout population, then initiation of Section 7 consultation is appropriate.

The following primary impacts for the listed fish species and their habitats are the focus of the effects analysis:

- Water quality alteration—Actions, activities, or accidents (spills and leaks) that could alter important water quality parameters, such as pH, dissolved oxygen, temperature, alkalinity, and turbidity
- Direct mortality—Sublethal effects of stress, reduced recruitment, and reduced quality and quantity of food
- Water depletions—Loss of physical habitat, reduced water quality, increased sedimentation, loss of habitat structure and complexity, reduced recruitment, reduced food quality and quantity, disease, and stress
- Introduction and spread of aquatic nuisance species or disease vectors—Competition for resources, displacement, predation, reduced recruitment
- Direct mortality—Potential direct mortality of eggs, larvae, and adults of fish in low-water crossing areas

Conservation Planning (as Relates to Section 7[a][1] of the ESA

The goals for biological resources management, including ESA-listed species, in the PRMP are summarized in **Table 2-1** of this BA. Additionally, **Table 2-1** includes the objectives, actions, and conservation measures proposed to achieve the goals. The PRMP is primarily a landscape-level, programmatic-level document. The stipulations, conservation measures, and BMPs described below for listed fishes are not comprehensive. New conservation measures may be developed at the project level.

Objectives

The following objective from the PRMP is directly related to listed fish species (see **Table 2-1**):

- Maintain or improve the quality of listed (threatened or endangered) fish and sensitive fish habitat by managing public land activities to support species recovery and the benefit of those species.

Actions and Surface Disturbance Restrictions

Seven actions and surface disturbance restrictions directly related to listed plant species are included in the proposed plan (**Table 2-1**):

- Identify limiting habitat factors based on site characteristics and habitat capabilities using channel type and geology classifications (e.g., Rosgen). Upon identification of limiting factors, prioritize and implement proven river, stream, lake, and riparian practices (e.g., in-channel habitat structures to create pools, riparian plantings) or by changing management of other program activities (e.g., changing livestock grazing season use) to achieve desired future condition.
- Designate the following ACECs to protect habitat for unique, sensitive, and listed fish (see ACECs section for management prescriptions):
    - Roan and Carr Creeks: green lineage cutthroat trout *(Oncorhynchus clarkii)*.
- While maintaining desired levels of access, identify and reroute or close and rehabilitate redundant, duplicative, or poorly constructed routes to reduce point sources of erosion and resulting sedimentation and turbidity impacts within watersheds containing known Colorado River and Greenback cutthroat trout populations. Focus on routes within closest proximity to occupied streams.
- Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures. Refer to **Table 2-1** for details.
- No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major rivers: Colorado, Dolores, and Gunnison.
- Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone. (Refer to Appendix B of the PRMP.)

- Manage the Roan and Carr Creeks ACEC as a ROW avoidance area to protect special status fish species' habitat.

Colorado Standards for Public Land Health

Colorado Public Land Health Standards are applied on a landscape scale (Appendix E of the PRMP). Of the five listed standards, Standards 2, 4, and 5 would directly apply to conservation of listed fish species within the GJFO planning area. Standard 2 applies to recovery of properly functioning lentic and lotic waters from disturbances such as fire, overgrazing, and floods. Standard 4 establishes standards for protecting and enhancing special status, threatened, and endangered species (federal and state), including big river fish. Standard 5 applies to all water bodies, including groundwater on or influenced by BLM lands, to achieve or exceed the water quality standards established by the State of Colorado. Water quality standards for surface water and groundwater include the designated beneficial uses, numeric and narrative criteria, and antidegradation requirements set forth under 5 Colorado Code of Regulations 1002-8, as required by Section 303(c) of the Clean Water Act.

BMPs for Management Actions

Appendix H of the PRMP includes a number of standard operating procedures and BMPs that would directly or indirectly benefit listed fish species by protecting soils, water resources, riparian habitat and wetlands, fish and wildlife management, and special status species.

Direct and Indirect Effects

There would be no effects on threatened and endangered fish species from air and climate resources; wild horse management; cultural resources, paleontological resources, visual resources, lands with wilderness characteristics, wild and scenic rivers, National Trails, national, state, and BLM byways; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Water Depletion Programmatic BAs

The BLM has determined, and the USFWS has concurred, that any water depletions in the Colorado River Basin are likely to adversely affect the four endangered Colorado River fishes and their critical habitats (BLM 2008a, 2008b; USFWS 2008, 2009a). Two programmatic BAs assessed the effects of activities administered by the BLM across eight administrative units and field offices in western Colorado that could deplete water from the upper Colorado River Basin. One BA assessed the BLM's fluid mineral program and consists of ongoing and projected fluid mineral development administered by the BLM in western Colorado including all federal natural gas wells, oil wells, and coalbed methane natural gas wells including split estate (BLM 2008b). This BA addressed water depletion activities such as: water used for access road dust abatement, water used for hydrostatic testing of new pipelines, water used to drill and complete wells, water associated with connected federal actions, and water use associated

with seismic activity. The second BA (BLM 2008a) addressed all other water depleting projects including impoundments, diversions, water wells, pipelines, and spring developments.

These programmatic BAs cover most BLM activities in the action area. Therefore, the impact analysis contained in them is incorporated here by reference. The following impact analysis addresses only impacts not included in the two programmatic BAs. These BAs did not assess the effects of water depletions on the green lineage cutthroat trout; those effects are discussed below.

Effects from Soil Management

Stipulations, BMPs, and other conservation actions related to soils management would benefit the five listed fish species by reducing erosion and sedimentation potential. These measures would be particularly beneficial to populations of green lineage cutthroat trout which are more susceptible to increased sediment and turbidity. Increased sediments in the cutthroat trout streams can reduce dissolved oxygen, raise stream temperature, and can cover spawning and rearing areas, thereby reducing the survival of fish embryos and juveniles (US Forest Service 2009). Excessive sedimentation can also fill in important pool habitats, reducing their depth and making them less usable. Pool habitats are important as over-summer and over-winter thermal refuge areas and, when coupled with stream-flows, are often a limiting factor in many cutthroat trout streams. While impacts on the sediment-tolerant big river fish species would not be as pronounced as those on the green lineage cutthroat trout, increased turbidity and altered flow regimes can still result in impacts. Sediment loads beyond what water volumes can effectively and efficiently move can restrict channel width, reduce side-channel formation and maintenance, and result in reduced numbers and depth of important microhabitats such as backwaters. In general, sediment loads out of balance with flow regimes can result in reduced habitat complexity and diversity and reduce habitat quality for these species.

High concentrations of selenium may adversely affect listed fish species. Selenium is a natural trace element that is a component of certain sedimentary deposited soils, primarily Mancos shale, a common formation in parts of western Colorado, and is a known water quality problem for the Colorado pikeminnow, bonytail, humpback chub, and razorback sucker. The Mancos shale formation occurs within the planning area, and experiences substantial instability. Selenium becomes an issue when upon saturation, it leaches into water. In larger rivers, it becomes concentrated and accumulates in low to zero velocity habitats and enters the food chain. Historic agricultural practices in particular have resulted in the Colorado River having higher than desired levels of selenium. Selenium concentrations of 4.9-7.0 µg/g dry weight in whole body fish from the Colorado River basin have been among the highest in the nation (Hamilton et al. 2002). Selenium bioaccumulates in fish tissue primarily via the consumption of food resources that contain elevated levels of the compound.

All of the endangered big river fish species are at increased risk because they are all long lived species which increases bioaccumulation potential. Colorado pikeminnow are especially at risk given their piscivorous (fish eating) nature and status as the top predator. High selenium levels can affect reproduction and recruitment (Lemly 2002; Sorensen 1991). Tissue samples taken from Colorado pikeminnow in the Colorado River near Grand Junction, CO showed selenium levels to be above the recommended toxicity threshold of 4 parts per million in the majority of fish (Osmundson et al. 2000).

Approximately 171,900 acres of potentially unstable Mancos shale areas were mapped throughout the planning area, the majority of which occurs north of Interstate 70. One of the objectives for soil management included within the PRMP is to "minimize or control elevated levels of salt sediment, and selenium contribution from federal lands to river systems in the planning area." Protective soil program stipulations would help to eliminate and reduce potential impacts. For example, CO-CSU-Geology Soil would restrict all surface disturbing activities on fragile soils and mapped Mancos shale and saline soils. This could include special design, construction, and implementation measures, including relocation of operations by more than 200 meters (625 feet). This stipulation would apply to 481,600 acres, and would reduce the potential for selenium and salt contributions into the major waterways due to anthropogenic activity. CO-NSO-Geology Slope would prohibit surface occupancy and use on lands with steep slopes greater than or equal to 40 percent. This stipulation would encompass 347,700 acres, and protect inclined slopes which are particularly vulnerable to accelerated erosion. These measures, in combination with BMPs and other soil and geology stipulations, would help minimize or control elevated selenium levels. Selenium leaching is a naturally occurring process within the planning area, and is expected to continue. However, implementation of the RMP is not expected to increase selenium contributions beyond current conditions. Soil management is not anticipated to adversely affect the five listed fish species.

Effects from Water Resource Management

To protect, preserve, and enhance watershed functions, the PRMP would implement BMPs, NSO stipulations, and other conservation measures within or near streams and rivers. Activities such as energy development, road use, active pipeline rights-of-ways, and other construction activities can alter water quality by way of spills, leaks, or vehicular accidents. Impacts on fish species can range from sub-lethal (stress, reduced feeding behavior, reduced breeding success and recruitment), to direct mortality of individuals or populations. To protect water quality, operators would utilize standard operating procedures and BMPs as described in Appendix H of the RMP. These include but are not limited to: using closed loop drilling systems, containing flowback and stimulation fluids in tanks on well pads with secondary containment mats/blankets, and collecting baseline water quality data from downstream fresh water sources prior to drilling, mining, or storage of potentially harmful substances. Specific stipulations which

limit or restrict surface disturbing actions within stream corridors would also reduce the risk of water quality impairments (e.g. spills, leaks, fine sediments, and other contaminants).

Water depletion activities would result in adverse effects to the four big river listed fish species. The primary actions and activities that result in water depletions include construction of water impoundments (stock ponds, reservoirs), water diversions for agricultural and domestic uses, water use associated with natural gas development, and fire suppression. Effects to the four big river endangered species were analyzed in the two BAs for water depletion activities in western Colorado (BLM 2008a; BLM 2008b). The BAs concluded and the USFWS concurred that any water depletion activities would have an adverse effect of these four fish species.

Water depletions would also affect green lineage cutthroat trout populations. Reduced flow can result in increased water temperatures, reduced food supplies, reduced habitat complexity and diversity, and a loss of carrying capacity. Important microhabitats such as spawning bars and pools can be lost or altered. Reduced flows can result in habitat fragmentation and limit movement of cutthroat between preferred habitats. Holding habitats (pools) can be reduced in size and become less useable by fish or amphibians. Fish that congregate in limited pool habitats for long periods can incur increased stress and susceptibility to disease. However, the green lineage cutthroat trout is a headwater species; therefore, water depletions along the Colorado, Gunnison, and Dolores Rivers would have no effect. Activities resulting in water depletions from headwater streams where green lineage cutthroat trout are known or believed to occur would require separate consultation with the USFWS.

Effects from Vegetation Management

Vegetation management under the PRMP includes mechanical treatments, hand thinning, prescribed fire, and herbicide use. The types of effects on listed fish species from vegetation management include loss or reduced streamside vegetation cover, sediment transport, increased turbidity, and incidental exposure to herbicides.

Impacts on listed fish species associated with weed management were analyzed in the BA for Programmatic Integrated Weed Management (BLM 2010b). The standard operating procedures and conservation measures identified in this document would help to protect the listed fish species from incidental herbicide exposure. The BA determined and the USFWS concurred that the Integrated Weed Management Plan may affect, but is not likely to adversely affect the green lineage cutthroat trout, Colorado pikeminnow, razorback sucker, bonytail, and humpback chub. This BA tiers to the 2010 Programmatic Integrated Weed Management Plan BO.

Loss of streamside vegetation cover and increased sedimentation and turbidity may occur as a result of vegetation treatments. However, these impacts would

generally be short term and minor. The minimal amount of sediment transport that could result from vegetation management would be undetectable and well within the background levels carried by the Colorado or Gunnison Rivers, and would therefore have no adverse effect on the four listed fish species within these water bodies. Short-term impacts associated with streamside vegetation treatments would have a greater effect on green lineage cutthroat trout. However, vegetation management actions would emphasize healthy riparian vegetation systems capable of capturing sediment and providing forage habitat. As such, vegetation management would have long-term benefits to green lineage cutthroat trout.

Effects from Fish and Wildlife Management

Fish and wildlife management would benefit the five listed fish species which occur within the planning area by applying stipulations and other actions which protect steam channels and river corridors. In-channel stream work TLs would help protect fish species during spawning, egg incubation, and fry emerging seasons. Additionally, NSO stipulations within 400 feet (for fluid mineral activities) or 0.25-mile (all other programs except fluid minerals) of the ordinary high-water mark (bank-full stage) of the major river corridors, would reduce sedimentation potential.

Effects from Special Status Species Management

Special status species management would benefit the listed fish species. Conservation actions and stipulations as described throughout this analysis (e.g., NSO stipulations, ACEC management, route closures) would work towards maintaining or improving the quality of listed fish and sensitive fish habitat by managing public land activities to support species recovery and the benefit of those species.

Effects from Wildland Fire Management

Fire management in the GJFO is guided by the Fire Management Plan for the Colorado National Monument and BLM Grand Junction Field Office (BLM 2008c). Effects to special status species (including listed fish) were analyzed in the Environmental Assessment prepared by the BLM, and are incorporated by reference. In summary, mitigation will provide for the protection of ponds, live streams and their attendant riparian areas by precluding all equipment, fire lines and all other unnecessary disturbance from the area including a buffer area (determined on a case-by-case basis) during firefighting activities (subject to exceptions). Short-term effects from ash runoff and sedimentation can occur; however, long-term adverse effects on listed fish species are not anticipated.

Water withdrawals used in combating fire could alter the hydrologic regime of aquatic systems, affecting special status fish species in the GJFO and downstream.

Effects from Forestry Management

Effects from forestry management are similar to those discussed under vegetation management. Closing wood harvesting in ACECs, the Palisade watershed, municipal watershed, and other areas identified in the PRMP would limit sediment transport to nearby stream systems. Impacts on listed fish species would be short-term and minor.

Effects from Livestock Grazing Management

Under the PRMP, 960,500 acres of land would be open to livestock grazing, which includes lands adjacent to streams and rivers utilized by listed fish species. Livestock often use riparian areas for water and shade, which may cause greater impacts in these areas. Concentrating livestock in these areas could alter stream functionality and vegetation structural diversity. The loss or reduction of streamside vegetation can decrease available aquatic cover, increase water temperatures, and reduce the availability of insects to feed fish and other aquatic wildlife. Additionally, livestock use near riparian areas can contribute to the spread of invasive weed species downstream, thus increasing the fuel load.

Livestock grazing could change aquatic habitat connectivity by altering bank stabilization and water quality in certain areas. Water developments near tributary creeks could affect the hydrologic regime of these systems by withdrawing water. Range improvements, including the construction of stock ponds, could promote vegetation loss, soil compaction, and erosion in the areas around the ponds. However, depending on the placement of stock ponds, new livestock water sources may draw livestock away from existing natural water features and sensitive riparian habitat that have vulnerable soils.

Under the PRMP, the BLM would periodically evaluate possible livestock grazing closures on allotments or potions of allotments should major impacts on sensitive species (including fish) occur. Specific allotments identified as closed to grazing would benefit green lineage cutthroat trout in areas such as Brush Creek.

Effects from Recreation and Travel Management

Recreation in riparian areas and waterways could alter aquatic wildlife movement patterns. Use of trails to access fishing along streams or lakes could compact soil, exacerbate erosion and sedimentation into waterways, and reduce vegetation cover. The spread of aquatic disease vectors is also of concern: fishing equipment and boats can provide a means for transporting parasites to previously unaffected habitats.

Green lineage cutthroat trout are susceptible to whirling disease: a parasite-caused condition which can limit recruitment and long-term population persistence, and can result in mortality. The parasite is difficult to eradicate once established in a previously unexposed aquatic ecosystem (Nehring et al. 2005). The PRMP would implement measures to reduce the chance of spreading whirling disease. Specifically, all equipment associated with actions permitted by

the BLM (including but not limited to Special Recreation Permits) conducted within or near perennial water source previously used in water bodies with known invasive species would be treated with accepted disinfection practices prior to launch.

Travel on routes can present a high risk of sediment impacts on aquatic fish species, including green lineage cutthroat trout. Sediments of less than 1 millimeter can impact spawning habitat and reproductive success for fish species that spawn in gravel substrates. Tiny sediments can fill the interstitial spaces in spawning gravels and reduce the flow of oxygenated water to developing embryos, which decreases survival (Quinn 2005). Although sediments and turbid waters may provide cover from predators for sediment-tolerant species, including razorback sucker (Johnson and Hines 1999), too much sediment could negatively impact spawning success of other fish species.

Travel routes may cross water bodies; these routes often require in-channel structures such as culverts and bridges, which remove aquatic habitat and may be barriers to fish passage (Bryant 1981; Barrett et al. 1992). By designating zero acres as open to cross-country motorized travel within 100 feet of perennial streams, and by closing an additional 260 acres of land within 100 feet of perennial streams to motorized travel, the Proposed RMP would decrease impacts on green lineage cutthroat and big river fish and their habitat over the long term.

Riparian areas and waterways are popular recreation spots, and demand for access (e.g., more roads) to these areas is expected to increase over the long term. This would cause greater impacts on aquatic species. Some species may adapt to disturbances over time and could recolonize disturbed habitats. Impacts are more likely to occur in easily accessible areas, where visitation would be high and concentrated.

Effects from Lands and Reality Management

Impacts on listed fish species from lands and reality management would depend on the location and extent of the activity. ROW authorizations in proximity to or upstream of waterways with occupied listed fish species could result in increased sedimentation and turbidity; however, these impacts would typically be site specific and small in scale. ROW exclusion areas would be designated on 221,600 acres, including the majority of the Dolores River Canyon. ROW avoidance areas would be designated on 779,800 acres, including the Roan and Carr Creeks ACEC (which contain green lineage cutthroat trout populations), and floodplains. These measures would reduce lands and reality impacts on listed fish species and their habitats.

Effects from Energy and Mineral Management

Impacts on the four big river endangered fish species resulting from increased sediment and turbidity associated with energy development projects would be minor. Any fluid mineral or other energy activity which results in water

depletions would have adverse effects on these species; these activities and effects are addressed in the Programmatic BA and BO for Water Depletions Associated with Bureau of Land Management's Fluid Mineral Program within the Upper Colorado River Basin in Colorado (BLM 2008b).

The effects of sedimentation and increased turbidity would be more likely to affect populations of green lineage cutthroat trout. Actions that result in ground disturbance including the construction of well pads, pipelines, compressor stations, settling ponds, and access roads, can increase soils available for offsite transport and increased sedimentation and turbidity in streams. NSO-2 would prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). This measure would limit impacts associated with unleased fluid mineral development on green lineage cutthroat trout populations and habitats.

Effects from Wilderness Study Area Management

Designating additional WSAs is not being considered under the PRMP. Four existing WSAs occur within the planning area: Demaree Canyon (22,700 acres); Little Book Cliffs (29,300 acres); The Palisade (26,700 acres); and Sewemup Mesa (17,800 acres). Continued management of the four WSAs within the planning area would benefit green lineage cutthroat trout in nearby aquatic systems by implementing more restrictive use stipulations and actions (such as closing these areas to motorized and mechanized travel).

Effects from Areas of Critical Environmental Concern Management

The BLM would designate 13 ACECs in the GJFO planning area under the PRMP, encompassing 123,400 acres. Of these, Dolores River Riparian, Roan and Carr Creeks, and Rough Canyon are valued for the rare fish species (among other resources) which occur within the proposed designated boundaries. These designated areas would be closed to wood harvest, mineral materials sales, and non-energy leasable mineral exploration and development. Other restrictions include travel route closures or limitations, ROW avoidance or exclusion areas, recreation restrictions, surface disturbance stipulations, and fluid mineral leasing closures. As such, listed fish species (primarily green lineage cutthroat trout in the Roan and Carr Creeks ACEC) which occur in these waterways would benefit from ACEC management.

Cumulative Effects

Cumulative effects under the ESA are the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in the cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

The CIAA for the five listed fish species extends outside the planning area and follows fourth-order watershed boundaries that completely or partially overlap the planning area. This includes private and state lands and accounts for cumulative effects associated with water depletions outside the planning area.

Declines in the abundance or range of these fish species have been attributed to various human activities on federal, state, and private lands. These activities are expanding human population and associated infrastructure development; constructing and operating dams along major waterways; water retention, diversion, or dewatering of springs, wetlands, or streams; recreation, including off-road vehicle activity; expanding agricultural and grazing activities, including altering or clearing native habitats for domestic animals or crops; and introducing nonnative plant, wildlife, or aquatic species.

These types of activities can alter native habitats. When nonnative fish are introduced, they can prey on young listed species or outcompete them for space, optimal habitats, and food. Many of these activities are expected to continue on lands in the range of these fish species and could contribute to cumulative effects on these species in the analysis area.

Water diversions began when the first white settlers to the region began to manage water for human uses, including irrigation for crops, livestock, and domestic uses. As population centers in the planning area and beyond continued to grow and expand, water demand increased. Western Colorado is considered water rich, compared to the Front Range population center of Colorado, where water is more limited. Several dams and reservoirs and large trans-mountain/basin water diversions were constructed to take water from headwater streams in the Colorado River Basin and move it through the Continental Divide to Front Range municipalities. The GJFO has been and will continue to be affected by irrigation and drinking water diversions. Reservoir operations have affected water supply, aquatic conditions, and timing. Irrigation rights are expected to continue being bought and sold in the future, with some new property owners informally changing how the right was historically used. Due to population growth and land sales, more agricultural water rights may be converted to municipal and industrial uses. Future oil shale development could also result in water diversions. Impacts associated with water depletions include habitat alteration, sediment aggradation, reduced spawning habitat and habitat complexity and diversity, and loss of important microhabitats, including backwaters, flooded bottomlands, and side channels.

Introductions of nonnative fishes were common in the late 1800s and throughout the 1900s. Several species were stocked as sport fish and for food production, including rainbow trout, brown trout, brook trout, and Snake River and Yellowstone cutthroat trout. In addition, purposely or accidentally, other species have made their way to the west slope of Colorado. Examples are fathead minnows, white suckers, longnose suckers, channel catfish, and

smallmouth bass. Nonnative species often outcompete native species where they commingle. These species can also prey on native fishes, and in other cases, nonnative fishes of the same genus or subspecies can hybridize with native species, reducing their genetic integrity and fitness. This is particularly common in the sucker species. Nonnative fish stocking is much more limited today, as emphasis has shifted to native species management. However, this impact that started a hundred years ago will continue to be a problem throughout the life of the RMP.

Land management actions and activities have been ongoing since the settling of the West. Fire suppression, logging, recreation use, livestock grazing, mining, natural gas development, native rangeland conversion to agriculture, road construction, pipelines, power lines, railroads, and ever-increasing urban sprawl have all resulted in cumulative impacts on watersheds that contain aquatic species. Impacts are habitat alteration, streamside vegetation cover reduction, water quantity and quality impacts, and site-specific increases in sediment and turbidity. It is many of these actions that resulted in select species having been designated as special status, as populations have declined and habitats for these species have been altered.

Elevated selenium concentrations also present a risk to the listed fish species by affecting reproduction and recruitment. While selenium leaching is common within the planning area due to the naturally occurring Mancos shale formations, historic agricultural practices have resulted in both the Gunnison and Colorado rivers having higher than desired level of selenium. Extensive irrigation activities which occur on Mancos shale formations (particularly east of the Uncompahgre Valley and on the western half of the Grand Valley) are likely to continue contributing to selenium leaching, along with non-anthropogenic soil erosion.

Another emerging issue is the effect of a changing climate. This could impact special status aquatic species and their habitats by reducing suitable habitat, changing distributions, and altering food webs and water quality (temperatures). These fish are cool-water/warm-water species, and while there certainly can be effects, most research has focused on potential effects on cold-water species, such as cutthroat trout. Scientists predict that there will be an increase in the severity and frequency of droughts, floods, and wildfires, as well as changes in the timing of snowmelt and peak flows (Isaak et al. 2010; Haak et al. 2010; Rieman and Isaak 2010; Wenger et al. 2011).

Changes in timing of snowmelt and peak flows could also affect spawning times and breeding and recruitment success for these fish. Wildfire frequency and intensity could result in select debris and ash flows; these have been shown to impact these fish in select locations. Drought frequency and severity could further reduce flows, which, when coupled with other water depleting activities, could result in cumulative effects on these species. There are many unknowns about potential impacts and their likelihood. Managing habitats to their full

potential will help to reduce the potential effects of climate change on these species.

4.2.3 Terrestrial Wildlife—General

Assumptions and Methods of Analysis

Impact analyses and conclusions are based on interdisciplinary team knowledge of resources and relevant data and on the professional judgment of experts in and outside the BLM. Impacts were quantified where possible, and in the absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if quantitative data were not necessary or available.

The following assumptions were used in the analysis of impacts on all special status terrestrial wildlife species.

- Maintaining high quality habitat conditions would have some influence on reducing the severity of outbreaks and subsequent losses from diseases, but the prevalence in the environment of various diseases cannot be fully controlled, particularly at chronic levels of occurrence.
- Significant modifications to habitat suitability can affect the survivability and viability of populations (e.g., higher winter mortality and reduced reproductive success).
- Impacts on special status terrestrial wildlife populations and habitat are not discrete since actions may benefit one species while having an adverse impact on another.
- Impacts from displacing wildlife would be greater for special status species that have limited habitat or a low tolerance for disturbance.
- In the context of this analysis, "avoidance by wildlife" means reduced use, not absence of use by wildlife.
- The CPW would continue to manage wildlife populations.
- The BLM would continue to manage wildlife habitat, in coordination with the CPW. The BLM is not restricted from making reasonable land management decisions within the framework of multiple use management, applicable laws, policy, and supplemental guidance.

Impacts on special status wildlife species and their habitat would be considered significant if the following were to occur:

- Disturbance or loss of terrestrial habitat, food supplies, cover, breeding areas, and other habitat components to a degree considered essential to the local populations for population maintenance.

- Disturbance or loss of seasonally important habitat, such as critical for overwintering or successful breeding, to the degree considered essential for maintenance of the local population.
- Interference with the movement patterns of a species to the extent that it decreases the ability of the species to breed or overwinter successfully to a degree considered essential for maintenance of the local population.
- Special status species objectives are not achieved.

4.2.4 Mexican Spotted Owl

Assumptions and Methods of Analysis

Suitable habitat exists for Mexican spotted owl in the GJFO, but the species has not been observed there. The closest designated critical habitat for the species is approximately 30 miles southwest of the GJFO boundary, in the San Juan Mountains of Utah. Therefore, impact analysis is based on how the PRMP would directly or indirectly maintain the condition of habitat that is potentially suitable mixed-conifer forest habitat and offer protections for the species should it occur in the GJFO.

Conservation Planning (Section 7 [a][1] of the ESA)

The goal of biological resources management (including for ESA-listed species) in the PRMP is summarized in **Table 2-1**. The goals for protecting special status wildlife species, including Mexican spotted owl, are also presented in **Table 2-1**. The goals presented there are the same for all ESA-listed species considered in the PRMP and this BA. Additionally, **Table 2-1** includes the objectives, management actions, and conservation measures of the BLM proposed plan to achieve the goal.

The PRMP is primarily a landscape-level, programmatic-level document. The stipulations and conservation measures for the Mexican spotted owl and the BMPs described in Appendix H are not comprehensive. New conservation measures may be developed at the project level. Surveys not associated with specific projects would be conducted in suitable habitat as funding and time allows.

Objectives

There are no objectives specific to Mexican spotted owl in the proposed plan; however, the species habitat would benefit from objectives directed towards the protection of all special status species and their habitat as detailed in Chapter 2 of the EIS as well as management actions for ponderosa pine and spruce/fir habitats.

Actions and Surface Disturbance Restrictions

There are no actions specific to Mexican spotted owl in the proposed plan; however, the species habitat would benefit from actions and stipulations

directed towards the protection of all special status species and their habitat as detailed in Chapter **Table 2-1**.

Colorado Standards for Public Land Health

The Colorado Public Land Health Standards are applied on a landscape scale and relate to the potential of the landscape (Appendix E of the PRMP). Of the five standards listed, Standards 1, 3, and 4 would directly apply for promoting the conservation of Mexican spotted owl habitat. Specifically, Standard 1 applies to the desire for upland soil moisture conditions to sustain optimal plant growth and vigor for vegetation. This would then support healthy habitats. Standard 3 promotes the health of native plant and animal communities at the community and population levels. Standard 4 establishes BLM standards for protecting and enhancing special status, threatened and endangered species (federal and state), and other species.

BMPs for Management Actions

Appendix H of the PRMP includes a number of standard operating procedures and BMPs applicable to the management actions proposed under the PRMP. The BMPs and conditions of approval described in Appendix H that would benefit Mexican spotted owl habitat are those aimed at protecting soils, vegetation, and special status species. No BMPs specifically address Mexican spotted owl.

Direct and Indirect Effects

There would be no impacts on Mexican spotted owl from air and climate resources; wild horse management; cultural resources; paleontological resources; visual resources; lands with wilderness characteristics; land tenure and land use; wild and scenic rivers; wilderness study areas; National Trails; national, state, and BLM byways; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Soils Management

In general, actions related to soils management would strive to maintain or improve soil productivity, including retention of topsoil quality and reestablish soil capability, potential, and functionality when disturbed. As a result, Mexican spotted owl habitat would benefit from reduced erosion and sedimentation and increased water infiltration, which would generally maintain or improve habitat.

Effects from Water Resource Management

Decisions related to water resource management would work towards protecting, preserving, and enhancing the watershed function. Stipulations which restrict or prohibit surface disturbing activities within stream corridors would help to maintain potential habitat for the Mexican spotted owl and its prey.

Effects from Vegetation Management

Desired vegetation management objectives emphasize perpetuating late- to mid seral plant communities that provide suitable habitat for wildlife. Ponderosa

pine, Douglas-fir, and spruce/fir communities would be managed to mimic natural stand conditions and natural regeneration. Vegetation treatments may occur within suitable habitat for the Mexican spotted owl. However, because no individuals are known to occur within the planning area, no impacts are anticipated. Vegetation management would increase stand resilience to beetles and disease, which would promote long-term forest health. Current acreage of old growth pinyon juniper would be maintained and old growth woodlands would be managed as ROW avoidance areas. Maintaining plant communities (particularly those with late-seral characteristics) would benefit Mexican spotted owl habitat.

Effects from Fish and Wildlife Management

In general, fish and wildlife management would improve and maintain habitat throughout the decision area. Applying stipulations to reduce or mitigate surface-disturbing activities within wildlife corridors and wildlife priority habitats would likely benefit Mexican spotted owl habitat and habitat for prey species.

Effects from Special Status Species Management

Actions and stipulations proposed for the benefit of special status species would provide short and long-term benefits to Mexican spotted owl. Effects from special status species management are similar to those described under Effects from Fish and Wildlife Management.

Effects from Wildland Fire Management

Direct effects to Mexican spotted owl habitat as a result of prescribed or wildland fire would include degradation or loss. The effects of wildfire would depend on the severity and extent of the fire. A large fire that would require extensive suppression operations, such as large-scale staging areas and fire-line construction, could result in long-term effects to Mexican spotted owl habitat within the planning area. Fire or fire suppression activities which result in the loss of mature trees, snags, or canopy cover would have the greatest impact on suitable habitat.

Prescribed burning could also affect habitat by changing the vegetation structure. Common features associated with roosting and nesting habitat include large trees, multistory canopies, standing dead trees, uneven-tree stands, and tree canopy creating shade over 40 percent or more of the ground cover. Prescribed burning could have short term impacts on Mexican spotted owl habitat by removing these roosting and nesting components; however, long-term benefits would include increased vegetation diversity with more productive prey base over time.

Effects from Forestry Management

Effects from forestry are similar to those described under Vegetation Management. Forestry practices would utilize a variety of silvicultural techniques and harvest systems to manage for healthy forests and woodlands while offering

a variety of forest products and meeting other resource objectives. No long-term adverse effects from forestry management are anticipated.

Effects from Livestock Grazing Management

Livestock grazing and wild ungulate management which results in heavy to severe utilization levels can reduce stubble height which serves as a food source and protective cover for Mexican spotted owl prey species such as voles (Birney et al. 1976; Getz 1985; Peles and Barrett 1996). The PRMP includes measures which allow for changes in livestock use through allotment management plans, grazing use agreements, and terms and conditions on grazing permits for priority allotments based on the current prioritization process and/or land health issues. As such, no long-term adverse effects to Mexican spotted owl habitat from livestock grazing management are anticipated.

Effects from Recreation and Travel Management

Recreation activities such as OHV use can disturb soil and vegetation and contribute to the spread and establishment of noxious weeds, which would degrade potential owl habitat. Other dispersed recreational activities such as fishing, hiking, and camping would have minimal disturbance to potential habitat.

Effects from Lands and Realty Management

The nature and type of impacts on Mexican spotted owl habitat from land tenure and land use authorizations would be similar to those described under Vegetation Management. ROW exclusion and avoidance area designations would limit impacts on potential habitat. Old growth forest and woodlands serve as potential habitat for the Mexican spotted owl; these areas would be managed as ROW avoidance, which would limit the number of land use authorizations which could potentially fragment or degrade suitable habitat.

Effects from Energy and Minerals Management

Energy development activities, such as construction of well pads, pipelines, and access roads could impact potential Mexican spotted owl habitat within the planning area by means of habitat removal or alteration (e.g. removal of trees, snags, logs and shade canopy). Impacts on potential habitat would be reduced by implementing a CSU within old growth forests.

Effects from Areas of Critical Environmental Concern Management

The BLM would designate 13 ACECs in the GJFO planning area under the PRMP, encompassing 123,400 acres. These designated areas would be closed to wood harvest, mineral materials sales, and non-energy leasable mineral exploration and development. Other restrictions include travel route closures or limitations, ROW avoidance or exclusion areas, recreation restrictions, surface disturbance stipulations, and fluid mineral leasing closures. Where these ACEC's overlap potential habitat these actions would help to further protect owl and prey habitat.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

Historically, the cumulative effects of wildland fires, timber extraction, ski-area development, urban development, and road construction have reduced the abundance of old-growth spruce-fir forest, which has affected Mexican spotted owl and its prey. Such activities are likely to continue in the future; however, those activities which occur in the planning area are not likely to have a great impact on the species, as limited suitable habitat occurs within the GJFO boundary.

4.2.5 Canada Lynx

Assumptions and Methods of Analysis

Canada Lynx have been recorded on US Forest Service-administered lands adjacent to the GJFO planning area. However, primary habitat for the species occurs only in small pockets on high-elevation BLM lands, and suitable habitat within the planning area is limited. Therefore, impact analysis is based on how the PRMP would directly or indirectly maintain the condition of habitat that is potentially suitable and offer protections for the species should it occur in the GJFO.

Conservation Planning (Section 7 [a][1] of the ESA)

The goal of biological resources management (including for ESA-listed species) in the PRMP is summarized in **Table 2-1**. The goals for protecting special status wildlife species, including the Canada lynx, are also presented in **Table 2-1**. The goals presented there are the same for all ESA-listed species considered in the PRMP and this BA. Additionally, **Table 2-1** includes the objectives, management actions, and conservation measures of the BLM proposed plan to achieve the goal.

The PRMP is primarily a landscape-level, programmatic-level document. The stipulations and conservation measures for the Canada lynx and the BMPs described in Appendix H of the PRMP are not comprehensive. New conservation measures may be developed at the project level.

Objectives

The following objective from the PRMP directly relates to the Canada lynx (see **Table 2-1**):

- Maintain and improve BLM-managed portions of Lynx Analysis Units for Lynx habitat

Actions and Surface Disturbance Restrictions
The following action from the PRMP directly relates to the Canada lynx (see **Table 2-1**):

- Within lynx (*Lynx canadensis*) habitat in Lynx Analysis Units:
  - Manage timber harvest consistent with the August 2013 Lynx Conservation Assessment and Strategy and
  - Limit the expansion of consistent snow compaction unless it serves to consolidate use and improve lynx habitat.

BMPs for Management Actions
Appendix H of the PRMP includes a number of standard operating procedures and BMPs applicable to the management actions proposed under the PRMP. The BMPs and conditions of approval described in Appendix H that would benefit Canada lynx habitat are those aimed at protecting soils, vegetation, and special status species. No BMPs specifically address Canada lynx.

Direct and Indirect Effects
There would be no impact on Canada lynx from ACECs, air and climate resources; soils management, wild horse management; cultural resources, paleontological resources, visual resources, lands with wilderness characteristics, lands and reality, wild and scenic rivers, wilderness study areas, National Trails, national, state, and BLM byways; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Water Resource Management
Decisions related to water resource management would work towards protecting, preserving, and enhancing the watershed function. Stipulations which restrict or prohibit surface disturbing activities within stream corridors would help to maintain potential habitat for lynx prey. Riparian and wetland shrub communities found in valleys, drainages, wet meadows, and moist timberline locations may support important prey resources for lynx (Noss and Cooperrider 1994). Lynx transplanted to Colorado in 1999 are frequently located in well-developed riparian and valley wetland shrub habitats of the upper montane and subalpine zones (Ruggiero et al. 2000).

Effects from Vegetation Management
Desired vegetation management objectives include emphasizing the perpetuation of late- to mid seral plant communities that provide suitable habitat for wildlife. Current acreage of old growth woodlands would be maintained and managed as ROW avoidance areas which would benefit potential habitat for lynx and associated prey.

Effects from Fish and Wildlife Management

In general, fish and wildlife management would improve and maintain habitat throughout the decision area. Applying stipulations to reduce or mitigate surface-disturbing activities within wildlife corridors and wildlife priority habitats may help support prey populations.

Effects from Special Status Species Management

Actions and stipulations proposed for the benefit of special status species (as described throughout this analysis) would benefit the Canada lynx. Actions specific to the lynx include: managing timber harvest consistent with the August 2013 Lynx Conservation Assessment and Strategy, and limiting the expansion of consistent snow compaction unless it serves to consolidate use and improve habitat. Both actions would only apply to lands within the lynx analysis unit.

Effects from Wildland Fire Management

The PRMP would utilize a full range of wildfire management actions from full suppressions to resource benefits on unplanned ignitions. This strategy is consistent with the conservation measures for wildland fire as identified in the Canada Lynx Conservation Assessment and Strategy (Interagency Lynx Biology Team 2013). Specifically, these measures emphasize maintaining fire as an ecological process in lynx habitat and considering the use of mechanical or burn prescriptions to restore fire as an ecological process or to maintain specific lynx and/or prey species habitat components.

The effects of wildfire on Canada lynx would depend on the severity and extent of the fire. Direct species mortality is unlikely, as individuals are highly mobile. Wildfire may result in short term decreases in suitable habitat for lynx and prey, due to reduced cover and forage. However, long-term benefits may include increases in the extent of early successional forest stands on burned areas and resulting in increased forage for prey. After stand-replacing fires, lodgepole pine can regenerate in dense, even-aged stands that are favored by snowshoe hares, the lynx's preferred prey (Ellsworth and Reynolds 2006).

Effects from Forestry Management

Known lynx habitat would be identified as unsuitable for harvest in the site specific forest/woodland management plans. As such, effects from forestry management on the Canada lynx would be negligible.

Effects from Livestock Grazing Management

Potential impacts on Canada lynx habitat from livestock grazing include habitat disturbance, soil compaction, erosion, sedimentation, and weed spread. However, there is minimal overlap between grazing allotments managed and covered under the GJFO RMP and suitable habitat for the lynx. No adverse effects are anticipated

Effects from Recreation and Travel Management
Dispersed recreation generally has limited or negligible effects on vegetation conditions valued by lynx and prey species. Indirect effects (such as snow compaction) from winter recreational uses and activities such as snowmobiling, cross country skiing, and snowshoeing may occur.

Research on the effect of over-snow motorized travel and snow compaction is conflicting. The Canada Lynx Conservation Assessment and Strategy (Interagency Lynx Biology Team 2013) suggests that increased competition has contributed to the decline of lynx populations. As a result it was recommended in the Canada Lynx Conservation Assessment and Strategy, to which the BLM is a signatory, that federal agencies limit over-snow travel in lynx habitat. Bunnell et al. (2006) confirmed that coyotes do use compacted trails to travel in heavy snow. However, research by Kolbe found little evidence of compacted trails causing increased competition (Kolbe et al. 2007). The PRMP, in combination with the Southern Rockies Lynx Amendment (which includes National Forest System lands adjacent to the decision area), limits the expansion of consistent snow compaction unless it serves to consolidate use and improve lynx habitat. This would provide the BLM with flexibility to monitor over-snow travel and lynx habitat and respond accordingly to limit impacts.

Effects from Lands and Realty Management
Land and realty management actions, such as ROW authorizations, can increase habitat fragmentation and allow for direct removal of habitat, conversion of habitat to other habitat types, and weed invasion. Current acreage of old growth woodlands would be maintained and managed as ROW avoidance areas which would benefit habitat for lynx and associated prey by limiting this type of activity in potential habitat.

Effects from Energy and Minerals Management
Energy development activities can cause direct and indirect impacts on lynx and their habitats. Fluid mineral leasing could occur in the vicinity of the Lynx Analysis Unit, which could lead to habitat avoidance. A CSU would be applied in old growth forests, which would reduce impacts on lynx and potential habitat.

Additional management actions to emphasize education may increase the appreciation of special status species and their habitats and subsequently reduce impacts.

Cumulative Effects
Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

Historically, the cumulative effects of timber extraction, ski-area development, urban development, and road construction have reduced the abundance of old-growth spruce-fir forest, which has affected lynx and its prey. Areas of prime snowshoe hare habitat have been impacted by these types of activities, which has in turn affected lynx populations (Ellsworth and Reynolds 2006). Such activities are likely to continue in the future; however, those activities which occur in the planning area are not likely to have a great impact on the species, as limited suitable habitat occurs within the GJFO boundary.

4.2.6 Western Yellow-Billed Cuckoo

Assumptions and Methods of Analysis

Assumption and methods of analysis are similar to those described in Section 4.1.2.

Conservation Planning (Section 7 [a][1] of the ESA)

The goal of biological resources (including ESA-listed species) management in the PRMP is summarized in **Table 2-1**. The goals for protecting special status wildlife species, including western yellow-billed cuckoo, are also presented in **Table 2-1**. The goals presented there are the same for all ESA-listed species considered in the PRMP and this BA. Additionally, **Table 2-1** includes the objectives, management actions, and conservation measures of the GJFO proposed plan to achieve the goal.

The PRMP is primarily a landscape-level, programmatic-level document. The stipulations and conservation measures below for the western yellow-billed cuckoo, as well as the BMPs described in Appendix H, are not comprehensive. New conservation measures may be developed during Section 7 consultation at the project level.

Objectives

The following objective from the PRMP directly relates to the yellow-billed cuckoo (**Table 2-1**):

- Maintain and improve BLM lands for yellow-billed cuckoo habitat

Actions and Surface Disturbance Restrictions

The following actions from the PRMP are directly related to the yellow-billed cuckoo (see **Table 2-1**):

- Where large stands of cottonwoods occur, develop management plans to restore or improve cuckoo habitat and increase canopy cover and mid-story tree and shrub cover.
- No surface occupancy or use is allowed within 400 meters (1,312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is

greatest) on the following major rivers: Colorado, Dolores, and Gunnison.

- Prohibit surface occupancy and surface disturbing activities with a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and surface disturbing activities within the riparian zone.
- Conserve mature riparian forests (e.g. cottonwood [*Populus deltoids*] galleries) in suitable habitat to maintain their integrity for use as bald eagle (*Haliaeetus leucocephalus*) nesting, roosting, or perching substrate.

Colorado Standards for Public Land Health

The Colorado Public Land Health Standards are applied on a landscape scale and relate to the potential of the landscape. Standards 1, 2, 3, and 4 would directly apply for promoting the conservation of western yellow-billed cuckoo habitat.

Specifically, Standard 1 applies to the desire for upland soil moisture conditions to sustain optimal plant growth and vigor for vegetation which would support healthy habitats. Standard 2 monitors riparian systems associated with both running water and standing water function properly and have the ability to recover from major disturbance, such as fire, severe grazing, and 100-year floods. Standard 3 promotes the health of native plant and animal communities at the community and population levels. Standard 4 establishes BLM standards for protecting and enhancing special status, threatened and endangered (federal and state), and other species.

BMPs for Management Actions

Appendix H of the PRMP includes a number of standard operating procedures and BMPs that are applicable to the implementation of management actions proposed under the PRMP. The BMPs and conditions of approval described in Appendix H that would benefit western yellow-billed cuckoo and riparian habitat include those aimed at protecting soils, vegetation, special status species, water resources, riparian habitat and wetlands, fire management, forestry, and livestock grazing.

Direct and Indirect Effects

The following resources, resource uses, special designations, and support management categories would have no effect on western yellow-billed cuckoo and are not discussed further: air and climate resources; soils; wild horse management; cultural resources; paleontological resources; visual resources; lands with wilderness characteristics; lands and reality; wilderness study areas; ACECs; National Trails; national, state, and BLM byways; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Water Resource Management
Decisions related to water resource management would work towards protecting, preserving, and enhancing the watershed function. Stipulations which restrict or prohibit surface disturbing activities within stream corridors would limit loss of native vegetation along riparian corridors, which serves as nesting and foraging habitat for the species.

Effects from Vegetation Management
Riparian vegetation management follows Land Health Standard 2, which emphasizes properly functioning riparian systems which capture sediment and provide forage habitat and biodiversity. Where conditions are appropriate, the BLM would allow for removal of tamarisk *(Tamarix* spp.*)*, non-native elms *(Ulmus* spp.*)*, and Russian olive *(Elaeagnus angustifolia)* material for biomass or personal use. Tamarisk has become increasingly prevalent within riparian corridors in the planning area, and can pose a serious threat to yellow-billed cuckoo habitat by replacing native riparian vegetation structures (USFWS 2014i). As such, removal of this invasive species would benefit the yellow-billed cuckoo and its habitat.

Stipulations which restrict or prohibit surface disturbing activities within stream corridors would limit loss of native vegetation along riparian corridors, which serves as nesting and foraging habitat for the species.

Effects from Fish and Wildlife Management
In general, fish and wildlife management would improve and maintain habitat throughout the decision area. This includes actions specific to the protection of aquatic and riparian habitats (such as the Colorado River where the yellow-billed cuckoo critical habitat is found). Actions intended to protect fish species (such as TL for in-channel stream work) would likely also benefit the yellow billed cuckoo.

Effects from Special Status Species Management
Actions and stipulations proposed for special status species would benefit the yellow-billed cuckoo, effects are similar to those described under Effects from Fish and Wildlife Management.

Effects from Fire and Fuels Management
Depending on the extent, location, severity, and seral type affected, unplanned ignitions would have short-term impacts on yellow-billed cuckoo habitat. Unplanned fires could remove or degrade habitat for yellow-billed cuckoo, subsequently reducing population viability.

A significant threat to the yellow-billed cuckoo is habitat loss and degradation due to nonnative vegetation conversion. Fuels management could include removal of tamarisk and Russian olive. Such activities would result in short-term impacts on the species (temporary displacement and avoidance), with long-term benefits (establishment of native riparian woodland vegetation, which supplies essential food and cover).

Increased human activity and noise associated with wildland fire management, prescribed fire, and fuels management could increase the likelihood for disturbance or displacement. These activities could promote habitat avoidance or changes to survival or reproduction caused by changes to nesting, breeding, foraging, or roosting behavior. However these impacts would be short in duration and limited in scope.

A large fire that would require extensive suppression operations could result in long-term effects on riparian-dependent species and their habitats. Smaller fires that would require less extensive suppression operations would generally avoid these long-term effects. Cottonwood galleries and areas with dense tamarisk infestations would generally be at a higher risk of fire. The PRMP would emphasize a suite of fuels treatments and would provide the most management flexibility, resulting in increased protection for special status species (such as the yellow-billed cuckoo) and their habitat from fire. Not all riparian corridors within the planning area are potential habitat for the yellow-billed cuckoo, therefore not all fire and fire suppression activities along streams and rivers would result in impacts to the species.

Effects from Forestry Management

The effects from forestry management would be similar to those of vegetation management. Much of the Dolores River corridor is closed to wood product sales or harvest and the riparian corridors along the Colorado and Gunnison rivers are protected by NSO stipulations for surface-disturbing activities. As such, large scale forest harvest would not occur in riparian areas and no adverse effects to the yellow-billed cuckoo or its proposed critical habitat are anticipated from forestry management.

Effects from Livestock Grazing Management

Livestock often use riparian areas for water and shade, which may cause greater impacts on these areas through concentrated use. Livestock could alter stream functionality and vegetation structural diversity. The loss or reduction of streamside vegetation from grazing can affect the suitability of habitat for yellow-billed cuckoo breeding and prey populations.

Range improvements, including the construction of stock ponds, could promote vegetation loss, soil compaction, and erosion in the areas around the ponds. The source would be livestock congregating around these areas that were previously less intensively grazed. However, depending on the placement of stock ponds, the development of livestock water sources may draw livestock away from existing natural water features and sensitive riparian habitat that have vulnerable soils and that livestock now use as a water source.

Under the PRMP, the BLM would identify appropriate utilization levels and may implement changes in livestock use if major impacts on sensitive species occur.

Effects from Recreation and Travel Management

Effects from recreation management are related to the duration, intensity, and expanse of recreation. Damage to riparian resources from recreation could affect habitat suitability for the yellow-billed cuckoo. Use of trails to access fishing along streams and camping along waterways could disturb birds, causing habitat avoidance, compact soil, exacerbate erosion and sedimentation into waterways, and reduce vegetation cover. Furthermore, since riparian areas and waterways are popular recreation spots, increased demand for access to these areas is expected as the population increases, causing greater impacts on riparian species.

However, the 2014 Determination of Threatened Status Final Rule (USFWS 2014i) found there were no known or anticipated threats to the species resulting from overutilization for recreational purposes. While recreation activities are anticipated to increase in the planning area, effects to yellow-billed cuckoo habitat would likely be localized and short-term.

Effects from Energy and Minerals Management

Energy exploration and mineral development along the Colorado, Gunnison, and Dolores Rivers could potentially affect the yellow-billed cuckoo and its proposed critical habitat by means of habitat loss or degradation. However, NSO stipulations would prohibit surface occupancy or use within 400 meters of the ordinary high water mark (bank-full stage) or within 100 meters of the 100-year floodplain (whichever is greatest) on the three rivers which contain suitable habitat for the yellow-billed cuckoo. This would prevent loss of habitat from new leasing. COA and BMPs would help to mitigate the effects of energy development in areas where existing leases overlap with proposed yellow-billed cuckoo habitat.

Additionally, closing the three river corridors to mineral material disposal and non-energy solid mineral leasing and development would help further reduce potential impacts of energy development on proposed yellow-billed cuckoo habitat.

Effects from Wild and Scenic Rivers Management

Under the PRMP, WSR management would have the greatest impacts on riparian-dependent and special status species. It would do this by protecting the free-flowing nature of the segments, maintaining the Outstandingly Remarkable Values for which the segment was found eligible and prohibiting actions that would modify the setting or level of development such that the tentative classification would change.

Under the PRMP, a portion of the Dolores River would be determined suitable for inclusion in the National Wild and Scenic Rivers System. Proposed yellow-billed cuckoo critical habitat does not occur along this segment, and no individuals have been recorded in the area. While it is possible the species may

utilize this area, interim management guidelines and management measures would have only a minor beneficial effect.

Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

The CIAA used to analyze cumulative impacts on special status species, including western yellow-billed cuckoo in the PRMP, extends outside the planning area, following fourth-order watershed boundaries that completely or partially overlap the planning area. The fourth-order watersheds were used as the basic unit of analysis because the scope of cumulative influence would be at the watershed scale and is not expected to extend beyond this scale.

Past, present, and reasonably foreseeable future actions and conditions in the CIAA, both on public and private land, that have affected and will likely continue to affect western yellow-billed cuckoo are mineral exploration and development, forestry, grazing, recreation, road construction, ROWs, prescribed and wildland fires, land planning efforts, vegetation treatments, habitat improvement projects, insects and disease, and drought. Many of these activities create conditions that cause or favor other vegetation to take over.

The scope of analysis for cumulative impacts for the western yellow-billed cuckoo takes in the riparian areas along the Gunnison River and the Colorado River Basin and its tributaries. This includes private and state lands to account primarily for cumulative effects on western yellow-billed cuckoo and its habitat. Climate change in the CIAA could cause an increase or decrease in temperatures and precipitation, which would affect soil conditions, vegetation distribution, and overall riparian habitat health. Such changes would alter the conditions to which vegetation communities are adapted, potentially creating conditions that could favor certain species or communities, weeds, or pests (Hellmann et al. 2007).

Under the PRMP, impacts on riparian habitat would be minimized to the extent practical and feasible through restrictions on uses and activities. Vegetation conditions would be improved through treatments, weed prevention and control, habitat improvements, use of prescribed and wildland fire, and proper grazing practices. Under the PRMP, the BLM would move toward improving land health and achieving priority habitat objectives.

4.3 PROPOSED SPECIES

4.3.1 Gunnison Sage-Grouse

Assumptions and Methods of Analysis

Methods of analysis and assumptions are similar to those described above in Sections 4.1.2 and 4.2.3. Indicators of impacts on Gunnison Sage-Grouse and the measurements used to describe the impacts (where available or appropriate) are described below:

Direct Habitat Loss

Acres of habitat lost. Direct habitat loss results when habitat is destroyed or converted to a form that is unsuitable for the impacted species. Direct habitat loss can be a short-term or long-term impact.

Habitat Fragmentation

Habitat fragmentation occurs when contiguous habitat is broken into smaller blocks by surface-disturbing activities. Habitat fragmentation could lead to the following:

- Likelihood of reduced habitat quality and interference with movement patterns, leading to a decreased ability to breed or overwinter successfully to a degree that would lead, in turn, to substantial population declines
- Likelihood that individual habitat blocks would be reduced
- Likelihood of increased percentage of edge habitat on smaller blocks when compared to larger blocks

Disruption to Species

Direct mortality of species, including predation, collisions with structures (fences, towers, vehicles), and disease; interference with movement patterns due to fragmented landscapes; short- or long-term displacement and physiological or behavioral influences (avoidance of otherwise functional habitats).

Habitat Degradation

Weed infestation and overstory reductions indicators (reductions in herbaceous ground cover, lack of residual cover, and change in understory plant composition).

Miles disturbed (for limits on travel management, recreation, unleased areas).

Miles/acres disturbed. (It is assumed that habitat next to roads that are impacted by dust and dust suppression activities would have some lower level of understory next to the impacted habitat.)

Habitat Restoration or Improvement
The likelihood of improving habitat quality (e.g., increased species diversity, increased habitat connectivity, and decreased weeds).

Habitat Protection
Acres protected through stipulations, withdrawals, closures, and special designations (e.g., ACECs). Also, the likelihood of reduced or prohibited surface disturbance.

In addition to the assumptions listed under Section 4.1.2, the following would apply specifically to Gunnison Sage-Grouse:

- In general, Gunnison Sage-Grouse are highly sensitive to habitat fragmentation, development, or changes in habitat conditions. This is because Gunnison Sage-Grouse inhabit and require large, intact sagebrush ecosystems, and are especially sensitive to disturbance and human presence.
- There is little to no fluid mineral potential within mapped critical habitat for the Piñon Mesa population. Mapped occupied habitat is no leasing in the PRMP for all federal minerals. Because of the low potential for oil and gas development, it is assumed no impacts will occur.

Unavailable Information
A complex range of factors will influence the response or fate of individual birds to impacts, thus, there is uncertainty in generating specific metrics for anticipated adverse effects (such as number of expected mortalities of individuals, or number of habitat acres temporarily or permanently lost or temporarily affected). Factors contributing to this uncertainty include, but are not limited to:

1. Inability to accurately predict the location, frequency, timing, duration, etc. of future projects;
2. Inability to accurately measure the nature or extent of potential effects;
3. Limited ability to pinpoint the source, or combined sources, of effect;
4. Accounting for confounding or stochastic events such as drought;
5. Sources of risk that emerge outside of federal lands covered under the PRMP.

Conservation Planning (Section 7[a][1] of the ESA]
The goal of biological resources (including ESA-listed species) management in the PRMP is summarized in **Table 2-1**. The goals for protecting special status wildlife species, including Gunnison Sage-Grouse, are also presented in **Table 2-1**. The goals presented there are the same for all ESA-listed species considered in the PRMP and this BA. Additionally, **Table 2-1** includes the

objectives, management actions, and conservation measures of the GJFO Proposed RMP to achieve the goal. The PRMP is primarily a landscape-level, programmatic-level document.

The stipulations and conservation measures below for Gunnison Sage-Grouse, as well as BMPs described in Appendix H, are not comprehensive. New conservation measures may be developed at the project level.

Objectives

One objective directly related to Gunnison Sage-Grouse is included in the PRMP (**Table 2-1**):

- Advance the conservation of Gunnison and Greater Sage-Grouse and their habitat in accordance with current national, state, and local working group recommendations and policy as well as the most current scientific literature and research.

Actions and Surface Disturbance Restrictions

Twenty-six management actions and stipulations directly related to Gunnison Sage-Grouse are included in the proposed plan (**Table 2-1**):

- Consistent with current guidance for sagebrush-dependent species, improve areas of poor quality nesting habitat by implementing the following actions, including but not limited to:
    - In areas where species diversity is low seed area with grasses and forbs, with an emphasis on forbs if brood-rearing occurs in the area, accompanied by light disking and interseeding, or drill seeding.
    - Where sage is decadent and does not meet habitat objectives, conduct thinning by roller-chopping, light disking, Dixie Harrow, Lawson Aerator or other methods.
    - Conduct vegetation treatments to retain residual cover through fall and winter into nesting season.
- When reseeding roads, primitive roads and trails, use appropriate seed mixes (appropriate for Sage-Grouse ecological conditions) and consider the use of transplanted sagebrush.
- Reduce routes through currently suitable or potentially suitable Gunnison and Greater Sage-Grouse habitat by reducing routes through sage brush parks, with an emphasis on routes that bisect sage brush parks.
- Improve brood-rearing habitats by implementing the following action:

  - Restore old ponds or construct new ponds in areas lacking water, while minimizing potential for promoting mosquito breeding habitat at elevations below 8,000 feet.

- Improve lek areas by mechanically treating historic lek areas where sagebrush density has increased.
- To reduce disturbance to Gunnison or Greater Sage-Grouse, close duplicative or redundant routes within Sage-Grouse habitat and within 4 miles of a lek.
- Remove/modify raptor perches, in Gunnison and Greater Sage-Grouse habitat (trees, fences, dry-hole markers, and power poles).
- Monitor measureable objectives and evaluate grazing management to assure that management actions are achieving Sage-Grouse habitat objectives.
- Design any new structural range improvements to conserve, enhance, or restore Sage-Grouse habitat through an improved grazing management system relative to Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, enclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels, and spring developments.
- To reduce Sage-Grouse strikes and mortality, remove, modify, or mark fences in high risk areas. When fences are necessary, require a Sage-Grouse-safe design.
- Locate supplements (salt or protein blocks) in a manner designed to conserve, enhance, or restore Sage-Grouse habitat.
- Offer temporary use on a case-by-case basis in allotments where grazing preference has been relinquished, or non-use warrants to rest other allotments that include important Sage-Grouse habitat.
- Apply TL-16 (Occupied Sage-Grouse Winter Habitat) or TL-17 (Sage-Grouse Leks) to vegetation management treatments according to the type of seasonal habitats present in a priority area.
- Monitor after vegetation treatments for success in meeting objectives and monitor and control invasive vegetation after vegetation treatments in Sage-Grouse habitat.
- Apply post-vegetation treatment management and monitoring to ensure long term persistence of seeded native plants. Outline temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain vegetation management objectives to benefit Sage-Grouse and their habitats.

- Design vegetation treatments in Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant seral stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design.
- Include Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, state and federal Sage-Grouse conservation and recovery plans and appropriate local information in habitat restoration objectives. Make maintaining these objectives within priority Sage-Grouse habitat areas a high restoration priority.
- Choose native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success, and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and Sage-Grouse habitat objectives.
- Manage the following areas to benefit Sage-Grouse habitat:
    - Wildlife Emphasis Areas:
        - Glade Park and
        - Sunnyside.
    - ACECs:
        - Roan and Carr Creeks
- Identify the following as ROW exclusion areas:
    - Within a 0.6-mile radius of Sage-Grouse leks.
- Identify the following as ROW avoidance areas:
    - Sage-Grouse occupied habitat and
    - Within a 4-mile radius of Sage-Grouse leks.
- **No Leasing:** *Sage-Grouse.* Close all occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) and greater Sage Grouse habitat within one mile of an active lek to fluid mineral leasing and geophysical exploration.
- **No Leasing:** *Split-estate.* Manage 12,200 acres of Private and State surface/federal fluid mineral estate in all occupied Gunnison Sage-Grouse habitat and greater Sage Grouse habitat within one mile of an active lek as closed to fluid mineral leasing and geophysical exploration.

- **STIPULATION** TL-16: *Occupied Sage-Grouse Winter Habitat.* Prohibit surface occupancy and surface-disturbing activities in occupied Sage-Grouse winter habitat from December 16 to March 15.
- **STIPULATION** NSO-25: *Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat.* Prohibit surface occupancy and surface-disturbing activities within 4 miles of an active lek or within Sage-Grouse nesting and early brood-rearing habitat.
- **STIPULATION** TL-17: Sage-Grouse Leks. Prohibit surface occupancy and surface-disturbing activities within 4 miles of Sage-Grouse leks from March 1 to June 30.

Additional management actions indirectly related to the protection of the Gunnison Sage-Grouse are described in **Table 2-1** and incorporated by reference.

Colorado Standards for Public Land Health

The Colorado Public Land Health Standards are applied on a landscape scale and relate to the potential of the landscape. Of the five standards listed, Standards 1, 3, and 4 would directly apply for promoting the conservation of Gunnison Sage-Grouse. Specifically, Standard 1 applies to the desire for upland soil moisture conditions to sustain optimal plant growth and vigor for vegetation. Standard 3 promotes the health of native plant and animal communities at the community and population levels. Standard 4 establishes standards for the BLM to protect and enhance special status, threatened and endangered (federal and state), and other species.

BMPs for Management Actions

Appendix H of the PRMP includes a number of standard operating procedures and BMPs that are applicable to implementing the management actions proposed under the PRMP. The BMPs and conditions of approval described in Appendix H that would benefit Gunnison Sage-Grouse are those aimed at protecting soils, vegetation, and special status species.

Direct and Indirect Effects

There would be no effects on Gunnison Sage-Grouse from air and climate resources; wild horses; cultural resources; paleontological resources; visual resources; water resources; wild and scenic rivers; lands with wilderness characteristics; forestry; National Trails; national, state, and BLM byways; wilderness study areas; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Soils Resource Management

The goal of soil resource management in the GJFO RMP is to ensure upland soils exhibit infiltration and permeability rates that are appropriate to soil type,

climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for optimal plant growth and vigor, and minimizes runoff and erosion. As a result, this would support healthy sagebrush habitats for the Gunnison Sage-Grouse.

Effects from Vegetation Management

Under the PRMP, vegetation management and protection would impact Gunnison Sage-Grouse habitats. Management to improve and protect vegetation conditions throughout the planning area would improve vegetative cover, reduce the likelihood for erosion and sedimentation, and maintain seed banks. Most vegetation treatments would not affect Gunnison Sage-Grouse, as a timing limitation would be applied to avoid impacts during sensitive periods. Improved vegetative conditions would improve habitat for Gunnison Sage-Grouse by providing more opportunities for lekking, nesting, brood-rearing, wintering, cover, and foraging over the long term. In the short term, vegetation treatments could remove potential habitat or increase the potential for weed spread. In addition, human disturbance and noise associated with the use of heavy equipment for vegetation removal could temporarily displace Gunnison Sage-Grouse from foraging, breeding, nesting, and wintering habitats.

Gunnison Sage-Grouse habitat would be improved and maintained through vegetation treatments, prioritizing winter Sage-Grouse habitat for treatment and restoration, developing restoration plans in non-functioning habitat, reducing pinyon-juniper encroachments, increasing habitat connectivity, and managing for age class diversity. Actions to reduce pinyon-juniper woodland invasion of upper elevation sagebrush communities would benefit Gunnison Sage-Grouse that require open sage parks. Monitoring after vegetation treatments would occur to evaluate success in meeting objectives. These actions would help support health Gunnison Sage-Grouse habitats, and are consistent with the conservation measures identified in the Piñon Mesa Conservation Plan (Gunnison Piñon Mesa Gunnison Sage Grouse Partnership 2000).

Effects from Fish and Wildlife Management

The BLM would establish 10 wildlife emphasis areas on 150,000 acres to protect areas with high wildlife value and significance, focusing on protecting habitat for big game, cutthroat trout, and Sage-Grouse. This strategy would allow BLM to focus their wildlife management efforts in the areas that would be most effective to preserve and protect fish and wildlife, including Gunnison Sage-Grouse. The Timber Ridge and Glade Park wildlife emphasis areas would be of particular benefit to the Gunnison Sage Grouse, as these boundaries would overlap with occupied habitat for the species and a recently discovered Lek in the Timber Ridge area. Combined, these wildlife emphasis areas would encompass 96% of proposed occupied critical habitat and 49% of proposed unoccupied critical habitat on BLM-administered lands. The Glade Park area alone encompass 10,100 acres of Gunnison Sage-Grouse occupied proposed critical habitat; this

accounts for the majority (95%) of occupied proposed critical habitat on BLM-administered lands.

Examples of management actions that would be applied in wildlife emphasis areas include stipulations on surface-disturbing activities and recreation restrictions, as well as ROW avoidance and exclusion areas and travel closures and seasonal restrictions to maintain existing unfragmented habitat and meet wildlife objectives. Approximately 27,200 acres of the Glade Park Wildlife Emphasis Area would be subject to the CO-CSU-Wildlife Habitat stipulation, which would benefit Gunnison Sage-Grouse by restricting surface occupancy or use within this area.

Effects from Special Status Species

A suite of management actions would be implemented to conserve Gunnison Sage-Grouse under the PRMP, including habitat improvement, habitat protection, and mineral leasing stipulations and prohibitions. Nesting, brood-rearing, and lek habitat would be improved, and vegetation management actions in sagebrush would aim to conserve, enhance, and restore Gunnison Sage-Grouse habitats. Raptor perches would be removed or modified in Gunnison Sage-Grouse habitat to reduce predation. In addition, the Rough Canyon ACEC and the Glade Park and Timber Ridge wildlife emphasis areas would be managed for Gunnison Sage-Grouse habitats.

Effects from Wildland Fire Management

Depending on the extent, location, severity, and seral type affected, unplanned ignitions would have adverse impacts on Gunnison Sage-Grouse by removing or degrading habitat and/or reducing population viability. Large or intense wildfires could damage large expanses of habitat. Indirect effects could result from increased erosion, and increased potential for noxious and invasive weed establishment.

Under the PRMP, the BLM would avoid planned and unplanned fire in low-elevation cheatgrass-infested communities, which would help protect adjacent sagebrush habitats used by Gunnison Sage-Grouse. However, prescribed fire, if applied at an appropriate scale, is a viable management tool for protecting Gunnison sagebrush habitats from catastrophic wildfires (Gunnison Sage-Grouse Rangewide Steering Committee 2005). Using a variety of fuel treatments would have short-term effects on Gunnison Sage-Grouse and habitats through vegetation removal, increased likelihood of erosion and sedimentation, human presence, and the potential for habitat avoidance. In the long term, these activities would reduce the likelihood of uncharacteristically large or intense wildfires that could damage large expanses of habitat or kill or displace wildlife. In addition, the condition of upland vegetation would be improved. Cheatgrass recolonization in prescribed burned areas is a notable concern, and reseeding efforts may be necessary to reduce the potential for invasive weeds (Gunnison Sage-Grouse Rangewide Steering Committee 2005). Fuel treatment actions as

described in the PRMP may include seeding by means of aerial or ground application. Emergency stabilization and rehabilitation treatments would help to reestablish vegetation and restore habitat for Gunnison Sage-Grouse.

Increased human activity and noise associated with wildland fire suppression and prescribed fire in areas occupied by Gunnison Sage-Grouse could affect lekking, nesting, brood-rearing, wintering, or foraging behavior. Important habitats could be altered because of the use of heavy equipment, hand tools, and noise associated with intensive human activity. However, there is also a risk of habitat loss in areas where wildland fire suppression is absent or limited due to the increased potential for large and more severe wildfires. This in turn is balanced by the fact that a large fire could require extensive suppression operations, such as extensive staging areas and fire-line construction, which could themselves result in long-term effects on Gunnison Sage-Grouse and their habitats. Smaller fires that would require less extensive suppression operations would generally avoid these long-term effects.

Effects from Livestock Grazing Management

Timing and intensity of livestock grazing may affect Gunnison Sage-Grouse nesting and brood rearing success, as fall grazing can remove residual cover needed the following spring for nest and brood cover (Piñon Mesa Gunnison Sage Grouse Partnership 2000). Potential impacts of grazing and associated activities on Gunnison Sage-Grouse include direct impacts of herbivores, such as trampling of nests and eggs, altered Sage-Grouse behavior due to presence of herbivores, and impacts on their behavior from structures associated with grazing management (Beck and Mitchell 2000). Additionally, mortality associated with fence collisions has been documented in lesser prairie-chickens *(Tympanuchus pallidicinctus)* in Oklahoma (Wolfe et al. 2007) and Greater Sage-Grouse in Idaho (Stevens 2011). No specific data regarding Gunnison Sage-Grouse fence-related mortalities is available; however it is assumed the species is also killed by fence collisions (USFWS 2013d). Within the planning area, 9.2 miles of mapped fences are located within 4 miles of active leks on BLM lands.

In areas that are available for livestock grazing, there could be more impacts on Gunnison Sage-Grouse than in areas where livestock grazing is excluded. Under the PRMP, all Gunnison Sage-Grouse proposed critical habitat would be open to grazing, resulting in an increased likelihood for impacts. **Table 4-1**, Existing Land Health Assessment Conditions by Proposed Occupied and Unoccupied Gunnison Sage Grouse Critical Habitat on BLM Lands, provides an overview of current rangeland health conditions. For a detailed description of rangeland health conditions by allotment, see Appendix A, Rangeland Health Conditions in Gunnison Sage-Grouse Critical Habitat.

Table 4-1
Existing Land Health Assessment Conditions by Proposed Occupied and Unoccupied Gunnison Sage-Grouse Critical Habitat on BLM Lands

Indicator	Occupied Habitat	Unoccupied Habitat
Acres Meeting Land Health Standards	7,300	46,100
% Habitat Meeting Land Health Standards	69%	83%
Acres Meeting Land Health Standards With Problems	2,626	2,600
% Habitat Meeting Land Health Standards With Problems	25%	5%
Acres Not Meeting Land Health Standards	300	2,300
% Habitat Not Meeting Land Health Standards	3%	4%

Source: BLM 2010a

The PRMP includes a number of management actions to incorporate Gunnison Sage-Grouse habitat objectives and management considerations into livestock grazing management. Such measures would help to improve vegetation condition of rangeland areas and could reduce the likelihood of nonnative invasive species introduction or spread. In addition, removing, modifying, or marking fences in high risk areas would help to reduce the threat of injury or mortality to Gunnison Sage-Grouse.

As shown in **Table 4-1**, the majority of proposed critical habitat is currently meeting land health standards. However, 28% of occupied habitat and 9% of unoccupied habitat is categorized as meeting the standards with problems, or not meeting the standards. Despite the management actions described above, reductions in herbaceous cover that fall below the Rangewide Conservation Plan habitat guidelines (Gunnison Sage-grouse Rangewide Steering Committee 2005) are likely to continue to occur at times. Adverse effects from trampling of eggs or nests may also occur. This is thought to be rare but the impact is not discountable.

Effects from Recreation and Travel Management

Impacts from recreational use would include casual use activities such as nonmotorized recreation or dispersed camping. Such activities are not subject to site-specific environmental review and vegetation impacts would not be apparent until after damage has occurred. Examples of direct impacts on Gunnison Sage-Grouse from casual use include habitat loss, fragmentation, and direct mortality from collisions with vehicles. Impacts are more likely to occur in easily accessible areas where visitation would be high, and in areas open to intensive motorized use, as cross-country travel facilitates weed spread as well

as increasing habitat fragmentation. In general, the more acres of routes in the area, the greater the likelihood of habitat fragmentation and disturbance to species and habitats as high concentrations of human use typically occur on or immediately adjacent to motorized routes.

Within proposed occupied habitat, 18.4 miles of routes would be open to public use (including 1.1 miles of county-maintain roads), and 12.3 miles of routes would be restricted to administrative and permitted use only. 0.4 miles of routes would be proposed for closure and rehabilitation. Within unoccupied habitat, 68.8 miles of routes would be open to public use (including 14.7 miles of county-maintained roads), and 29.6 miles of routes would be restricted to administrative and permitted use only. 19.9 miles of routes would be proposed for closure and rehabilitation. Habitat loss, degradation, and fragmentation from roads are a major threat to Gunnison Sage-Grouse (USFWS 2013d). The collective influences of fragmentation and disturbance from roads reduces the effective habitat as they are avoided by sage-grouse (Knick et al 2011; USFWS 2013d). Impacts related to behavior disruption may occur (particularly along routes occurring in occupied habitat). However, seasonal limitations and route closure of routes within 4 miles of leks would reduce impacts. In addition, the Timber Ridge Wildlife Emphasis Area would only be open to foot and horseback use, which is expected to reduce potential impacts to the lek in this area.

Activities authorized under SRPs could disrupt Gunnison Sage-Grouse, but all SRPs would contain standard stipulations appropriate for the type of activity and may include additional stipulations necessary to protect land or resources, including Gunnison Sage-Grouse.

Effects from Lands and Reality Management

Construction and operation of ROW facilities, such as pipelines, roads, and transmission lines, may result in habitat loss, fragmentation, and degradation. Surface disturbance during construction removes vegetation and important habitat components for Gunnison Sage-Grouse and, in most cases, renders the habitat unsuitable. ROWs, such as those for roads and industrial facilities, may lead to permanent loss of Gunnison Sage-Grouse habitat. Other ROWs, such as those for pipelines or buried power lines, may lead to a more short-term loss of habitat if the area were reclaimed after construction. However, following natural succession regimes, sagebrush communities would take 20 to 30 years to return to preconstruction conditions. In addition to removing vegetation, long-term occupancy of structures and facilities leads to direct habitat loss.

ROWs may also lead to habitat fragmentation and degradation. ROW projects can reduce patch size and increase edge habitats. Since Gunnison Sage-Grouse require large blocks of intact habitat, linear disturbances reduce habitat quality. Surface disturbance can also lead to new weed infestations and spread weeds where infestations already occur. Noxious and invasive weeds are often of

lower value to wildlife, and degrade wildlife habitat by reducing optimal cover or food. Sagebrush-steppe communities are among the ecosystems most vulnerable to invasion and degradation by invasive weeds. Not only can invasive species outcompete most native plants when moisture is limited, they can also change site-specific fire ecology and result in the loss of critical shrub communities. The loss and degradation of sagebrush habitat can reduce the carrying capacity of local breeding populations of Gunnison Sage-Grouse, especially in areas where high quality sagebrush habitat is limited (Braun 1998; Connelly et al. 2000).

As such, there would likely be more impacts on Gunnison Sage-Grouse and their habitat in areas where ROWs are permitted compared to areas where ROWs are excluded or avoided.

Disruption Impacts. Both the construction and operation phases of ROW projects can lead to disruption impacts. Noise and an increase in human presence during construction may displace Gunnison Sage-Grouse into lower quality habitat and may disrupt breeding and nesting (Holloran 2005). Although construction impacts are generally short term, many impacts would continue during routine maintenance and operation of the ROWs. Gunnison Sage-Grouse would likely avoid habitat in the vicinity of infrastructure (Holloran et al. 2010), resulting in indirect habitat loss. In addition, noise and an increase in traffic during ROW operation and maintenance would disturb and likely displace Gunnison Sage-Grouse (Lyon and Anderson 2003; Holloran 2005). Avoidance of habitat would be most prevalent during levels of high human activity, such as ROW construction. Gunnison Sage-Grouse may avoid otherwise suitable habitat as the density of roads and infrastructure increases (Holloran 2005).

Avian predators, particularly raptors and corvids (i.e., crows, ravens, and magpies), are attracted to overhead utility lines because they provide perches for various activities, including hunting (Avian Power Line Interaction Committee 2006). Increased predation and harassment of Gunnison Sage-Grouse may occur from new ROW projects involving power lines or other tall structures (Connelly et al. 2004). However, the PRMP includes management to remove or modify raptor perches, thereby reducing this threat. In addition, road ROWs may increase mammalian predator densities.

Construction and operation of ROW facilities may also lead to direct mortality of Gunnison Sage-Grouse. The potential for Gunnison Sage-Grouse mortality from project construction would be low and likely limited to nesting hens or young chicks that have limited mobility. Direct mortality may occur from collisions with turbines, power lines, or meteorological towers or their supporting infrastructure, such as guy wires (Connelly et al. 2004; Beck et al. 2006). In addition, an increase of traffic on roads from ROW maintenance and operations can lead to direct mortality through vehicle collisions.

Habitat Protection. The PRMP would identify any areas within a 0.6-mile radius of any Sage-Grouse lek as a ROW exclusion area. Additionally, all occupied

Sage-Grouse habitat and areas within a 4-mile radius of Sage-Grouse leks would be identified as ROW avoidance areas. These measures would reduce or eliminate the above described impacts on Gunnison Sage-Grouse and their habitat by restricting new ROWs.

Effects from Energy and Mineral Management

Negative effects of fluid mineral development on Sage-Grouse populations are well-documented (Connelly et al. 2000; Lyon and Anderson 2003; Holloran 2005; Doherty et al 2008; Walker et al. 2007). Federal mineral estate encompasses 22,800 acres of occupied proposed critical habitat, and 76,800 acres of unoccupied proposed critical habitat; however, no fluid mineral development potential occurs within or near established Gunnison Sage-Grouse populations in the GJFO planning area, and no existing fluid mineral leases overlap with proposed critical habitat. All occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) would be closed to leasing. Additionally, unoccupied habitat in the Dominguez Escalante NCA would be closed to leasing. As stated under the assumptions and methods of analysis, no mineral development is expected and as a result, no adverse impacts on Gunnison Sage-Grouse are anticipated.

Effects from Areas of Critical Environmental Concern Management

The BLM would designate 13 ACECs in the GJFO planning area under the PRMP, encompassing 123,400 acres. Of these, the Rough Canyon ACEC (2,778 acres) would be expanded to accommodate better management of the Gunnison Sage-Grouse. This area would be withdrawn from mineral entry, and managed as ROW exclusion. In addition, an NSO stipulation would be applied to protect Sage-Grouse leks, nesting, and early brood-rearing habitat. While no proposed occupied or unoccupied critical habitat occurs within the ACEC, the boundaries encompass the historical range for the species. As such, Gunnison Sage-Grouse would be protected from surface disturbance and associated impacts within this ACEC if the area was to be reoccupied in the future.

Cumulative Effects

Cumulative effects include those of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

The CIAA for Gunnison Sage-Grouse includes follows fourth-order watershed boundaries that completely or partially overlap the planning area.

The majority of the planning area occurs within Mesa County, which has experienced significant population growth since 1987, and population forecasts expect the growth trend will continue (Colorado Division of Local Government,

State Demography Office 2013). As such, continued use and development within the planning area is expected to continue. Past, present, and reasonably foreseeable future actions and conditions on non-federal lands in the CIAA that have affected and will likely continue to affect Gunnison Sage-Grouse are as follows:

- Mineral exploration and development
- Agricultural development
- ROW and infrastructure development
- Livestock grazing
- Recreation
- Road construction
- Weed invasion and spread
- Wildland fires
- Drought
- Farming

In general, resource use activities have cumulatively caused habitat removal, fragmentation, soil compaction, erosion, increased human presence, and weed spread as described above.

Many natural influences create conditions that cause vegetation changes. For example, wildland fire removes vegetation, which makes affected areas more susceptible to weed invasion and soil erosion. Droughts reduce vegetation health, leaving it prone to insect infestation or disease. Climate change in the CIAA could increase or decrease temperatures and precipitation. This would affect soil conditions, vegetation distribution, water flows, water quality, and water temperature (Ficklin et al. 2010; Lenihan et al. 2003; McKenney et al. 2007; Hamann and Wang 2006). Such changes would alter the conditions to which vegetation communities are adapted, potentially creating conditions that favor certain species or communities, weeds, or pests (Hellmann et al. 2007) and potentially creating unsuitable conditions for Gunnison Sage-Grouse.

4.4 CANDIDATE SPECIES

4.4.1 Greater Sage-Grouse

Assumptions and Methods of Analysis

Methods of analysis and assumptions are similar to those described above in Sections 4.1.2 and 4.2.3. The following additional indicators and assumptions apply to Greater Sage-Grouse:

Indicators of impacts on Greater Sage-Grouse and the measurements used to describe the impacts (where available or appropriate) are described below:

Direct Habitat Loss
Acres of habitat lost. Direct habitat loss results when habitat is destroyed or converted to a form that is unsuitable for the impacted species. Direct habitat loss can be a short-term or long-term impact.

Habitat Fragmentation
Habitat fragmentation occurs when contiguous habitat is broken into smaller blocks by surface-disturbing activities. Habitat fragmentation could lead to the following:

- Likelihood of reduced habitat quality and interference with movement patterns, leading to a decreased ability to breed or overwinter successfully to a degree that would lead, in turn, to substantial population declines
- Likelihood that individual habitat blocks would be reduced
- Likelihood of increased percentage of edge habitat on smaller blocks when compared to larger blocks

Disruption to Species
Direct mortality of species, including predation, collisions with structures (fences, towers, vehicles), and disease; interference with movement patterns due to fragmented landscapes; short- or long-term displacement and physiological or behavioral influences (avoidance of otherwise functional habitats).

Habitat Degradation
Weed infestation and understory and overstory reductions indicators (reductions in herbaceous ground cover, lack of residual cover, change in understory plant composition)

Miles disturbed (for limits on travel management, recreation, unleased areas)

Miles/acres disturbed. (It is assumed that habitat next to roads that are impacted by dust and dust suppression activities would have some lower level of understory next to the impacted habitat.)

Habitat Restoration or Improvement
The likelihood of improving habitat quality (e.g., increased species diversity, increased habitat connectivity, and decreased weeds).

Habitat Protection
Acres protected through stipulations, withdrawals, closures, and special designations (e.g., ACECs). Also, the likelihood of reduced or prohibited surface disturbance.

In addition to the assumptions listed under Section 4.1.2, the following would apply specifically to Greater Sage-Grouse:

- In general, Greater Sage-Grouse are highly sensitive to habitat fragmentation, development, or changes in habitat conditions. This is because Greater Sage-Grouse inhabit and require large, intact sagebrush ecosystems, and are especially sensitive to disturbance and human presence.

Conservation Planning
The goals for biological resources management in the PRMP are summarized in **Table 2-1** of this BA. Additionally, **Table 2-1** includes the objectives, actions, and conservation measures proposed to achieve the goals. The PRMP is primarily a landscape-level, programmatic-level document. The stipulations, conservation measures, and BMPs described below for Greater Sage-Grouse are not comprehensive. New conservation measures may be developed at the project level.

Objectives
One objective directly related to Greater Sage-Grouse is included in the PRMP (**Table 2-1**):

- Advance the conservation of Gunnison and Greater Sage-Grouse and their habitat in accordance with current national, state, and local working group recommendations and policy as well as the most current scientific literature and research.

Actions and Surface Disturbance Restrictions
Twenty-six management actions and stipulations directly related to Greater Sage-Grouse are included in the proposed plan (**Table 2-1**):

- Consistent with current guidance for sagebrush-dependent species, improve areas of poor quality nesting habitat by implementing the following actions, including but not limited to:
    - In areas where species diversity is low seed area with grasses and forbs, with an emphasis on forbs if brood-rearing occurs in the area, accompanied by light disking and interseeding, or drill seeding.
    - Where sage is decadent and does not meet habitat objectives, conduct thinning by roller-chopping, light disking, Dixie Harrow, Lawson Aerator or other methods.

  - Conduct vegetation treatments to retain residual cover through fall and winter into nesting season.

- When reseeding roads, primitive roads and trails, use appropriate seed mixes (appropriate for Sage-Grouse ecological conditions) and consider the use of transplanted sagebrush.
- Reduce routes through currently suitable or potentially suitable Gunnison and Greater Sage-Grouse habitat by reducing routes through sage brush parks, with an emphasis on routes that bisect sage brush parks.
- Improve brood-rearing habitats by implementing the following action:
  - Restore old ponds or construct new ponds in areas lacking water, while minimizing potential for promoting mosquito breeding habitat at elevations below 8,000 feet.
- Improve lek areas by mechanically treating historic lek areas where sagebrush density has increased.
- To reduce disturbance to Gunnison or Greater Sage-Grouse, close duplicative or redundant routes within Sage-Grouse habitat and within 4 miles of a lek.
- Remove/modify raptor perches, in Gunnison and Greater Sage-Grouse habitat (trees, fences, dry-hole markers, and power poles).
- Monitor measureable objectives and evaluate grazing management to assure that management actions are achieving Sage-Grouse habitat objectives.
- Design any new structural range improvements to conserve, enhance, or restore Sage-Grouse habitat through an improved grazing management system relative to Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, enclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments.
- To reduce Sage-Grouse strikes and mortality, remove, modify, or mark fences in high risk areas. When fences are necessary, require a Sage-Grouse-safe design.
- Locate supplements (salt or protein blocks) in a manner designed to conserve, enhance, or restore Sage-Grouse habitat.
- Offer temporary use on a case-by-case basis in allotments where grazing preference has been relinquished, or non-use warrants to rest other allotments that include important Sage-Grouse habitat.

- Apply TL-16 (Occupied Sage-Grouse Winter Habitat) or TL-17 (Sage-Grouse Leks) to vegetation management treatments according to the type of seasonal habitats present in a priority area.
- Monitor after vegetation treatments for success in meeting objectives and monitor and control invasive vegetation after vegetation treatments in Sage-Grouse habitat.
- Apply post-vegetation treatment management and monitoring to ensure long term persistence of seeded native plants. Outline temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain vegetation management objectives to benefit Sage-Grouse and their habitats.
- Design vegetation treatments in Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant seral stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design.
- Include Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, state and federal Sage-Grouse conservation and recovery plans and appropriate local information in habitat restoration objectives. Make maintaining these objectives within priority Sage-Grouse habitat areas a high restoration priority.
- Choose native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success, and the vegetation management objectives for the area covered by the treatment. Where probability of success or native seed availability is low, use species that meet soil stability and hydrologic function objectives as well as vegetation and Sage-Grouse habitat objectives.
- Manage the following areas to benefit Sage-Grouse habitat:
    - Wildlife Emphasis Areas:
        - Glade Park and
        - Sunnyside.
    - ACECs:
        - Roan and Carr Creek
- Identify the following as ROW exclusion areas:
    - Within a 0.6-mile radius of Sage-Grouse leks.
- Identify the following as ROW avoidance areas:

  - Sage-Grouse occupied habitat and
  - Within a 4-mile radius of Sage-Grouse leks.

- **No Leasing:** *Sage-Grouse.* Close all occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) and greater Sage Grouse habitat within one mile of an active lek to fluid mineral leasing and geophysical exploration.
- **No Leasing:** *Split-estate.* Manage 12,200 acres of Private and State surface/federal fluid mineral estate in all occupied Gunnison Sage-Grouse habitat and greater Sage Grouse habitat within one mile of an active lek as closed to fluid mineral leasing and geophysical exploration.
- **STIPULATION** TL-16: *Occupied Sage-Grouse Winter Habitat.* Prohibit surface occupancy and surface-disturbing activities in occupied Sage-Grouse winter habitat from December 16 to March 15.
- **STIPULATION** NSO-25: *Sage-Grouse Leks, Nesting, and Early Brood-rearing Habitat.* Prohibit surface occupancy and surface-disturbing activities within 4 miles of an active lek or within Sage-Grouse nesting and early brood-rearing habitat.
- **STIPULATION** TL-17: Sage-Grouse Leks. Prohibit surface occupancy and surface-disturbing activities within 4 miles of Sage-Grouse leks from March 1 to June 30.

Additional management actions indirectly related to the protection of the Greater Sage-Grouse are described in **Table 2-1** and incorporated by reference.

Colorado Standards for Public Land Health

The Colorado Standards for Public Land Health describe conditions needed to sustain public land health. They relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape (Appendix E of the PRMP). Of the five standards listed, standards 1, 3, and 4 would directly apply to the conservation of Greater Sage-Grouse. Specifically, standard 1 applies to the desire for upland soil moisture conditions to sustain optimal plant growth and vigor thereby enhancing habitat conditions. Standard 3 promotes the health of native plants and animals at the community and population levels. Standard 4 establishes BLM standards for protecting and enhancing special status, threatened, and endangered federal and state species and other plants and animals.

BMPs for Management Actions

Appendix H of the PRMP includes a number of BMPs and standard operating procedures that would benefit Greater Sage-Grouse by protecting soils, vegetation, and suitable habitat. These BMPs include but are not limited to:

closing selected routes to protect special status species, placing pipelines and other ROWs within road corridors when feasible to minimize disturbance, and minimizing disturbance to soil and native vegetation as much as possible. Additionally, various other practices designed to prevent or limit noxious and invasive weed infestations are also included as BMPs.

Direct and Indirect Effects

There would be no effects on Greater Sage-Grouse from air and climate resources; wild horses; cultural resources; paleontological resources; visual resources; water resources; wild and scenic rivers; lands with wilderness characteristics; forestry; National Trails; national, state, and BLM byways; Native American tribal uses; public health and safety; socioeconomics; and environmental justice. These resource programs are not discussed further.

Effects from Soils Resource Management

The goal of soil resource management in the GJFO RMP is to ensure upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for optimal plant growth and vigor, and minimizes runoff and erosion. As a result, this would support healthy Greater Sage-Grouse habitats.

Effects from Vegetation Management

Under the PRMP, vegetation management and protection would impact Greater Sage-Grouse habitats. Management to improve and protect vegetation conditions throughout the planning area would improve vegetative cover, reduce the likelihood for erosion and sedimentation, and maintain seed banks. Most vegetation treatments would not affect Greater Sage-Grouse, as a timing limitation would be applied to avoid impacts during sensitive periods. Improved vegetative conditions would improve habitat for Greater Sage-Grouse by providing more opportunities for lekking, nesting, brood-rearing, wintering, cover, and foraging over the long term. In the short term, vegetation treatments could remove potential habitat or increase the potential for weed spread. In addition, human disturbance and noise associated with the use of heavy equipment for vegetation removal could temporarily displace Greater Sage-Grouse from foraging, breeding, nesting, and wintering habitats.

Greater Sage-Grouse habitat would be improved and maintained through vegetation treatments, prioritizing winter Sage-Grouse habitat for treatment and restoration, developing restoration plans in non-functioning habitat, reducing pinyon-juniper encroachments, increasing habitat connectivity, and managing for age class diversity. Greater Sage-Grouse would be directly and indirectly affected by these management actions in the short and long term. Actions to reduce pinyon-juniper woodland invasion of upper elevation sagebrush communities would benefit Greater Sage-Grouse that require open sage parks.

Effects from Fish and Wildlife Management

In general, fish and wildlife management would improve and maintain habitat for a variety of species throughout the decision area. Objectives and actions intended to support big game species would likely also benefit to Greater Sage-Grouse. For example, elk winter concentrations areas and severe winter range overlap with PPH and PGH. Prohibiting surface occupancy and surface-disturbing activities from December 1 to May 1 in these areas to protect big game winter range would also benefit Greater Sage-Grouse populations by limiting activities which can result in behavior disturbances.

Effects from Special Status Species

A suite of management actions would be implemented to conserve Greater Sage-Grouse under the PRMP, including habitat improvement, habitat protection, and mineral leasing stipulations and prohibitions. Nesting, brood-rearing, and lek habitat would be improved, and vegetation management actions in sagebrush would aim to conserve, enhance, and restore Greater Sage-Grouse habitats. Raptor perches would be removed or modified in Greater Sage-Grouse habitat to reduce predation, and a Sage-Grouse-safe design would be required for all fences in PPH. In addition, the Roan and Carr Creeks ACEC and the Glade Park and Sunnyside wildlife emphasis areas would be managed for Sage-Grouse habitat. There would be a number of range management actions, such as authorizing new water developments when PPH would benefit and designing new structural range improvements to benefit PPH.

Effects from Wildland Fire Management

Depending on the extent, location, severity, and seral type affected, unplanned ignitions would have adverse impacts on Greater Sage-Grouse by removing or degrading habitat and/or reducing population viability. Large or intense wildfires could damage large expanses of habitat. Indirect effects could result from increased erosion, and increased potential for noxious and invasive weed establishment.

Under the PRMP, the BLM would avoid planned and unplanned fire in low-elevation cheatgrass-infested communities, which would help protect adjacent sagebrush habitats used by Greater Sage-Grouse. Following an unplanned fire, Emergency stabilization and rehabilitation treatments could help to reestablish vegetation and restore habitat for Greater Sage-Grouse. Using a variety of fuel treatments would have short-term effects on Greater Sage-Grouse and habitats through vegetation removal, increased likelihood of erosion and sedimentation, human presence, and the potential for habitat avoidance. In the long term, these activities would reduce the likelihood of uncharacteristically large or intense wildfires that could damage large expanses of habitat or kill or displace wildlife. In addition, the condition of upland vegetation would be improved.

Increased human activity and disturbance associated with wildland fire suppression and prescribed fire in areas occupied by Greater Sage-Grouse could

affect lekking, nesting, brood-rearing, wintering, or foraging behavior. Important habitats could be altered because of the use of heavy equipment, hand tools, and noise associated with intensive human activity. However, there is also a risk of habitat loss in areas where wildland fire suppression is absent or limited due to the increased potential for large and more severe wildfires. This in turn is balanced by the fact that a large fire could require extensive suppression operations, such as extensive staging areas and fire-line construction, which could themselves result in long-term effects on Greater Sage-Grouse and their habitats. Smaller fires that would require less extensive suppression operations would generally avoid these long-term effects.

Effects from Livestock Grazing Management

Potential impacts of herbivory (plant eating) on Greater Sage-Grouse habitat include historic overgrazing of sagebrush communities, resulting in Greater Sage-Grouse habitat changes (Beck and Mitchell 2000). By altering components necessary for Greater Sage-Grouse habitats, livestock grazing can impact the suitability and extent of Greater Sage-Grouse habitats (Wyoming Sage-Grouse Working Group 2003).

Potential impacts of grazing and associated activities on Greater Sage-Grouse include direct impacts of herbivores, such as trampling of nests and eggs, altered Greater Sage-Grouse behavior due to presence of herbivores, and impacts on Greater Sage-Grouse and their behavior from structures associated with grazing management (Beck and Mitchell 2000). Additionally, mortality associated with fence collisions has been documented in lesser prairie-chickens *(Tympanuchus pallidicinctus)* in Oklahoma (Wolfe et al. 2007) and Greater Sage-Grouse in Idaho (Stevens 2011). Stevens et al. (2012) showed that topographic features, proximity to active leks, lek size, and fence design and density can influence collision potential and frequency. Furthermore, fences in areas with higher Greater Sage-Grouse population densities had higher collision rates. Areas where fence densities exceed 1.6 miles per square mile may also pose a risk to Greater Sage-Grouse (Stevens 2011).

In areas that are available for livestock grazing, there could be more impacts on Greater Sage-Grouse than in areas where livestock grazing is excluded. Under the PRMP, 5,200 acres of Sage-Grouse PPH and 8,700 acres of PGH would be open to livestock grazing and 200 acres of PPH and 100 acres of PGH would be closed to livestock grazing.

The PRMP includes a number of management actions to incorporate Greater Sage-Grouse habitat objectives and management considerations into livestock grazing management. Such measures would help to improve vegetation condition of rangeland areas and could reduce the likelihood of nonnative invasive species introduction or spread. In addition, removing, modifying, or marking fences in high risk areas would help to reduce the threat of injury or mortality to Greater Sage-Grouse.

Effects from Recreation and Visitor Services

Areas Open for Casual Use. Impacts from recreational use would include impacts from casual use such as nonmotorized recreation or dispersed camping. Such activities are not subject to site-specific environmental review and vegetation impacts would not be apparent until after damage has occurred. Examples of direct impacts on Greater Sage-Grouse from casual use include habitat loss, fragmentation, and direct mortality from collisions with vehicles. Impacts are more likely to occur in easily accessible areas where visitation would be high, and in areas open to intensive motorized use, as cross-country travel facilitates weed spread as well as increasing habitat fragmentation. In general, the more acres of routes in the area, the greater the likelihood of habitat fragmentation and disturbance to species and habitats as high concentrations of human use typically occur on or immediately adjacent to motorized routes.

Permitted Uses. Activities authorized under SRPs could disrupt Greater Sage-Grouse, but all SRPs would contain standard stipulations appropriate for the type of activity and may include additional stipulations necessary to protect land or resources, including Greater Sage-Grouse.

Effects from Lands and Reality Management

Construction and operation of ROW facilities, such as pipelines, roads, and transmission lines, may result in habitat loss, fragmentation, and degradation. Surface disturbance during construction removes vegetation and important habitat components for Greater Sage-Grouse and, in most cases, renders the habitat unsuitable. ROWs, such as those for roads and industrial facilities, may lead to permanent loss of Greater Sage-Grouse habitat. Other ROWs, such as those for pipelines or buried power lines, may lead to a more short-term loss of habitat if the area were reclaimed after construction. However, following natural succession regimes, sagebrush communities would take 20 to 30 years to return to preconstruction conditions. In addition to removing vegetation, long-term occupancy of structures and facilities leads to direct habitat loss.

ROWs may also lead to habitat fragmentation and degradation. ROW projects can reduce patch size and increase edge habitats. Since Greater Sage-Grouse require large blocks of intact habitat, linear disturbances reduce habitat quality. Surface disturbance can also lead to new weed infestations and spread weeds where infestations already occur. Noxious and invasive weeds are often of lower value to wildlife, and degrade wildlife habitat by reducing optimal cover or food. Sagebrush-steppe communities are among the ecosystems most vulnerable to invasion and degradation by invasive weeds. Not only can invasive species outcompete most native plants when moisture is limited, they can also change site-specific fire ecology and result in the loss of critical shrub communities. The loss and degradation of sagebrush habitat can reduce the carrying capacity of local breeding populations of Greater Sage-Grouse, especially in areas where high quality sagebrush habitat is limited (Braun 1998; Connelly et al. 2000).

As such, there would likely be more impacts on Greater Sage-Grouse and their habitat in areas where ROWs are permitted compared to areas where ROWs are excluded or avoided.

Disruption Impacts. Both the construction and operation phases of ROW projects can lead to disruption impacts. Noise and an increase in human presence during construction may displace Greater Sage-Grouse into lower quality habitat and may disrupt breeding and nesting (Holloran 2005). Although construction impacts are generally short term, many impacts would continue during routine maintenance and operation of the ROWs. Greater Sage-Grouse would likely avoid habitat in the vicinity of infrastructure (Holloran et al. 2010), resulting in indirect habitat loss. In addition, noise and an increase in traffic during ROW operation and maintenance would disturb and likely displace Greater Sage-Grouse (Lyon and Anderson 2003; Holloran 2005). Avoidance of habitat would be most prevalent during levels of high human activity, such as ROW construction. Greater Sage-Grouse may avoid otherwise suitable habitat as the density of roads and infrastructure increases (Holloran 2005).

Greater Sage-Grouse have evolved in habitat devoid of tall structures. ROW projects involving tall structures, such as power lines (distribution and transmission lines), communication towers, and meteorological towers, may lead to avoidance of suitable habitat (Pitman et al. 2005; Pruett et al. 2009; Wisdom et al. 2011). Although peer-reviewed science that demonstrated a clear avoidance of tall structures is limited for Greater Sage-Grouse, studies conducted on species that have similar life history (i.e., the lesser and greater prairie-chickens) have shown that use of habitat is reduced when these habitats are located near tall structures (Pitman et al. 2005; Pruett et al. 2009).

Avian predators, particularly raptors and corvids (i.e., crows, ravens, and magpies), are attracted to overhead utility lines because they provide perches for various activities, including hunting (Avian Power Line Interaction Committee 2006). Increased predation and harassment of Greater Sage-Grouse may occur from new ROW projects involving power lines or other tall structures (Connelly et al. 2004). However, the PRMP includes management to remove or modify raptor perches, thereby reducing this threat. In addition, road ROWs may increase mammalian predator densities.

Construction and operation of ROW facilities may also lead to direct mortality of Greater Sage-Grouse. The potential for Greater Sage-Grouse mortality from project construction would be low and likely limited to nesting hens or young chicks that have limited mobility. Direct mortality may occur when Greater Sage-Grouse collide with turbines, power lines, or meteorological towers or their supporting infrastructure, such as guy wires (Connelly et al. 2004; Beck et al. 2006). In addition, an increase of traffic on roads from ROW maintenance and operations can lead to direct mortality through vehicle/Greater Sage-Grouse collisions.

Habitat Protection. ROW exclusion or avoidance areas would reduce or eliminate the above-described impacts on Greater Sage-Grouse and their habitat by not allowing ROWs in PGH or PPH. Under the PRMP, all areas within a 0.6-mile radius of leks would be ROW exclusion areas, covering 600 acres of PPH. Further, Sage-Grouse occupied habitat and areas within 4 miles of leks would be ROW avoidance areas, covering 5,000 acres of PPH and 8,700 acres of PGH. There would be no PPH within ROW corridors.

Effects from Energy and Mineral Management

While the long-term impacts of fluid minerals development are unclear (Connelly et al. 2000), recent studies have shown effects from these activities on Greater Sage-Grouse. Impacts include reduced nest initiation rates (Lyon and Anderson 2003), avoidance of developed areas and increases in movement (Lyon and Anderson 2003; Holloran 2005; Crompton 2005; Doherty et al. 2008), reduced attendance of males at lek sites (Holloran 2005; Walker et al. 2007; Crompton 2005), and reduced survivorship (Crompton 2005). Impacts occur in lekking, nesting, brood rearing, and winter habitat (Crompton 2005; Doherty et al. 2008), and negative effects have been shown to occur from 0.5 mile to 4 miles away from oil and gas development (Walker et al. 2007). It is possible that Sage-Grouse may repopulate developed areas after oil and gas operation ends, but long-term studies have not yet been conducted.

Within the planning area, leased and unleased fluid minerals overlap with PPH and PGH, see **Table 4-2**, Acres of Fluid Minerals in Greater Sage-Grouse Habitat by PPH and PGH.

Table 4-2
Acres of Fluid Minerals In Greater Sage-Grouse Habitat by PPH and PGH

Indicator	PPH	PGH
Total Acres	49,300 Acres	29,300 Acres
Acres of BLM Surface Ownership	5,520 Acres	8,900 Acres
% BLM Surface Ownership	11.2%	30.4%
Acres of Federal Minerals	9,600 Acres	13,400 Acres
% Federal Minerals	19.5%	45.7%
Acres of Federal Mineral Estate Leased	4,100 Acres	11,000 Acres
% of Habitat Currently Leased	8.3%	37.5%

As shown in **Table 4-2**, the majority of Greater Sage-Grouse habitat within the planning area occurs on non-BLM administered lands. Federal mineral estate covers 19.5 percent of PPH and 45.7% of PGH. 65.7% of all overlapping federal mineral estate has been leased. Because stipulations in the PRMP can only apply

to new leases, COAs would be more effective at limiting potential impacts associated with fluid mineral developments in these areas.

For the remainder of unleased federal mineral estate in PPH and PGH, stipulations and mineral leasing restrictions for Sage-Grouse include closure of all occupied Greater Sage-Grouse habitat to fluid mineral leasing; TL in occupied winter habitat; NSO for leks, nesting, and early brood-rearing habitat (with a four-mile buffer); CSU for nesting and early brood-rearing habitat (with a four-mile buffer); and TL within four miles of leks. In addition, Sage-Grouse preliminary priority habitat would not be acceptable for coal leasing under the PRMP. With implementation of the stipulations and COAs as described above, adverse effects to the Greater Sage-Grouse are not anticipated.

Effects from Travel Management

In general, the more acres of routes that are designated in the area, the greater the likelihood of habitat fragmentation and disturbance to Sage-Grouse and habitats as high concentrations of human use typically occur on or next to motorized routes. Areas designated as open have no restrictions on cross-country travel and therefore have the highest potential for increased route density and associated disturbance. Managing on-site recreation and motorized activity, limiting travel to designated routes, and closing travel routes could prevent or reduce impacts. For example, seasonal closure of routes would prevent impacts on species during sensitive or critical times of the year, such as during winter or birthing. Impacts are more likely to occur in easily accessible areas where visitation would be highest.

Under the PRMP, the BLM would reduce impacts on Greater Sage-Grouse by limiting key areas to motorized and mechanized vehicles. Specifically, 5,600 acres of PPH and 8,900 acres of PGH would be limited for motorized and mechanized vehicles. In addition, management actions to reduce routes in sage brush parks and close duplicative or redundant routes in Sage-Grouse habitat and within 4 miles of a lek would reduce the potential for impacts from vehicles and human presence.

Effects from Wilderness Study Areas

Under the PRMP, the BLM would continue to manage four existing WSAs within the planning area: Demaree Canyon (22,700 acres); Little Book Cliffs (29,300 acres); The Palisade (26,700 acres); and Sewemup Mesa (17,800 acres). These areas would be closed to motorized and mechanized travel and fluid mineral leasing and geophysical exploration. Further, surface occupancy and surface-disturbing activities would be prohibited. Given the reduced disturbance and human presence in these areas, continued management of the four WSAs within the planning area would benefit any Greater Sage-Grouse which occur within or adjacent to these areas.

Effects from Areas of Critical Environmental Concern Management

The BLM would designate 13 ACECs in the GJFO planning area under the PRMP, encompassing 123,400 acres. Of these, the Roan and Carr Creeks ACEC are valued for Greater Sage-Grouse (among other resources) which occur within the proposed designation boundaries. This designated area would be limited to designated routes, managed as a ROW avoidance area, and classified as unacceptable for coal leasing. In addition, an NSO stipulation would be applied to protect Sage-Grouse leks, nesting, and early brood-rearing habitat. As such, Greater Sage-Grouse would be protected from surface disturbance and associated impacts within these areas.

Cumulative Effects

Cumulative effects include those of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in cumulative analysis because they will be subject to separate consultation, in accordance with Section 7 of the ESA. Cumulative effects address the impact of implementing the RMP in combination with other future non-federal actions outside the scope of this RMP, either in the planning area or next to it.

The CIAA for Greater Sage-Grouse includes the Western Association of Fish and Wildlife Agencies Management Zone II and VII, which encompasses the entire population, and surrounding populations in Wyoming and Utah.

The majority of the planning area occurs within Mesa County, which has experienced significant population growth since 1987, and population forecasts expect the growth trend will continue (Colorado Division of Local Government, State Demography Office 2013). As such, continued use and development within the planning area is expected to continue. Past, present, and reasonably foreseeable future actions and conditions on non-federal lands in the CIAA that have affected and will likely continue to affect Greater Sage-Grouse are as follows:

- Mineral exploration and development
- Agricultural development
- ROW and infrastructure development
- Livestock grazing
- Recreation
- Road construction
- Weed invasion and spread
- Wildland fires
- Drought
- Farming

In general, resource use activities have cumulatively caused habitat removal, fragmentation, soil compaction, erosion, increased human presence, and weed spread as described above.

Many natural influences create conditions that cause vegetation changes. For example, wildland fire removes vegetation, which makes affected areas more susceptible to weed invasion and soil erosion. Droughts reduce vegetation health, leaving it prone to insect infestation or disease. Climate change in the CIAA could increase or decrease temperatures and precipitation. This would affect soil conditions, vegetation distribution, water flows, water quality, and water temperature (Ficklin et al. 2010; Lenihan et al. 2003; McKenney et al. 2007; Hamann and Wang 2006). Such changes would alter the conditions to which vegetation communities are adapted, potentially creating conditions that favor certain species or communities, weeds, or pests (Hellmann et al. 2007) and potentially creating unsuitable conditions for Greater Sage-Grouse.

CHAPTER 5
EFFECTS DETERMINATION

5.1 COLORADO HOOKLESS CACTUS

Implementing the RMP **may affect, is likely to adversely affect** the Colorado hookless cactus.

5.1.1 Rationale

- In 2012 the BLM prepared a BA (BLM 2012a) and an amendment containing revised conservation measures (BLM 2012b). The BA assessed the effects of the BLM's livestock grazing program on Colorado hookless cactus, clay-loving wild buckwheat, and DeBeque phacelia in the Uncompahgre, Grand Junction, and Colorado River Valley Field Offices. The BA determined that livestock grazing permitted by the BLM is likely to adversely affect these three listed species. The USFWS issued a programmatic BO for the consultation on November 15, 2012 (USFWS 2012b). This BA tiers to the 2012 BO for livestock grazing. Grazing activities within the GJFO would contribute to the adverse effects determination for the Colorado hookless cactus.

- Under the Proposed RMP, 56.4 miles of routes open to public use (including 11.2 miles of county-maintained roads) would be located within 200 meters of known Colorado hookless cactus occurrences. An addition, 9.8 miles of routes within 200 meters would be restricted to administrative and permitted use only. There would also be 47.9 miles of existing routes within 200 meters of known occurrences proposed for closure and rehabilitation. Within 20 meters of known occurrences, 4.1 miles of routes would be open to public use (including 0.3 miles of county-maintained roads) and 1.1 miles of routes would be restricted to administrative and permitted use only. There would be 5.8 miles of routes within 20 meters of known occurrences proposed for closure and rehabilitation.

Impacts, in the form of trampling, could also occur from cross-country foot and horse travel. Therefore, adverse effects associated with travel and transportation are anticipated.

- Numerous actions, stipulations, BMPs, and other measures detailed in Section 4.2.1would be implemented under the PRMP to protect Colorado hookless cactus and its habitat throughout the planning area. However, adverse effects from livestock grazing and travel management are anticipated.

5.2 DEBEQUE PHACELIA

Implementing the RMP **may affect, is likely to adversely affect** the DeBeque phacelia. Additionally, implementing the RMP **may affect, is likely to adversely affect** designated critical habitat for the DeBeque phacelia.

5.2.1 Rationale

- In 2012 the BLM prepared a BA (BLM 2012a) and an amendment containing revised conservation measures (BLM 2012b). The BA assessed the effects of the BLM's livestock grazing program on Colorado hookless cactus, clay-loving wild buckwheat, and DeBeque phacelia in the Uncompahgre, Grand Junction, and Colorado River Valley Field Offices. This BA determined that livestock grazing permitted by the BLM is likely to adversely affect these three listed species. The USFWS issued a programmatic BO for this consultation on November 15, 2012 (USFWS 2012b). This BA tiers to the 2012 BO for livestock grazing. Grazing activities within the GJFO would contribute to the adverse effects determination for the DeBeque phacelia.

- Numerous actions, stipulations, BMPs, and other measures detailed in Section 4.2.1 would be implemented under the PRMP to protect the DeBeque phacelia and its habitat throughout the planning area. However, adverse effects from livestock grazing and travel management are still anticipated.

5.3 PARACHUTE PENSTEMON

Implementing the RMP **may affect, is not likely to adversely affect** the Parachute penstemon. Additionally, implementing the RMP **may affect, is not likely to adversely affect** designated critical habitat for the Parachute penstemon.

5.3.1 Rationale

- The majority of Parachute penstemon occurrences within the planning area are found on private lands where the BLM has limited ability to implement protective measures. However, the cooperative

work between Oxy Oil Shale, the Colorado Natural Areas Program (CNAP), and USFWS in the designation of a Natural Area for the Logan Wash Mine demonstrates Oxy Oil Shale's commitment to the protection of Parachute penstemon on their private land.

- Drainage clearing along the Logan Wash Mine area (as required by the Logan Wash Mine stormwater management plan) is the one of the most significant threats to individuals within the planning area.

- The Logan Wash Mine area would be identified as a core conservation population, and would be managed to maintain the population. Management tools include but are not limited to the use of mats, weed treatments, route closures, and fencing/barriers. Additionally, rehabilitation and closure of roads associated with authorized uses would occur when no longer needed.

5.4 UTE LADIES'-TRESSES

Implementing the RMP **may affect, is not likely to adversely affect** the Ute Ladies'-tresses and its habitat.

5.4.1 Rationale

- No known occurrences have been documented within the planning area.

- There is minimal potential habitat with the planning area. Riparian areas surround DeBeque and Plateau Creek is considered suitable. NSO-2 (streams/springs possessing lotic riparian characteristics) would help protect this habitat by prohibiting surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, surface occupancy and use and surface-disturbing activities would be prohibited within the riparian zone.

5.5 BONYTAIL, HUMPBACK CHUB, RAZORBACK SUCKER, COLORADO PIKEMINNOW

Implementing the PRMP **may affect, is likely to adversely affect** the four endangered Colorado River fishes. Additionally, the PRMP **may affect, is likely to adversely affect** the four endangered Colorado River fishes critical habitat.

5.5.1 Rationale

- Water depletion activities (e.g. construction of water impoundments, water diversions, and water use associated with fluid mineral development) are likely to adversely affect the four big

river fish species and their critical habitat. These effects from water depletions would be similar to those effects described under the 2008 fluid minerals, and the 2009 non-fluid mineral water depletions BOs. The effects under the RMP would not exceed those consulted on in the programmatic BOs (USFWS 2008; 2009a).

- The indirect effects of small, site-specific increases in sediment on the four endangered Colorado fish species would be negligible and well within the background levels carried by the Colorado and Gunnison Rivers. Any increased sediment loading into the river from BLM management would be largely undetectable.
- Elevated selenium concentrations can affect fish reproduction and recruitment. Selenium leaching is a naturally occurring process within the planning area, and is expected to continue. Stipulations and BMPs in the PRMP including those that affect stormwater, steep slopes, and proximity to drainages are expected to reduce the likelihood of water quality impacts from the implementation of the RMP to the point where these impacts would be discountable.
- While such programs as travel, ROWs, and wildland fire suppression have the potential for accidental spills and leaks of hazardous substances associated with their application on BLM lands, the BLM does not authorize these accidents. The RMP and this BA contain conservation measures to reduce the risk of these occurrences near critical habitats for these fish. In the rare and unlikely event of a spill, the BLM would initiate emergency consultation with the USFWS.
- Climate change is an unknown factor regarding long-term persistence of some cutthroat trout populations. However, given the global scale over which effects are occurring, it is impossible to detect effects from actions authorized in this plan. Managing stream and riparian habitats to their full potential will help to offset impacts associated with global climate change.

5.6 GREENBACK CUTTHROAT TROUT

Implementing the PRMP **may affect, is not likely to adversely affect** the greenback cutthroat trout.

5.6.1 Rationale

- Increased sediment and turbidity have the potential to impact green lineage cutthroat trout; however stipulations, BMPs, and the designation of the Roan and Carr Creeks ACEC would limit surface disturbing activities near occupied waterways.

- While such programs as travel, ROWs, and wildland fire suppression have the potential for accidental spills and leaks of hazardous substances associated with their application on BLM lands, the BLM does not authorize these accidents. The RMP and this BA contain conservation measures to reduce the risk of these occurrences near critical habitats for these fish. In the rare and unlikely event of a spill, the BLM would initiate emergency consultation with the USFWS.

- Climate change is an unknown factor regarding long-term persistence of some cutthroat trout populations. However, given the global scale over which effects are occurring, it is impossible to detect effects from actions authorized in this plan. Managing stream and riparian habitats to their full potential will help to offset impacts associated with global climate change.

- Stipulations and BMPs to protect perennial waterways would also protect green lineage cutthroat trout habitat

5.7 MEXICAN SPOTTED OWL

Based on the effects analysis and the management actions, stipulations, and conservation measures described above, implementation of the RMP **may affect, is not likely to adversely affect** the threatened Mexican spotted owl. The PRMP would have no effect on critical habitat because none has been designated in the action area.

5.7.1 Rationale

- No individuals are known to occur in the RMP planning area.
- The RMP and this BA contain conservation measures and management actions to reduce the risk of impacting Mexican spotted owl habitat.

5.8 CANADA LYNX

Based on the effects analysis and the management actions, stipulations, and conservation measures described above, implementation of the RMP **may affect, is not likely to adversely affect** the threatened Canada lynx. Additionally, implementing the RMP **may affect, is not likely to adversely affect** proposed critical habitat for the Canada lynx.

5.8.1 Rationale

- Limited suitable habitat occurs within the planning area.
- The RMP and this BA contain conservation measures and management actions to maintain and improve BLM-managed portions of the Lynx Analysis Unit.

5.9 WESTERN YELLOW-BILLED CUCKOO

Based on the effects analysis and the management actions, stipulations, and conservation measures described above, implementation of the RMP **may affect, is not likely to adversely affect** the threatened western yellow-billed cuckoo. Additionally, the PRMP **may affect, is not likely to adversely affect** the proposed western yellow-billed cuckoo critical habitat.

5.9.1 Rationale

- The RMP and this BA contain conservation measures, BMPs, and management actions to reduce the risk of impacting yellow-billed cuckoo and associated riparian habitat including limitations on development within riparian areas.

5.10 GUNNISON SAGE-GROUSE

5.10.1 Determination for Gunnison Sage-Grouse

Based on the effects analysis and the management actions and conservation measures described above, implementation of the RMP is not likely to jeopardize the continued existence of the Gunnison Sage-Grouse. Implementation of the RMP **may affect, is likely to adversely affect** the Gunnison Sage-Grouse.

5.10.2 Rationale

- Livestock grazing may potentially result in adverse impacts to the Gunnison Sage-Grouse through trampling of nests. This is thought to be rare but the impact is not discountable.
- Impacts would not be sufficient to preclude the survival or recovery of the population as a whole. If the proposed species is listed, the BLM would request that the conference opinion be included in the BO.
- The RMP and this BA contain conservation measures, BMPs, and management actions to reduce the risk of impacting Gunnison Sage-Grouse.
- Surface disturbance restrictions would be implemented under the RMP to prohibit surface-disturbing activities, with the goal of protecting sensitive Gunnison Sage-Grouse habitat from human-caused disturbances. These include but are not limited to NSO stipulations surrounding active leks; TLs which would prohibit surface occupancy and surface disturbing activities in or surrounding occupied winter habitat, leks, nesting, and early brood-rearing habitat; and ROW exclusion and avoidance designations near leks and occupied habitat. No fluid mineral development potential occurs within or near established Gunnison Sage-Grouse

populations in the GJFO planning area, and no existing fluid mineral leases overlap proposed critical habitat. All occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) would be closed to leasing.

5.10.3 Determination for Gunnison Sage-Grouse Proposed Critical Habitat

Based on the effects analysis and the management actions and conservation measures described above, implementation of the RMP **may affect, is not likely to adversely affect** the Gunnison Sage-Grouse proposed critical habitat.

5.10.4 Rationale

- Determination for proposed critical habitat included the consideration of the potential for 'harm' to Gunnison Sage-Grouse. The ESA handbook defines harm as an act which actually kills or injures wildlife, to include significant habitat modification or degradation when it actually kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding or sheltering (ESA handbook 4-46). At no point will proper livestock grazing in the project area reach a level to significantly impair breeding, feeding, or sheltering behavior of Gunnison Sage-Grouse. Grazing authorizations are required to incorporate sage-grouse habitat objectives into all allotments in occupied critical habitat. Allotments in occupied habitat are prioritized for land health assessments and required to have sage-grouse habitat objectives incorporated in to LHAs. Proper livestock grazing management does not considerably reduce the capability of designated or proposed critical habitat to satisfy requirements essential to both the survival and recovery of a listed species, and does not lead to adverse effects on critical habitat. This is evident in the Gunnison Basin where almost all habitats in the basin are grazed by livestock. Gunnison Sage-Grouse in the Gunnison Basin have experienced steady population trends over the last decade, even during drought. Improper livestock grazing management may have adverse impacts on critical habitat; however this plan does not analyze an improper livestock grazing alternative.
- The RMP and this BA contain conservation measures, BMPs, and management actions to reduce the risk of impacting Gunnison Sage-Grouse.
- Surface disturbance restrictions would be implemented under the RMP to prohibit surface-disturbing activities, with the goal of protecting sensitive Gunnison Sage-Grouse habitat from human-caused disturbances. These include but are not limited to NSO stipulations surrounding active leks; and ROW exclusion and

avoidance designations near leks and occupied habitat. No fluid mineral development potential occurs within or near established Gunnison Sage-Grouse populations in the GJFO planning area, and no existing fluid mineral leases overlap proposed critical habitat. All occupied Gunnison Sage-Grouse habitat (currently 10,600 acres) would be closed to leasing.

5.11 GREATER SAGE-GROUSE

Based on the effects analysis and the management actions and conservation measures described above, implementation of the RMP is not likely to jeopardize the continued existence of the Greater Sage-Grouse. Implementation of the RMP **may affect, is not likely to adversely affect** the Greater Sage-Grouse.

5.11.1 Rationale

- The GJFO contains primarily wintering habitat for the species on BLM lands. The potential for trampling of nests and/or eggs by permitted livestock is unlikely and therefore discountable.
- Impacts would not be sufficient to preclude the survival or recovery of the population as a whole. If the proposed species is listed, the BLM would request that the conference opinion be include in the BO.
- The RMP and this BA contain conservation measures, BMPs, and management actions to reduce the risk of impacting the Greater Sage-Grouse.
- Surface disturbance restrictions would be implemented under the RMP to prohibit surface-disturbing activities, with the goal of protecting sensitive Greater Sage-Grouse habitat from human-caused disturbances. These include but are not limited to NSO stipulations surrounding active leks; TLs which would prohibit surface occupancy and surface disturbing activities in or surrounding occupied winter habitat, leks, nesting, and early brood-rearing habitat; and ROW exclusion and avoidance designations near leks and occupied habitat.
- Impacts on Greater Sage-Grouse and its habitat would be minimized to the extent practical and feasible through compliance with the BLM Manual 6840, restrictions, stipulations, closures to mineral exploration and development, designation of ACECs, COAs, and by concentrating development in previously disturbed areas. Habitat conditions would be improved through vegetation treatments, weed prevention and control, and grazing management.

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SECTION 6
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Appendix A

Rangeland Heath Conditions in Gunnison Sage-Grouse Critical Habitat

Existing Rangeland Health Conditions By Proposed and Unoccupied Gunnison Sage-Grouse Critical Habitat for Individual Grazing Allotments

Allotment Name	Total Acres	Total Federal Acres	Acres of Occupied Habitat Meeting Standards	Acres of Unoccupied Habitat Meeting Standards	Acres of Occupied Habitat Meeting Standards with Problems	Acres of Unoccupied Habitat Meeting Standards with Problems	Acres of Occupied Habitat not Meeting Standards	Acres of Unoccupied Habitat not Meeting Standards
28 Hole	663	663	139	134	324	66	0	0
Battleship	3,662	1,090	0	394	0	283	0	344
Beezer	1,138	1,126	0	1,126	0	0	0	0
Buckhorn[1]	2,438	2,438	0	253	0	0	0	0
Carns Point	87	50	0	50	0	0	0	0
Clarks Bench	3,070	2,467	0	130	0	0	0	0
Coates Creek	630	378	0	165	0	213	0	0
Cook Canyon	238	126	0	126	0	0	0	0
Dierich Ranch	2,733	1,388	95	1,292	0	0	0	0
Duval	658	658	0	658	0	0	0	0
Duval Bottom	1,173	1,173	0	974	0	0	0	199
East Tom's Canyon	3,892	3,681	0	3,357	0	59	0	265
Fessler	1,054	888	0	864	0	0	0	24
Files	4,076	2,679	0	2,345	0	0	0	333
Fish Canyon	3,683	3,659	283	3,374	0	0	0	0
Fish Park[2]			1,113	756	0	0	257	69
Flat Rock	2,160	705	0	701	0	0	0	0
Hall	91	73	0	73	0	0	0	0
Haystack[2]			1,103	145	0	0	0	0
Hill Creek Flats	6,067	5,470	2,293	2,886	0	0	0	0
King-Rogers	15,240	895	0	210	0	0	0	0
Kings Gap	963	453	0	439	0	0	0	0

Existing Rangeland Health Conditions By Proposed and Unoccupied Gunnison Sage-Grouse Critical Habitat for Individual Grazing Allotments

Allotment Name	Total Acres	Total Federal Acres	Acres of Occupied Habitat Meeting Standards	Acres of Unoccupied Habitat Meeting Standards	Acres of Occupied Habitat Meeting Standards with Problems	Acres of Unoccupied Habitat Meeting Standards with Problems	Acres of Occupied Habitat not Meeting Standards	Acres of Unoccupied Habitat not Meeting Standards
Leslie Bays	6,105	961	3	600	0	303	0	0
Little Dolores Canyon[2]			0	1,269	0	0	0	374
Little Dolores River		1,638	131	1,508	0	0	0	0
Livestock Trail	346	346	0	346	0	0	0	0
Longshore Above Rims[2]			12	33	442	96	0	0
Longshore Below Rims[2]			41	1,345	0	0	0	0
Mabie	794	65	0	64	0	0	0	0
Malone	480	86	0	79	0	3	0	0
McKenzie[2]			29	379	0	0	0	0
Meinhart	3,839	2,144	15	1,580	251	51	0	104
Moore	1,367	336	0	13	0	210	0	0
Mountain Island	43,541	35,046	1	588	0	0	0	0
Notch Springs	3,704	3,467	0	71	0	0	0	0
Payne Wash	3,525	2,408	0	2,096	0	0	0	0
Reservation	3,085	2,944	0	477	1,610	526	8	320
Sieber Canyon[2]			0	1,025	0	0	0	201
Skinner	3,716	1,498	0	1,051	0	0	0	0
Snyder Flats	5,322	3,223	0	2,358	0	0	0	0
South of the	2,026	1,329	0	1,104	0	216	0	0

Existing Rangeland Health Conditions By Proposed and Unoccupied Gunnison Sage-Grouse Critical Habitat for Individual Grazing Allotments

Allotment Name	Total Acres	Total Federal Acres	Acres of Occupied Habitat Meeting Standards	Acres of Unoccupied Habitat Meeting Standards	Acres of Occupied Habitat Meeting Standards with Problems	Acres of Unoccupied Habitat Meeting Standards with Problems	Acres of Occupied Habitat not Meeting Standards	Acres of Unoccupied Habitat not Meeting Standards
Road Spring Creek	5,779	5,779	2,013	3,225	0	60	0	67
Thompson	6,420	5,282	0	173	0	0	0	0
Timber Ridge	1,418	1,391	0	1,391	0	0	0	0
Unalloted Mesa Top	991	991	0	991	0	0	0	0
Van Loan Individual	650	347	0	337	0	0	0	0
West Tom's Canyon	3,487	3,481	0	3,013	0	468	0	0
Wiretrap	510	510	0	510	0	0	0	0
Woodring	2123	1,110	0	19	0	0	0	0

Source: BLM 2002e; BLM 2007b; US Forest Service and BLM 1995

[1]Allotment is within the GJFO planning area but is managed and covered under the BLM, Moab Field Office RMP regarding grazing.

[9]Mountain Island allotment is a consolidation of Brush Hole, Fish Park, Haystack, Little Dolores Canyon, Longshore Above Rims, Longshore Below Rims, Lost Horse, McKenzie, and Sieber Canyon allotments. Fish Park is part of Interdistrict Agreement with Moab Field office

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APPENDIX B
STIPULATIONS APPLICABLE TO FLUID MINERAL LEASING AND OTHER SURFACE-DISTURBING ACTIVITIES

This appendix lists by alternative the stipulations for fluid mineral leasing (e.g., oil, gas, and geothermal) referred to throughout this Proposed RMP/Final EIS. These stipulations would also apply, where appropriate, to all surface-disturbing activities (and occupancy) associated with land use authorizations, permits, and leases issued on BLM lands. The stipulations would not apply to activities and uses where they are contrary to laws, regulations, or specific program guidance. The intent of these stipulations is to consistently mitigate impacts by applying the same stipulation to all land use authorizations across the board. It is BLM's intent to incorporate the same level of restrictions, to the extent practicable, on agency proposed projects.

Stipulations also apply to fluid mineral leasing on lands overlying federal mineral estate, which includes federal mineral estate underlying BLM lands, privately owned lands, and state-owned lands. As such, federal mineral estate acres are greater than BLM surface acres. Within the planning area, the BLM administers 1,061,400 acres of surface estate and 169,800 acres of split-estate (i.e., where the surface rights are in private ownership and the rights to development of the mineral resources are publicly held and managed by the federal government (BLM). The BLM will coordinate with the surface owner when applying stipulations on split-estate at the leasing phase. Other land management agencies may have their own surface management decisions for oil and gas development; the BLM would apply these decisions with consent and may add additional stipulations in cooperation with the surface-management agency. Acreages in this appendix reflect federal mineral estate overlain by BLM, private, and state-owned land. Acreages for stipulations are calculated based on current information and may be adjusted in the future through plan maintenance as conditions warrant.

Data from GIS have been used in developing acreage calculations and for generating many of the figures in Appendix A. Calculations are dependent upon the quality and availability of data and most calculations in this RMP are rounded to the nearest one hundred acres. Given the scale of the analysis, the compatibility constraints between datasets, and lack of data for some resources, all calculations are approximate and serve for comparison and analytic purposes only. Likewise, the figures in Appendix A are provided for illustrative purposes and subject to the limitations discussed above. BLM may receive additional GIS data; therefore, acreages may be recalculated and revised at a later date.

Surface-disturbing activities are those that normally result in more than negligible (i.e., immeasurable, not readily noticeable) disturbance to vegetation and soils on public lands and accelerate the natural erosive process.

Surface disturbances could require reclamation and normally involve use and/or occupancy of the surface, causing disturbance to soils and vegetation. They include, but are not limited to: the use of mechanized earth-moving equipment; truck-mounted drilling and geophysical exploration equipment off designated routes; off-road vehicle travel in areas designated as limited or closed to off road vehicle use; construction of facilities such as oil and gas wells and/or pads; major recreation sites; new trail construction; and use of pyrotechnics and explosives. Surface disturbance is not normally caused by casual-use activities. Activities that are not normally considered surface disturbing include, but are not limited to: livestock grazing, cross country hiking, minimum impact filming, vehicular travel on designated routes, and minimum impact emergency response activities such as construction of fire line using hand tools as a tactic for suppression and management of unplanned fire. Even where stipulations prohibit surface disturbing activities, some surface disturbing activities may be allowed under exceptions from stipulations through the process described under **Section B.2.1**. (Example 1: A livestock fence proposed in an area covered by NSO-35 for Wildlife Emphasis Areas may be excepted from the stipulation if it can be shown that the project will have negligible impacts to wildlife through appropriate mitigation; or example 2: A natural gas well pad proposed in an area covered by CSU-8 for Old Growth Forests and Woodlands may be excepted from the stipulation if it can be shown that the project would have negligible impacts on old growth forests and woodlands through appropriate mitigation.)

The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by environmental analysis. All mitigation/conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations.

B.1 DESCRIPTION OF STIPULATIONS

Tables B-1 through **B-4** summarize the stipulations, and **Tables B-5** through **B-8** provide details of the stipulations and protected resources including exceptions, modifications, and waivers by alternative. Three types of stipulations could be applied to fluid mineral leasing or to land use authorizations, except for those authorized under the realty program: 1) NSO or other no surface-disturbing activities; 2) CSU; and 3) TL. ROW authorizations are governed by avoidance and exclusion area restrictions. ROW avoidance areas may have corresponding stipulations, as specifically noted in **Tables B-1** through **B-3** and **Tables B-5** through **B-7**. In these cases, denoted as NSO-X (ROWA), CSU-X (ROWA), or TL-X (ROWA), the surface area covered by the stipulation is considered a ROW avoidance area. Where stipulations are noted as *Partial ROWA*, only a portion of the area covered by the stipulation is a ROW avoidance area. See the glossary for descriptions of ROW avoidance and ROW exclusion.

Lease stipulations and lease notices would be applied to all new leases. On existing leases, the BLM would seek voluntary compliance or would develop Conditions of Approval for Applications for Permit to Drill to achieve resource objectives of the RMP (see BLM's Land Use Planning Handbook H-1601-1 at Appendix C, part H), when determined reasonable and consistent with valid existing rights.[1]

Stipulations identified in Alternative A, current management, were developed in the 1987 GJFO RMP (BLM 1987) and are annotated as "existing" in italics in the "stipulations number" column of **Tables B-1** through **B-4** and **B-5** through **B-8**.

B.1.1 No Surface Occupancy (NSO) or Other Surface-disturbing Activities

Use or occupancy of the land surface for fluid mineral exploration or development and other surface-disturbing activities (as defined above) is prohibited to protect identified resource values. In Alternative A, NSO stipulations apply only to fluid mineral exploration or development. Refer to **Tables B-1** and **B-5**. Acreages are provided in these tables for mapped stipulations.

The NSO/No Surface-disturbing Activities stipulation, a major constraint, includes stipulations that may have been worded as "No Surface Use/Occupancy," "No Surface Disturbance," "Conditional NSO," "ground-disturbing activity," and "Surface Disturbance or Surface Occupancy Restriction (by location)."

[1] See also 43 CFR 1610.5-3(b): "…the Field Manager shall take appropriate measures, subject to valid existing rights, to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved plan or amendment within a reasonable period of time."

Areas identified as NSO/No Surface-disturbing Activities are open to fluid mineral leasing, but surface-disturbing activities cannot be conducted on the surface of the land unless an exception, waiver, or modification is granted (Section B.2). Access to fluid mineral deposits would require directional drilling from outside the boundaries of the NSO/No Surface-disturbing Activities areas.

An NSO/No Surface-disturbing Activities stipulation cannot be applied to operations conducted under the 1872 Mining Law unless the lands have been withdrawn from mineral entry and the operator has no valid and existing mining claims. A withdrawal is not considered a land use planning decision because it must be approved by the Secretary of Interior. Therefore, unless withdrawn from mineral entry with no pre-existing mining claims, areas identified as NSO/No Surface-disturbing Activities are open to operations conducted under the mining laws, and subject only to TL and CSU stipulations that are consistent with the rights granted under the mining laws. Where only an NSO stipulation exists, and no equivalent CSU or TL stipulations applies to operations conducted under the mining laws, the NSO stipulation would be applied as a CSU stipulation (i.e., the surface-disturbing activity could be shifted more than 200 meters [656 feet] to protect the specified resource or value if consistent with the rights granted under the mining laws).

An NSO/No Surface-disturbing Activities stipulation does not apply to existing facilities and the maintenance of existing facilities, such as, but not limited to, range improvements, oil and gas wells and/or pads, and major recreation sites.

B.1.2 Controlled Surface Use (CSU)

CSU is a category of moderate constraint stipulations that allows some use and occupancy of public land while protecting identified resources or values. A CSU stipulation allows the BLM to require special operational constraints, or the surface-disturbing activity can be shifted more than 200 meters (656 feet) to protect the specified resource or value. Refer to **Tables B-2** and **B-6**. Acreages are provided in these tables for mapped stipulations.

B.1.3 Timing Limitations (TL)

Areas identified for TL, a moderate constraint, are closed to fluid mineral exploration and development, surface-disturbing activities, and intensive human activity during identified time frames. This stipulation does not apply to operation and basic maintenance activities, including associated vehicle travel, unless otherwise specified. Construction, drilling, completions, and other operations considered to be intensive in nature are not allowed. Intensive maintenance and routine or scheduled workovers on wells is not permitted. Administrative activities are allowed at the discretion of the Authorized Officer. Refer to **Tables B-3** and **B-7**. Acreages are provided in these tables for mapped stipulations.

B.1.4 Lease Notice (LN)

A LN provides more-detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. An LN also addresses special items that lessees should consider when planning operations but does not impose additional restrictions. Lease Notices apply only to leasable minerals (e.g., oil, gas, geothermal) and not to other types of leases, such as livestock grazing. Refer to **Tables B-4** and **B-8**.

B.1.5 Condition of Approval (COA)

Conditions of Approval are enforceable conditions or provisions (requirements) under which an Application for Permit to Drill is approved.

B.1.6 Mitigation and Monitoring

Stipulations are designed to provide resource-specific protections. Permit holders shall be responsible for the monitoring and reporting deemed necessary to document and maintain mandated protective measures. Also, the BLM retains the right to modify the operations of all surface and other disturbance activities caused by the presence of humans and to require additional specific or specialized mitigation following the submission of a detailed plan of development or other project proposal, a monitoring report, and an environmental analysis of such.

B.2 EXCEPTIONS, MODIFICATIONS, AND WAIVERS

Stipulations could be excepted, modified, or waived by the Authorized Officer. An exception exempts the holder of the land use authorization document from the stipulation on a one-time basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently exempts the surface stipulation. Any changes to stipulations will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of stipulations, see BLM Manuals 1624 and 3101.)

B.2.1 Exception, Modification, or Waiver Process

An exception, modification, or waiver may be granted at the discretion of the Authorized Officer if any of the standard exception, modification, or waiver criteria (**Section B.2.2**, **B.2.3**, **B.2.4**) are met; or if any of the exception, modification, or waiver criteria specific to the stipulation (**Tables B-5, B-6, B-7**) are met. In order to implement an action that would not normally be allowed because of a stipulation, the proponent must submit a request in writing for an exception, modification, or waiver. The request shall detail which exception, modification, or waiver criteria are met. When requested concurrently with an application, the exception, modification, or waiver is considered as part of the project proposal in RMP and NEPA compliance review. For separate requests, the request is considered as a unique action and is analyzed and documented individually for RMP and NEPA compliance. The Authorized Officer will make the final determination whether to grant an exception, modification, or waiver

to stipulations. When use of heavy equipment is necessary for emergency response activities such as wildland fire suppression, management of unplanned fire, and emergency stabilization, the standard exception would be approved verbally by the BLM authorized officer as delegated (e.g., Incident Commander in coordination with Resource Advisor).

B.2.2 Standard Exception

The standard exception applies to all NSO/No Surface-disturbing Activities, CSUs, and TLs, even though the standard exception is not included in the "exception" portion of **Tables B-5** through **B-7**. In situations where a surface-disturbing activity is excepted, the activity could be subject to additional conditions of approval, reclamation measures, or BMPs. Measures required would be based on the nature and extent of resource values potentially affected by the surface-disturbing activity.

Fluid Minerals

An exception is a one-time exemption for a particular site within the leasehold. Exceptions are determined on a case-by-case basis. The stipulation continues to apply to all other sites within the leasehold. The Authorized Officer may grant an exception to a stipulation if it is determined that the factors leading to its inclusion in the lease have changed sufficiently such that:

1. the protection provided by the stipulation is no longer justified or necessary to meet resource objectives established in the RMP; or
2. proposed operations would not cause unacceptable impacts.

The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination.

All Programs Except Fluid Minerals

An exception may be granted by the Authorized Officer if it can be demonstrated that the surface-disturbing activity:

1. would not cause adverse impacts or would have negligible impacts to the resource or resource use that the stipulation was designated to protect; or
2. would improve the protected resource or resource use as defined by RMP objectives, standards, or conditions in the stipulation (e.g., fuels treatment that improves forbs in key wildlife habitat, or trail construction for resource protection in an ACEC or elsewhere);
3. is necessary to meet health and safety objectives such as fire suppression or fire emergency stabilization and rehabilitation; or
4. is necessary to protect federal mineral estate.

B.2.3 Standard Modification

A modification is a change to the provisions of a lease stipulation, either temporarily or for the term of the lease. Depending on the specific modification, the stipulation may or may not apply to all sites within the leasehold to which the restrictive criteria are applied.

In accordance with the provisions of 43 CFR 3101.1-4, the Authorized Officer may modify a stipulation or the area subject to the stipulation if it is determined that the factors leading to its inclusion in the lease have changed sufficiently. The Authorized Officer may modify a stipulation as a result of new information if:

1. the protection provided by the stipulation is no longer justified or necessary to meet resource objectives established in the RMP;
2. the protection provided by the stipulation is no longer sufficient to meet resource objectives established in the RMP; or
3. proposed operations would not cause unacceptable impacts.

The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination, and the modification may be subject to public review for at least a 30-day period.

B.2.4 Standard Waiver

A waiver is a permanent exemption from a lease stipulation. When a waiver is granted, the stipulation no longer applies anywhere within the leasehold.

In accordance with the provisions of 43 CFR 3101.1-4, the Authorized Officer may waive a stipulation if it is determined that the factors leading to its inclusion in the lease no longer exist. The Authorized Officer may require additional plans of development, surveys, mitigation proposals, or environmental analysis, and may be required to consult with other government agencies and/or the public in order to make this determination. The waiver may be subject to public review for at least a 30-day period.

No permanent exemptions or waivers are authorized unless the areas mapped as possessing the attributes are field verified by BLM staff to lack those attributes.

B.3 Standard Terms and Conditions for Fluid Mineral Leasing

Oil and gas development is subject to standard terms and conditions of the lease. Onshore Oil and Gas Order No. 1 (Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Approval of Operations) regulations (43 CFR 3160) give the BLM the ability to relocate proposed operations up to 200 meters (656 feet) and prohibit surface-disturbing operations for a period not to exceed 60 days.

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
	Water Resources						
NSO-1 *(ROWA)*	Major River Corridors			●	●		✓
HYDROLOGY RIVER NSO CO	Hydrology River		●				✓
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		●	●			✓
NSO-3	Definable Streams			●			✓
NSO-4 *(ROWA)*	Lentic Riparian Areas (including springs, seeps, and fens)		●	●			✓
NSO-1 (BLM 1987)	No Surface Occupancy (Grand Junction Municipal Watershed)	●				✓	
NSO-5	Palisade and Grand Junction Municipal Watersheds		●				✓
NSO-6 *(ROWA)*	Palisade and Grand Junction Municipal Watersheds, Collbran and Mesa/Powderhorn Source Water Protection Areas, and Jerry Creek Watershed			●			✓
NSO-7	Water Intake Zone 3			●			✓
	Soils and Geology						
NSO-1 (ROWA) (Exhibit GJ-1AB) (BLM 1987)	No Surface Occupancy (Soils in the Baxter/Douglas Slump Area)	●				✓	
NSO-1(ROWA) (Exhibit GJ-1AA) (BLM 1987)	No Surface Occupancy (Soils in the Plateau Area)	●				✓	
NSO-9 *(ROWA)*	Fragile Soils			●			✓
NSO-3 (BLM 1987)	Steep Slopes	●				✓	
GEOLOGY SLOPE NSO CO	Geology Slope		●				✓
GEOLOGY SOIL NSO CO	Geology Soil		●				✓
NSO-10 *(ROWA)*	Steep Slopes Greater than or Equal to 40 Percent			●	●		✓
	Vegetation						
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		●	●			✓
NSO-4 *(ROWA)*	Lentic Riparian Areas (including springs, seeps, and fens)		●	●			✓

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
	Special Status Species						
NSO-11 *(ROWA)*	Conservation Populations of Cutthroat Trout				•		✓
NSO-1 *(ROWA)*	Major River Corridors			•	•		✓
HYDROLOGY RIVER NSO CO	Hydrology River		•				✓
NSO-2 *(ROWA)*	Streams/Springs Possessing Lotic Riparian Characteristics		•	•			✓
NSO-1 (Partial ROWA) (BLM 1987)	No Surface Occupancy (ACECs: Badger Wash, Pyramid Rock, and Unaweep Seep)	•				✓	
NSO-12 *(Partial ROWA)*	ACECs		•	•	•		✓
NSO-13 *(ROWA)*	Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species		•	•			✓
NSO-14 *(ROWA)*	Currently Occupied Habitat of Threatened, Endangered, Proposed, and Candidate Species				•		✓
NSO-15 *(ROWA)*	BLM Sensitive Plant Species' Occupied Habitat			•			✓
NSO-16 *(ROWA)*	Osprey Nest Sites			•			✓
NSO-17 *(ROWA)*	Ferruginous Hawk Nest Sites			•			✓
NSO-18 *(ROWA)*	Red-tailed Hawk Nest Sites			•			✓
NSO-19 *(ROWA)*	Swainson's Hawk Nest Sites			•			✓
NSO-20 *(ROWA)*	Peregrine Falcon Nest Sites			•			✓
NSO-21 *(ROWA)*	Prairie Falcon Nest Sites			•			✓
NSO-22 *(ROWA)*	Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls)			•			✓
NSO-23 *(ROWA)*	Golden Eagle Nest Sites		•	•	•		✓
NSO-24 *(ROWA)*	Bald Eagle Nest Sites		•	•	•		✓
NSO-25 *(ROWA)*	Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (6.4 kilometers [4 miles])		•	•			✓
NSO-26 *(ROWA)*	Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad (no buffer)		•		•		✓
NSO-27 *(ROWA)*	Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Boreal Toad (805 meters [0.5-mile])			•			✓

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
NSO-28 *(ROWA)*	Special Status Bat Species' Roost Sites and Winter Hibernacula			●			✓
WILDLIFE BAT NSO CO	Wildlife Bat		●				✓
NSO-29 *(ROWA)*	Active Kit Fox Dens			●			✓
NSO-30 *(ROWA)*	Occupied Prairie Dog Towns (no buffer)		●				✓
NSO-31 *(ROWA)*	Occupied Prairie Dog Towns (46 meters [150 feet])			●			✓
	Fish and Wildlife						
NSO-32 *(ROWA)*	Research Sites		●	●	●		✓
NSO-12 *(Partial ROWA)*	ACECs		●	●	●		✓
NSO-1 (ROWA) (BLM 1987)	No Surface Occupancy (Wildlife Habitat in Rough Canyon)	●				✓	
NSO-1 (ROWA) (BLM 1987)	No Surface Occupancy (State Wildlife Areas)	●				✓	
RECREATION PARKS NSO CO	Recreation Parks		●				✓
NSO-1 (Exhibit GJ-1DC) (BLM 1987)	No Surface Occupancy (Elk Calving Sites)	●				✓	
NSO-34 *(ROWA)*	Elk Production Area		●	●	●		✓
WILDLIFE HABITAT NSO CO	Wildlife Habitat		●				✓
NSO-35 *(Partial ROWA)*	Wildlife Emphasis Areas			●			✓
	Wild Horses						
NSO-36 *(ROWA)*	Little Book Cliffs Wild Horse Range		●	●			✓
	Cultural Resources						
NSO-37 *(ROWA Alternatives B and C)*	Allocation to Conservation Use Category		●	●	●		✓
NSO-38 *(ROWA Alternatives B and C)*	Allocation to Traditional Use Category		●	●	●		✓
NSO-1 (BLM 1987)	No Surface Occupancy (Cultural Resources)	●				✓	
NSO-39 *(ROWA Alternatives B and*	Cultural Resources (Indian Creek)		●	●	●		✓

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
C)							
	Visual Resources						
NSO-1 (BLM 1987)	No Surface Occupancy (Visual Resources)	●				✓	
VISUAL CLASS I NSO CO	Visual Class I		●				✓
NSO-40	VRM (Class I and the Goblins)			●	●		✓
	Lands Managed for Wilderness Characteristics						
NSO-41	Lands Managed for Wilderness Characteristics			●			✓
LANDS WITH WILDERNESS CHARACTERISTICS NSO CO	Lands with Wilderness Characteristics		●				✓
	Recreation and Visitor Services						
NSO-1 (ROWA) (BLM 1987)	No Surface Occupancy (Recreational Resources at The Palisade ONA, established recreation sites, Island Acres, Vega State Recreation Area, Highline Reservoir Recreation Area, Rough Canyon ACEC, Hunter/Garvey backcountry, Granite Creek Canyons/Cliffs, Bangs Canyon, Dolores River, and Gunnison River)	●				✓	
NSO-42 *(Partial ROWA)*	Special Recreation Management Areas			●	●		✓
RECREATION SRMA NSO CO	Recreation SRMA		●				✓
RECREATION PARKS NSO CO	Recreation Parks		●				✓
	Fluid Minerals (Oil and Gas and Geothermal Resources)						
NSO-1 (BLM 1987)	No Surface Occupancy (State Wildlife Areas)	●				✓	
RECREATION PARKS NSO CO	Recreation Parks		●				✓
	ACECs						
NSO-1 (Partial ROWA) (BLM 1987)	No Surface Occupancy (ACECs: Badger Wash, Pyramid Rock, and Unaweep Seep)	●				✓	

Table B-1
Summary of No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative					
		A	B	C	D	Fluid Minerals Only	All Surface-disturbing Activities
NSO-12 *(Partial ROWA)*	ACECs		●	●	●		✓
	Wilderness Study Areas						
NSO-43	Wilderness Study Areas	●	●	●	●		✓
	Wild and Scenic Rivers						
NSO-44 *(ROWA)*	WSR Study Segments Classified as Wild			●			✓
	National Trails						
NSO-45 *(ROWA)*	Old Spanish National Historic Trail (50 meters [164 feet])		●		●		✓
NSO-46 *(ROWA)*	Old Spanish National Historic Trail (805 meters [0.5-mile])			●			✓

[1]Details of these stipulations are provided in Table B-5, No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.
[2]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).
[3]For Alternative B, this stipulation applies to all-surface disturbing activities except fluid minerals. For the other alternative(s), it applies to all surface-disturbing activities.

Table B-2
Summary of Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
	Water Resources						
CSU-39	Roan and Carr Creeks ACEC		●				✓
CSU-1 *(ROWA)*	Major River Corridors			●			✓
CSU-7 (ROWA) (BLM 1987)	Perennial Streams Water Quality	●				✓	
CSU-2 *(ROWA)*	Hydrologic Features/Riparian			●	●		✓
CSU-3 *(ROWA)*	Definable Streams		●				✓
CSU-6 (BLM 1987)	Watersheds	●				✓	
CSU-4 *(ROWA)*	Collbran and Mesa/Powderhorn Source Water Protection Areas, and Jerry Creek Watershed		●		●		✓
	Soils and Geology						
GEOLOGY SOIL CSU CO	Geology Soil		●				✓
CSU-6 *(ROWA)*	Mapped Mancos Shale and Saline Soils			●	●		✓
CSU-7	Natural Slopes			●			✓
	Vegetation						
PLANT COMMUNITY CSU CO	Plant Community		●				✓
CSU-8 *(ROWA)*	Old Growth Forests and Woodlands			●	●		✓
	Special Status Species						
CSU-9 *(ROWA)*	BLM Sensitive Plant Species Occupied Habitat		●				✓
CSU-10 *(ROWA)*	Wildlife Habitat		●	●			✓
CSU-1 *(ROWA)*	Major River Corridors			●			✓
CSU-11 *(ROWA)*	Significant Plant Communities (200 meters [656 feet])			●			✓
CSU-12 *(ROWA)*	Significant Plant Communities (no buffer)				●		✓
CSU-13 *(ROWA)*	Osprey Nest Sites		●		●		✓
CSU-14 *(ROWA)*	Ferruginous Hawk Nest Sites		●		●		✓
CSU-15 *(ROWA)*	Red-tailed Hawk Nest Sites		●		●		✓
CSU-16 *(ROWA)*	Swainson's Hawk Nest Sites		●		●		✓
CSU-17 *(ROWA)*	Peregrine Falcon Nest Sites		●		●		✓
CSU-18 *(ROWA)*	Prairie Falcon Nest Sites		●		●		✓
CSU-19 *(ROWA)*	Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls)		●		●		✓
CSU-20 *(ROWA)*	Sage-grouse Nesting and Early Brood-rearing Habitat				●		✓
CSU-21 *(ROWA)*	Special Status Bat Species' Roost Sites and Winter Hibernacula				●		✓

Table B-2
Summary of Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
CSU-22 *(ROWA)*	Kit Fox Dens		●		●		✓
CSU-23 *(ROWA)*	Occupied Prairie Dog Towns		●		●		✓
	Fish and Wildlife						
CSU-1 *(ROWA)*	Major River Corridors			●			✓
CSU-10 *(ROWA)*	Wildlife Habitat		●	●			✓
WILDLIFE HABITAT CSU CO	Wildlife Habitat		●				✓
CSU-24 *(ROWA)*	Deer and Elk Migration and Movement Corridors		●	●			✓
CSU-25	Wildlife Emphasis Areas			●	●		✓
	Wild Horses						
CSU-2 (Exhibit GJ-2FA) (BLM 1987)	Scenic and Natural Values (Little Book Cliffs Wild Horse Area)	●				✓	
CSU-26	Little Book Cliffs Wild Horse Range				●		✓
	Cultural Resources						
CSU-27 *(ROWA Alternatives B and C)*	Allocation to Scientific Use Category		●	●	●		✓
CSU-28 *(ROWA Alternatives B and C)*	Allocation to Public Use Category		●	●	●		✓
CSU-29 *(ROWA)*	Sub-surface Inventory		●	●	●		✓
CSU-5 (ROWA) (BLM 1987)	Known Cultural Resource Values	●				✓	
	Visual Resources						
CSU-30 *(ROWA)*	VRM Class II		●	●	●		✓
CSU-2 (BLM 1987)	Scenic and Natural Values (Bangs Benches, the Book Cliffs, established BLM recreation sites, Grand Mesa Slopes, Granite Creek Benches, Gunnison River corridor, highway corridors, Hunter/Garvey, Little Book Cliffs Wild Horse Area, Sinbad Valley, South Shale Ridge, and Unaweep Valley)	●				✓	
	Recreation and Visitor Services						
CSU-2 (BLM 1987)	Scenic and Natural Values (recreation resources at Bangs Benches, Granite Creek Benches, Hunter/Garvey Benches, and Lower Gunnison River)	●				✓	
CSU-31 *(ROWA)*	Recreation		●	●	●		✓
CSU-32	Recreation Management Areas		●	●	●		✓

Table B-2
Summary of Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative					
		A	B	C	D	Fluid Minerals Only	All Surface-disturbing Activities
	Lands and Realty						
DISPOSAL CSU CO	Disposal		●				✓
CSU-33	Disposal Tracts				●		✓
	Coal						
COAL MINE CSU CO	Coal Mine		●			✓	
CSU-34	Federally Leased Coal			●	●	✓	
	ACEC						
CSU-39	Roan and Carr Creeks ACEC		●				✓
	Wild and Scenic Rivers						
CSU-35 *(ROWA)*	WSR Study Segments Classified as Scenic and Recreational			●			✓
CSU-36	Old Spanish National Historic Trail			●			✓
CSU-37	Scenic Byways (805 meters [0.5-mile])		●	●			✓
CSU-38	Scenic Byways (402 meters [0.25-mile])				●		✓

[1]Details of these stipulations are provided in Table B-6, Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.

[2]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).

[3]For Alternative B, this stipulation applies to all-surface disturbing activities except fluid minerals. For the other alternative(s), it applies to all surface-disturbing activities.

Table B-3
Summary of Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
	Special Status Species						
TL-1 *(ROWA)*	Salmonid and Native, Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace)		●	●			✓
TL-2 *(ROWA)*	Occupied Cutthroat Trout Waters				●		✓
TL-3 *(ROWA)*	Migratory Bird Habitat		●	●			✓
TL-4 *(ROWA)*	Birds of Conservation Concern's Habitat				●		✓
WILDLIFE RAPTOR NESTS TL CO	Raptor Nests		●				✓
WILDLIFE SENSITIVE RAPTOR NESTS TL CO	Sensitive Raptor Nests		●				✓
TL-5 *(ROWA)*	Osprey Nests			●	●		✓
TL-6 *(ROWA)*	Ferruginous Hawk Nests			●	●		✓
TL-7 *(ROWA)*	Red-tailed Hawk Nests			●	●		✓
TL-8 *(ROWA)*	Swainson's Hawk Nest Sites			●	●		✓
TL-14 (ROWA) (Exhibit GJ-14EB) (BLM 1987)	Threatened and Endangered Seasonal Habitat (Peregrine Falcon Habitat)	●				✓	
TL-9 *(ROWA)*	Peregrine and Prairie Falcon Nest Sites			●	●		✓
TL-10 *(ROWA)*	Goshawk Nest Sites			●	●		✓
TL-11 *(ROWA)*	Burrowing Owl Burrows and Nest Sites			●	●		✓
TL-12 *(ROWA)*	Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls)			●	●		✓
TL-13 *(ROWA)*	Golden Eagle Nest Sites		●	●	●		✓
TL-14 (ROWA) (Exhibit GJ-14EA) (BLM 1987)	Threatened and Endangered Seasonal Habitat (Bald Eagle Habitat)	●				✓	
TL-14 *(ROWA)*	Bald Eagle Nest Sites		●	●	●		✓
TL-15 *(ROWA)*	Bald Eagle Winter Roost		●	●	●		✓
TL-16 *(ROWA)*	Occupied Sage-grouse Winter Habitat		●	●			✓
TL-17 *(ROWA)*	Sage-grouse Leks (6.4 kilometers [4 miles])		●				✓
TL-18 *(ROWA)*	Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (966 meters [0.6-mile])				●		✓
TL-19 *(ROWA)*	Occupied Prairie Dog Towns		●		●		✓

Table B-3
Summary of Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative A	Alternative B	Alternative C	Alternative D	Fluid Minerals Only	All Surface-disturbing Activities
	Fish and Wildlife						
TL-1 *(ROWA)*	Salmonid and Native, Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace)		●	●			✓[3]
TL-2 *(ROWA)*	Occupied Cutthroat Trout Waters				●		✓
TL-12 (ROWA) (BLM 1987)	Deer and Elk Winter Range	●				✓	
TL-20 *(ROWA)*	Big Game Winter Range		●	●	●		✓
TL-9 (ROWA) (BLM 1987)	Bighorn Seasonal Stipulation	●				✓	
TL-4 (ROWA) (BLM 1987)	Elk Calving Area	●				✓	
BIG GAME PRODUCTION TL CO	Big Game Production		●				✓
TL-21 *(ROWA)*	Big Game Production Areas			●			✓
TL-22 *(ROWA)*	Pronghorn Wintering Habitat		●	●	●		✓
	Wild Horses						
TL-10 (ROWA) (BLM 1987)	Wild Horse Winter Range	●				✓	
TL-11 (ROWA) (BLM 1987)/**TL-23** *(ROWA)*	Wild Horse Foaling Area	●			●	✓	

[1]Details of these stipulations are provided in Table B-7, Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities.
[2]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).
[3]For Alternative B, this stipulation applies to all-surface disturbing activities except fluid minerals. For the other alternative(s), it applies to all surface-disturbing activities.

Table B-4
Summary of Lease Notices (LN)
Applicable to Fluid Mineral Leasing[1]

Stipulation Number (*Existing*/**New**)[2]	Protected Resource	Alternative			
		A	B	C	D
	Air Resources				
CO-56	Air Resources		•		
	Water Resources				
LN-17	Palisade Municipal Watershed	•			
LN-1	Source Water Protection Areas		•		
LN-2	Municipal Watersheds and Source Water Protection Areas				•
LN-13	Threatened and Endangered Species Habitat	•			
LN-3	Biological Inventories		•	•	•
LN-15	Colorado Hookless Cactus (Formerly Uinta Basin Hookless Cactus)	•			
LN-4	Threatened and Endangered Species / Colorado Hookless Cactus		•	•	•
	Fish and Wildlife				
LN-3	Biological Inventories		•	•	•
LN-5	Working in Wildlife Habitat		•	•	
LN-6	Class 4 and 5 Paleontological Areas	•	•	•	•
LN-16/ **LN-7**	Powderhorn Ski Area	•	•		•

[1]Details of these stipulations are provided in Table B-8, Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Fluid Mineral Leasing.
[2]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Water Resources				
NSO-1 *(ROWA)* **Major River Corridors.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 402 meters (0.25-mile/1,320 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) of the Colorado, Gunnison, and Dolores Rivers. **PURPOSE:** To protect rivers and adjacent habitat that provide: a) special status fish and wildlife species habitat; b) important riparian values; c) water quality/filtering values; d) waterfowl and shorebird production values; e) valuable amphibian habitat; f) 100-year floodplain; and g) high scenic and recreation values of the three major rivers (Colorado, Gunnison, and Dolores). Minimizing potential deterioration of water quality and high scenic and recreation values; maintaining natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities; and preserving wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows (note: both actions must be met for exception to be granted): • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. Design and construction for a 100-year flood event along strait and stable stream reaches would be required; • New trail construction resulting in a disturbance corridor less than or equal to 1.2 meters (48 inches) wide open to nonmotorized use. Trails would be constructed per BLM minimum design standards; and • Section 7 consultation with USFWS on threatened or endangered species and/or their critical habitat has been completed.			•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
HYDROLOGY RIVER NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major river: <NAME> **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect rivers and adjacent aquatic habitat that provide: a) *special status* or *critical* fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: f) 100-year floodplain, and g) high scenic and recreation values of major rivers. Minimizing potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	JUSTIFICATION: This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian Characteristics.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings. • For actions requiring individual permits through the USACE, require a Licensed Professional Engineer to approve and stamp project design, implementation, and reclamation plans. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone)		•	•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish bearing streams in the GJFO.				
NSO-3 **Definable Streams.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 30 meters (98 feet) from the edge of the ordinary high-water mark (bank-full stage). **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because any alteration of properly functioning stream channels, stream banks, and floodplains (including the xeririparian zone) can create an imbalance between sediment supply and stream discharge resulting in accelerated erosion and decreased water quality.			•	
NSO-4 *(ROWA)* **Lentic Riparian Areas (including springs, seeps, and fens).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 100 meters (328 feet) from the mapped extent of perennial, intermittent, and ephemeral streams; riparian areas, fens and/or wetlands; and water impoundments. For streams, the buffer will be measured from ordinary high-water mark (bank-full stage), whereas for wetland features, the buffer will be measured from the edge of the mapped extent. **PURPOSE:** To maintain the proper functioning condition, including the vegetation, hydrologic, and geomorphic functionality of wetland features. To protect water quality, riparian zones, fens, fish habitat, and aquatic habitat, and to provide a clean, reliable source of water for downstream users.		•	•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Buffers are expected to indirectly benefit migratory birds, wildlife habitat, amphibians, and other species. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because surface disturbance within the minimum 100-meter (328-foot) buffer may impair proper function and condition of springs, seeps, and fens. Source areas (for springs, seeps, and fens) are delicate and susceptible to any alteration of natural flow patterns, soil infiltration rates, or drainages within the contributing watershed. Changes to these variables may dewater lentic riparian areas, greatly impairing the system's ability to properly function.				
NSO-1 *(BLM 1987)* **No Surface Occupancy (Grand Junction Municipal Watershed).** 1,400 acres ***Fluid Minerals Only***	**STIPULATION:** No occupancy or other activities (fluid minerals only) will be allowed in the Grand Junction municipal watershed on the following portions of this lease: <LEGAL_DESCRIPTIONS> **PURPOSE:** To protect municipal watersheds providing domestic water. **EXCEPTION:** Exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • New trail construction resulting in a disturbance corridor less than or equal to 1.2 meters (48 inches) wide open to nonmotorized use. Trials would be constructed per BLM minimum design standards. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
NSO-5 **No Surface Occupancy (Palisade and Grand Junction Municipal**	**STIPULATION:** Prohibit surface occupancy and use and other surface-disturbing activities in the Palisade and Grand Junction municipal watersheds. **PURPOSE:** To protect municipal watersheds providing drinking water to local communities.		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
Watersheds). *BLM surface/ federal minerals:* 900 acres *Private or State surface/federal minerals:* 8,300 acres ***All Surface-disturbing Activities***	**EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would require professionally engineered design and construction for a 100-year flood event along strait and stable stream reaches. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce potential for groundwater contamination and/or dewatering of municipal sources.				
NSO-6 *(ROWA)* **No Surface Occupancy (Palisade and Grand Junction Municipal Watersheds, Collbran and Mesa/ Powderhorn Source Water Protection Areas, and Jerry Creek Watershed).** *BLM surface/ federal minerals:* 34,700 acres *Private or State surface/federal minerals*: 27,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and other activities in the Palisade and Grand Junction municipal watersheds, Collbran and Mesa/Powderhorn source water protection areas, and Jerry Creek watershed. **PURPOSE:** To protect municipal watersheds providing drinking water to local communities. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would require professionally engineered design and construction for a 100-year flood event along strait and stable stream reaches. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce potential for groundwater contamination and/or dewatering of domestic and municipal sources.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	Stipulation Description	Alternative			
		A	B	C	D
NSO-7 **Water Intake Zone 3.** 3,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and other surface-disturbing activities within state identified sensitivity zone 3. In cases where this zone could not be determined through analytic calculations, zone 3 will be defined as a 4-kilometer (2.5-mile) radius around the intake or be based on professional interpretation of geology, topography, and location of municipal wells. The boundary of zone 3 is subject to change based on increased knowledge of groundwater hydrology in these areas. **PURPOSE:** To protect municipal water. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce potential for groundwater contamination and/or dewatering of domestic and municipal sources.			•	
	Soils and Geology				
NSO-1 (ROWA) (Exhibit GJ-1AB) (BLM 1987) **No Surface Occupancy (Soils in the Baxter/Douglas Slump Area).** 53,100 acres ***Fluid Minerals Only***	**STIPULATION:** No occupancy or other activities will be allowed on the following portions of this lease: <LEGAL_DESCRIPTIONS> **PURPOSE:** To protect soils in the Baxter/Douglas slump area. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			
NSO-1 (ROWA) (Exhibit GJ-1AA) (BLM 1987) **No Surface Occupancy**	**STIPULATION:** No occupancy or other activities will be allowed on the following portions of this lease: <LEGAL_DESCRIPTIONS> **PURPOSE:** To protect soils in the Plateau area.	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
(Soils in the Plateau Area). 900 acres ***Fluid Minerals Only***	**EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change, or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease.				
NSO-9 *(ROWA)* **Fragile Soils.** *BLM surface/ federal minerals:* 481,600 acres *Private or state surface/federal minerals:* 20,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum of 25 meters (82 feet) of fragile soils (distance may be extended based on site-specific conditions). Onsite evaluation of site-specific soil characteristics may be conducted by BLM or a qualified third party to verify Natural Resource Conservation Service soil mapping unit descriptions are appropriate to the site. These evaluations would be conducted at the discretion of the BLM SWA specialist. **PURPOSE:** To maintain site stability, site productivity, prevent excessive soil erosion and sediment transport, and increase reclamation potential. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. • Temporary actions associated with solid mineral exploration (e.g., access roads, exploratory bore holes less than or equal to 20 centimeters [8 inches] in diameter) in which the reclamation process will be initiated a maximum of 1 calendar year from the beginning of construction will be allowed on a case-by-case basis at the discretion of the BLM Authorized Officer. Construction activities will be limited to dry season conditions and subject to site-specific			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	Stipulation Description	Alternative			
		A	B	C	D
	mitigation based on soil characteristics. Temporary status of exploration actions may be extended up to a maximum of 3 years (from initial construction) given monitoring results/onsite inspection indicate soil-stabilizing techniques and drainages structures are functional and adequate to protect soil and watershed health. • Stipulation does not apply to OHV open areas. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because accelerated erosion from fragile soils in the GJFO is a major contributor of nonpoint source pollution in rivers and streams. The 25-meter (82-foot) buffer is necessary to adequately protect fragile soils from stormwater runoff and other impacts associated with surface-disturbing actions.				
NSO-3 *(BLM 1987)* **Steep Slopes.** 318,200 acres ***Fluid Minerals Only***	**STIPULATION:** The following portions of the lease include land with greater than 40 percent slopes: <LEGAL_DESCRIPTIONS>. In order to avoid or mitigate unacceptable impacts to soil, water, and vegetation resources on these lands, special design practices may be necessary and higher than normal costs may result. Where impacts cannot be mitigated to satisfaction of the BLM Authorized Officer, no surface-disturbing activities shall be allowed. **PURPOSE:** To maintain site stability, site productivity, prevent excessive soil erosion and sediment transport, and increase reclamation potential. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change, or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
GEOLOGY SOIL NSO CO *BLM surface/ federal minerals: 54,500 acres* *Private or state surface/federal minerals: 3,100 acres* ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed on lands with soils, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, with the following special characteristics: Baxter/Douglas Pass Slump Area and the Plateau Creek Slump Area. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (e.g., from landslides and mass wasting). **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION: JUSTIFICATION:** This stipulation is necessary because accelerated erosion from fragile soils in the GJFO is a major contributor of nonpoint source pollution in rivers and streams. The 25-meter (82-foot) buffer is necessary to adequately protect fragile soils from stormwater runoff and other impacts associated with surface-disturbing actions.		•		
GEOLOGY SLOPE NSO CO *BLM surface/ federal minerals:* 347,700 acres *Private or State surface/federal minerals*: 28,800 acres	**STIPULATION:** Prohibit surface occupancy and use on lands with steep slopes greater than 40 percent. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (e.g., from landslides and mass wasting).		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
All Surface-disturbing Activities	**EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because accelerated erosion from soils on steep slopes in the GJFO can be a major contributor of nonpoint source pollution in rivers and streams.				
NSO-10 *(ROWA)* **Steep Slopes Greater than or Equal to 40 Percent.** *BLM surface/ federal minerals:* 347,700 acres *Private or State surface/federal minerals*: 28,800 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities on lands with steep slopes greater than or equal to 40 percent. **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (from landslides, mass wasting, etc.). **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Above-ground electrical transmission lines. • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. • Alternative D only: Temporary actions associated with coal exploration (e.g., access roads, exploratory bore holes less than or equal to 20 centimeters [8 inches] in diameter) in which the reclamation process will be initiated a maximum of 1 calendar year from the beginning of construction will be allowed on a case-by-case basis at the discretion of the Authorized Officer. Construction activities will be limited to dry season conditions and subject to site-specific mitigation. Temporary status of exploration actions may be extended up to a maximum of 3 years (from initial construction) given monitoring results/onsite inspection indicate soil-stabilizing techniques and drainages structures are functional and			•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	adequate to protect soil and watershed health. • Alternative D only: Surface disturbance necessary for development of federally leased coal (e.g., mine portals, roads and pads associated with vent holes, methane capture, etc.). Professionally engineered design, construction, maintenance, and reclamation would be required to mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because accelerated erosion from soils on steep slopes in the GJFO can be a major contributor of nonpoint source pollution in rivers and streams.				
	Vegetation				
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian Characteristics.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings. **MODIFICATION:** Standard modifications apply (Section B.2).		•	•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	WAIVER: Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone) transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish bearing streams in the GJFO.				
NSO-4 *(ROWA)* **Lentic Riparian Areas (including springs, seeps, and fens).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because surface disturbance within the minimum 100-meter (328-foot) buffer may impair proper function and condition of springs, seeps, and fens. Source areas (for springs, seeps, and fens) are delicate and susceptible to any alteration of natural flow patterns, soil infiltration rates, or drainages within the contributing watershed. Changes to these variables may dewater lentic riparian areas, greatly impairing the system's ability to properly function.		•	•	
	Special Status Species				
NSO-11 *(ROWA)* **Conservation Populations of Cutthroat**	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 100 meters (328 feet) from edge of ordinary high-water mark (bank-full stage) of streams containing genetically pure populations of cutthroat trout. Where the riparian corridor width is greater than 100 meters				•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
Trout. 3,600 acres ***All Surface-disturbing Activities***	(328 feet) from stream edge, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect conservation and core conservation populations of cutthroat trout. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, in-channel restoration or enhancement work designed to improve stream habitat conditions, riparian plantings, and temporary disturbances of less than 0.1 acre where BMPs are applied. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** Streams with conservation and core conservation populations of cutthroat trout are of the highest priority to BLM, USFWS, and CPW. The 100-meter (328-foot) buffer adequately protects fish habitat values because many of the perennial streams are within narrow canyons and steep slopes so the 100-meter (328-foot) buffer covers most of the key habitat for protecting these species.				
NSO-1 *(ROWA)* **Major River Corridors.** 11,800 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within stream channels, stream banks, and the area 402 meters (0.25-mile) either side of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) of the Colorado, Gunnison, and Dolores Rivers. **PURPOSE:** To protect these riverine and adjacent areas that provide: a) special status fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: and f) high scenic and recreation values of the three major rivers (Colorado, Gunnison, and Dolores). **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Essential future actions in which implementation of a professionally engineered design, construction, maintenance,			•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action; • New trail construction resulting in a disturbance corridor less than or equal to 1.2 meters (48 inches) wide open to nonmotorized use. Trials would be constructed per BLM minimum design standards; and • Section 7 consultation with USFWS on threatened or endangered species and/or their critical habitat has been completed. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
HYDROLOGY RIVER NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within 400 meters (1312 feet) of the ordinary high-water mark (bank-full stage) or within 100 meters (328 feet) of the 100-year floodplain (whichever area is greatest) on the following major river: <NAME> **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect rivers and adjacent aquatic habitat that provide: a) *special status* or *critical* fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: f) 100-year floodplain, and g) high scenic and recreation values of major rivers. Minimizing potential deterioration of water quality, high scenic and recreation values, maintain natural		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
NSO-2 *(ROWA)* **Streams/ Springs Possessing Lotic Riparian Characteristics.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a minimum distance of 100 meters (328 feet) from the edge of the ordinary high-water mark (bank-full stage). Where the riparian corridor width is greater than 100 meters (328 feet) from bank-full, prohibit surface occupancy and use and surface-disturbing activities within the riparian zone. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as riparian corridors/flood-prone areas are lands adjacent to waterbodies where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Necessary site restoration and management as dictated by initial analysis or later evaluation/monitoring. • Essential stream crossings associated with linear transportation, and utility crossings.		•	•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to maintain the natural hydrologic function and condition of mountain and rangeland stream systems. Properly functioning stream channels, stream banks, and floodplains (including the riparian zone) transport and store sediment at a rate which is in balance with each system's typical flow regime. Any alteration of this system can create an imbalance between sediment supply and flow, resulting in accelerated erosion, decreased water quality, and degraded habitat conditions and for special status aquatic wildlife. This stipulation is also essential to protect fish-bearing streams in the GJFO.				
NSO-1 (Partial ROWA) (BLM 1987) **No Surface Occupancy (ACECs: Badger Wash, Pyramid Rock, Unaweep Seep).** 1,400 acres ***Fluid Minerals Only***	**STIPULATION:** Prohibit surface occupancy and use (for fluid minerals only) in the following areas: • Hydrologic and sensitive plants study area in Badger Wash ACEC (700 acres) *(Exhibit GJ-1BA)*; • Pyramid Rock State Natural Area (500 acres) *(Exhibit GJ-1EF)*; and • Unaweep Seep State Natural Area and Research Natural Area (200 acres) *(Exhibit GJ-1EG)*. **PURPOSE:** Badger Wash ACEC: To protect sensitive plants. Pyramid Rock: To protect known threatened, proposed, candidate, and sensitive plant species. Unaweep Seep: To protect sensitive plants. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-12 *(Partial ROWA)* **ACECs.** *Alternative B:* 34,600 acres *Alternative C:* 38,200 acres *Alternative D:* 3,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive species: Alternative B: • Atwell Gulch (2,900 acres); • Badger Wash (2,200 acres); • Pyramid Rock (1,300 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). Alternative C: • Atwell Gulch (6,100 acres); • Badger Wash (2,200 acres); • Plateau Creek (220 acres); • Pyramid Rock (1,300 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). Alternative D: • Badger Wash (2,200 acres); • Pyramid Rock (1,300 acres); and • Unaweep Seep (80 acres). **PURPOSE:** • Atwell Gulch: To protect threatened and sensitive plants. • Badger Wash: To protect sensitive plants. • Plateau Creek: To protect sensitive fish species. • Pyramid Rock: To protect known threatened, proposed, and sensitive plants. • South Shale Ridge: To protect threatened, proposed, and sensitive plants. • Unaweep Seep: To protect sensitive plants and Great Basin Silverspot Butterfly habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** This stipulation may be modified to include species listed as threatened, endangered, proposed, candidate, or sensitive in the future. This stipulation may also be modified to account for the change in status of species protected in this		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	stipulation. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect critical habitat for threatened, proposed, and sensitive plants.				
NSO-13 *(ROWA)* **Current and Historically Occupied Habitat and Critical Habitat of Threatened, Endangered, Proposed, and Candidate Plant and Animal Species.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit certain surface uses, as specified below, to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts, loss of immediately adjacent suitable habitat, or impacts to primary constituent elements of critical habitat as designated by USFWS. Maintain existing buffer distances where pre-existing disturbance exists, and reduce redundancies in roads to minimize fragmentation, and minimize direct impacts from motorized and mechanized users of roads, routes and trails. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of current and historically occupied and suitable habitat. This stipulation includes emergency closures of roads where damage to T&E habitat has occurred. **PURPOSE:** To protect threatened, endangered, proposed, and candidate species from indirect impacts or loss of immediately adjacent suitable habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO may be altered if all of the following conditions are met: 1. Section 7 consultation with USFWS on threatened or endangered species has been completed; 2. Valid current surveys for protected species have been completed and submitted; 3. Mitigation has been applied to avoid adverse impacts to protected species and the proponent will submit monitoring reports; and 4. The proposed disturbance would occur in unsuitable habitat. Other surface-disturbing activities may be allowed in suitable habitat if conditions 1 through 3 above are met, and the purpose or the result of the activity would improve habitat conditions		•	•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	for the protected species. Allow occupancy within 200 meters (656 feet) when terrain and topography provide adequate protections **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER**: Standard waivers apply (Section B.2). **JUSTIFICATION**: This stipulation is necessary to protect threatened, endangered, proposed, and candidate species and ensure the preservation of their habitat (including plant pollinator habitat).				
NSO-14 *(ROWA)* **Currently Occupied Habitat of Threatened, Endangered, Proposed, and Candidate Species.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities to protect threatened, endangered, proposed, and candidate plants and animals from indirect impacts or loss of immediately adjacent suitable habitat. Maintain existing buffer distances where pre-existing disturbance exists. In undisturbed environments and ACECs, prohibit new disturbance within 200 meters (656 feet) of habitat. **PURPOSE:** To protect threatened, endangered, proposed, and candidate species from indirect impacts or loss of immediately adjacent suitable habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO may be altered if all of the following conditions are met: 1. Section 7 consultation with USFWS on threatened or endangered species has been completed; 2. Valid current surveys for protected species have been completed; 3. Mitigation has been applied to avoid adverse impacts to protected species; and 4. The proposed disturbance would occur in unsuitable habitat. Other surface-disturbing activities may be allowed in suitable habitat if conditions 1 through 3 above are met, and the purpose or the result of the activity would improve habitat conditions for the protected species.				•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to provide minimal protection for occurrences of threatened, endangered, proposed, and candidate species.				
NSO-15 *(ROWA)* **BLM Sensitive Plant Species' Occupied Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 100 meters (328 feet) of BLM sensitive plant species' occupied habitat. In addition, relocation of operations by more than 200 meters (656 feet) may be required. **PURPOSE:** To reduce or eliminate threats to BLM sensitive plant species to minimize the likelihood and need for listing of these species under the Endangered Species Act of 1973. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions may be granted for activities where no other feasible alternatives are available and losses of population numbers comprise less than five percent of total population present in the action area. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to guard against BLM-permitted activities resulting in the listing of any species on the State Director's Sensitive Species List. This stipulation is based on guidance from the USFWS and BLM (USFWS and BLM 2008).			•	
NSO-16 *(ROWA)* **Osprey Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-mile) of active osprey nest sites. **PURPOSE:** To protect osprey habitat and nest sites. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect osprey nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
NSO-17 *(ROWA)* **Ferruginous Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 805 meters (0.5-mile) of active ferruginous hawk nest sites and associated alternate nests. **PURPOSE:** To protect ferruginous hawk nesting habitat **EXCEPTION:** Standard exceptions apply (Section B.2). The NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	
NSO-18 *(ROWA)* **Red-tailed Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 531 meters (0.33-mile) of active red-tailed hawk nest sites and associated alternate nests. **PURPOSE:** To protect red-tailed hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect red-tailed hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
NSO-19 *(ROWA)* **Swainson's Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-mile) of active Swainson's hawk nest sites and associated alternate nests. **PURPOSE:** To protect Swainson's hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect Swainson's hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	
NSO-20 *(ROWA)* **Peregrine Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 805 meters (0.5-mile) of active peregrine falcon nest sites. **PURPOSE:** To protect peregrine falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	JUSTIFICATION: This stipulation is necessary to protect peregrine falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
NSO-21 *(ROWA)* **Prairie Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 0.5-mile of active prairie falcon nest sites. **PURPOSE:** To protect prairie falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	
NSO-22 *(ROWA)* **Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 201 meters (0.125-mile) of an active nest site of all accipiters, falcons (except kestrel), buteos, and owls not listed in other NSO stipulations. Raptors that are listed and protected by the Endangered Species Act of 1973 and the Bald and Golden Eagle Protection Act are addressed separately. **PURPOSE:** To protect raptor nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	JUSTIFICATION: This stipulation is necessary to protect raptor nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2002).				
NSO-23 *(ROWA)* **Golden Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-mile) of active golden eagle nest sites and associated alternate nests. **PURPOSE:** To protect golden eagle nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect golden eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•	•	•
NSO-24 *(ROWA)* **Bald Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area prior to nest establishment) within 402 meters (0.25-mile) of active bald eagle nests. **PURPOSE:** To protect bald eagle nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect bald eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-25 *(ROWA)* **Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (4 miles).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 6.4 kilometers (4 miles) of an active lek or within sage-grouse nesting and early brood-rearing habitat. **PURPOSE:** To protect breeding, nesting, and brood-rearing habitat for the Gunnison and greater sage-grouse. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending upon the active status of the lek or the geographical relationship of topographical barriers and vegetation to the lek site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impacts on greater and Gunnison sage-grouse. The four mile buffer is consistent with current scientific research recommendations (The Parachute-Piceance-Roan (PPR) Greater Sage-Grouse Work Group 2008).		•	•	
NSO-26 *(ROWA)* **Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Long-nosed Leopard Lizard, Boreal Toad (no buffer).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within all identified canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, long-nosed leopard lizard (*Gambelia wislizenii*), and boreal toad breeding and denning sites. **PURPOSE:** To protect breeding habitat for canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, long-nosed leopard lizard, and boreal toad. Note: no midget faded rattlesnake or boreal toad breeding locations are currently identified in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important breeding habitat for these species. The Northern Leopard Frog has been petitioned for listing under the Endangered Species Act of 1973.		•		•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-27 *(ROWA)* **Canyon Treefrog, Midget Faded Rattlesnake, Northern Leopard Frog, Great Basin Spadefoot, Boreal Toad (0.5-mile).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 805 meters (0.5-mile) of all identified canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot, and boreal toad breeding and denning sites. **PURPOSE:** To protect breeding habitat for canyon treefrog, northern leopard frog, midget faded rattlesnake, Great Basin spadefoot and boreal toad. Note: no midget faded rattlesnake or boreal toad breeding locations are currently identified in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important breeding habitat for these species. The Northern Leopard Frog has been petitioned for listing under the Endangered Species Act of 1973. The larger buffer would ensure potential impacts would be minimized.			•	
NSO-28 *(ROWA)* **Special Status Bat Species' Roost Sites and Winter Hibernacula.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within a 402-meter (0.25-mile) radius of the entrance of maternity roosts or hibernacula of BLM sensitive bat species, as mapped in the RMP, BLM's GIS database, or other maps provided by local, state, federal, or tribal agencies that are analyzed and accepted by the BLM. **PURPOSE:** To protect sensitive bat species' maternity roosts and hibernacula. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impacts on important bat areas.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
WILDLIFE BAT NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within a 402 meter (0.25 mile) radius of the entrance of maternity roosts or hibernacula of BLM sensitive bat species, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM. <SPECIES> **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect sensitive bat species' maternity roosts and hibernacula. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impacts on important bat areas.		•		
NSO-29 *(ROWA)* **Active Kit Fox Dens.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and other intensive activities including but not limited to work-over rigs and permitted recreational events within 200 meters (656 feet) of active kit fox dens. **PURPOSE:** To protect breeding kit fox. Note there are currently no known breeding locations for kit fox in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize disturbance to the kit fox, which have become increasingly rare in Colorado and appear to be significantly more susceptible to disturbance than other canids in the GJFO.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-30 *(ROWA)* **Occupied Prairie Dog Towns (no buffer).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area) within active white-tailed prairie dog towns. **PURPOSE:** To maintain or improve white-tailed prairie dog habitat and distribution. **EXCEPTION:** Standard exceptions apply (Section B.2). Additional exception criteria include activities that avoid the center of active towns while maintaining the integrity of the town's social structure. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs, a keystone species whose population has been declining across the western US.		•		
NSO-31 *(ROWA)* **Occupied Prairie Dog Towns (46 meters).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities (beyond that which historically occurred in the area) within 46 meters (150 feet) of active white-tailed prairie dog towns. **PURPOSE:** To maintain or improve white-tailed prairie dog habitat and distribution. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending upon the type of activity and existing disturbance within 46 meters (150 feet) of the white-tailed prairie dog town. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation provides additional protection for prairie dogs, a keystone species whose population has been declining across the western US.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Fish and Wildlife				
NSO-32 *(ROWA)* **Research Sites.** 130 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities in approved research sites including, but not limited to, the Ant Research Area (16 Road) and the Owl Banding Station (south of DeBeque). **PURPOSE:** To maintain the integrity of ongoing research stations. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would be granted for work to be done in the research areas consistent with the goals and objectives of the research being conducted on the site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect long-term, ongoing research sites within the GJFO. If research sites are impacted, they incur the potential for research findings to be negatively affected.		•	•	•
NSO-12 *(Partial ROWA)* **ACECs.** *Alternative B:* 74,800 acres *Alternative C:* 146,600 acres *Alternative D:* 26,300 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following ACECs to protect threatened, proposed, candidate, and sensitive species and habitat: Alternative B: • Atwell Gulch (2,900 acres); • Indian Creek (2,300 acres); • Palisade (32,200 acres); • Rough Canyon (2,800 acres); • Sinbad Valley (6,400 acres); and • South Shale Ridge (28,200 acres). Alternative C: • Atwell Gulch (6,100 acres); • Colorado River Riparian (880 acres); • Glade Park-Pinyon Mesa (27,200 acres); • Indian Creek (2,300 acres); • Palisade (32,200 acres);		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	• Plateau Creek (220 acres); • Prairie Canyon (6,900 acres); • Roan and Carr Creeks (33,600 acres); • Rough Canyon (2,800 acres); • Sinbad Valley (6,400 acres); and • South Shale Ridge (28,200 acres). Alternative D: • Palisade (23,600 acres); and • Rough Canyon (2,700 acres). **PURPOSE:** • Atwell Gulch: To protect wildlife habitat. • Colorado River Riparian: To protect fisheries values. • Glade Park-Pinyon Mesa: To protect occupied Gunnison sage-grouse habitat. • Indian Creek: To protect wildlife values. • The Palisade: To protect special status wildlife. • Plateau Creek: To protect fisheries values. • Prairie Canyon: To protect wildlife habitat. • Roan and Carr Creeks: To protect core conservation populations of cutthroat trout. • Rough Canyon: To protect wildlife habitat. • Sinbad Valley: To protect wildlife resources. • South Shale Ridge: To protect wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** This stipulation may be modified to include species listed as threatened, endangered, proposed, candidate, or sensitive in the future. This stipulation may also be modified to account for the change in status of species protected in this stipulation. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect critical habitat for threatened, proposed, and sensitive plants.				

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
RECREATION PARKS NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units: • Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the state wildlife areas, where BLM manages the fluid mineral rights.		•		
NSO-1 *(Exhibit GJ-1DE)* *(BLM 1987)* **No Surface Occupancy (Wildlife Habitat in Rough Canyon).** 2,600 acres ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy or other activity (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS> **PURPOSE:** To protect wildlife habitat in Rough Canyon. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease.	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
NSO-1 (ROWA) (BLM 1987) **No Surface Occupancy (State Wildlife Areas).** ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy and other activities (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS> • Highline Reservoir recreation site (1,800 acres) *(Exhibit GJ-11E)* • Horsethief Canyon (1,400 acres) *(Exhibit GJ-1DD)* • Jerry Creek Reservoir (7,200 acres) *(Exhibit GJ-6BD)* • Vega Reservoir recreation site (4,000 acres) *(Exhibit GJ-11D)* **PURPOSE:** To protect wildlife habitat, reservoirs, and recreation facilities. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
NSO-1 (Exhibit GJ-1DC) (BLM 1987) **No Surface Occupancy (Elk Calving Sites).** ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy or other activity (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS> **PURPOSE:** To protect elk calving sites. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease.	•			
NSO-34 *(ROWA)* **Elk Production Area.** *BLM surface/ federal minerals:* 13,100 acres *Private or State*	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in elk production areas year-round. **PURPOSE:** To protect elk production areas. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2).		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
surface/federal minerals: 25,100 acres ***All Surface-disturbing Activities***	**JUSTIFICATION:** This stipulation is necessary to reduce surface disturbance and habitat fragmentation on BLM lands that CPW has identified as elk calving habitat.				
WILDLIFE HABITAT NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed within the following wildlife emphasis or priority areas, as identified in the Resource Management Plan: • Blue Mesa (wintering habitat for mule deer and elk) (9,300 acres); • Bull Hill (wintering habitat for mule deer and elk) (4,800 acres); • A portion of East Salt Creek (wintering habitat for mule deer and elk) (4,500 acres); • A portion of Prairie Canyon (pronghorn antelope habitat) (5,600 acres); • Sunnyside (wintering and migratory habitat for bighorn sheep, mule deer, elk, and Greater Sage-Grouse) (14,500 acres); and • Timber Ridge (habitat for mule deer, elk, and Gunnison Sage-Grouse) (11,800 acres). **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect lands identified in the Resource Management Plan as unique and important wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse. Wildlife emphasis areas were identified in coordination with CPW biologists.		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-35 *(ROWA)* **Wildlife Emphasis Areas.** 57,800 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities within the following wildlife emphasis areas: • Beehive (wintering and migratory habitat for mule deer and elk) (4,700 acres); • Blue Mesa (wintering habitat for mule deer and elk) (9,300 acres); • Bull Hill (wintering habitat for mule deer and elk) (4,800 acres); • Casto (wintering habitat for mule deer and elk) (4,200 acres); • A portion of East Salt Creek (wintering habitat for mule deer and elk) (4,400 acres); • A portion of Prairie Canyon (pronghorn antelope habitat) (5,600 acres); • A portion of Rapid Creek (wintering habitat for mule deer) (1,700 acres); and • Sunnyside (wintering and migratory habitat for bighorn sheep, mule deer, elk, and sage-grouse) (11,300 acres); and • Timber Ridge (habitat for mule deer, elk, and sage-grouse) (11,800 acres). **PURPOSE:** To protect wildlife emphasis areas for the species noted above. Wildlife emphasis areas are areas of the highest value/top-ranked wildlife habitat (by BLM and CPW) for multiple species. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would be granted for range improvement projects designed to improve livestock grazing distribution. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse. Wildlife emphasis areas were identified in coordination with CPW biologists.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Wild Horses				
NSO-36 *(ROWA)* Little Book Cliffs Wild Horse Range. 35,200 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities on lands within the LBCWHR. **PURPOSE:** To reduce impacts on wild horses in the LBCWHR. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would be granted for gather activities, vegetative treatments, water hauling or the development of springs, catchments, reservoirs, storage tanks, exclosures or fences designed to improve wild horse forage, distribution, containment, or overall management. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to mitigate impacts that could interfere with the protection and management of wild horses in the LBCWHR.		•	•	
	Cultural Resources				
NSO-37 *(ROWA)* **Allocation to Conservation Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities, including archaeological excavation, within 100 meters (328 feet) around eligible sites allocated to Conservation Use. **PURPOSE:** To protect unique scientific information in sites allocated to Conservation Use. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the design of the proposed action, and the characteristics of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve sites allocated to Conservation Use, where mitigation through data recovery is not an option. This stipulation allows the BLM		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1))*.				
NSO-38 *(ROWA)* **Allocation to Traditional Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 200 meters (656 feet), from the boundary of the following known eligible or potentially eligible sites allocated to Traditional Use. In addition, consider visual impacts that projects may have on sites allocated to this use, and apply appropriate mitigation, which may include redesign. **PURPOSE:** To protect values that contribute to sites allocated to Traditional Use. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis after completion and documentation of Native American Consultation, taking into account topographical barriers, the design of the proposed action, and the characteristics of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to address indirect or secondary impacts that can occur to cultural resources that have been identified by the Ute Indian Tribe and Ute Mountain Ute Indian Tribe. This stipulation buffer has been established through consultation conducted with the Ute Indian Tribe for the Orchard GAP (shared CRVFO-GJFO MDP) and during the RMP Ute Ethnohistory project with the Ute Indian Tribe and the Ute Mountain Ute Tribe. Impacts to Traditional Use sites are typically not mitigated through data recovery. This stipulation allows the BLM to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1))*.		•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
NSO-1 *(BLM 1987)* **No Surface Occupancy (Cultural Resources).** 4,600 acres ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy or other activity (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS> • Site 5ME1358 *(Exhibit GJ-1HF)* (170 acres); • Indian Creek *(Exhibit GJ-1HA)* (1,400 acres); • Rough Canyon *(Exhibit GJ-1HB)* (2,600 acres); and • Ladder Springs *(Exhibit GJ-1HG)* (460 acres). **PURPOSE:** To protect unique, significant, and fragile cultural resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			
NSO-39 *(ROWA Alternatives B and C)* **Cultural Resources (Indian Creek).** 1,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities in the following areas: • West Indian Creek (520 acres); and • East Indian Creek (1,200 acres). **PURPOSE:** To protect cultural resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary because data recovery to mitigate adverse effects (for the purposes of compliance with Section 106 of the NHPA) is not an objective for these sites. This stipulation also preserves the site(s) within these areas for long term research projects.		•	•	•
	Visual Resources				
NSO-1 *(BLM 1987)* **No Surface Occupancy**	**STIPULATION:** Prohibit occupancy or other activity (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS>. • Juanita Arch (330 acres) *(Exhibit GJ-1GA)*;	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
(Visual Resources). 189,900 acres ***Fluid Minerals Only***	• The Goblins (120 acres) *(Exhibit GJ-1GB)*; • Dolores River corridor (55,200 acres) *(Exhibit GJ-1GE)*; • Gunnison River corridor (22,000 acres) *(Exhibit GJ-1GF)*; • The Book Cliffs (15,300 acres) *(Exhibit GJ-1GH)*; • Bangs Canyon (39,900 acres) *(Exhibit GJ-1GJ)*; • Sinbad Cliffs (7,400 acres) *(Exhibit GJ-1GK)*; • Granite Creek Canyon/Cliffs (14,200 acres) *(Exhibit GJ-1GL)*; • Unaweep Canyon (54,000 acres) *(Exhibit GJ-1GM)*; • Hunter/Garvey Cliffs (24,400 acres) *(Exhibit GJ-1GN)*; and • Vega State Recreation Area (7,100 acres) *(Exhibit GJ-1GO)*. **PURPOSE:** To protect visual resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease.				
VISUAL CLASS I NSO CO ***All Surface-Disturbing Activities*** 98,700 acres	**STIPULATION:** No surface occupancy or use is allowed in VRM Objective Class I areas and the Goblins **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the quality of the scenic (visual) values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure the protection of vital visual features in the GJFO landscape.		•		
NSO-40 **VRM (Class I and the**	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within the following areas: • All VRM Class I areas; and			•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
Goblins). *Alternative C:* 101,000 acres *Alternative D:* 9,500 acres ***All Surface-disturbing Activities***	• The Goblins. **PURPOSE:** To protect the quality of the scenic (visual) values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure the protection of vital visual features in the GJFO landscape.				
	Lands Managed for Wilderness Characteristics				
NSO-41 **Lands Managed for Wilderness Characteristics.** 171,000 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities on identified lands managed to protect inventoried wilderness characteristics: • Bangs Canyon (20,400 acres); • East Demaree Canyon (4,800 acres); • East Salt Creek (17,000 acres) • Hunter Canyon (32,000 acres); • Kings Canyon (9,600 acres); • Lumsden Canyon (10,100 acres); • Maverick (20,400 acres); • South Shale Ridge (27,500 acres); • Spink Canyon (13,100 acres); • Spring Canyon (8,800 acres); • Unaweep Canyon (7,200 acres); and • West Creek (adjacent) (110 acres). **PURPOSE:** To protect inventoried wilderness characteristics and their locally, regionally, or nationally significant recreational, social, economic, and environmental values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure lands with identified wilderness characteristics remain in their current undeveloped state.			•	

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
LANDS WITH WILDERNESS CHARACTERISTICS NSO CO. 44,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** No surface occupancy or use is allowed on identified lands being managed to protect inventoried wilderness characteristics, in accordance with the Resource Management Plan: • Bangs Canyon (19,600 acres); • Maverick (17,800 acres); • Unaweep Canyon (6,700 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect inventoried wilderness characteristics and their locally, regionally, or nationally significant recreational, social, economic, and environmental values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure lands with identified wilderness characteristics remain in their current undeveloped state.		•		
	Recreation and Visitor Services				
NSO-1 (ROWA) (BLM 1987) **No Surface Occupancy (Recreational Resources).** 114,000 acres ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy or other activity (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS>. • The Palisade ONA (860 acres) *(Exhibit GJ-11A)*; • Established recreation sites (200 acres) *(Exhibit GJ-11B)*; • Island Acres (560 acres) *(Exhibit GJ-11C)*; • Vega State Recreation Area (4,000 acres) *(Exhibit GJ-11D)*; • Highline Reservoir Recreation Area (1,7800 acres) *(Exhibit GJ-11E)*; • Rough Canyon ACEC (2,600 acres) *(Exhibit GJ-11F)*; • Hunter/Garvey backcountry (23,000 acres) *(Exhibit GJ-11G)*; • Granite Creek Canyons/Cliffs (14,000 acres) *(Exhibit GJ-11H)*; • Bangs Canyon (36,900 acres) *(Exhibit GJ-11I)*; • Dolores River (8,400 acres) *(Exhibit GJ-11K)*; and	•			

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	• Gunnison River (21,500 acres) *(Exhibit GJ-11L)*. **PURPOSE:** To protect recreational resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease.				
NSO-42 **Special Recreation Management Areas.** *Alternative C:* 17,300 acres *Alternative D:* 25,200 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within the following RMZs/SRMAs. Alternative C: • Bangs (17,300 acres) Alternative D: • Bangs (17,300 acres) • Castle Rock (4,400 acres) • Gunnison River Bluffs (800 acres) • Palisade Rims (2,700 acres) **PURPOSE:** To protect: specific recreation-tourism visitors and/or community customer markets to be served, and to maintain the specific setting character and/or service delivery system conditions that are essential to achievement of the experiences and benefits identified in management objectives for the SRMA. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard modifications apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas important to recreation users which may also include large facility investments. Protection of RMZs is necessary to meet desired recreation outcomes.			•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
RECREATION SRMA NSO CO ***All Surface-disturbing Activities*** 87,000 acres	**STIPULATION:** No surface occupancy or use is allowed within the following Special Recreation Management Areas (SRMAs) as identified in the Resource Management Plan: • Bangs; • Dolores River Canyon; • North Fruita Desert; and • Palisade Rim. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect specific recreation-tourism visitors and/or community customer markets to be served, and maintain the specific setting character and/or service delivery system conditions that are essential to achievement of the experiences and benefits identified in management objectives for the SRMA. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas important to recreation users which may also include large facility investments. Protection of RMZs is necessary to meet desired recreation outcomes.		•		
RECREATION PARKS NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units: • Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres) **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the state wildlife areas, where BLM manages the fluid mineral rights.				
	Fluid Minerals (Oil and Gas and Geothermal Resources)				
NSO-1 *(BLM 1987)* **No Surface Occupancy (State Wildlife Areas).** ***Fluid Minerals Only***	**STIPULATION:** Prohibit occupancy and other activities (fluid minerals only) on the following portions of this lease: <LEGAL_DESCRIPTIONS> • Highline Reservoir recreation site (1,788 acres) *(Exhibit GJ-11E)* • Horsethief Canyon (1,400 acres) *(Exhibit GJ-1DD)* • Jerry Creek Reservoir (7,200 acres) *(Exhibit GJ-6BD)* • Vega Reservoir recreation site (4,000 acres) *(Exhibit GJ-11D)* **PURPOSE:** To protect wildlife habitat, reservoirs, and recreation facilities. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
RECREATION PARKS NSO CO ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use within the boundaries of the following county parks, state parks, state wildlife areas, federal wildlife refuges, and/or National Park Service units: • Horsethief Canyon State Wildlife Area (1,400 acres) • Jerry Creek Reservoir State Wildlife Area (870 acres) • Plateau Creek State Wildlife Area (1,400 acres) • Highline State Park (350 acres) • Vega State Park (2,000 acres)		•		

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	On the following lands: <LEGAL_DESCRIPTION> **PURPOSE:** To protect the resources of wildlife refuges and park units, such as county parks, state parks, and wildlife areas, and federal parks and wildlife refuges. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to prevent placement of facilities within the state wildlife areas, where BLM manages the fluid mineral rights.				
	ACECs				
NSO-1 (Partial ROWA) (BLM 1987) **NSO-12** *(Partial ROWA)* **ACECs.** *Alternative A:* 28,800 acres *Alternative B:* 89,800 acres *Alternative C:* 168,000 acres *Alternative D:* 33,200 acres ***Alternative A: Fluid Minerals Only*** ***Alternatives B, C, and D: All Surface-***	**STIPULATION**: Prohibit surface occupancy and use (for fluid minerals only in Alternative A), and prohibit surface occupancy and use and surface-disturbing activities (Alternatives B, C, and D), within the following ACECs: Alternative A: • Badger Wash (hydrologic and sensitive plants study area) *(Exhibit GJ-1BA)* (1,900 acres); • Palisade *(Exhibit GJ-1IA)* (23,600 acres); • Pyramid Rock State Natural Area (550 acres) *(Exhibit GJ-1EF)*; • Rough Canyon *(Exhibit GJ-1EF)* (2,700 acres); and • Unaweep Seep *(Exhibit GJ-1EG)* (80 acres). Alternative B: • Atwell Gulch (2,900 acres); • Badger Wash (2,200 acres); • Dolores River Riparian (7,400 acres); • Indian Creek (2,300 acres); • Juanita Arch (1,600 acres); • Mt. Garfield (2,400 acres); • Palisade (32,200 acres); • Pyramid Rock (1,300 acres); • Rough Canyon (2,800 acres);	•	•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
disturbing Activities	• Sinbad Valley (6,400 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). <u>Alternative C:</u> • Atwell Gulch (6,100 acres); • Badger Wash (2,200 acres); • Colorado River Riparian (880 acres); • Coon Creek (110 acres); • Dolores River Riparian (7,400 acres); • Glade Park-Pinyon Mesa (27,200 acres); • Gunnison River Riparian (460 acres); • Hawxhurst Creek (860 acres); • Indian Creek (1,700 acres); • John Brown Canyon (1,400 acres); • Juanita Arch (1,600 acres); • Mt. Garfield (5,700 acres); • Nine-mill Hill Boulders (90 acres); • Palisade (32,200 acres); • Plateau Creek (220 acres); • Prairie Canyon (6,900 acres); • Pyramid Rock (1,300 acres); • Reeder Mesa (470 acres); • Roan and Carr Creeks (33,600 acres); • Rough Canyon (2,800 acres); • Sinbad Valley (6,400 acres); • South Shale Ridge (28,200 acres); and • Unaweep Seep (85 acres). <u>Alternative D:</u> • Badger Wash (2,200 acres); • Palisade (26,900 acres); • Pyramid Rock (1,300 acres); • Rough Canyon (2,700 acres); and • Unaweep Seep (80 acres). **PURPOSE:** To protect and prevent irreparable damage to resources described in the relevance and importance criteria for				

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	which the ACEC was established. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change, or if the lease can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified. If this stipulation is waived or reduced in scope, any of the other attached stipulations (if any) may impact operations on this lease. **JUSTIFICATION:** This stipulation is necessary to protect areas that contain highly important resources requiring special protections.				
	Wilderness Study Areas				
NSO-43 **Wilderness Study Areas.** 96,500 acres ***All Surface-disturbing Activities***	**STIPULATION**: Prohibit surface occupancy and use and surface-disturbing activities in WSAs in accordance with the Interim Management Policy for Lands Under Wilderness Review (BLM Manual H-8550-1) (BLM 1995c). • Demaree Canyon (22,700 acres); • Little Book Cliffs (29,300 acres); • The Palisade (26,700 acres); • Sewemup Mesa (17,800 acres). **PURPOSE:** To preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined by the Interim Management Policy for land under wilderness review (BLM Manual H-8550-1). **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve wilderness characteristics in WSAs in accordance with non-impairment standards as defined by the Interim Management Policy for land under wilderness review (BLM Manual H-8550-1).	•	•	•	•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Wild and Scenic Rivers				
NSO-44 *(ROWA)* **WSR Study Segments Classified as Wild.** 1,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 402 meters (0.25-mile) of either side of the active river channel (bank-full stage): • North Fork West Creek. **PURPOSE:** To protect the outstanding remarkable values, water quality, and free-flowing nature and recommended classification of suitable segments. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure WSR segments classified as Wild remain undeveloped and waters unpolluted.			•	
	National Trails				
NSO-45 *(ROWA)* **Old Spanish National Historic Trail (50 meters).** 1,000 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 50 meters (164 feet) of the center line of the congressionally designated Old Spanish National Historic Trail. **PURPOSE:** To protect the physical evidence of the trail, associated cultural and historic resources, and integrity of the viewshed associated with the Old Spanish National Historic Trail. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would be granted for actions not resulting in long-term adverse impacts to the trail. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the cultural and historic resources along this congressionally designated historic trail.		•		•

Table B-5
No Surface Occupancy (NSO) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
NSO-46 *(ROWA)* **Old Spanish National Historic Trail (0.5 mile).** 3,400 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within 805 meters (0.5-mile) of the center line of the congressionally designated Old Spanish National Historic Trail. **PURPOSE:** To protect the physical evidence of the trail, associated cultural and historic resources, and integrity of the viewshed associated with the Old Spanish National Historic Trail. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions would be granted for actions not resulting in long-term adverse impacts to the trail. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect to protect the cultural and historic resources along this congressionally designated historic trail.			•	

[1]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Water Resources				
CSU-39 **Roan and Carr Creeks ACEC.** 33,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required in the Roan and Carr Creeks ACEC (33,600 acres). **PURPOSE:** To protect and prevent irreparable damage to unique riparian habitats, genetically pure populations of cutthroat trout, and Greater Sage-Grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas that contain highly important resources requiring special protections.		•		
CSU-1 *(ROWA)* **Major River Corridors.** 12,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions from 402 to 805 meters (0.25- to 0.5-mile) landward from identified NSO buffer (402 meters [0.25-mile] from ordinary high water mark or within 100 meters [328 feet] of the 100-year floodplain, whichever is greatest) on either side of the Colorado, Gunnison, and Dolores Rivers for fluid mineral development. **PURPOSE:** To protect these riverine and adjacent areas that provide: a) special status fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: and f) high scenic and recreation values of the three major rivers (Colorado, Gunnison, and Dolores). **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action.			•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
CSU-7 (ROWA) (BLM 1987) **Perennial Streams Water Quality.** ***Fluid Minerals Only***	**STIPULATION:** Limit surface-disturbing activities (for fluid minerals only) within 31 meters (100 feet) of perennial streams to essential roads and utility crossings. **PURPOSE:** To reduce impacts to water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			
CSU-2 *(ROWA)* **Hydrologic Features/Riparian.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 152 meters (500 feet) from the edge of any hydrologic feature including perennial and intermittent streams, wetlands (including fens), lakes, springs, seeps, and riparian areas. **PURPOSE:** To protect water quality and aquatic values and prevent channel degradation, as Streamside Management Zones are lands adjacent to a waterbody where activities on land are likely to affect water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect water quality, riparian and wildlife dependent habitats.			•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
CSU-3 *(ROWA)* **Definable Streams.** ***All Surface-disturbing Activities***	**STIPULATION:** Surface-disturbing actions within a minimum distance of 30 meters (98 feet) from the edge of the ordinary high-water mark (bank-full stage) should be avoided to the greatest extent practicable and disturbances would be subject to site specific relocation at the discretion of the BLM. **PURPOSE:** To protect watershed resource values and reduce non-point source pollutant contributions to the Colorado River system. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2) **JUSTIFICATION:** This stipulation is necessary to carefully plan and appropriately mitigate disturbances near surface water drainages in order to reduce non-point source pollutant contributions from BLM lands to the Colorado River system.		•		
CSU-6 *(BLM 1987)* **Watersheds.** 10,600 acres ***Fluid Minerals Only***	**STIPULATION:** Require that all lease operations (for fluid minerals only) avoid interference with watershed resource values located on the following portions of this lease: • Jerry Creek Reservoirs (5,400 acres) *(Exhibit GJ-6BD)* and • The Palisade municipal watershed (5,200 acres) *(Exhibit GJ-6BB)*. **PURPOSE:** To protect watershed resource values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** This may include the relocation of proposed roads, drilling sites, and other facilities, or the application of appropriate mitigating measures. **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			
CSU-4 *(ROWA)* **Collbran and Mesa/ Powderhorn**	**STIPULATION:** Require that all ground disturbances within source water protection areas and the Jerry Creek watershed avoid interference with watershed resource values.		•		•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
Source Water Protection Areas, and Jerry Creek Watershed. *BLM surface/ federal minerals:* 148,200 acres *Private or State surface/federal minerals*: 30,300 acres ***All Surface-disturbing Activities***	**PURPOSE:** To protect watershed resource values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2) **JUSTIFICATION:** This stipulation is necessary because land management actions can compromise both water quality and quantity if proper locations, mitigation and construction techniques are not utilized.				
	Soils and Geology				
GEOLOGY SOIL CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted on lands within mapped soils with the following special characteristics: Fragile soils and mapped Mancos shale and saline soils. Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit an engineering/reclamation plan to avoid, minimize and mitigate potential effects to soil productivity. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To improve reclamation potential, maintain soil stability and productivity of sensitive areas, minimize contributions of salinity, selenium and sediments likely to affect downstream water quality, fisheries and other downstream aquatic habitats. **EXCEPTION:** Standard exceptions apply (Section B.2).		•		

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to decrease potential degradation to soil and watershed resources within the Greater Colorado River Basin. Land use decisions occurring on mapped areas of Mancos Shale (e.g. conversion of native vegetative communities to irrigated hay fields or golf courses) have been documented to mobilize selenium and contaminate ground and surface water resources. The Colorado River Basin Salinity Control Act of 1974 directed the BLM to manage the Colorado River's salinity, including salinity contributed from public lands.				
CSU-6 *(ROWA)* **Mapped Mancos Shale and Saline Soils.** *BLM surface/ federal minerals:* 355,500 acres *Private or State surface/federal minerals*: 12,000 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within mapped Mancos Shale areas and on saline soils. **PURPOSE:** To improve reclamation potential of disturbed lands, maintain soil stability and productivity in sensitive areas, and to minimize contributions of salt, selenium, sediment, and other minerals constituents of eroding soils likely to affect downstream water quality. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to decrease potential degradation to soil and watershed resources within the Greater Colorado River Basin. Land use decisions occurring on mapped areas of Mancos Shale (e.g. conversion of native vegetative communities to irrigated hay fields or golf courses) have been documented to mobilize selenium and contaminate ground and surface water resources. The Colorado River Basin Salinity Control Act of 1974 directed the BLM to manage the Colorado River's salinity, including salinity contributed from public lands.			•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
CSU-7 **Natural Slopes.** *BLM surface/ federal minerals:* 173,100 acres *Private or State surface/federal minerals*: 26,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in areas with natural steep slopes in the range of 25 to 40 percent. Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit an engineering/reclamation plan to mitigate potential effects to slope stability. **PURPOSE:** To minimize the risk of mass wasting and sedimentation; reduce reclamation costs; protect soil productivity, rare, or sensitive biota; minimize risk to water bodies, fisheries, and aquatic species habitats; and protect human health and safety (from landslides, mass wasting, etc.). **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to allow BLM to move surface disturbances away from natural slopes in order to reduce erosion and sediment load, and improve reclamation potential.			•	
	Vegetation				
PLANT COMMUNITY CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted within occupied habitat that meets BLM's criteria, as established in the Resource Management Plan, for significant and/or relict plant communities: • all old growth forests and woodlands and • plant communities that meet BLM's criteria for significant plant communities Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit a plan of development		•		

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	that would demonstrate that habitat would be preserved to maintain the viability of significant or relict plant communities. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To conserve significant and/or relict plant communities (e.g. old growth forests, Blue Mountain Deciduous Browse/Aspen Communities and woodlands) that are not otherwise protected. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize the loss of old growth trees by adjusting the location of well pads, access roads, and other development; and to limit new disturbance within relic plant communities, thus reducing fragmentation, and the possibility of degradation or loss.				
CSU-8 *(ROWA)* **Old Growth Forests and Woodlands.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within all old growth forests and woodlands. Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Prior to authorizing activities in this area, the operator may be required to submit a plan of development that would demonstrate that habitat would be preserved to maintain the viability of significant or relict plant communities. **PURPOSE:** To conserve significant and/or relict plant communities (i.e., old growth forests and woodlands) that are not otherwise protected. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize the loss of old growth trees by adjusting the location of well pads, access roads, and other development.			•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Special Status Species				
CSU-9 *(ROWA)* **BLM Sensitive Plant Species Occupied Habitat.**	**STIPULATION:** For plant species listed as sensitive by BLM, special design, construction, and implementation measures within a 100-meter (328 feet) buffer from the edge of occupied habitat may be required. In addition, relocation of operations by more than 200 meters (656 feet) may be required. **PURPOSE:** To protect BLM sensitive plant species from direct and indirect impacts, including loss of habitat. The protection buffer reduces dust transport, weed invasion, chemical and produced-water spills and those effects on BLM sensitive plant populations. It also reduces impacts to important pollinators and their habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to reduce direct impacts to sensitive status species by placing disturbances outside of occupied habitat.		•		
CSU-10 *(ROWA)* **Wildlife Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or essential wildlife habitat. Measures would be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs. **PURPOSE:** To reduce impacts of surface disturbing activities and related actions on wildlife and wildlife habitat within high-value or crucial wildlife habitat including, but not limited to, big game winter range and Gunnison and greater sage grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to remain in compliance with current BLM sage grouse direction and allow for protection of essential habitat for wildlife species.		•	•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-1 *(ROWA)* **Major River Corridors.** 12,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions from 402 to 805 meters (0.25- to 0.5-mile) landward from identified NSO buffer (402 meters [0.25-mile] from ordinary high water mark or within 100 meters [328 feet] of the 100-year floodplain, whichever is greatest) on either side of the Colorado, Gunnison, and Dolores Rivers for fluid mineral development. **PURPOSE:** To protect these riverine and adjacent areas that provide: a) special status fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: and f) high scenic and recreation values of the three major rivers (Colorado, Gunnison, and Dolores). **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. • New trail construction resulting in a disturbance corridor less than or equal to 1.2 meters (48 inches) wide open to nonmotorized use. Trials would be constructed per BLM minimum design standards. • BLM on-site evaluation identifies topographic features which adequately buffer and protect riverine environments from adverse impacts. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated critical habitat for federally listed fish species. The buffers are			•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	sized to accommodate the rivers' larger floodplains and wider riparian zones.				
CSU-11 *(ROWA)* **Significant Plant Communities (200 meters).** ***All Surface-disturbing Activities***	**STIPULATION:** For those plant communities that meet BLM's criteria for significant plant communities, special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Habitat areas include occupied habitat and habitat necessary for the maintenance or recovery of the species or communities. **PURPOSE:** To conserve significant plant communities and relict communities that are not otherwise protected. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to limit new disturbance within relic plant communities, thus reducing fragmentation, and the possibility of degradation or loss.			•	
CSU-12 *(ROWA)* **Significant Plant Communities (no buffer).** ***All Surface-disturbing Activities***	**STIPULATION:** For those plant communities that meet BLM's criteria for significant plant communities, special design, construction, and implementation measures, including avoidance, may be required. Habitat areas include occupied habitat and habitat necessary for the maintenance or recovery of the species or communities. **PURPOSE:** To conserve significant plant communities and relict communities that are not otherwise protected. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to limit new disturbance within relic plant communities, thus reducing fragmentation, and the possibility of degradation or loss.				•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-13 *(ROWA)* **Osprey Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 402 meters (0.25-mile) of active osprey nest sites. **PURPOSE:** To protect osprey habitat and nest sites. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect osprey nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•		•
CSU-14 *(ROWA)* **Ferruginous Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active ferruginous hawk nest sites, and associated alternate nests. **PURPOSE:** To protect ferruginous hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•		•
CSU-15 *(ROWA)* **Red-tailed Hawk Nest Sites.** ***All Surface-disturbing***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 531 meters (0.33-mile) of active red-tailed hawk nest sites, and associated alternate nests. **PURPOSE:** To protect red-tailed hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of		•		•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
Activities	the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect red-tailed hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
CSU-16 *(ROWA)* **Swainson's Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 402 meters (0.25-mile) of active Swainson's hawk nest sites and associated alternate nests. **PURPOSE:** To protect ferruginous hawk nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect Swainson's hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•		•
CSU-17 *(ROWA)* **Peregrine Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active peregrine falcon nest sites. **PURPOSE:** To protect peregrine falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect		•		•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	peregrine falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
CSU-18 *(ROWA)* **Prairie Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 805 meters (0.5-mile) of active prairie falcon nest sites. **PURPOSE:** To protect prairie falcon nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•		•
CSU-19 *(ROWA)* **Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls).** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 201 meters (0.125-mile) of an active nest site of all accipiters, falcons (except kestrel), buteos, and owls not listed in other CSU stipulations. Raptors that are listed and protected by the Endangered Species Act of 1973 and the Bald and Golden Eagle Protection Act are addressed separately. **PURPOSE:** To protect nesting habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect raptor nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2002).		•		•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-20 *(ROWA)* **Sage-grouse Nesting and Early Brood-rearing Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to protect sage-grouse nesting and early brood-rearing habitat within 6.4 kilometers (4 miles) of an active lek or within sage-grouse nesting and early brood-rearing habitat. **PURPOSE:** To protect sage-grouse nesting and early brood-rearing habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending upon the active status of the lek or the geographical relationship of topographical barriers and vegetation to the lek site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect sage-grouse nesting and early brood-rearing habitat, per current scientific research recommendations (Parachute-Piceance-Roan Greater Sage-grouse Work Group 2008).				•
CSU-21 *(ROWA)* **Special Status Bat Species' Roost Sites and Winter Hibernacula.** ***All Surface-disturbing Activities***	**STIPULATION:** Require mitigation and minimization measures (as determined by the BLM biologist) for all surface occupancy and use and surface-disturbing activities within 402 meters (0.25-mile) of special status bat species' roost sites and winter hibernacula. **PURPOSE:** To protect bat-roosting and maternity sites and winter hibernacula. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to minimize impact to important bat areas.				•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-22 *(ROWA)* **Kit Fox Dens.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to, and require mitigation and minimization measures (as determined by the BLM biologist) of, surface occupancy and use and surface-disturbing activities within 200 meters (656 feet) of active kit fox dens. **PURPOSE:** To protect breeding kit fox. Note: there are currently no known breeding locations for kit fox in the GJFO. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect breeding kit fox, which have become increasingly rare in Colorado and appear to be significantly more susceptible to disturbance than other canids in the GJFO.		•		•
CSU-23 *(ROWA)* **Occupied Prairie Dog Towns.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within white-tailed prairie dog towns. Locate permanent above-ground structures outside of prairie dog towns. **PURPOSE:** To maintain white-tailed prairie dog habitat and distribution. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the CSU area may be altered depending upon the type of activity and existing disturbance within or adjacent to white-tailed prairie dog towns. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs, a keystone species whose population has been declining in the GJFO and across the western US. This stipulation would help to minimize total abandonment of towns by prairie dog colonies due to disturbance.		•		•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Fish and Wildlife				
CSU-1 *(ROWA)* **Major River Corridors.** 12,700 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions from 402 to 805 meters (0.25- to 0.5-mile) landward from identified NSO buffer (402 meters [0.25-mile] from ordinary high water mark or within 100 meters [328 feet] of the 100-year floodplain, whichever is greatest) on either side of the Colorado, Gunnison, and Dolores Rivers for fluid mineral development. **PURPOSE:** To protect these riverine and adjacent areas that provide: a) special status fish and wildlife species habitat: b) important riparian values: c) water quality/filtering values: d) waterfowl and shorebird production values: e) valuable amphibian habitat: and f) high scenic and recreation values of the three major rivers (Colorado, Gunnison, and Dolores). **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, exceptions, which are subject to CSU (site-specific relocation) stipulations, are as follows: • Essential future actions in which implementation of a professionally engineered design, construction, maintenance, and reclamation plan can mitigate to the fullest extent practicable all potential resource damage associated with the proposed action. • New trail construction resulting in a disturbance corridor less than or equal to 1.2 meters (48 inches) wide open to nonmotorized use. Trails would be constructed per BLM minimum design standards. • BLM on-site evaluation identifies topographic features which adequately buffer and protect riverine environments from adverse impacts. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is required to minimize potential deterioration of water quality, high scenic and recreation values, maintain natural hydrologic function and condition of stream channels, banks, floodplains, and riparian communities, and preserve wildlife habitat including designated			•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	critical habitat for federally listed fish species. The buffers are sized to accommodate the rivers' larger floodplains and wider riparian zones.				
CSU-10 *(ROWA)* **Wildlife Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Require proponents of surface-disturbing activities to implement specific measures to mitigate impacts of operations on wildlife and wildlife habitat within high-value or crucial wildlife habitat. Measures would be determined through biological surveys, onsite inspections, effects of previous actions in the area, and BMPs. **PURPOSE:** To reduce impacts of surface disturbing activities and related actions on wildlife and wildlife habitat within high-value or crucial wildlife habitat including, but not limited to, big game winter range and Gunnison and greater sage grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to remain in compliance with current BLM sage grouse direction and allow for protection of essential habitat for wildlife species.		•	•	
WILDLIFE HABITAT CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted within the following wildlife emphasis or priority areas, as identified in the Resource Management Plan: • Beehive (habitat for mule deer and elk) (4,700 acres); • A portion of East Salt Creek (habitat for mule deer and elk) (20,500 acres); • Glade Park (habitat for Gunnison sage-grouse, mule deer, and elk) (27,200 acres); • A portion of Prairie Canyon (long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, and burrowing owl habitat) (16,500 acres); • A portion of Rapid Creek (wintering and migratory habitat for mule deer and elk) (26,900 acres); and • South Shale Ridge (deer and elk wintering grounds) (3,500 acres).		•		

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. A plan of development may be required to demonstrate how potential adverse impacts to wildlife habitat will be mitigated. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To protect lands identified in the Resource Management Plan as unique and important wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse, Wildlife emphasis areas were identified in coordination with CPW biologists.				
CSU-24 *(ROWA)* **Deer and Elk Migration and Movement Corridors.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within migration and movement corridors for deer and elk. **PURPOSE:** To protect deer and elk migration and movement corridors. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure connectivity between summer and winter ranges for deer and elk. Fragmentation is an increasing problem in deer and elk habitat and this stipulation would help to maintain existing corridors on BLM lands.		•	•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-25 **Wildlife Emphasis Areas.** *Alternative C:* 90,400 acres *Alternative D:* 33,400 acres ***All Surface-disturbing Activities***	**STIPULATION**: Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within the following wildlife emphasis areas: Alternative C: • A portion of East Salt Creek (habitat for mule deer and elk) (21,700 acres); • Hawxhurst (wintering and migratory habitat for bighorn sheep, mule deer, and elk) (9,400 acres); • Indian Point (habitat for pronghorn antelope and wintering habitat for mule deer and elk) (11,400 acres); • A portion of Prairie Canyon (long billed curlew, long eared owl, pronghorn antelope, white-tailed prairie dog, kit fox, and burrowing owl habitat) (12,500 acres); • A portion of Rapid Creek (wintering and migratory habitat for mule deer and elk) (26,900 acres); • Red Mountain (wintering and migratory habitat for mule deer and elk) (5,000 acres); and • South Shale Ridge (deer and elk wintering grounds) (3,500 acres). Alternative D: • Roan and Carr Creeks (33,400 acres). **PURPOSE:** To protect core wildlife areas, which are areas of the highest value/top-ranked wildlife habitat (by BLM and CPW) for multiple species. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect the highest priority wildlife habitat for deer, elk, antelope, bighorn sheep, and sage-grouse, Wildlife emphasis areas were identified in coordination with CPW biologists.			•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Wild Horses				
CSU-2 *(Exhibit GJ-2FA)* *(BLM 1987)* **Scenic and Natural Values (Little Book Cliffs Wild Horse Area).** 36,100 acres ***Fluid Minerals Only***	**STIPULATION:** Special design and reclamation measures (for fluid minerals only) may be required to protect the outstanding scenic and natural landscape value of the following portion(s) of this lease: <LEGAL_DESCRIPTIONS> Special design and reclamation measures may include transplanting trees and shrubs, fertilization, mulching, special erosion-control structures, irrigation, site recontouring to match the original contour, buried tanks and low-profile equipment, and painting to minimize visual contrasts. Surface-disturbing activities may be denied in sensitive areas, such as unique geologic features and rock formations, visually prominent areas, and high recreation use areas. **PURPOSE:** To protect scenic and natural values in the Little Book Cliffs Wild Horse Area. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concerns(s) identified.	•			
CSU-26 **Little Book Cliffs Wild Horse Range.** 35,200 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface-disturbing activities within the LBCWHR. **PURPOSE:** To protect wild horses in the LBCWHR. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to mitigate impacts that could interfere with the protection and management of wild horses in the LBCWHR.				•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Cultural Resources				
CSU-27*(ROWA)* **Allocation to Scientific Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to certain surface uses, as specified below, except archaeological documentation and excavation, within 100 meters (328 feet) around eligible or potentially eligible sites allocated to Scientific Use. **PURPOSE:** To protect unique scientific information in sites that may be damaged from inadvertent or unauthorized uses. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the nature of the proposed action, and the nature of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to address indirect or secondary impacts that can occur to cultural resources. Indirect and secondary impacts are typically not mitigated through data recovery by the proponent. Managing properties by addressing only direct impacts can lead to adverse effect and the loss of the resource. This stipulation allows the BLM to mitigate impacts that can cause significant degradation to the site integrity criteria that are applied in the designation of the cultural resource as eligible or potentially eligible for nomination to the NRHP *(36 CFR part 800.5(a)(1))*.		•	•	•
CSU-28 *(ROWA)* **Allocation to Public Use Category.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to certain surface uses, as specified below, within 100 meters (328 feet) around sites allocated to Public Use. In addition, consider factors such as integrity of setting, recreation opportunity, or visual impacts that projects may have on sites allocated to this use. **PURPOSE:** To protect the values that contribute to sites allocated to Public Use. **EXCEPTION:** Standard exceptions apply (Section B.2).		•	•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	MODIFICATION: The BLM's Authorizing Officer may modify the site-protection boundary on a case-by-case basis, taking into account topographical barriers, the nature of the proposed action, and the nature of the cultural resource site and/or area. **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect sites allocated to Public Use, including those that may not meet the criteria for the NRHP but are important for heritage tourism as a visual resource of a rural landscape.				
CSU-29 *(ROWA)* **Sub-surface Inventory.** *Alternative B:* 53,500 acres *Alternative C:* 68,400 acres *Alternative D:* 51,600 acres ***All Surface-disturbing Activities***	**STIPULATION**: Require sub-surface inventory for deep sub-surface-disturbing activities and buried ROW in the following locations and in additional areas where high potential for subsurface resources may be identified in the future: Alternative B: • Grand Mesa Slopes (16,000 acres); • Indian Creek (20,200 acres); and • Sunnyside (17,300 acres). Alternative C: • Grand Mesa Slopes (24,400 acres); • Indian Creek (20,200 acres); and • Sunnyside (24,000 acres). Alternative D: • Grand Mesa Slopes (16,000 acres); • Indian Creek (20,200 acres); and • Sunnyside (15,400 acres). **PURPOSE:** To protect cultural resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is needed to protect buried cultural resources within areas of high potential for sub-surface activities.		•	•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
CSU-5 (ROWA) (BLM 1987) **Known Cultural Resource Values.** ***Fluid Minerals Only***	**STIPULATION:** Important cultural resource values <RESOURCE_VALUE> are present on the following portions of this lease: <LEGAL_DESCRIPTIONS>. Surface-disturbing activities (for fluid minerals only) must avoid these areas. **PURPOSE:** To protect known cultural sites. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, an exception could be granted if mitigation of impacts is agreed to by the Authorized Officer. Where impacts cannot be mitigated to the satisfaction of the Authorized Officer, surface occupancy and use on that area must be prohibited. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
	Visual Resources				
CSU-30 *(ROWA)* **VRM Class II.** *Alternative B:* 354,900 acres *Alternative C:* 556,600 acres *Alternative D:* 194,800 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within all areas designated as VRM Class II. Require that surface-disturbing activities meet the objectives of VRM Class II. **PURPOSE:** To protect visual resources. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, an exception could be granted for bond projects within scenic byways to ensure that visual and reclamation objectives are achieved. Facility design should incorporate viewshed analysis and modeling to minimize impacts to visual resources. Special mitigation measures such as facility placement and color selection have been proposed to reduce impacts to visual resources. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is needed to maintain the visual integrity within designated Class II VRM areas. A CSU will allow placement of facilities and disturbances outside of the critical view sheds.		•	•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
CSU-2 (BLM 1987) **Scenic and Natural Landscape Values.** 310,600 acres ***Fluid Minerals Only***	**STIPULATION:** Special design and reclamation measures (for fluid minerals only) may be required to protect the outstanding scenic and natural landscape values located on the following portions of this lease: <LEGAL_DESICRIPTION>. • Bangs Benches (Exhibit GJ-2GJ) (32,000 acres); • The Book Cliffs (Exhibit GJ-2GC) (31,100 acres); • Established BLM Recreation Sites (Exhibit GJ-2GB and Exhibit GJ-2IB) (1,000 acres); • Grand Mesa Slopes (Exhibit GJ-2GI) (62,000 acres); • Granite Creek Benches (Exhibit GJ-2GL) (23,400 acres); • Gunnison River Corridor (Exhibit GJ-2GF) (1,200 acres); • Highway Corridors (Exhibit GJ-2GP) (69,400 acres); • Hunter/Garvey (Exhibit GJ-2GN) (24,700 acres); • Little Book Cliffs Wild Horse Area (Exhibit GJ-2FA) (33,000 acres); • Sinbad Valley (Exhibit GJ-2GK) (6,400 acres); • South Shale Ridge (Exhibit GJ-2GG) (24,400 acres); and • Unaweep Valley (Exhibit GJ-2GM) (2,000 acres). Special design and reclamation measures may include transplanting trees and shrubs, fertilization, mulching, special erosion-control structures, irrigation, site recontouring to match the original contour, buried tanks and low-profile equipment, and painting to minimize visual contrasts. Surface-disturbing activities may be denied in sensitive areas, such as unique geologic features and rock formations, visually prominent areas, and high recreation use areas. **PURPOSE:** To protect outstanding scenic and natural landscape values. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	Recreation and Visitor Services				
CSU-2 (BLM 1987) **Scenic and Natural Landscape Values (Recreation Resources).** 89,200 acres ***Fluid Minerals Only***	**STIPULATION:** Special design and reclamation measures (for fluid minerals only) may be required to protect the outstanding scenic and natural landscape value of the following portion(s) of this lease: <LEGAL_DESCRIPTIONS> • Bangs Benches (Exhibit GJ-2IJ) (42,900acres); • Granite Creek Benches (Exhibit GJ-2IH) (23,400 acres); • Hunter/Garvey Benches (Exhibit GJ-2IG) (21,700 acres); and • Lower Gunnison River (Exhibit GJ-2IL) (1,200 acres). Special design and reclamation measures may include transplanting trees and shrubs, fertilization, mulching, special erosion-control structures, irrigation, site recontouring to match the original contour, buried tanks and low-profile equipment, and painting to minimize visual contrasts. Surface-disturbing activities may be denied in sensitive areas, such as unique geologic features and rock formations, visually prominent areas, and high recreation use areas. **PURPOSE:** To protect recreation resources. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concerns(s) identified.	•			
CSU-31 *(ROWA)* **Recreation.** ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to surface occupancy and use and surface-disturbing activities to minimize conflicts with developed (and future) recreation sites and to mapped (and future) national/regional trails, local system trails that connect communities, and trailheads and interpretive sites with exceptional recreation values or significant public interest. Apply this stipulation to the following sites that lie outside of designated RMAs: • Low Gap Recreation Site;		•	•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	• North Soda Recreation Site; • Miracle Rock Recreation Site; • Mud Springs Campground; and • West Creek Picnic Site. **PURPOSE:** To minimize conflicts with developed (and future) recreation sites and to mapped (and future) national/regional trails, local system trails that connect communities, and trailheads and interpretive sites with exceptional recreation values or significant public interest. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to assure significant public investment and desired recreation opportunities are protected from surface-disturbing occupancy.				
CSU-32 **Recreation Management Areas.** *Alternative B:* 227,100 acres *Alternative C:* 42,700 acres *Alternative D:* 58,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions in the following RMAs: Alternatives B: • Grand Valley OHV SRMA (9,700 acres) • Barrel Spring ERMA (24,700 acres) • Gateway ERMA (78,100 acres) • Grand Valley Shooting Ranges ERMA (750 acres) • Gunnison River Bluffs ERMA (800 acres) • Horse Mountain ERMA (5,100 acres) • North Desert ERMA (107,900 acres) Alternative C • North Fruita Desert (42,700 acres) Alternative D: • Castle Rock (4,400 acres) • Grand Valley OHV (9,600 acres) • North Fruita Desert (44,100 acres) **PURPOSE:** To protect recreation outcomes and setting prescriptions.		•	•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	EXCEPTION: Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect areas important to recreation users which may also include large facility investments. Protection of RMZs is necessary to meet desired recreation outcomes.				
	Lands and Realty				
DISPOSAL CSU CO ***All Surface-disturbing Activities***	**STIPULATION:** Surface occupancy or use may be restricted due to lands identified for disposal in the Resource Management Plan. Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. **PURPOSE:** To preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal.		•		
CSU-33 *(CSU CO-25)* **Disposal Tracts.** ***All Surface-disturbing Activities***	**STIPULATION:** Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet) may be required on disposal tracts. **PURPOSE:** To preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, underground facilities may be excepted.				•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	MODIFICATION: Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to preserve the value of disposal tracts and/or protect facilities or uses for which these tracts of land were identified for disposal.				
	Coal				
COAL MINE CSU CO 9,000 acres ***Fluid Minerals Only***	**STIPULATION:** Surface occupancy or use (for fluid minerals only) may be restricted due to surface or underground coal mines. Special design, construction and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. Operations proposed within the area of an approved surface or underground coal mine will be relocated outside the area to be mined or to accommodate room and pillar mining operations. **PURPOSE:** To protect surface or underground coal mines. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to allow underground coal operations within oil and gas leases while reducing safety concerns.		•		
CSU-34 *(CSU CO-25)* **Federally Leased Coal.** 9,000 acres ***Fluid Minerals Only***	**STIPULATION:** Where applicable, apply CSU (site-specific relocation) restrictions to new oil and gas leases and operations within the area of federally leased coal. Relocate oil and gas operations outside the area to be mined or locate to accommodate room and pillar mining operations. **PURPOSE:** To protect federally leased coal lands. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to allow underground coal operations within oil and gas leases while reducing safety concerns.			•	•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	ACEC				
CSU-39 **Roan and Carr Creeks ACEC.** 33,600 acres ***All Surface-disturbing Activities***	**STIPULATION:** Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required in the Roan and Carr Creeks ACEC (33,600 acres). **PURPOSE:** To protect and prevent irreparable damage to unique riparian habitats, genetically pure populations of cutthroat trout, and Greater Sage-Grouse habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).		•		
	Wild and Scenic Rivers				
CSU-35 *(ROWA)* **WSR Study Segments Classified as Scenic and Recreational.** 22,980 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions within 402 meters (0.25-mile) on either side of the ordinary high-water mark or other preliminary or final boundary of identified eligible or suitable WSR study corridors, as defined in the WSR Suitability Report, of the following segments classified as "Scenic" or "Recreational." Special design, construction, and implementation measures, including relocation of operations by more than 200 meters (656 feet), may be required. • Colorado River Segment 1 (2,200 acres); • Colorado River Segment 2 (120 acres); • Dolores River (5,900 acres); • North Fork Mesa Creek (700 acres); • Blue Creek (2,900 acres); • Gunnison River Segment 2 (970 acres); • Roan Creek (2,000 acres); • Carr Creek (1,800 acres); • Rough Canyon Creek (1,200 acres); • East Creek (1,900 acres); • West Creek (1,700 acres); and • Ute Creek (1,400 acres). **PURPOSE:** To protect WSR outstandingly remarkable values, free-flowing nature, and water quality of eligible or suitable river			•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	segments and their consequent recreational, social, economic, and environmental significance. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ORVs associated with WSR segments, and allow BLM to place disturbances 402 meters (0.25-mile) away from the identified segment.				
	National Trails				
CSU-36 **Old Spanish National Historic Trail.** 3,400 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within 805 meters (0.5-mile) of either side of the Old Spanish National Historic Trail. **PURPOSE:** To protect visual resources associated with the trail. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect to protect visual resources along this congressionally designated historic trail.			•	
CSU-37 **Scenic Byways (0.5-mile).** 32,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within 805 meters (0.5-mile) of either side of centerline of the following scenic byways: • Dinosaur Diamond Prehistoric Highway (National Scenic Byway and All American Road) (14,300 acres); • Grand Mesa Scenic and Historic Byway (1,200 acres); and • Unaweep-Tabeguache Scenic and Historic Byway (17,000 acres). **PURPOSE:** To protect the quality of the scenic (visual) values of		•	•	

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	scenic, historic, or backcountry byways. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, an exception could be granted if: (a) a viewshed analysis indicates minimal impairment of the visual resources from the driving corridor; or (b) the action is determined to be consistent and compatible with protection or enhancement of the resource values, or the use would provide suitable opportunities for public enjoyment of these resources. An exception could also be granted for bond projects within scenic byways to ensure that visual and reclamation objectives are achieved. Facility design should incorporate viewshed analysis and modeling to minimize impacts to visual resources. Special mitigation measures such as facility placement and color selection have been proposed to reduce impacts to visual resources. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to place surface-disturbing activities along scenic byways in areas that do not affect values associated with the identified scenic byway.				
CSU-38 **Scenic Byways (0.25-mile).** 29,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Apply CSU (site-specific relocation) restrictions to fluid mineral leasing and other surface-disturbing activities within 402 meters (0.25-mile) of the following scenic byways: • Lands' End (540 acres); • John Brown Canyon (1,800 acres); • Dinosaur Diamond Prehistoric Highway (National Scenic Byway and All American Road) (7,000 acres); • Grand Mesa Scenic and Historic Byway (860 acres); • Unaweep-Tabeguache Scenic and Historic Byway (7,700 acres); • Niche to Blue Mesa (3,800 acres); and • Winter Flats Road (7,800 acres). **PURPOSE:** To protect scenic views in driving corridors. **EXCEPTION:** Standard exceptions apply (Section B.2). In				•

Table B-6
Controlled Surface Use (CSU) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
	addition, an exception could be granted if: (a) a viewshed analysis indicates minimal impairment of the visual resources from the driving corridor; or (b) the action is determined to be consistent and compatible with protection or enhancement of the resource values, or the use would provide suitable opportunities for public enjoyment of these resources. An exception could also be granted for bond projects within scenic byways to ensure that visual and reclamation objectives are achieved. Facility design should incorporate viewshed analysis and modeling to minimize impacts to visual resources. Special mitigation measures such as facility placement and color selection have been proposed to reduce impacts to visual resources. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to ensure surface-disturbing activities do not affect values associated with the identified scenic byway.				

[1]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Special Status Species				
TL-1 *(ROWA)* **Salmonid and Native Non-salmonid Fishes (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit in-channel stream work in all occupied streams during fish spawning, egg incubation, and fry emerging seasons. Fish spawning, egg incubation, and fry emerging seasons vary by elevation and temperatures; however, the following intervals generally apply in Colorado: • Cutthroat trout (various subspecies): May 1-September 1 • Rainbow trout: March 1-June 15 • Brown trout: October 1-May 1 • Brook trout: August 15-May 1 • Sculpin: May 1-July 31 • Bluehead sucker: May 1-July 15 • Flannelmouth sucker: April 1-July 1 • Roundtail chub: May 15-July 15 • Speckled dace: May 1-August 31 • Mountain whitefish: October 1-November 30 **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry of native fish populations. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this stipulation only applies to construction and drilling and does not apply to operations and maintenance. If competing species are involved, the BLM may select to implement species-specific dates for native fish versus nonnative species. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native and game fish breeding.		•	•	
TL-2 *(ROWA)* **Occupied Cutthroat Trout Waters.** ***All Surface-disturbing***	**STIPULATION:** Prohibit in-channel work in all occupied cutthroat trout streams during spring spawning periods of April 1 to August 1. **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry. **EXCEPTION:** Standard exceptions apply (Section B.2).				•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
Activities	**MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native fish species, including a USFWS-listed species.				
TL-3 *(ROWA)* **Migratory Bird Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities, including vegetation-removal projects, in migratory bird habitat during nesting season when nesting birds are present. Alternative B: May 15 to July 15 or as site-specific analysis dictates. Alternative C: April 15 to July 31 or as site-specific analysis dictates. **PURPOSE:** To minimize disruption of migratory bird nesting activity. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this stipulation only applies to construction and drilling, and does not apply to operations and maintenance. The TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect migratory bird habitat and ensure compliance with the Migratory Bird Treaty Act (Information Bulletin No. 2010-110); BLM Memorandum of Understanding with US Fish and Wildlife Service).		•	•	
TL-4 *(ROWA)* **Birds of Conservation Concern's Habitat.**	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities, including vegetation-altering projects, in birds of conservation concern's habitat (USFWS 2008) during nesting season (May 15 to July 15 or as site-specific analysis dictates) when nesting birds are present. **PURPOSE:** To protect nesting osprey from human disturbance				•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
All Surface-disturbing Activities	that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect osprey nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008) and ensure compliance with the Migratory Bird Treaty Act (Information Bulletin No. 2010-110); BLM Memorandum of Understanding with US Fish and Wildlife Service).				
WILDLIFE RAPTOR NESTS TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed within a 402 meter (0.25-mile) radius of active raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young: • Osprey nests: April 1 to August 31. • Red-tailed hawk nests, including any alternate nests: February 15 to July 15. • Swainson's hawk nests and associated alternate nests: April 1 to July 15. • Burrows or burrowing owl nest sites: March 1 to August 15. • Great horned owl nests: February 1 to August 15. • Other owls and raptors: March 1 to August 15. • Cooper's hawk, sharp shinned hawk, and northern harrier nests: April 1 to August 15. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To prevent disruption of reproductive activity of raptors during the production period.		•		

Table B-7
Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	EXCEPTION: Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
WILDLIFE SENSITIVE RAPTOR NESTS TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed within an 805 meter (0.5-mile) radius of active or inactive raptor nests, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM, during the following time period(s), or until fledging and dispersal of young: • Ferruginous hawk nests, including any alternate nests: February 1 to July 15. • Goshawk nest sites: March 1 to September 30. • Peregrine and prairie falcon nest cliff(s): March 15 to July 31. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To prevent disruption of reproductive activity of raptors during the production period. **EXCEPTION:** Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•		

Table B-7
Timing Limitation (TL) Stipulations Applicable to Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
TL-5 *(ROWA)* **Osprey Nests.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 402 meters (0.25-mile) of active osprey nests from April 1 to August 31. **PURPOSE:** To protect nesting osprey from human disturbance that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect osprey nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•
TL-6 *(ROWA)* **Ferruginous Hawk Nests.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 402 meters (0.25-mile) (Alternatives C and D) of active ferruginous hawk nests, including any alternate nests, from February 1 to July 15. **PURPOSE:** To protect ferruginous hawks from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect ferruginous hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
TL-7 *(ROWA)* **Red-tailed Hawk Nests.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 531 meters (0.33-mile) of active red-tailed hawk nests, including any alternate nests, from February 15 to July 15. **PURPOSE:** To protect nesting red-tailed hawks from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect red-tailed hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•
TL-8 *(ROWA)* **Swainson's Hawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 402 meters (0.25-mile) of active Swainson's hawk nests and associated alternate nests from April 1 to July 15. **PURPOSE:** To protect nesting Swainson's hawks from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect Swainson's hawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
TL-14 (ROWA) (Exhibit GJ-14EB) (BLM 1987) **Threatened and Endangered Seasonal Habitat (Peregrine Falcon Habitat).** ***Fluid Minerals Only***	**STIPULATION:** In order to protect important seasonal habitat of threatened or endangered animal species, any lease operations (fluid minerals only) which may affect these species will be allowed only during the following period: Occupancy is allowed <BEGIN_DATE> to <END_DATE> on the lands described below: <LEGAL_DESCRIPTIONS>. **PURPOSE:** To protect bald eagle habitat. **EXCEPTION:** Exceptions to this limitation in any particular year may be specifically approved in writing by the Authorized Officer. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
TL-9 *(ROWA)* **Peregrine and Prairie Falcon Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 805 meters (0.5-mile) of active peregrine and prairie falcon nest cliff(s) from March 15 to July 31. **PURPOSE:** To protect nesting peregrine and prairie falcons from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect peregrine and prairie falcon nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative			
		A	B	C	D
TL-10 *(ROWA)* **Goshawk Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities that may affect nesting success within 805 meters (0.5-mile) of active goshawk nest sites from March 1 to September 30. **PURPOSE:** To protect nesting goshawks from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect goshawk nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•
TL-11 *(ROWA)* **Burrowing Owl Burrows and Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 402 meters (0.25-mile) of active burrows or burrowing owl nest sites from March 1 to August 15. **PURPOSE:** To protect nesting burrowing owls from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect nesting burrowing owls.			•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
TL-12 *(ROWA)* **Other Raptor Species (accipiters, falcons [except kestrel], buteos, and owls).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface disturbing activities, and intensive human activities that may affect nesting success within 402 meters (0.25-mile) of active nests from February 1 to August 15 (great horned owl), March 1 to August 15 (other owls and raptors), and April 1 to August 15 (Cooper's hawk, sharp shinned hawk, and northern harrier). **PURPOSE:** To protect reproductive activity at active nest sites. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect raptor species per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).			•	•
TL-13 *(ROWA)* **Golden Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit human encroachment within an 805-meter (0.5-mile [Alternative B]) or 402-meter (0.25-mile [Alternatives C and D]) radius of active golden eagle nests and associated alternate nests, as mapped in the RMP, BLM's GIS database, or other maps provided by local, state, federal, or tribal agencies that are analyzed and accepted by the BLM, during the following time period, or until fledging and dispersal of young: December 15 to July 15. **PURPOSE:** To prevent disruption of reproductive activity of golden eagles. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect golden eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•	•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
TL-14 (ROWA) (Exhibit GJ-14EA) (BLM 1987) **Threatened and Endangered Seasonal Habitat (Bald Eagle Habitat).** ***Fluid Minerals Only***	**STIPULATION:** In order to protect important seasonal habitat of threatened or endangered animal species, any lease operations (fluid minerals only) which may affect these species will be allowed only during the following period: Occupancy is allowed <BEGIN_DATE> to <END_DATE> on the lands described below: <LEGAL_DESCRIPTIONS>. **PURPOSE:** To protect bald eagle habitat. **EXCEPTION:** Exceptions to this limitation in any particular year may be specifically approved in writing by the Authorized Officer. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
TL-14 *(ROWA)* **Bald Eagle Nest Sites.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit human encroachment within an 805-meter (0.5-mile) radius of active bald eagle nests from November 15 to July 31. **PURPOSE:** To prevent disruption of reproductive activity of bald eagles. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this stipulation only applies to construction and drilling, and does not apply to operations and maintenance. The TL area may be altered depending on the status of the nest site or the geographical relationship of topographic barriers and vegetation screening to the nest site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect bald eagle nesting habitat per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).		•	•	•
TL-15 *(ROWA)* **Bald Eagle Winter Roost.** ***All Surface-***	**STIPULATION:** Prohibit activity within 402 meters (0.25-mile) of bald eagle winter roosts from November 15 to March 15. Additional restrictions may be necessary within 805 meters (0.5-mile) of active bald eagle winter roosts if there is a direct line of sight from the roost to the activities.		•	•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
disturbing Activities	**PURPOSE:** To protect bald eagles from human impacts that could affect winter survival. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the TL area may be altered depending on the status of the roost site or the geographical relationship of topographic barriers and vegetation screening to the roost site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect bald eagle winter roosts per CPW's *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* (CPW 2008).				
TL-16 *(ROWA)* **Occupied Sage-grouse Winter Habitat.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities in occupied sage-grouse winter habitat from December 1 to March 15. **PURPOSE:** To protect sage-grouse (Gunnison and greater) from human impacts that could affect winter survival. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect sage-grouse from disturbance in a time of year when the added stress from disturbance can lead to death.		•	•	
TL-17 *(ROWA)* **Sage-grouse Leks (4 miles).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities within 6.4 kilometers (4 miles) of sage-grouse leks from March 1 to June 30. **PURPOSE:** To protect breeding and nesting sage-grouse (Gunnsion and greater) from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, the NSO area may be altered depending upon the active status of the lek or the geographical relationship of		•		

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	topographical barriers and vegetation to the lek site. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect breeding and nesting sage-grouse per current research recommendations (Parachute-Piceance-Roan Greater Sage-grouse Work Group 2008).				
TL-18 *(ROWA)* **Sage-grouse Leks, Nesting, and Early Brood-rearing Habitat (0.6-mile).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities from March 1 to June 30 within 966 meters (0.6-mile) of the lek or within sage-grouse nesting and early brood-rearing habitat. **PURPOSE:** To protect breeding and nesting sage-grouse (Gunnsion and greater) from human impacts that could affect nest success. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect greater and Gunnison sage-grouse breeding habitat.				•
TL-19 *(ROWA)* **Occupied Prairie Dog Towns.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use and surface-disturbing activities within active white-tailed prairie dog towns from April 1 to July 15. **PURPOSE:** To avoid impacts to white-tailed prairie dogs during the pupping season. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect prairie dogs during the breeding season to allow for distribution of young.		•		•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Fish and Wildlife				
TL-1 *(ROWA)* **Sport and Native Fish (brown, brook, rainbow, and cutthroat trout; bluehead and flannelmouth sucker; roundtail chub; mountain whitefish; Paiute and mottled sculpin; and speckled dace).** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit in-channel stream work in all occupied streams during appropriate spring and fall spawning periods. Alternative B: Rainbow and cutthroat trout, bluehead and flannelmouth sucker, roundtail chub, and Paiute and mottled sculpin (April 1 to August 1); brown and brook trout (October 1 to November 30). Alternative C: Cutthroat trout (May 1-September 1), Rainbow trout (March 1-June 30), Brown trout (October 1-May 1), Brook trout (August 1-May 1), Sculpin (May 1-July 31), Bluehead sucker (May 1-July 31), Flannelmouth sucker (April 1-July 1), Roundtail chub (May 1-July 31), Speckled dace (May 1-August 31), Mountain whitefish (October 1-November 30). **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native and game fish breeding.		•	•	
TL-2 *(ROWA)* **Occupied Cutthroat Trout Waters.** ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit in-channel work in all occupied cutthroat trout streams during spring spawning periods of April 1 to August 1. **PURPOSE:** To protect redds (egg masses) in the gravel and emerging fry. **EXCEPTION:** Standard exceptions apply (Section B.2). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect important native fish species, including a USFWS-listed species.				•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
TL-12 (ROWA) (BLM 1987) **Deer and Elk Winter Range.** 262,800 acres ***Fluid Minerals Only***	**STIPULATION:** Lease activities such as exploration, drilling, and other development (for fluid minerals only) will be allowed only during the period from May 1 to December1 on the following portions of this lease: <LEGAL_DESCRIPTION>. **PURPOSE:** To protect important seasonal wildlife habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to maintenance and operation of producing wells and range management. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concerns(s) identified.	•			
TL-20 *(ROWA)* **Big Game Winter Range.** 474,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities from December 1 to May 1 to protect big game winter range as mapped by the CPW. Certain areas and/or routes within big game winter range may be closed to foot, horse, motorized, and/or mechanized travel from December 1 to May 1. **PURPOSE:** To reduce disruption of big game during the winter season. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g., producing wells) and range administration. An exception will be granted only when the proposed action would not cause unacceptable harm to big game based on the following factors: 1. Winter conditions (such as snow cover and crusting) at the project site and vicinity; 2. Predictable, short-term (1 week) storm forecasts for the project area; 3. Period of winter in which the exception is requested (e.g., after April 15, before December 15, heart of winter); 4. Project site location relative to the size and spatial configuration of delineated critical winter range, open		•	•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	roads and trails, and other background disturbance; 5. Length of time that activities would encroach on the period of the winter range stipulation; 6. Number of vehicle trips per day in and out of the work site; 7. Time of day that activity occurs (after dark generally prohibited); 8. Actual big game use of the area; 9. Cumulative impacts on big game (such as other activities in the area); and 10. Additional site-specific or general concerns, as appropriate. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect big game winter habitat from surface-disturbing and major human activities during the periods of the year when the habitat is occupied. This habitat is critical to the viability of big game herds. These areas will be managed by BLM to reflect CPW most current big game winter range maps.				
TL-9 (ROWA) (BLM 1987) **Bighorn Seasonal Stipulation.** ***Fluid Minerals Only***	**STIPULATION:** Lease activities such as exploration, drilling, and other development (for fluid minerals only) will be allowed only during the period from May 1 to December 1 on the following portions of this lease: <LEGAL_DESCRIPTION>. **PURPOSE:** To protect important seasonal bighorn habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g., producing wells) and range administration. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concern(s) identified.	•			

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
TL-4 (ROWA) (BLM 1987) **Elk Calving Area.** 3,400 acres ***Fluid Minerals Only***	**STIPULATION:** Lease activities such as exploration, drilling, and other development (for fluid minerals only) will be allowed only during the period from June 15 to May 15 on the following portions of this lease. **PURPOSE:** To protect important seasonal elk calving habitat. **EXCEPTION:** This limitation does not apply to maintenance and operation of producing wells and range management. In addition, no surface-disturbing activity will be allowed on elk calving sites. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2).	•			
BIG GAME PRODUCTION TL CO ***All Surface-disturbing Activities***	**STIPULATION:** No surface use is allowed during the following time period(s) in big game production areas, as mapped in the Resource Management Plan, BLM's GIS database or other maps provided by local, state, federal or tribal agencies that are analyzed and accepted by the BLM: Prohibit activities, including motorized travel, in elk production areas from May 15 to June 15; in antelope production areas from April 15 to June 30; in Rocky Mountain bighorn sheep production areas from April 15 to June 30; in Moose production areas from April 15 to June 30; and in desert bighorn sheep production areas from February 1 to May 1. **On the following lands:** <LEGAL_DESCRIPTION> **PURPOSE:** To reduce disruption of big game during parturition and young rearing period. **EXCEPTION:** Standard exceptions apply (Section B.2). This stipulation only applies to construction and drilling, and does not apply to operations and maintenance. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation provides for protection of big game production areas from disturbance and displacement by human activities during critical periods.		•		

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
TL-21 *(ROWA)* **Big Game Production Areas.** 13,100 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit activities, including motorized travel, in elk production areas from May 15 to June 15; in antelope production areas from April 15 to June 30; in Rocky Mountain bighorn sheep production areas from April 15 to June 30; in Moose production areas from April 15 to June 30; and in desert bighorn sheep production areas from February 1 to May 1. **PURPOSE:** To protect important seasonal big game production habitat, and reduce disruption of big game during parturition and young rearing period. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g. producing wells) and range administration (Section B.1). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation provides for protection of big game production areas from disturbance and displacement by human activities during critical periods.			•	
TL-22 *(ROWA)* **Pronghorn Wintering Habitat.** 23,500 acres ***All Surface-disturbing Activities***	**STIPULATION:** Prohibit surface occupancy and use, surface-disturbing activities, and intensive human activities in pronghorn wintering habitat from January 1 to March 31. **PURPOSE:** To improve pronghorn antelope habitat. **EXCEPTION:** Standard exceptions apply (Section B.2). In addition, this limitation does not apply to essential maintenance and operation of facilities (e.g. producing wells) and range administration (Section B.1). **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** Standard waivers apply (Section B.2). **JUSTIFICATION:** This stipulation is necessary to protect pronghorn winter habitat from surface-disturbing and major human activities during the periods of the year when the habitat is occupied. This habitat is critical to the viability of pronghorn herds. These areas will be managed by BLM to reflect CPW most current pronghorn winter range maps.		•	•	•

Table B-7
Timing Limitation (TL) Stipulations Applicable to
Fluid Mineral Leasing and Other Surface-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Wild Horses				
TL-10 (ROWA) (BLM 1987) **Wild Horse Winter Range.** ***Fluid Minerals Only***	**STIPULATION:** Lease activities such as exploration, drilling, and other development (for fluid minerals only) will be allowed only during the period from May 1 to December 1 on the following portions of this lease: <LEGAL_DESCRIPTION>. **PURPOSE:** To protect important wild horse habitat. **EXCEPTION:** This limitation does not apply to maintenance and operation of producing wells and range management. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concerns(s) identified.	•			
TL-11 (ROWA) (BLM 1987) **TL-23** **Wild Horse Foaling Area.** ***Alternative A: Fluid Minerals Only*** ***Alternative D: All Surface-disturbing Activities***	**STIPULATION:** Lease activities such as exploration, drilling, and other development will be allowed only during the period from July 1 to March 1 on the following portions of this lease: <LEGAL_DESCRIPTION>. **PURPOSE:** To protect important seasonal wild horse habitat. **EXCEPTION:** This limitation does not apply to maintenance and operation of producing wells and range management. **MODIFICATION:** Standard modifications apply (Section B.2). **WAIVER:** This stipulation may be waived or reduced in scope if circumstances change or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the concerns(s) identified.	•			•

[1]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987).

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Air Resources				
CO-56 **Air Resources.**	This lease notice is attached to new oil and gas leasing agreements to provide notice to operators of analysis and mitigation requirements that would be determined on a case by case basis at the permitting/development stage.		•		
	Water Resources				
LN-17 **Palisade Municipal Watershed.**	This lease contains privately owned surface of the Town of Palisade that is within the Town's designated municipal watershed and is covered by a Watershed Protection Ordinance. This applies to the lands described below: <LEGAL_DESCRIPTIONS>.	•			
LN-1 **Source Water Protection Areas.**	The lease is within source water protection areas, and the lessee is required to implement special protective measures for water resources and to collaborate with municipalities and comply with applicable municipal watershed plans. **JUSTIFICATION:** This lease notification is necessary because leases within source water protection areas require extensive protection measures to ensure protection of water quality and human health.		•		
LN-2 **Municipal Watersheds and Source Water Protection Areas.**	The lease is within a municipal watershed or source water protection area, and the lessee is required to implement special protective measures for water resources and to collaborate with municipalities and comply with applicable municipal watershed plans. **JUSTIFICATION:** This lease notification is necessary because leases within municipal watersheds and source water protection areas require extensive protection measures to ensure protection of water quality and human health.				•
	Special Status Species				
LN-13 *(BLM 1987)* **Threatened and Endangered Species Habitat.**	The lessee/operator is required to submit to the BLM's Authorized Officer a plan for avoidance or mitigation of impacts on the identified species. This may require completion of an intensive inventory by a qualified biologist. The plan must be approved prior to any surface disturbance. The Authorized Officer may require additional mitigation measures, such as relocation of proposed roads, drilling sites, or other facilities.	•			

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] **Protected Resource** **Acres/Miles Affected**	**Stipulation Description**	**Alternative**			
		A	**B**	**C**	**D**
	Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy and use on that area is prohibited. • Black-footed ferret *(Exhibit GJ-13EC)*; • Spineless hedgehog cactus *(Exhibit GJ-13ED)*; and • Colorado hookless cactus (formerly Uinta Basin hookless cactus) *(Exhibit GJ-13EE)*.				
LN-3 **Biological Inventories.**	The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, sage-grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy and use on that area is prohibited. **JUSTIFICATION:** This lease notice is necessary to identify current plant and animal populations in order to reduce or avoid impacts to those species.		•	•	•
LN-4 **Threatened and Endangered Species (Alternative B) / Colorado Hookless Cactus (Alternatives C and D)**	Alternative B: ***Threatened and Endangered Species*** This lease contains habitat for threatened and endangered species. Prior to undertaking any activity on the lease, including surveying and staking of well locations, the lessee may be required to perform botanical inventories on the lease. Special design and construction measures may also be required in order to minimize impacts to threatened and endangered species habitat from drilling and producing operations. This applies to the lands described below: <LEGAL_DESCRIPTIONS>. Alternatives C and D: ***Colorado Hookless Cactus*** This lease contains habitat for the Colorado hookless cactus *(Sclerocactus glaucus)*. Prior to undertaking any activity on the lease, including surveying and staking of well locations, the lessee may be required to perform botanical inventories on the		•	•	•

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	lease. Special design and construction measures may also be required in order to minimize impacts to Colorado hookless cactus habitat from drilling and producing operations. **EXCEPTION:** An exception may be granted depending on current usage of the site or on the geographical relationship to topographic barriers and vegetation screening. **MODIFICATION:** Changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.) **JUSTIFICATION:** This lease notice is necessary to identify current cactus populations and habitat in order to reduce or avoid impacts to cactus habitat.				
	Fish and Wildlife				
LN-3 **Biological Inventories.**	The operator is required to conduct a biological inventory prior to approval of operations in areas of known or suspected habitat of special status species, or habitat of other species of interest such as but not limited to raptor nests, sage-grouse leks, or significant natural plant communities. The operator, in coordination with the BLM, shall use the inventory to prepare mitigating measures to reduce the impacts on affected species or their habitats. These mitigating measures may include, but are not limited to, relocation of roads and other facilities and fencing operations or habitat. Where impacts cannot be mitigated to the satisfaction of the BLM's Authorized Officer, surface occupancy and use on that area is prohibited. **JUSTIFICATION:** This lease notice is necessary to identify current plant and animal populations in order to reduce or avoid impacts to those species.		●	●	●
LN-5 **Working in Wildlife Habitat.**	Require operators to establish and submit to the GJFO a set of operating procedures for employees and contractors working in important wildlife habitats. Design such procedures to inform employees and contractors of ways to minimize the effect of their presence on wildlife and wildlife habitats. Procedures may address, but are not limited to, items such as working in bear		●	●	

Table B-8
Lease Notices (LN) and Additional Required Conditions of Approval Applicable to Authorized Ground-disturbing Activities

Stipulation Number (*Existing*/**New**)[1] Protected Resource Acres/Miles Affected	Stipulation Description	Alternative A	Alternative B	Alternative C	Alternative D
	or snake country, controlling dogs, and understanding and abiding by hunting and firearms regulations.				
	Paleontological Resources				
LN-6 **Class 4 and 5 Paleontological Areas.**	Have a permitted paleontologist approved by the Authorized Officer perform an inventory of surface-disturbing activities in Class 4 and 5 paleontological areas per Instruction Memorandum No. 2008-009: Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. **JUSTIFICATION:** This lease notice is necessary to ensure an adequate paleontologist is present during surface disturbing activities to protect paleontological resources from direct impacts.	●	●	●	●
	Lands and Realty				
LN-16/**LN-7** **Powderhorn Ski Area.**	If drilling operations are proposed, the lessee is hereby notified that there are concerns about ski lift structures, other facilities, and ski runs within the Powderhorn ski area. The lessee is hereby notified that special design, construction, and scheduling measures may be required in order to minimize the impacts of drilling and production operations. Proposed drilling and production facilities and operations will be relocated and rescheduled as needed to avoid physical interference with ski area facilities and recreation use. This can include relocations of more than 200 meters (656 feet) or seasonal closures of more than 60 days. This applies to the lands described below: <LEGAL_DESCRIPTIONS>. **JUSTIFICATION:** This lease notification is necessary to protect recreation facilities at Powderhorn Ski Area.	●	●		●

[1]Existing stipulations currently in effect in Alternative A, current management, are noted in italics and are from the current RMP (BLM 1987). Proposed new stipulations under Alternatives B, C, and/or D are noted in bold-face, non-italics.

APPENDIX H
BEST MANAGEMENT PRACTICES AND STANDARD OPERATING PROCEDURES

INTRODUCTION

This appendix provides a list of common standard operating procedures (SOPs) and best management practices (BMPs) that are applicable to all alternatives in the resource management plan. Standard operating procedures are established guidelines that are followed by the BLM in carrying out management activities. While the list of standard operating procedures is complete, the list is not intended to be comprehensive; additional standard operating procedures could be developed and implemented to support achieving resource objectives.

Best management practices are state-of-the-art mitigation measures applied on a site-specific basis to avoid, minimize, reduce, rectify, or compensate for adverse environmental or social impacts. They are applied to management actions to aid in achieving desired outcomes for safe, environmentally responsible resource development, by preventing, minimizing, or mitigating adverse impacts and reducing conflicts. Best management practices can also be proposed by project applicants for activities on public lands (e.g., for gas drilling). Best management practices not incorporated into the permit application by the applicant may be considered and evaluated through the environmental review process and incorporated into the use authorization as conditions of approval or stipulations. Standard conditions of approval and stipulations are also provided in this appendix as appropriate. Additional best management practices, conditions of approval, and stipulations could be developed to meet resource objectives based on local conditions and resource specific concerns.

Master Leasing Plan

BMPs and SOPs that will be analyzed at the development stage and may be applied consistent with environmental analysis and existing lease rights are denoted by "**(MLP)**" in this appendix.

AIR QUALITY (A)

Air quality standards are governed by the Clean Air Act of 1990 (as amended) (42 United States [US] Code Chapter 85). The US Environmental Protection Agency is charged with setting National Ambient Air Quality Standards, currently found at http://www.epa.gov/air/criteria.html (US Environmental Protection Agency 2009). At the state level, the Colorado Department of Public Health and Environment has established its standards (Colorado Department of Public Health and Environment 2009).

Standard Operating Procedures

A-1: The BLM has the authority and responsibility under the Federal Land Policy and Management Act to manage public lands in a manner that will protect the quality of air and atmospheric values. Therefore, the BLM may manage the pace, place, density, and intensity of leasing and development to meet air quality goals.

A-2: The proponent of a project will be required to minimize air pollutant emissions by complying with all applicable state and federal regulations (including application of best available control technology) and may be required to apply mitigation including but not limited to best management practices, and other control technologies or strategies identified by the BLM or CDPHE in accordance with delegated regulatory authority.

Best Management Practices

A-3: The BLM may require project proponents for oil and gas development projects to conduct pre-construction air monitoring within or adjacent to the proposed development area. The purpose of this monitoring is to establish baseline air quality conditions prior to development at the site. The requirement for monitoring will be determined by BLM based on the absence of existing monitoring; existing air quality conditions; magnitude of potential air emissions from the project or activity; magnitude of existing emission sources in the area; proximity to a federally mandated Class I area, sensitive Class II area, or population center; location within a non-attainment or maintenance area; meteorological or geographic conditions; project duration; or issues identified during project scoping. The project proponent will be required to provide a minimum of one year of baseline ambient air monitoring data for any pollutant(s) of concern as determined by BLM. If BLM determines that baseline monitoring is required, this pre-analysis data must meet CDPHE air monitoring standards, be obtained from a site within 50 km of the project boundary, and cover the year immediately prior to the proposed project submittal. The project proponent will be responsible for siting, installing, operating, and maintaining any required air monitoring.

A-4: The BLM may require project proponents for oil and gas development projects to conduct air monitoring for the life of the oil and gas development project depending on the magnitude of potential air emissions from the project or activity, proximity to a federally mandated Class I area, sensitive Class II area,

or population center, location within a non-attainment or maintenance area, meteorological or geographic conditions, existing air quality conditions, magnitude of existing development in the area, or issues identified during project scoping. The purpose of this air monitoring is to determine impacts attributable to the project over time. The project proponent will be responsible for siting, installing, operating, and maintaining any required air monitoring.

A-5: The BLM may require a project proponent to conduct air quality modeling for any pollutant(s) of concern in the absence of sufficient data to ensure compliance with laws and regulations or to determine the effectiveness of mitigation options, unless the project proponent can demonstrate that the project will result in no net increase in emissions of the pollutant(s) of concern. The requirement for modeling will be based on existing air quality conditions; magnitude of potential air emissions from the project or activity; magnitude of existing emission sources in the area; proximity to a federally mandated Class I area, sensitive Class II area, an area expected to exceed a NAAQs or PDS increment, population center, location within a non-attainment or maintenance area; meteorological or geographic conditions; project duration; or issues identified during project scoping. The BLM, in cooperation with an interagency review team, will determine the parameters for the modeling analysis through the development of a project specific modeling protocol.

A-6: The BLM may require project proponents for oil and gas development projects to submit a contingency plan that provides for reduced operations in the event of an air quality episode. Specific operations and pollutants to be addressed in the contingency plan will be determined by the BLM on a case-by-case basis taking into account existing air quality and pollutants emitted by the project.

A-7: Implement directional drilling techniques to reduce construction related emissions (dust and vehicle and construction equipment emissions).

A-8: **(MLP)** Improve engine technology (Tier 2 or better) for diesel drill rig engines to reduce NOx, PM, CO, and VOC emissions.

A-9: Utilize natural gas fired drill rig engines to reduce NOx emissions and reduce formation of visibility impairing compounds and ozone.

A-10: Improve engine technology (Tier 2 or better) for all mobile and non-road diesel engines to reduce NOx, PM, CO, and VOC emissions.

A-11: Utilize "Green completion" (a.k.a. closed loop or flareless) technology to reduce VOC and CH4 emissions. This would also reduce or eliminate open pits and associated evaporative emissions.

A-12: Utilize "Green workovers" to reduce VOC and CH4 emissions. This would also reduce or eliminate open pits and associated evaporative emissions.

A-13: Eliminate evaporation pits for drilling fluids to reduce VOC and GHG emissions.

A-14: Electrification of wellhead compression/pumping to reduce local emissions of fossil fuel combustion and transfers to a more easily controlled source.

A-15: Utilize renewable power sources to provide energy for compressors, monitoring equipment, or pumps.

A-16: Replace wet compressor seals with dry seals or use mechanical seals to reduce gas venting (VOC and GHG emissions).

A-17: Centralize or consolidate gas processing facilities, liquids gathering systems (condensate and produced water), water and/or fracturing liquids delivery systems, to reduce VOC and GHG emissions from individual dehydration/separator units and to reduce vehicle emissions.

A-18: Eliminate the use of open top tanks to reduce VOC and GHG emissions.

A-19: Improve capture and control of flashing emissions from all storage tanks and separation vessels with vapor recovery and/or thermal combustion units.

A-20: Improve capture and control of produced water, crude oil, and condensate tank emissions to reduce VOC and GHG emissions.

A-21: Improve capture and control of dehydration equipment emissions with condensers, vapor recovery, and/or thermal combustion to reduce VOC, HAP, and GHG emissions.

A-22: Use zero emissions dehydrators or use desiccants dehydrators to reduce VOC, HAP, and GHG emissions.

A-23: Reduce miscellaneous fugitive VOC emissions by

- **a)** Installing plunger lift systems to reduce well blow downs
- **b)** Install and maintain low VOC emitting seals, valves, and hatches on production equipment.
- **c)** Initiate equipment leak detection and repair program (e.g., including use of FLIR infrared cameras, grab samples, organic vapor detection devices, and/or visual inspection).
- **d)** Install or convert Gas operated pneumatic devices to electric, solar, or instrument (or compressed) air driven devices/controllers.
- **e)** Use "low" or "no bleed" gas operated pneumatic devices/controllers.

f) Use closed loop system or thermal combustion for gas operated pneumatic pump emissions.

g) Install or convert gas operated pneumatic pumps to electric, solar, or instrument (or compressed) air driven pumps.

h) Install vapor recovery on truck loading/unloading operations at tanks.

A-24: Utilize dust suppression techniques on unpaved surfaces including watering, chemical suppressants, and gravel.

A-25: Utilize remote telemetry and automation of wellhead equipment to reduce vehicle traffic and associated emissions.

A-26: Post and enforce speed limits to reduce air borne fugitive dust from vehicular traffic on unpaved roads.

A-27: Reduce commuter vehicle trips through car pools, commuter vans or buses, innovative work schedules, or work camps.

A-28: Use ultra-low sulfur diesel (e.g. in engines, compressors, construction equipment) to reduce emissions of particulates and sulfates.

A-29: Utilize best available technology and methods to degasify coal seams prior to mining. Capture methane gas from coal seams to obtain a market income. Modify methane drainage over time to ensure capture is optimal.

A-30: Reduce unnecessary vehicle idling to reduce combustion emissions, ozone formation, visibility impacts, and fuel consumption.

A-31: Reduce the pace of (phased) development to reduce the peak emissions of all pollutants.

A-32: Restrict surface disturbing activities to periods when wind speeds are less than 25 mph.

A-33: Keep soil and coal refuse moist while loading into dump trucks.

A-34: Keep soil and coal refuse loads below the freeboard of the truck.

A-35: Minimize drop heights when loaders dump soil and coal refuse into trucks.

A-36: Tighten gate seals on dump trucks.

A-37: Cover dump trucks before traveling on public roads.

A-38: Cover construction materials, stockpiled soils, and stockpiled coal refuse if they are a source of fugitive dust.

A-39: Train workers to handle construction materials and debris to reduce fugitive emissions.

A-40: Employ water injection or rotoclones on all overburden drills.

A-41: Use chutes, drapes, or other means to enclose conveyor transfer points, screens, and crushers; cover all conveyors.

A-42: Suppress and extinguish spoil and coal fires as soon as is reasonable and safely possible.

References

Colorado Department of Public Health and Environment. 2011. Air Quality Control Commission Regulations. Internet Web site: http://www.cdphe.state.co.us/regulations/airregs. Accessed on May 21, 2011.

Bureau of Land Management. 2009. Air Quality BMPs-Best Management Practices for Fluid Minerals. Updated 8-24-2009. Internet Web site: www.blm.gov/bmp.

US Environmental Protection Agency. 2009. National Ambient Air Quality Standards. Internet Web site: http://www.epa.gov/air/criteria.html. Accessed on October 14, 2009.

SOILS (S)

Standard Operating Procedures

S-1: All routes shall be built and maintained to BLM Manual Section 9113 standards for road shape and drainage features (BLM 2011a) or where appropriate BLM Manual Section 9115 standards for primitive roads (BLM 2012). For drainage crossings, culverts should be sized for the 50 year storm event with no static head and to pass a 100-year event without failing. Site specific conditions may warrant BLM to require designs for larger events (e.g. 75-100 year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

S-2: When saturated soil conditions existing on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads and locations.

S-3: Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed sodding or seeding.

S-4: Topsoil shall only be used for reclamation and shall not be used as fill or to bed or pad the pipe during backfilling.

S-5: Topsoil stripping will include all growth medium present at a site (following initial clearing of large trees, etc.), as indicated by color or texture. Stripping and storage depth may be specified during the onsite inspection. All stripped topsoil/growth medium will be salvaged, segregated and stored in a manner that extends biological viability and protects it from loss. Topsoil and all growth medium will be replaced prior to seedbed preparation. No topsoil will be stripped or segregated when soils are saturated or frozen below the stripping depth.

S-6: A Winter Construction Plan will be submitted and approved by the BLM Authorized Officer before a Notice to Proceed will be authorized for construction activities in frozen soils.

S-7: Prohibit placing fill on a frozen foundation.

S-8: Slopes shall not be created so close to property lines as to endanger adjoining properties without adequate protection against sedimentation, erosion, slippage, settlement, subsidence or other related damages.

S-9: Surface disturbing actions will be sensitive to natural resource protection. When surface disturbance in sensitive areas is unavoidable, they will be minimized to the greatest extent practicable, especially near drainage features and on soils mapped as being saline (see Glossary).

S-10: Surface disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book)(BLM 2007b).

S-11: As detailed in the site plan for surface water management, drainage from disturbed areas will be confined or directed to minimize erosion, particularly within 100 feet of all drainages. No runoff, including that from roads, will be allowed to flow into intermittent or perennial waterways without first passing through sediment-trapping mechanisms such as vegetation, anchored bales or catchments.

S-12: Standard secondary containment shall hold 110 percent of the capacity the largest single tank it contains and be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours. Earthen berms must be compacted and of fine material that will prevent seepage of any spill to surrounding area.

S-13: All tanks with a capacity of ten (10) barrels or greater shall be labeled or posted with the following information: A. Name of operator; B. Operator's emergency contact telephone number; C. Tank capacity; D. Tank contents; and E. National Fire Protection Association (NFPA) Label. Smaller chemical storage shall be labeled with contents and NFPA label.

S-14: Interim and final reclamation procedures shall utilize best available science and technology to protect natural resources from undue degradation.

S-15: Use BLM-GJFO Trail Design Criteria along with BLM Manual handbooks 9113-2 (Roads National Inventory & Condition Assessment Guidance & Instructions) and 9115-2 (Primitive Roads National Inventory & Condition Assessment Guidance & Instructions) to evaluate road conditions for maintenance and mitigation.

Best Management Practices

S-16: To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes and side cuts across steep slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

S-17: Consider site specific soil and vegetative characteristics and reclamation potential in project design and layout.

S-18: Native vegetation and soils will be protected and disturbance to them will be minimized.

S-19: Cleared vegetation smaller than four inches in diameter will be stockpiled, shredded, and salvaged with topsoil. Cleared vegetation larger than four inches in diameter will be scattered over disturbed areas to accomplish reclamation objectives. Excessive vegetation larger than four inches in diameter may be removed from public land or shredded in place to be salvaged with topsoil. A wood cutting permit may be purchased from BLM for material removed from the site.

S-20: Windrowing of Topsoil. [Use where appropriate based on topography – may not be appropriate for pads in steep areas or where pad size should be minimized.] Topsoil shall be windrowed around the perimeter of surface disturbance to create a berm that limits and redirects stormwater runoff and extends the viability of the topsoil per BLM Topsoil Best Management Practices (BLM 2009 PowerPoint presentation available upon request from the Grand Junction Field Office). Topsoil shall also be windrowed, segregated, and stored along disturbed surfaces or linear features for later spreading across the disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.

S-21: Where applicable, entrances to construction locations will be covered by gravel "track pads" to prevent sediment and weed seeds from being tracked in and out of the site.

S-22: In areas where all weather access is necessary, the operator would construct and maintain all-weather routes per BLM Manual Section 9113 standards. Graveling or other appropriate surfacing material would be required to reduce environmental resource damage and provide safe all-weather access.

S-23: Specialized low surface impact equipment (wide- or balloon-tired vehicles, all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

S-24: Standard secondary containment shall include a study corrugated metal wall to create a basin, be lined with a heavy impervious poly liner and be protected with a gravel surface. Small plastic hoppers shall be installed at all loadout connections to catch drips and small leaks.

References

BLM. 2009. H-9112-1 Bridges and Major Culverts Handbook. Bureau of Land Management, Washington, D.C.

BLM. 2011a. H-9113-1 Road Design Handbook. Bureau of Land Management, Washington, D.C.

BLM. 2012g. H-9115 Primitive Roads Manual. Bureau of Land Management, Washington, D.C.

United States Department of the Interior and United States Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

WATER RESOURCES (H)

Standard Operating Procedures

H-1: The operator/permittee shall adhere to all requirements under the Federal Water Pollution Control Act, as amended through P.L. 107-303, November 27, 2002.

H-2: For surface disturbing activities exceeding one acre in size, develop and implement Stormwater Pollution Prevention Plans to include site-specific design, systematic site monitoring, installation of run-on/off controls such as ditches or berms and installation of adaptive BMPs to reduce potential erosion and sediment production and transport. Stormwater will be dispersed to stabilized areas to slow velocity, prevent erosion and support infiltration into soils.

Stormwater BMPs identified in the State approved Storm Water Pollution Prevention Plan shall be in place prior to any earth-disturbing activity. Additional BMPs will be installed if determined necessary by the BLM. All measures shall be maintained in good, functional condition. All temporary BMPs shall be removed once site stabilization and reclamation efforts have been deemed successful by the BLM.

H-3: For actions requiring individual permits through the US Army Corps of Engineers, require a licensed Professional Engineer to approve and stamp the project design, construction, and reclamation plans to mitigate to the fullest extent practicable riparian resource damage associated with the proposed action.

H-4: Spoil material from clearing, grubbing, and channel excavation shall be disposed of in a manner that will not interfere with the function of the channel and in accordance with all local, state, and federal laws and regulations.

H-5: Surface disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book BLM 2007b).

H-6: Before activities take place, every pad, access road, or facility site will have an approved surface drainage plan for establishing positive management of surface water drainage, to reduce erosion and sediment transport. The drainage plan will include adaptive BMPs, monitoring, maintenance and reporting. BMPs may include run-on/run-off controls such as surface pocking or re-vegetation, ditches or berms, basins, and other control methods to reduce erosion. Pre-construction drainage BMPs will be installed as appropriate.

H-7: The operator will reduce potential for contaminating water resources where spills of drilling fluids are most vulnerable. Areas of vulnerability will include a 0.25-mile buffer around the following: mapped alluvial, colluvial, and glacial deposits; springs and perennial water sources, Source Water Protection Areas, and Municipal Watersheds). In these areas, the operator will:

a) Utilize closed loop drilling systems.

b) Utilize gas-blocker additives during the cementing process.

c) Contain flowback and stimulation fluids in tanks on well pad with secondary containment mats/blankets (or equivalent).

d) Install containment devices beneath and around crude oil, condensate and produced water storage tanks.

e) Collect baseline water quality data from downstream fresh water sources prior to drilling, mining, or storage of potentially harmful substances. Parameters to be analyzed will be determined on a site

specific basis based on the nature of the proposed action. The operator will be responsible for submitting a list of parameters to BLM for approval prior to sampling.

f) Provide notification of potentially impacted Public Water Systems 15 miles downstream.

g) Develop an emergency spill and response program to be reviewed and approved by BLM prior to surface-disturbing activities.

H-8: Protection of drinking water supply sources within surface water supply areas (leased or made available for leasing) will concur with Colorado Oil and Gas Conservation Commission rule 317B and subsequent updates.

H-9: All routes shall be built and maintained to BLM Manual Section 9113 standards for road shape and drainage features (BLM 2011a) or where appropriate BLM Manual Section 9115 standards for primitive roads (BLM 2012b). For drainage crossings, culverts should be sized for the 50 year storm event with no static head and to pass a 100-year event without failing. Site specific conditions may warrant BLM to require designs for larger events (e.g. 75-100 year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

H-10: Erosion control features shall be maintained through periodic inspection and maintenance, including cleaning dips and cross-drains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.

H-11: Surface discharges shall comply with all regulatory requirements outlined in the Federal Water Pollution Control Act (commonly referred to as the Clean Water Act), as amended through P.L. 107-303, November 27, 2002 Clean Water Act. Additionally, surface discharges should be made to well defined channels away from major erosional features. Furthermore, discharges should be limited to a volume less than or equal to the naturally occurring mean annual peak flow (which is roughly equivalent to a peak generated by a 2-year 24-hour storm event) and that can be handled by the natural channel under anticipated conditions.

H-12: To protect water quality, anti-backflow devices shall be utilized while drafting fresh water from streams, springs, reservoirs and wells.

H-13: Range improvements will conform to BLM Manual H 1740-2 and subsequent updates (BLM 2008).

H-14: Discharge of surface and groundwater to surface drainages will comply with the Federal Water Pollution Control Act (as amended through P.L. 107–

303, November 27, 2002) and will be pre-approved by BLM and will meet the following criteria:

a) Discharge operations will not negatively impact downstream beneficial uses.

b) Discharge soil/water interactions will not facilitate the movement of water quality contaminants [e.g., salt, selenium (typically associated with Mancos shale derived soils), sediment, metals] above natural rates in surface and/or groundwater.

c) Water discharge shall be limited to well-defined major channels, to reduce potential of discharged water dissolving and transporting salts from the stream channel and to reduce concentration of salts in alluvium.

d) Discharges will be limited to a volume that can be handled by the natural channel and less than or equal to the naturally occurring mean annual peak flow (roughly equivalent to a two-year, 24-hour storm peak).

e) Discharge points will be located in stable channels or reservoirs away from any downstream head-cuts or other major erosional features (as determined by BLM). Outfall design may include discharge aprons and downstream stabilization of channel side slopes to prevent erosion and provide energy dissipation.

f) Subject to BLM approval, water quality thresholds for both surface and groundwater will be set and monitored during discharge operations in order that they will cease if thresholds were exceeded.

g) Surface and groundwater quantity and quality will be monitored during all discharge operations. Monitoring locations will be subject to BLM approval. Monitoring activities will continue for at least two water years following cessation of discharge.

H-15: Hazardous substances will not be used in drilling, testing, or completion operations, nor introduced at any time into the reserve or cuttings pit. Fluids will be confined to pits or tanks and all pits that may contain liquids will be lined to protect groundwater. Liners will be maintained in good condition, with no tears or holes, until they are removed when the reserve pit is closed.

H-16: Pits will be constructed so that water will not run into them. Fluid levels will be maintained below 2 feet of the lowest point of containment.

H-17: Interim and final reclamation procedures shall utilize best available science and technology to protect natural resources from undue degradation.

Best Management Practices

H-18: **(MLP)** To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes and side cuts across steep slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

H-19: Provide energy dissipaters (e.g., rock piles and logs) where necessary at the downstream end of ditch relief culverts to reduce the erosion energy of the emerging water.

H-20: The face of cut or fill slopes shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded swales, and downspouts.

H-21: Provide subsurface drainage where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

H-22: Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.

H-23: Avoid cutting the toe of cut slopes when grading roads or pulling ditches.

H-24: The operator will be responsible for keeping road inlet and outlet ditches, catch-basins, and culverts free of obstructions, particularly before and during spring runoff. Routine machine-cleaning of ditches shall be kept to a minimum during wet weather. Leave the disturbed area in a condition that provides drainage with no additional maintenance.

H-25: Remove all temporary stream crossings immediately after use and cross-ditch the ends of routes or rights-of-way to mitigate erosion from disturbed areas.

H-26: When designing protective/mitigation measures, consider the changes that may occur in the watershed hydrology and sedimentation over the design life of the measure. Moreover, design and construct roads that are self-maintaining and consider using road surfacing, such as gravel when year-long access may be necessary.

H-27: Design and construct stream crossings at right angles, in straight sections of stable reaches to handle (at a minimum) the 100-year flood, and consider culvert and bridge designs that facilitate aquatic life passage.

H-28: Where the access road crosses small drainages and intermittent streams not requiring culverts, low water crossings shall be used. The road will dip to the original streambed elevation of the drainage and the crossing will prevent

any blockage or restriction of the existing channel. Material moved from the banks of the crossing will be stockpiled nearby for later use in reclamation. Gravel, riprap, or concrete bottoms may be required in some situations.

H-29: For pipeline crossings of drainage ways: Pipelines crossing at the surface must be constructed high enough to remain above the highest possible floodflows at each crossing. Pipeline crossings below the surface must be buried deep enough to remain undisturbed by scour and fill processes typically associated with passage of peak flows. A hydraulic analysis should be completed during the pipeline design phase to avoid repeated maintenance of such crossings and eliminate costly repairs and potential environmental degradation associated with pipeline breaks at stream crossings (DOI 2007). Utilize horizontal directional boring techniques under perennial water bodies and/or wetland complexes when environmental circumstances allow.

H-30: Minimize crossing of streams (intermittent and perennial) and wetlands with vehicles and heavy machinery.

H-31: Time work in wetlands and watercourses to occur during low flow season when conditions are driest. High flows occur during late summer early fall as a result of high intensity convective thunderstorm events. Work in these areas must also be done in a manner consistent with BMPs for biological resources.

H-32: Exclude livestock and vehicles from spring sources and riparian areas where on-site evaluation and/or monitoring data indicate degrading conditions or potential to degrade spring or riparian function.

H-33: Avoid alteration of natural hydrologic function and condition in source areas for springs, seeps, fens, or other water developments. Relocate surface-disturbing activities away from these sensitive areas as site conditions warrant.

H-34: Limit consumptive water use from Federal point source water rights on public lands that are not sustainable and/or would jeopardize discharge to streams, springs, seeps, fens, or downstream senior water rights.

H-35: Manage and manipulate invasive stands of brush and weeds on forest, range, pasture land by mechanical, chemical, or biological means or by prescribed burning to improve watershed function and condition.

H-36: Limit surface disturbance near drainage features and minimize surface disturbance on steep slopes, fragile soils, saline soils, and Mancos shale derived soils.

H-37: When activity in streams, wetlands, or riparian areas is unavoidable, the operator will first employ best available technology such as eco-Matting to reduce impacts. The operator would then restore modified or damaged areas

as close as practicable to natural conditions to protect banks, wetlands and to re-establish riparian vegetation.

H-38: Maintain to the greatest extent practicable natural flow rates and chemical and physical properties of surface and groundwater during work within stream channels, floodplains, and/or riparian areas.

H-39: Oil and gas drilling operations within municipal watersheds, source water protection areas, or locally important fresh water aquifers should utilize methods and materials that will prevent degradation of the underlying groundwater. This may include practices such as surface and intermediate casing through potential fresh water zones, gas blocker additives to cement jobs, the use of green fracturing fluids, and pitless drilling - closed loop drilling. The use of "Green" fracturing fluids will be documented in the form of Material Safety Data Sheets which will be reviewed by the operator for compliance prior to use. Material Safety Data Sheets will remain on site at all times such chemicals are present.

H-40: Water from well production tests (water wells) or hydrostatic testing of pipelines shall be filtered of sediments prior to discharge into wetlands. Energy dissipating methods (e.g., straw-bails, waddles, vegetative buffers) shall be in place prior to discharge of production water or water used for hydrostatic testing.

H-41: Within portions of municipal watersheds and sourcewater protection areas available for fluid minerals development, the operator should develop and implement a watershed protection plan. This plan would include characterization and monitoring of baseline hydrologic/hydrogeologic conditions such as but not limited to: water quality, water quantity, groundwater flow patterns, connectivity between geologic formations, and communication between surface and groundwater. The operator should collaborate with all watershed stakeholders in development and implementation of the watershed protection plan.

H-42: Livestock feeding, and salting, shall be done in a manner to protect water quality. When possible, these developments or practices should be done at least 550 meters from riparian zones.

H-43: Maintain appropriate vegetative/riparian buffers around water features to slow runoff and trap sediments and protect water quality. A minimum buffer distance should be 200 meters or greater where site conditions warrant.

H-44: Surface disturbing actions should not permanently impair floodplain function.

H-45: No operations using chemical processes (except for vegetation management) or other pollutants in their activities will be allowed to occur

within 200 feet of any water bodies. This includes staging equipment for refueling, and equipment maintenance.

H-46: Fill material will not be cast over hilltops or into drainages.

H-47: All pipeline welds within 100 feet of a perennial stream will be x-rayed to prevent leakage into the stream. Where pipelines cross streams that support Federal or State-listed threatened or endangered species or BLM-listed sensitive species, additional safeguards such as double-walled pipe, and remotely-actuated block or check valves on both sides of the stream may be used.

H-48: Baseline information of channel characteristics and riparian vegetation present must be documented before actions are permitted to disturb riparian areas and the stream channel.

H-49: Direct overflow from water developments back to the original natural drainage in a way that does not accelerate erosion or modify riparian habitats.

H-50: Avoid soil compaction or surface disturbing activities in recharge areas that could impair natural function of springs and/or seeps.

References

Federal Water Pollution Control Act, as amended through P.L. 107-303, November 27, 2002

United States Department of the Interior and United States Department of Agriculture. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

BLM. 2009. H-9112-1 Bridges and Major Culverts Handbook. Bureau of Land Management, Washington, D.C.

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BLM. 2008. H-1740-2 Integrated Vegetation Management Handbook. Bureau of Land Management, Washington, D.C. Internet Web site: http://www.blm.gov/style/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.59510.File.dat/H-1740-2.pdf. Accessed on May 18, 2012.

U.S. Department of the Interior. 2007. Hydraulic considerations for pipelines crossing stream channels. Technical Note 423. BLM/ST/ST-

07/007+2880. Bureau of Land Management, National Science and Technology Center, Denver, CO. Internet Web site: http://www.blm.gov/nstc/library/techno2.htm. Accessed on May 18, 2012.

VEGETATION: RANGELAND (VR)

Guidance may come from various sources. See individual resources.

Standard Operating Procedures

VR-1: When making decisions about proposed projects/actions in known sagebrush habitat, existing plans and guidance will be used by interdisciplinary teams and considered in the decision making process. This guidance includes the conservation actions/guidelines identified in the Western Association of Fish and Wildlife Agencies – Conservation Assessment of Greater Sage-grouse and Sagebrush habitats (2004), and local working group population plans (Pinion Mesa population of Gunnison Sage Grouse and Parachute Piance Roan Population of Greater Sage Grouse).

VR-2: Utilize the techniques and methods for vegetation treatments identified in the Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

Best Management Practices

VR-3: Close and rehabilitate roads quickly once they are no longer needed.

VR-4: Close selected routes to protect special status species and significant plant communities.

VR-5: Build roads to the appropriate standard, no higher than necessary for use and safety, and utilize primitive or two-track roads rather than newly constructed roads where feasible.

VR-6: Pipelines (and electrical power lines when possible) shall be placed within road corridors to minimize disturbance.

VR-7: Minimize disturbance to soil and native vegetation as much as possible.

VR-8: Stockpile topsoil for use in final reclamation. Topsoil shall be stored separately from other fill materials.

VR-9: When timely natural regeneration of the native plant community is not likely to occur, carefully select species that will not compete with or exclude botanical resources for revegetation efforts. Bare sites shall be seeded as soon as appropriate to prevent establishment of undesirable plant species.

VR-10: Ensure that seed used for revegetation as well as straw and hay bales used for erosion control are certified free of noxious weeds.

VR-11: Monitor revegetation sites to ensure successful establishment of desired species.

VR-12: Monitor the long-term success of revegetation efforts to ensure successful establishment of desired species and detect any noxious weed infestations. If revegetation is unsuccessful, continue efforts to establish desired species in disturbed sites.

VR-13: In Salt Desert Shrub communities with biological soil crusts, require reclamation that includes but is not limited to: broadcasting bacterial inoculants, planting native grass, forbs, and shrubs seedlings, and exclosure fences.

References

BLM (US Department of Interior, Bureau of Land Management). 2007. Final Vegetation Treatment Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement. BLM, Nevada State Office, Reno, NV. June 2007.

Connelly, J.W., S.T. Knick, M.A. Schroeder, and S.J. Stiver. 2004. Conservation Assessment of Greater Sage-grouse and Sagebrush Habitat. Western Association of Fish and Wildlife Agencies. Unpublished Report. Cheyenne, Wyoming.

Elliott, B.A., S. Spackman Panjabi, B. Kurzel, B. Neely, R. Rondeau, and M. Ewing. 2009. Recommended Best Management Practices for Plants of Concern. Practices developed to reduce the impacts of oil and gas development activities to plants of concern. Unpublished report prepared by the Rare Plant Conservation Initiative for the National Fish and Wildlife Foundation.

VEGETATION: RIPARIAN HABITAT AND WETLANDS (VRW)

Standard Operating Procedures

VRW-1: Utilize the techniques and methods for vegetation treatments identified in the Record of Decision for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

VRW-2: Utilize the techniques and processes for protection of floodplains as identified in Executive Order 11988 – Floodplain Management.

VRW-3: Road crossings that will be used for longer than one year on perennial streams will be engineered and approved by the BLM Authorized Officer.

VRW-4: Do not locate roads or other facilities immediately parallel to streams. Where roads or facilities must cross streams, cross perpendicularly and immediately exit the buffer zone.

VRW-5: **(MLP)** Armor low water stream crossings, place properly sized culverts, or span streams as appropriate to protect the riparian zone.

VRW-6: Maintain a minimum of six inch stubble height at the end of October or winter grazing rotation on stream bank (lotic) riparian. If stability of riparian system is depend upon riparian grasses and forbs maintain adequate stubble height to dissipate energy from spring runoff.

VRW-7: Maintain a minimum of four inch stubble height at the end of October on wet meadows (lentic) systems.

VRW-8: Roads and trails (off-highway vehicle, horse, bicycle, hiking) will avoid wetlands and if avoidance is not possible will be designed and constructed in accordance with Technical Reference 2E22A68-NPS, Off-highway Vehicle Management.

Best Management Practices

VRW-9: Minimize crossing of streams (intermittent and perennial) and wetlands with vehicles, heavy machinery, and facilities (e.g. pipelines).

VRW-10: Locate residue piles (e.g., sawdust, field chipping residue, disposal ponds) away from drainages where runoff may wash residue into water bodies or wetlands.

VRW-11: Maintain appropriate vegetative/riparian buffers from ground disturbing or heavy use activities of at least 200 meters around riparian and wetland areas to protect and enhance the health and function of these systems.

VRW-12: Manage vegetation in riparian areas to provide wildlife habitat, adequate shade, sediment control, bank stability, and recruitment of wood into stream channels.

VRW-13: Locate project staging areas for refueling, maintenance equipment, materials, operating supplies, and boring in areas not designated as riparian and/or wetland areas.

VRW-14: Minimize surface disturbance within riparian areas and in wetlands.

VRW-15: Avoid late summer or early fall grazing in areas with declining willow populations. If grazing during these time periods must occur allow for at least one full year of rest between grazing rotations.

VRW-16: Utilize riparian pastures as appropriate to manage grazing activities in riparian areas. Vary the timing, duration, and frequency of grazing in riparian pastures.

VRW-17: Create off stream watering facilities when possible (e.g. stock tanks, stock ponds, nose pumps, etc.). Place grazing stock tanks and other watering facilities at least 550 meters from riparian zones.

VRW-18: Actively move cattle to and from riparian pastures or pastures containing riparian habitat. Do not allow for cattle to drift between pastures (BLM TR-1737-14 p. 33-34).

VRW-19: Low stress stockmanship methods should be used to encourage cattle grazing away from riparian areas. Cattle should be turned out away from riparian areas when enter new pastures or allotments. Cattle should also be guided to appropriate bedding areas.

VRW-20: Cull cattle from the herd that congregate or preferentially graze riparian areas for extended periods of time.

VRW-21: Place salt, hay, grain, molasses, and other supplements on uplands at least 550 meters away from riparian and wetland areas to encourage cattle to graze uplands and move out of riparian areas. Supplementation sites should be at least 1,100 meters (1,200 yards) apart.

VRW-22: Phase the size and timing of vegetation removal treatments within riparian areas. Phasing treatments sizes and timing to reduce soil and water temperatures, maintain bank and soil stability, and retain adequate wildlife habitat for cover and nesting.

VRW-23: Phase the size and timing of vegetation removal treatments on uplands immediately adjacent to riparian areas, and buffer treatment boundaries away from riparian areas to reduce sedimentation and erosion in riparian zones. Allow for at least one 1 year between vegetation removal treatments in uplands and in riparian or wetland areas.

VRW-24: Relocate existing roads away from riparian areas as feasible during requested permitting or authorization of these routes. Reclaim abandoned portions of relocated roads back to natural conditions. Recontour routes back to natural slopes as feasible, rip compacted soils (except for in close proximity to desirable trees), and seed disturbed areas.

VRW-25: Fences should not be placed immediately on the edge of riparian areas. Place fences away from riparian or wetland areas to decrease impacts from trailing along fences.

References

BLM (US Department of Interior, Bureau of Land Management). 2007. Final Vegetation Treatment Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement. BLM, Nevada State Office, Reno, NV. June 2007.

National Riparian Service Team. Riparian Area Management. Technical Reference 1737-20.Grazing Management Processes and Strategies for Riparian-Wetland Areas. 2006.

NOXIOUS AND INVASIVE WEED PREVENTION (WEED)

This list incorporates many suggested practices under various land uses, and is designed to allow managers to pick and choose those practices that are most applicable and feasible for each situation. Standard Operating Procedures (**SOP**s) as established by policy or law are identified as such.

Site-Disturbing Projects

Pre-project Planning

WEED-1: Environmental analyses for projects and maintenance programs should assess weed risks, analyze high-risk sites for potential weed establishment and spread, and identify prevention practices.

WEED-2: Determine site-specific restoration and monitoring needs and objectives at the onset of project planning.

WEED-3: Learn to recognize noxious and invasive weeds.

WEED-4: Inventory all proposed projects for weeds prior to ground-disturbing activities. If weeds are found, they should be treated (if the timing is appropriate) or removed (if seeds are present) to limit weed seed production and dispersal.

WEED-5: Be cognizant of moving equipment and machinery *from* weed-contaminated areas *to* non-contaminated areas.

WEED-6: Locate and use weed-free project staging areas. Avoid or minimize travel through weed infested areas, or restrict travel to periods when spread of disseminules is least likely.

WEED-7: Identify sites where equipment can be cleaned. Remove mud, dirt, and plant parts from project equipment before moving it into a project area. Seeds and plant parts should be collected and incinerated when possible.

WEED-8: If certified weed-free gravel pits become available in the county, the use of certified weed-free gravel will be required wherever gravel is applied to public lands (e.g., roads). **(SOP)**

WEED-9: Maintain stockpiled, non-infested material in a weed-free condition. Topsoil stockpiles should be promptly revegetated to maintain soil microbial health and reduce the potential for weeds.

WEED-10: Use competitive seed mixes when practical. A certified seed laboratory shall test each lot according to the Association of Official Seed

Analysts standards (which include an all-state noxious weed list) and provide documentation of the seed inspection test. The seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. **(SOP)**

Project Implementation

WEED-11: Minimize soil disturbance. To the extent practicable, native vegetation should be retained in and around project activity areas, and soil disturbance kept to a minimum.

WEED-12: If a disturbed area must be left bare for a considerable length of time, cover the area with weed barrier until revegetation is possible.

Post-project

WEED-13: Clean all equipment before leaving the project site when operating in weed infested areas.

WEED-14: Inspect, remove, and properly dispose of weed seed and plant parts found on clothing and equipment. Proper disposal means bagging and incinerating seeds and plant parts or washing equipment in an approved containment area.

WEED-15: Revegetate disturbed soil where appropriate to optimize plant establishment for that specific site. Define revegetation objectives for each site. Revegetation may include topsoil replacement, planting, seeding, fertilization, and certified weed-free mulching as necessary. Use native material where appropriate and feasible.

WEED-16: Monitor sites where seed, hay, straw, or mulch has been applied. Eradicate weeds before they form seed. In contracted projects, contract specifications could require that the contractor control weeds for a specified length of time.

WEED-17: Inspect and document all ground-disturbing activities in noxious weed infested areas for at least three growing seasons following completion of the project. For ongoing projects, continue to monitor until reasonably certain that no weeds are present. Plan for follow-up treatments based on inspection results.

Roads and Utilities

Pre-project Planning

WEED-18: Communicate with contractors, local weed districts or weed management areas about projects and best management practices for prevention.

WEED-19: Remove mud, dirt, and plant parts from project equipment before moving it into a project area. Seeds and plant parts shall be collected and incinerated when practical, or washed off in an approved containment area. **(SOP)**

WEED-20: Avoid acquiring water for road dust abatement where access to water is through weed-infested sites.

WEED-21: Treat weeds on travel rights-of-ways before seed formation so construction equipment doesn't spread weed seed.

WEED-22: Schedule and coordinate blading or pulling of noxious weed-infested roadsides or ditches in consultation with the local weed specialist. When it is necessary to blade weed-infested roadsides or ditches, schedule the activity when disseminules are least likely to be viable.

Project Implementation

WEED-23: Retain shade to suppress weeds by minimizing the removal of trees and other roadside vegetation during construction, reconstruction, and maintenance; particularly on south aspects.

WEED-24: Do not blade or pull roadsides and ditches infested with noxious weeds unless doing so is required for public safety or protection of the roadway. If the ditch must be pulled, ensure weeds remain onsite. Blade from least infested to most infested areas.

Post-project

WEED-25: Clean all equipment (power or high-pressure cleaning) of all mud, dirt, and plant parts before leaving the project site if operating in areas infested with weeds. Seeds and plant parts shall be collected and incinerated when possible.

WEED-26: When seeding has been specified for construction and maintenance activities, seed all disturbed soil (except travel route) soon after work is completed.

WEED-27: Use a certified weed-free seed mix suitable for local environmental conditions that includes fast, early growing (preferably native) species to provide quick revegetation. Consider applying weed-free mulch with seeding. **(SOP)**

WEED-28: Periodically inspect roads and rights-of-way for noxious weeds. Train staff to recognize weeds and report locations to the local weed specialist. Follow-up with treatment when needed.

WEED-29: When reclaiming roads, treat weeds before roads are made impassable. Inspect and follow up based on initial inspection and documentation.

WEED-30: To avoid weed infestations, create and maintain healthy plant communities whenever possible, including utility rights-of-ways, roadsides, scenic overlooks, trailheads, and campgrounds.

Recreation Activities

WEED-31: Inspect and clean mechanized trail vehicles of weeds and weed seeds.

WEED-32: Wash boots and socks before hiking into a new area. Inspect and clean packs, equipment, and bike tires.

WEED-33: Avoid hiking through weed infestations whenever possible.

WEED-34: Keep dogs and other pets free of weed seeds.

WEED-35: Avoid picking unidentified "wildflowers" and discarding them along trails or roadways.

WEED-36: Maintain trailheads, campgrounds, visitor centers, boat launches, picnic areas, roads leading to trailheads, and other areas of concentrated public use in a weed-free condition. Consider high-use recreation areas as high priority sites for weed eradication.

WEED-37: Sign trailheads and access points to educate visitors on noxious and invasive weeds and the consequences of their activities.

WEED-38: In areas susceptible to weed invasion, limit vehicles to designated, maintained travel routes. Inspect and document travel corridors for weeds and treat as necessary.

WEED-39: Encourage use of pelletized feed for backcountry horsemen and hunters. Pelletized feed is unlikely to contain weed seed.

Watershed Management

WEED-40: Frequently and systematically inspect and document riparian areas and wetlands for noxious weed establishment and spread. Eradicate new infestations immediately since effective tools for riparian-area weed management are limited.

WEED-41: Promote dense growth of desirable vegetation in riparian areas (where appropriate) to minimize the availability of germination sites for weed seeds or propagules transported from upstream or upslope areas.

WEED-42: Address the risk of invasion by noxious weeds and other invasive species in watershed restoration projects and water quality management plans.

Grazing Management

WEED-43: Consider prevention practices and cooperative management of weeds in grazing allotments. Prevention practices may include:

- **a)** Altering season of use
- **b)** Minimizing ground disturbance
- **c)** Exclusion
- **d)** Preventing weed seed transportation
- **e)** Maintaining healthy vegetation
- **f)** Revegetation
- **g)** Inspection
- **h)** Education
- **i)** Reporting

WEED-44: Provide certified weed-free supplemental feed in a designated area so new weed infestations can be detected and treated immediately. Pelletized feed is unlikely to contain viable weed seed.

WEED-45: If livestock may contribute to seed spread in a weed-infested area, schedule livestock use prior to seed-set or after seed has fallen.

WEED-46: If livestock were transported from a weed-infested area, annually inspect and treat entry units for new weed infestations.

WEED-47: Consider closing infested pastures to livestock grazing when grazing will either continue to exacerbate the condition or contribute to weed seed spread. Designate those pastures as unsuitable range until weed infestations are controlled.

WEED-48: Manage the timing, intensity (utilization), duration, and frequency of livestock activities to maintain the competitive ability of desirable plants and retain litter cover. The objective is to prevent grazers from selectively removing desirable plant species and leaving undesirable species.

WEED-49: Exclude livestock grazing on newly seeded areas with fencing to ensure that desired vegetation is well established, usually after 2-3 growing seasons. **(SOP)**

WEED-50: Reduce ground disturbance, including damage to biological soil crusts. Consider changes in the timing, intensity, duration, or frequency of livestock use; location and changes in salt grounds; restoration or protection of watering sites; and restoration of yarding/loafing areas, corrals, and other areas of concentrated livestock use.

WEED-51: Inspect areas of concentrated livestock use for weed invasion, especially watering locations and other sensitive areas that may be particularly susceptible to invasion. Inventory and manage new infestations.

WEED-52: Defer livestock grazing in burned areas until vegetation is successfully established, usually after 2-3 growing seasons. **(SOP)**

Outfitting / Recreation Pack and Saddle Stock Use

WEED-53: Allow only certified weed-free hay/feed on BLM lands. **(SOP)**

WEED-54: Inspect, brush, and clean animals (especially hooves and legs) before entering public land. Inspect and clean tack and equipment.

WEED-55: Regularly inspect trailheads and other staging areas for backcountry travel. Bedding in trailers and hay fed to pack and saddle animals may contain weed seed or propagules.

WEED-56: Tie or contain stock in ways that minimize soil disturbance and prevent loss of desirable native species.

WEED-57: Authorized trail sites for tying pack animals should be monitored several times per growing season to quickly identify and eradicate new weeds. Trampling and permanent damage to desired plants are likely. Tie-ups shall be located away from water and in shaded areas where the low light helps suppress weed growth.

WEED-58: Educate outfitters to look for and report new weed infestations.

Wildlife

WEED-59: Periodically inspect and document areas where wildlife concentrate in the winter and spring and cause excess soil disturbance.

WEED-60: Use weed-free materials for all wildlife management activities.

WEED-61: Incorporate weed prevention into all wildlife habitat improvement project designs.

Fire

Fire Management Plans

WEED-62: Prescribed fire plans should include pre-burn invasive weed inventory and risk assessment components as well as post-burn mitigation components.

WEED-63: Integrate prescribed fire and other weed management techniques to achieve best results. This may involve post-burn herbicide treatment or other practices that require careful timing.

WEED-64: Include weed prevention and follow-up monitoring in all prescribed fire activities. Include in burn plans the possibility for post-burn weed treatment.

Incident Planning

WEED-65: Increase weed awareness and weed prevention by providing training to new and/or seasonal fire staff on invasive weed identification and prevention.

WEED-66: For prescribed burns, inventory the project area and evaluate potential weed spread with regard to the fire prescription. Areas with moderate to high weed cover should be managed for at least 2 years prior to the prescribed burn to reduce the number of weed seeds in the soil. Continue weed management after the burn.

WEED-67: Ensure that a weed specialist is included on a Fire Incident Management Team when wildfire or prescribed operations occur in or near a weed-infested area. Include a discussion of weed prevention operational practices in all fire briefings.

WEED-68: Use operational practices to reduce weed spread (e.g., avoid weed infestations when locating fire lines).

WEED-69: Identify and periodically inspect potential helispots, staging areas, incident command posts, and base camps and maintain a weed-free condition. Encourage network airports and helibases to do the same.

WEED-70: Develop a burned-area integrated weed management plan, including a monitoring component to detect and eradicate new weeds early.

Fire-fighting

WEED-71: Ensure that all equipment (including borrowed or rental equipment) is free of weed seed and propagules before entering incident location.

WEED-72: When possible, use fire suppression tactics that reduce disturbances to soil and vegetation, especially when creating fire lines.

WEED-73: Use wet or scratch-lines where possible instead of fire breaks made with heavy equipment.

WEED-74: Given the choice of strategies, avoid ignition and burning in areas at high risk for weed establishment or spread.

WEED-75: Hose off vehicles on site if they have traveled through infested areas.

WEED-76: Inspect clothing for weed seeds if foot travel occurred in infested areas.

WEED-77: When possible, establish incident bases, fire operations staging areas, and aircraft landing zones in areas that have been inspected and are verified to be free of invasive weeds.

WEED-78: Cover weed infested cargo areas and net-loading areas with tarps if weeds exist and can't be removed or avoided.

WEED-79: Flag off high-risk weed infestations in areas of concentrated activity and show weeds on facility maps.

WEED-80: If fire operations involve travel or work in weed infested areas, a power wash station should be staged at or near the incident base and helibase. Wash all vehicles and equipment upon arrival from and departure to each incident. This includes fuel trucks and aircraft service vehicles.

WEED-81: Identify the need for possible fire rehab to prevent or mitigate weed invasion during fire incident and apply for funding during the incident.

Post-fire Rehabilitation

WEED-82: Have a weed specialist review burned area rehabilitation reports to ensure proper and effective weed prevention and management is addressed.

WEED-83: Thoroughly clean the undercarriage and tires of vehicles and heavy equipment before entering a burned area.

WEED-84: Treat weeds in burned areas. Weeds can recover as quickly as 2 weeks following a fire.

WEED-85: Schedule inventories 1 month and 1 year post-fire to identify and treat infestations. Eradicate or contain newly emerging infestations.

WEED-86: Restrict travel to established roads to avoid compacting soil that could hinder the recovery of desired plants.

WEED-87: Determine soon after a fire whether revegetation is necessary to speed recovery of a native plant community, or whether desirable plants in the

burned area will recover naturally. Consider the severity of the burn and the proportion of weeds to desirable plants on the land before it burned. In general, more severe burns and higher pre-burn weed populations increase the necessity of revegetation. Use a certified weed-free seed mix. **(SOP)**

WEED-88: Inspect and document weed infestations on fire access roads, equipment cleaning sites, and staging areas. Control infestations to prevent spread within burned areas.

WEED-89: Seed and straw mulch to be used for burn rehabilitation (e.g., for wattles, straw bales, dams) shall be certified weed-free. **(SOP)**

WEED-90: Replace soil and vegetation right side up when rehabbing fire line.

FISH AND WILDLIFE MANAGEMENT AND SPECIAL STATUS SPECIES (FWS)

Standard Operating Procedures

FWS-1: To minimize the spread of aquatic nuisance species including but not limited to zebra mussels, New Zealand mud snails, quagga mussels, rusty crayfish, and whirling disease vectors, personnel working in water will do the following:

a) Before leaving a particular water, inspect and clean gear used in the water, including watercraft (boats, canoes, kayaks, rafts, etc.), trailers, oars, nets, waders, wading boots, sandals, and life jackets. Remove vegetation, mud, grit, algae, etc. and drain water from boats and other gear.

b) Prior to entering another water body, clean your gear by spraying with 409 or a similar soap or bleach solution and let equipment dry in the hot sun for several hours, or use hot tap water that drains onto the ground, not down a drain or into another water course.

FWS-2: Fences constructed will comply with applicable wildlife fence standards, such as those described in BLM Handbook H-1741-1, Fencing (BLM 1989). Current standards for fencing cattle out in deer and elk range is a four strand fence, 40 inches high with a spacing of wires from ground to top of 60"(smooth bottom wire), 6" (second wire barbed), 6" (third wire barbed), 12" (top wire preferably smooth but may need to be barbed in areas of intense cattle use).

FWS-3: The GJFO will consult agency species management plans and other conservation plans as appropriate to guide management and devise mitigation measures when needed. Examples of these plans include but are not limited to the Colorado Wildlife Action Plan, Colorado Sagebrush: A Conservation Assessment and Strategy, National, Rangewide, statewide and local working group conservation plans for Gunnison and greater sage grouse, Sharing the land with pinyon-juniper birds, Birds in a sagebrush sea: managing sagebrush habitats

for bird communities, North American Landbird Conservation Plan, North American Waterbird conservation Plan, National and Colorado Partners in flight Bird Conservation Plans, Colorado Gunnison's and White-tailed Prairie Dog Conservation Strategy and Recovery plans for federally listed species.

FWS-4: Lessees will be notified that a lease parcel contains potential habitat for threatened (T), endangered (E), proposed (P), candidate (C) and BLM sensitive (S) plants, fish and wildlife.

FWS-5: Existing plant location records will be consulted and site inventories will be conducted to identify suitable habitat[1] for these plants. Surveys for occupied suitable habitat will be performed prior to any ground disturbance. Surveys will take place when the plants can be positively identified, during the appropriate flowering periods. Surveys will be performed by qualified field botanists/biologists who will provide documentation of their qualifications, experience and knowledge of the species prior to starting work.

FWS-6: In complex linear or split-estate actions early coordination with private landowners will facilitate the process the BLM must complete prior to authorizing the action. To comply with the Endangered Species Act, the BLM must consider the effects to listed species on private land that result from a Federal action, such as linear rights-of-way or constructing a well pad on private land to drill to federal lease. Before an applicant can contract a biological survey, the private surface owner must allow the biological consultant access. Projects can be authorized without completing biological surveys on private lands but this may lead to lengthy delays while the BLM completes consultation.

FWS-7: For Colorado hookless cactus and other T, E, P, and C species surface-disturbing activities will be avoided within 200 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible.

FWS-8: For BLM sensitive species surface-disturbing activities will be avoided within 100 meters of occupied plant habitat[1] wherever possible and where geography and other resource concerns allow[2]. Fragmentation of existing populations and identified areas of suitable habitat will be avoided wherever possible.

[1] Occupied habitat includes areas historically or currently supporting plants and/or soils containing a viable seed bank. Suitable habitat is defined as an area that contains or exhibits the specific components or constituents necessary for plant persistence, as determined by existing maps plus field inspection and/or surveys. It may or may not be occupied by plants or a seed bank. Potential habitat is defined as an area that satisfies the broad criteria of the species' habitat description. It is usually determined by preliminary in-house assessment.

[2] An avoidance buffer helps to minimize dust transport, weed invasion, unauthorized vehicular activities, chemical and produced-water spills; and helps to protect pollinator habitat.

FWS-9: Where development is allowed within 100 meters of occupied habitat for T, E, P and C species or BLM sensitive species, unauthorized disturbance of plant habitat will be avoided by on-site guidance from a biologist, and by fencing the perimeter of the disturbed area, or such other method as agreed to by the Fish and Wildlife Service. In such instances, a monitoring plan approved by the Service will be implemented for the duration of the project to assess impacts to the plant population or seed bank. If detrimental effects are detected through monitoring, corrective action will be taken through adaptive management.

FWS-10: Surface disturbance closer than 20 meters to a listed plant will be considered an adverse effect. Mitigating measures within this narrow buffer are very important and helpful to individual plants, but we do not expect that all adverse effects can be fully mitigated within this distance. Some adverse effects due to dust, dust suppression, loss of pollinator habitat, and toxic spills will likely remain. There are two possible exceptions to this rule of thumb: 1) The new disturbance is no closer to a listed plant than preexisting disturbance and no new or increased impacts to the listed plant are expected; or 2) the listed plant is screened from the proposed disturbance (e.g., tall, thick vegetation or a berm acts as a screen or effective barrier to fugitive dust and other potential impacts).

FWS-11: Transplantation of potentially affected plants will not be used as a rationale to defend a "not likely to adversely affect" or a "no effect" determination for listed plant species.

FWS-12: For drilling pads and other installations, surveys will extend beyond the edge of disturbance by at least 200 meters for T, E, P and C species. For linear features such as roads and pipelines, surveys will extend at least 100 meters beyond the edge of the proposed ground disturbance along each side of the right of way. If special status plants are found within the survey area, the contractor will endeavor to determine the complete areal extent of the occurrence and the approximate number of individuals within the occurrence.

FWS-13: Documentation will include individual plant locations and suitable habitat distributions. Prior to conducting plant surveys, the operator will provide maps (as hard-copy and Geographic Information System files) of all proposed areas of disturbance to BLM. Maps will include existing and proposed roads, pipelines, well pads, pits, parking lots, and all other work areas. Post-construction or as-built maps will also be submitted to account for any deviations from pre-project maps. Specific polygons where rare plant surveys have been conducted will be included, along with the results of those surveys (positive or negative). The locations of any monitoring plots established to measure the status of rare plants and habitat in the vicinity of project activities will also be displayed.

FWS-14: Protect pollinator species for endangered or threatened species by incorporating the standard operating procedures found in the Final

Programmatic Environmental Impact Statement for Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007).

FWS-15: Conduct development on existing or previously disturbed surface locations to reduce impacts on undisturbed areas and minimize impact on wildlife habitat.

FWS-16: To protect nesting raptors, raptor surveys shall be conducted prior to activities that could impact nesting activities. Based on the survey results the following mitigation measures may be applied:

a) Protect nest sites from human disturbances by implementing CPW and USFWS recommended buffers around known nest sites.

b) Provide perching and nesting structures as mitigation where disturbances are impacting raptors.

c) Apply guidance from *Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 2006* (Avian Power Line Interaction Committee 2006) and *Avian Protection Plan (APP) Guidelines* (Avian Power Line Interaction Committee and US Fish and Wildlife Service 2005) or most current guidance for new power line construction (including upgrades and reconstruction) to prevent electrocution of raptors.

FWS-17: **(MLP)** Implement drilling technology improvements, such as horizontal drilling, to maximize resource recovery and minimize environmental impacts.

FWS-18: **(MLP)** Install pipelines adjacent to roads wherever possible.

FWS-19: **(MLP)** Strategically apply fugitive dust control measures to reduce coating of vegetation and deposition in water sources, including enforcing established speed limits on BLM and private roads.

FWS-20: Ensure that ponds containing mining or other wastes that are potentially hazardous to fish and wildlife are enclosed to exclude birds, bats, and other wildlife attracted to the water.

FWS-21: When placing culverts on streams containing fish or amphibians, design culverts to maintain or improve aquatic organism passage.

FWS-22: In wildland fire situations work with Fire Resource Advisors during suppression efforts in the GJFO when considering dipping water from ponds, reservoirs, and lakes throughout the Grand Valley. Select reservoirs, ponds, and lakes harbor native and/or endangered fishes and should be avoided if at all possible. If these waters must be used, screen water intakes with ¼ inch mesh to avoid entrainment of fish.

FWS-23: When obtaining water from any live stream or river the following actions should be taken:

a) The best method to avoid entrainment of fish is to pump from off-channel locations (e.g., ponds, lakes, and diversion ditches), not directly connected to the mainstem rivers even during high spring flows;

b) If the pump head must be located in the river channel where larval fish are known to occur, the following measures apply:

1. Do not situate the pump in a low-flow or no-flow area as these habitats tend to concentrate larval or young-of-year fishes. Instead place the pump into fast moving/riffle habitat;
2. limit the amount of pumping, to the greatest extent possible, during that period of the year when larval fish may be present (June 1 to August 15); and
3. avoid pumping, to the greatest extent possible, during the pre-dawn hours (two hours prior to sunrise) as larval fish drift studies indicate that this is a period of greatest daily activity.

c) Screen all pump intakes with ¼-inch or finer mesh material.

d) Report any fish impinged on any intake screens to the Fish and Wildlife Service (970.243.2778) or the Colorado Division of Wildlife:

Northwest Region
711 Independent Ave., Grand Junction, CO 81505
Phone: (970) 255-6100

Southwest Region
415 Turner Dr., Durango, CO 81303
Phone: (970) 375-6700

Best Management Practices

FWS-24: Design lighting required for recreation, oil and gas, and other programs to be directing downward, using shielded lights, and only the minimum illumination required, utilize green lights in areas that require illumination at night and prevent skyward projection of lighting that may disorient night migrating birds. Sodium vapor lights, widely used for streetlights and security lighting, should not be used because they have been shown to attract night-flying birds.

FWS-25: Limit flaring operations when well pads are within 100 m of occupied T, E, C, P and sensitive species habitat.

FWS-26: Control noxious weeds using integrated techniques. Limit chemical control in areas with rare plant species to avoid damage to non-target species. Mechanical or chemical control in and near rare plant habitat shall only be implemented by personnel familiar with the rare plants.

FWS-27: Prohibit collection of rare plants or plant parts, except as permitted by the BLM Authorized Officer for scientific research.

FWS-28: The use of deicers and dust suppressants within 100 meters (328 feet) of road-side occurrences of special status plant species will require prior approval from the BLM.

FWS-29: Herbicide application shall be kept at least 200 meters from known plant populations, except in instances where weed populations threaten habitat integrity or plant populations. Great care shall be used to avoid pesticide drift in those cases.

FWS-30: Use temporary water delivery lines laid on the surface of the ground to reduce truck traffic.

FWS-31: Retain existing snags for wildlife use in places where they will not create a human hazard.

FWS-32: Where linear disturbance is proposed edges of vegetation shall be feathered to avoid long linear edges of habitat and allow for greater habitat complexity for wildlife.

FWS-33: Protect existing temporary pools to providing breeding and hibernating habitat for amphibians.

FWS-34: Avoid fragmentation of wildlife habitat especially in wildlife migration and movement corridors.

FWS-35: **(MLP)** Encourage the use of a variety of BMPs, as defined by the most recent version of "Best Management Practices for Oil and Gas Development on Public Lands," http://www.blm.gov/bmp/.

FWS-36: Identify in-channel features (e.g., culverts, water diversion structures) that block aquatic organism movement and/or impair stream connectivity and replace, modify, or remove these impediments as they are identified and as opportunities allow. Consider and address aquatic organism passage and appropriate life-stage requirements when designing new or modifying existing stream crossings.

FWS-37: Where construction of in-channel barriers will benefit aquatic species by limiting access from competitive species and/or disease vectors, consider barriers as a management tool on a site-specific basis.

FWS-38: In critical and sever winter range for deer and elk avoid recurring transportation activity within two hours before and after sunrise and sunset to avoid disturbing wintering wildlife between Dec1 and May1 (excluding emergencies).

FWS-39: For intensive activities within winter range for wildlife use carpooling for activities like crew rotations and shift changes.

FWS-40: For intensive activities within winter range for wildlife monitor and enforce speed limits

FWS-41: For intensive activities within winter range for wildlife prohibit pets and possession of fire arms on the site by employees or contractors.

FWS-42: Implement closed-loop drilling systems on all active rigs, using only a small cuttings mixing area on each location.

FWS-43: Optimize completion operations to minimize impact. Techniques include:

- **a)** Simultaneous drilling and completion operations minimize the operating time on the well pad, where space and safety restrictions permit the use of this technique.
- **b)** Remote completion operations using nearby existing well pads minimize overall surface disturbance.

FWS-44: Reuse water whenever possible for drilling and completion activities. Recycle all water used in completion activities to meet water needs for completion of subsequent wells on location; this will reduce fresh water consumption and reduce truck traffic.

FWS-45: Expand the water distribution system to efficiently move water in pipelines, reducing truck traffic for drilling and completion activities.

FWS-46: Reduce visits to well sites through remote monitoring (i.e. SCADA) and the use of multi-function contractors.

FWS-47: **(MLP)** Use solar panels as an alternative energy source for on location production equipment, to limit trips to the location for production maintenance.

FWS-48: Use dual-fuel natural gas/diesel systems, reducing diesel delivery to the well site by as much as 70 percent.

FWS-49: **(MLP)** Use existing roads instead of new construction segments wherever feasible.

FWS-50: **(MLP)** Seed all access roads and facilities other than well pads in a timely manner after construction has been completed. Seed all topsoil from pad construction.

FWS-51: Noise reduction techniques and designs will be used to reduce noise from compressors or other motorized equipment.

FWS-52: Where new roads are constructed seasonal restrictions on public vehicular access will be evaluated where there are wildlife conflict or road damage/maintenance issues.

FWS-53: Install multiple pipelines in a single trench, to minimize disturbance.

FWS-54: Install trench plugs (sloped to allow wildlife or livestock to exit the trench should they enter) at known wildlife or livestock trails to allow safe crossing on long spans of open trench.

FWS-55: Coordinate with the Colorado Parks and Wildlife (CPW) on BLM projects and BLM-authorized projects that are proposed within 0.5-mile of a small capacity water development and 2.0-mile of a large capacity wildlife water development. Projects determined to have a detrimental effect on wildlife using wildlife water developments will be avoided or rerouted if possible.

FWS-56: Coordinate with CPW on migratory bird inventories when migratory bird inventories are proposed by BLM or required of third parties.

References

Avian Power Line Interaction Committee. 2006. Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996. Edison Electric Institute, Avian Power Line Interaction Committee, and the California Energy Commission. Washington, DC, and Sacramento, CA.

Avian Power Line Interaction Committee and US Fish and Wildlife Service. 2005. Avian Protection Plan (APP) Guidelines, April 2005. Washington, DC.

BLM (United States Department of the Interior, Bureau of Land Management). 1989. Handbook H-1741-1: Fencing. Release 1-1572. BLM, Washington, DC. December 6, 1989. 58pp.

_____. 2007. Final Vegetation Treatment Using Herbicides on Bureau of Land Management Lands in 17 Western States, Programmatic Environmental Impact Statement. BLM, Nevada State Office, Reno, NV. June 2007.

US Fish and Wildlife Service and BLM Recommendations for Avoiding Adverse Effects on Threatened, Endangered, Proposed, Candidate and BLM Sensitive Plants on BLM Lease Lands in Colorado; Draft. July 25, 2008.

USDA Forest Service. Designing for Aquatic Organism Passage at Road-Stream Crossings. 2007.

Elliott, B.A., S. Spackman Panjabi, B. Kurzel, B. Neely, R. Rondeau, and M. Ewing. 2009. Recommended Best Management Practices for Plants of Concern. Practices developed to reduce the impacts of oil and gas development activities to plants of concern. Unpublished report prepared by the Rare Plant Conservation Initiative for the National Fish and Wildlife Foundation.

WILDLIFE DAMAGE MANAGEMENT (WDM)

Standard Operating Procedures

WDM-1: Control activities conducted by the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services will be coordinated with the GJFO on an annual basis, including review of authorized control areas and annual submittal of control activities on GJFO lands.

WDM-2: US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services will notify the GJFO before any damage control activity is implemented within the restricted area(s), and exceptions will be approved on a case-by-case basis.

WDM-3: All US Environmental Protection Agency use restrictions and requirements for toxicants are to be followed where control devices are employed on public lands. The GJFO must be notified before any toxicants are deployed and a map of the treatment area must be provided. Adequate signage must be provided and maintained.

WDM-4: All aerial control activities in the wild horse area must be conducted in compliance with all applicable Colorado State Statutes, the provisions of the 1971 Wild and Free-Roaming Horses and Burros Act, as amended, and its associated regulations (43 Code of Federal Regulations 4700). No harassment of wild horses and burros is permitted under these provisions; maliciously or negligently causing the injury of a wild horse or burro is also expressly prohibited.

WDM-5: Any aerial control activities in the wild horse area will require notification of and prior approval from the GJFO.

WDM-6: During the foaling season (March 1-June 30), a flyover survey to determine whether wild horses are present will be conducted prior to commencing any wildlife damage management activities. This survey will be conducted at a minimum of 500 feet above ground level. If wild horses are determined to be present, flyover surveys will be adjusted as needed to prevent any disturbance or harassment of the animals present, and wildlife damage

activities that would result in disturbance or harassment of these animals will not take place.

WDM-7: All persons involved with wildlife damage management activities shall be briefed on the regulations and penalties relating to harassment of wild horses prior to commencing animal control operations.

WDM-8: The GJFO will identify through the US Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services annual work plan process areas of public lands considered special resource use areas on which control activities be avoided except as requested by CPW, or other protective restrictions may apply. Examples may include special status species habitats (e.g., sage-grouse leks and nesting areas, and bald eagle nests).

WDM-9: Interim Management Policies must be adhered to at all times in Wilderness Study Areas and the GJFO must be notified before any wildlife damage management activity is implemented. Wildlife damage management activities in Wilderness Study Areas must be directed at the offending animal. Aerial hunting may be allowed in Wilderness Study Areas as long as those actions do not impair wilderness characteristics.

WILD HORSES (WH)

Standard Operating Procedures

WH-1: Wild Horse and/or Burro Gathers Standard Operating Procedures.

WH-2: Wild Horse Fertility Control Treatment Standard Operating Procedures.

WH-3: All new or reconstructed exclosures within herd management areas will follow the horse fencing standards.

WH-4: Any new facilities shall be a minimum of 0.25-mile from water sources to avoid hindrance of use by wild horses.

WH-5: Any new facilities shall be designed to avoid injury to horses or fenced to prevent wild horse access.

WH-6: Require rebar to be welded between the rails of cattle guards if the cattle guard or similar device is to be installed in or near herd management areas to decrease the risk of wild horse and/or burro entrapment.

WH-7: All new or reconstructed fences on the perimeter of the wild horse range will be comprised of materials that would reduce injury to wild horses. (e.g., wooden poles, smooth wire)

WH-8: Seed mixes for projects within the wild horse range shall benefit wild horses (emphasis on palatable grasses) while meeting land health standards.

WH-9: If a project involves heavy or sustained traffic; require road signs for safety and protection of wild horses.

WH-10: Above ground facilities requiring painting will be designed to blend in with local environment.

WH-11: Disturbed areas will be contoured to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with the surface disturbance.

WH-12: Still or motion picture photography for personal use is permitted; however, photography for commercial purposes may require a permit. Contact the local BLM office.

WH-13: Feed weed-free certified hay or pellet feed (refer to www.weedfreefeed.com for more information).

WH-14: For guide/outfitters and recreationists: The permittee shall inform all staff and clients that wild horses protected by federal law and will prevent harassment of wild horses from permitted activities. Prohibited acts include but are not limited to: maliciously injuring or harassing a wild horse; chasing wild horses, removing or attempting to remove a wild horse from public lands; destroying a wild horse; selling or attempting to sell a wild horse; and, commercially exploiting a wild horse. Crimes are punishable by fine and/or imprisonment. Examples of violations might include harassment by all-terrain vehicle, injury or death by a bullet or arrow, and illegal capture.

Best Management Practices

WH-15: Adequate water for livestock and dogs may not be available along your route. Springs and other water sources identified on maps may be dry at any time.

WH-16: Bring a sufficient quantity of drinking water for your riding stock (15 gallons or more per day, per animal)

WH-17: Secure your riding stock adequately (use portable panels or corrals).

WH-18: Be sure your domestic riding stocks are current with annual vaccinations.

WH-19: Do not bring sick or diseased riding animals into herd management areas. Wild horses on the range are not vaccinated against any diseases.

WH-20: Do not drive across, camp on, or stake riding stock out to graze on riparian areas.

WH-21: Water riding stock only at springs or streams with stable banks and dry soils.

WH-22: Keep riding stock secured away from dispersed camp sites and spread manure before leaving.

WH-23: Explore the area prior to hauling in a trailer to assess access. Pulling horse or other trailers off of State or County designated roads shall only be done with prior operator knowledge of the road. Many roads are narrow, rough, steep, or impassable. Turning around may be difficult or impossible, especially with a trailer.

WH-24: In the event that a foaling mare or newborn foal is encountered, every effort shall be made to stay away from that location. Do not attempt to help the mare or foal.

WH-25: Stay at least 100 feet away from wild horses.

WH-26: Try not to place yourself between members of a band or between adjoining bands.

WH-27: Observe wild horses quietly so wild behavior is not disrupted.

WH-28: If you are approached by wild horses while riding horseback, stay calm, maintain control of your animal, and leave the area as soon as you can. Ride with others whenever possible.

WH-29: Mares, especially if in season, may attract wild stud horses to you or your camp. Keep domestic horses secure at all times. Ride with others who are experienced and skilled at resolving unwanted wild horse or burro interactions.

WH-30: Do not feed or try to attract animals towards you.

WH-31: Keep dogs under control so they do not disturb or chase wild horses.

WH-32: Report sick or injured animals, or violations, to the BLM.

WH-33: Please do not attempt to assist or handle sick or injured animals.

CULTURAL RESOURCES (CR)

Standard Operating Procedures

CR-1: Evaluation of all BLM activities and BLM authorized activities shall be made in compliance with BLM Manual 8100, The Foundations for Managing Cultural Resources (BLM 2004a), and subsequent 8100 series (BLM 2004b, 2004c, 2004d, 2004e, 2004f, 2004g, and 2004h); Handbook of Guidelines and Procedures for Inventory, Evaluation, and Mitigation of Cultural Resources (BLM

1998, rev. 2007); and the current State Protocol Agreement between the Colorado BLM and the Colorado State Historic Preservation Office.

CR-2: In complex linear or split-estate actions early coordination with private landowners will facilitate the process the BLM must complete prior to authorizing the action. To comply with the National Historic Preservation Act, the BLM must consider the effects to cultural resources on private land that result from a Federal action, such as linear rights-of-way or constructing a well pad on private land to drill to federal lease. Before an applicant can contract a cultural survey, the private surface owner must allow the cultural consultant access. Projects can be authorized without completing cultural surveys on private lands but this may lead to lengthy delays while the BLM completes consultation.

CR-3: The holder of a BLM authorization to carry out land use activities on Federal lands, including all leases and permits, must notify the BLM, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony (43 Code of Federal Regulations [CFR] 10.4(g)). Activities must stop in the immediate vicinity of the discovery. The discovery must be protected from the authorized activity for a period of 30 days or unless otherwise notified by the (43 CFR 10.4(c) and (d)).

CR-4: The National Historic Preservation Act, as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during project implementation, work in that area must stop and the BLM Authorized Officer must be notified immediately. Within five working days the BLM Authorized Officer will inform the proponent as to:

a) Whether the materials appear eligible for the National Register of Historic Places;

b) The mitigation measures the proponent will likely have to undertake before the site could be used (assuming in situ preservation is not practicable), (36 CFR 800.13); and

c) A timeframe for the BLM Authorized Officer to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Office, that the BLM Authorized Officer's findings were correct and mitigation was appropriate.

CR-5: A standard Education/Discovery stipulation for cultural resource protection shall be attached to the land use authorization. The operator or its contractor is responsible for informing all persons who are associated with the project operations that Federal laws protect cultural resources and they will be subject to prosecution for disturbing or destroying any historic or archaeological sites, or collecting any cultural objects, prehistoric or historic from federal lands.

CR-6: Strict adherence to the confidentiality of information concerning the nature and location of archeological resources will be required of any company issued a land use authorization and all of their subcontractors (Archaeological Resource Protection Act, 16 US Code 470hh).

CR-7: When a NEPA document specifically stipulates the need for an archaeological monitor during construction or a project is located in areas that require an archaeological monitor to be present (see conditions of approval polygons for Sunnyside, Grand Mesa Slopes, and Indian Creek) it is the applicant's responsibility to contract an archaeological consultant holding a current Colorado BLM permit and authorized to work in the GJFO. Fieldwork authorizations are required prior to any construction monitoring Cultural Resource monitoring where resources are present or reasonably expected is permitted only when the ground surface is free of snow, unfrozen, and dry.

CR-8: A cultural resource must be allocated to public use prior to:

- **a)** authorizing or implementing any Heritage Tourism project;
- **b)** when Special Recreation Permits are issued that will use a cultural resource; or
- **c)** a BLM recreation project is proposed that involves the use or interpretation of a cultural resource.

Best Management Practices

CR-9: BLM specialists shall complete a File Search Request form and submit to the Field Office Archaeologist as soon as there is proposed BLM activity or BLM authorized activity that will require preparation of a NEPA document. This will provide the specialist with immediate information as to the need for Class III inventory, whether that will be contracted or in-house, or the presence of Cultural Resources that may preclude or impede their project.

CR-10: Once it has been determined that a project will require contracted cultural inventory the BLM specialists shall complete a *Request for CR Compliance* form *(find at S:\blm share\CRM_for_FO\ CR Compliance)* and submit to the Field Office Archaeologist as soon as they have a final design for a BLM proposed project or activity.

CR-11: When possible, locate projects in areas that are previously disturbed. To comply with the National Historic Preservation Act the BLM must identify significant cultural resources. Under the current regulations and guidelines the BLM may decide that no inventory needs to be conducted because the proposed action is located in an environment where ground disturbance has modified the surface so extensively that the likelihood of finding intact cultural resources is negligible.

CR-12: Where proposed projects or development will adversely affect a cultural resource, testing, data recovery or full excavation to recover scientific information may be required as mitigation. The applicant or operator bears the full cost of mitigation and is encouraged to consider avoiding adverse effects through project relocation or redesign rather than mitigating adverse effects.

CR-13: **(MLP)** A *File Search Request* form must be submitted to the Field Office Archaeologist identifying the site and the proposed use so the allocation to public use can be confirmed.

References

BLM (United States Department of the Interior, Bureau of Land Management). 1998. Handbook of Guidelines and Procedures for Inventory, Evaluation, and Mitigation of Cultural Resources. Rev. 2007. BLM, Colorado State Office, Lakewood, CO.

_____. 2004a. Manual 8100: The Foundations for Managing Cultural Resources. Release 8-72. BLM, Washington, DC. December 3, 2004.

_____. 2004b. Manual 8110: Identifying and Evaluating Cultural Resources. 8-73. BLM, Washington, DC. December 3, 2004.

_____. 2004c. Manual 8120: Tribal Consultation Under Cultural Resources. 8-74. BLM, Washington, DC. December 3, 2004.

_____. 2004d. Manual 8120-1: General Procedural Guidance for Native American Consultation. 8-75. BLM, Washington, DC. December 3, 2004.

_____. 2004e. Manual 8130: Planning for Uses of Cultural Resources. 8-76. BLM, Washington, DC. December 3, 2004.

_____. 2004f. Manual 8140: Protecting Cultural Resources. 8-77. BLM, Washington, DC. December 3, 2004.

_____. 2004g. Manual 8150: Permitting Uses of Cultural Resources. 8-78. BLM, Washington, DC. December 3, 2004.

_____. 2004h. Manual 8170: Interpreting Cultural Resources for the Public. 8-79. BLM, Washington, DC. December 3, 2004.

TRIBAL CONSULTATION (TC)

Standard Operating Procedures

TC-1: The BLM has a responsibility to develop a government-to-government relationship with the tribes: the formal relationship that exists between the Federal Government and tribal governments under United State laws. Tribal

governments are considered dependent domestic sovereignties with primary and independent jurisdiction (in most cases) over tribal lands. Concerning proposed BLM plans and actions, at least the level of consideration and consistency review provided to State governments must be afforded to tribal governments.

TC-2: The BLM is responsible for consultation under General Authorities defined as "laws, executive orders, and regulations that are not considered "cultural resource authorities". The regulations implementing both Federal Land Policy and Management Act and NEPA require Native American consultation. The American Indian Religious Freedom Act and the Indian Sacred sites order (Executive Order 13007) pertain to the free exercise clause of the First Amendment (BLM Manual 8120-1 Guidelines for Conducting Tribal Consultation [BLM 2004], Federal Land Policy and Management Act Title II, NEPA Section 102, 40 CFR 1501.2 and 1501.7)

TC-3: Tribes must be consulted whenever other governmental entities or the public are formally involved in the BLM's environmental review process in any NEPA documentation that entails public involvement or initial discussions with local or state governments (BLM Handbook H-1790-1, National Environmental Policy Act [BLM 2008]).

TC-4: NHPA Section 106 consultations for cultural resources that are significant to Indian tribes. Consultation with an Indian tribe must recognize the government-to-government relationship between the Federal Government and Indian tribes. The agency official shall consult with representatives designated or identified by the tribal government. Consultation shall be conducted in a manner sensitive to the concerns and needs of the Indian tribe. (36 CFR 800.2(c)(2)(ii)(C).

Best Management Practices

TC-5: Notification is conducted by simple one-way written means. Consultation is generally construed to mean direct, two-way communication.

TC-6: When publishing notices or open letters to the public indicating that the BLM is contemplating an action and that comments are welcome, managers shall send individual letters, certified mail or delivery confirmed to tribes requesting their input on actions being considered. If this is an opening dialogue, prior to having developed a strong working relationship with the tribe, if a timely response is not received the manager shall follow up with personal telephone calls.

TC-7: For the benefit of both parties, managers are encouraged to strive for the most efficient and effective method of consultation. Whatever method is chosen, all consultation activities shall be carefully documented in the official record.

TC-8: Consultation roles can be facilitated but may not be transferred to others. Cultural resource consulting firms working for land use applicants cannot negotiate, make commitments, or otherwise give the appearance of exercising the BLM's authority in consultations.

TC-9: Owing to their status as self-governing entities, tribes shall be notified and invited to participate at least as soon as (if not earlier than) the Governor, state agencies, local governments, and other federal agencies.

TC-10: Tribal consultation means dialogue between a BLM manager and an American Indian Tribe. The BLM managers are encouraged to visit tribal councils and appropriate tribal leaders on a recurring basis. This face-to-face meeting helps to develop relationships that can reduce the time and effort spent in later consultation or individual projects. This government-to-government consultation shall be treated with appropriate respect and dignity of position.

References

BLM (United States Department of the Interior, Bureau of Land Management). 2004. Manual 8120: Tribal Consultation Under Cultural Resources. 8-74. BLM, Washington, DC. December 3, 2004.

_____. 2004. Manual 8120-1: General Procedural Guidance for Native American Consultation. 8-75. BLM, Washington, DC. December 3, 2004.

_____. 2008. Handbook H-1790-1: National Environmental Policy Act. Washington, DC. January 2008.

PALEONTOLOGY (P)

Standard Operating Procedures

P-1: Attach lease notices, stipulations, and other requirements to permitted activities to prevent damage to paleontological resources.

P-2: Prior to any surface disturbing activities, an inventory of paleontological resources (fossils) may be required. Mitigation may be required upon the discovery of any vertebrate fossil or other scientifically-important paleontological resource. Mitigation of scientifically important paleontological resources may include avoidance, monitoring, collection, excavation, or sampling. Mitigation of discovered scientifically important paleontological resources might require the relocation of the disturbance over 100 meters. This and any subsequent mitigation work shall be conducted by a BLM-permitted paleontologist.

P-3: The lessee/operator shall bear all costs for inventory and mitigation (WO IM-2009-011).

P-4: The lessee is prohibited from surface occupancy and surface-disturbing activities within 100 meters around all known scientifically important paleontological resources.

(Locality-specific name)

This stipulation is to protect scientific information that may be damaged from inadvertent or authorized uses.

Exception: The Authorizing Officer may: (1) allow for paleontological excavation and (2) change the protection boundary on a case-by-case basis, taking into account topographical barriers, the design of the proposed action, and the characteristics of the paleontological resource.

Modification: None

Waiver: Destruction of all the physical characteristics of a paleontological resource.

P-5: A standard Education/Discovery stipulation for paleontological resource protection shall be attached to the land use authorization. The operator or its contractor is responsible for informing all persons who are associated with the project operations that Federal laws protect paleontological resources and they will be subject to prosecution for disturbing or destroying any vertebrate fossils or paleontological sites, or collecting any fossilized bones, tracks or any other vertebrate trace fossils from federal lands.

P-6: The Paleontological Resources Preservation Act (PRPA) [16 U.S.C. 470aaa] requires the lessee/operator to immediately suspend activities in the vicinity of a vertebrate fossil discovery, protect the discovery from damage and notify the BLM Authorized Officer of any paleontological resources discovered as a result of operations under this authorization. The Authorized Officer will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the Authorized Officer after consulting with the operator. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (1) following the Authorized Officer's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (2) following the Authorized Officer's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

VISUAL RESOURCES (V)

Standard Operating Procedures

V-1: All new surface-disturbing projects or activities, regardless of size or potential impact, will incorporate visual design considerations during project design as a reasonable attempt to meet the Visual Resource Management (VRM)

class objectives for the area and minimize the visual impacts of the proposal. Visual design considerations will be incorporated by:

a) Using the VRM contrast rating process (required for proposed projects in highly sensitive areas, high impact projects, or for other projects where it appears to be the most effective design or assessment tool), or by

b) Providing a brief narrative visual assessment for all other projects that require an environmental assessment or environmental impact statement.

c) Measures to mitigate potential visual impacts could include the use of natural materials, screening, painting, project design, location, or restoration (See Appendix H; BLM Handbook H-8431-1, Visual Resource Contrast Rating; or online at http://www.blm.gov/nstc/VRM/8431.html, for information about the contrast rating process).

V-2: All new roads will be designed and constructed to a safe and appropriate standard, "no higher than necessary" to accommodate intended vehicular use. Roads will follow the contour of the land where practical. Existing oil and gas roads that are in eroded condition or contribute to other resource concerns will be brought to BLM standards within a reasonable period of time.

Best Management Practices

V-3: Impacts to dark night skies will be prevented or reduced through the application of specific mitigation measures identified in activity level planning and NEPA level review. These measures may include directing all light downward, using shielded lights, using only the minimum illumination necessary, using lamp types such as sodium lamps (less prone to atmospheric scattering), using circuit timers, and using motion sensors.

V-4: Any facilities authorized will use the best technology available to minimize light emissions

V-5: Any new permits/authorizations, including renewals, will be stipulated to use the best technology available to minimize light emissions as compatible with public health and safety.

V-6: Restrict visual intrusion in VRM Class I and II areas and within 0.25-mile of historic trails.

V-7: Screening facilities from view and avoiding placement of production facilities on steep slopes, hilltops, and ridgelines.

V-8: Paint all facilities a color that best allows the facility to blend with the background (Operator-committed BMP).

V-9: Gravel of road color shall be similar to adjacent dominant soil colors.

V-10: Reduce impacts on visual resource management class II and class III areas.

V-11: Bury distribution powerlines and flow lines in or adjacent to access roads.

V-12: Repeat form, line, color, and texture elements to blend facilities with the surrounding landscape

V-13: All aboveground facilities including power boxes, building doors, roofs, and any visible equipment will be painted a color selected from the latest national color charts that best allows the facility to blend into the background.

V-14: Perform final reclamation recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography.

V-15: To the extent opportunities are practicable, extreme visual contrast created by past management practices or human activities will be minimized. Examples include right-of-way amendments, mineral material sites, abandoned mines, and areas impacted by unauthorized off-road driving.

V-16: Reclaim unused well pads within one year.

V-17: Final reclamation of all oil and gas disturbance will involve re-contouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography and revegetating all disturbed areas

V-18: The use of submersible pumps will be strongly encouraged, especially in VRM Class I, II or III areas or any area visible by the visiting public.

V-19: The use of partial or completely below-grade wellheads will be strongly encouraged in high visibility areas as well as VRM Class I, II or III areas.

V-20: The placement of production facilities on hilltops and ridgelines will be prohibited where they are highly visible.

WILDLAND FIRE ECOLOGY AND MANAGEMENT (WFM)

Standard Operating Procedures

Fire Suppression

WFM-1: Resource Advisors and other applicable specialists shall be utilized to advise the Incident Commander and suppression resources on the natural resource values during the suppression effort.

WFM-2: Avoid applying fire retardant in or near drinking water sources.

WFM-3: Avoid the application of retardant or foam within 300 feet of a waterway or stream channel. Deviations from this procedure are acceptable if life or property is threatened.

WFM-4: Fire lines will not be constructed by heavy equipment within riparian stream zones. If construction is necessary due to threats to life or property, control lines shall terminate at the edge of the riparian zone at a location determined appropriate to meet fire suppression objectives based on fire behavior, vegetation/fuel types, and fire fighter safety.

WFM-5: For streams currently occupied by Cutthroat Trout or other aquatic special status species, extractions of water from ponds or pools shall not be allowed if stream inflow is minimal and extraction of water will lower the existing pond or pool level.

WFM-6: Lands will be temporarily closed to other uses in areas where fire suppression is being implemented.

WFM-7: Stream flow shall not be impounded or diverted by mechanical means in order to facilitate extraction of water from the stream for fire suppression efforts.

WFM-8: If it is determined that use of retardant or surfactant foam within 300 feet of a waterway or stream channel is appropriate due to threats to life or property; alternative line construction tactics are not feasible because of terrain constraints, congested areas, or lack of ground personnel; or potential damage to natural resources outweighs possible loss of aquatic life, the unit administrator shall determine whether there have been any adverse effects to federally listed species. If the action agency determines that adverse effects were incurred by federally listed species or their habitats, then the action agency must consult with the Service, as required by 50 CFR 402.05, as soon as practicable.

WFM-9: Avoid whenever possible burning out unburned islands of native vegetation, specifically sagebrush communities.

WFM-10: Minimize/mitigate impacts to cultural resources and pristine vegetative communities.

WFM-11: Prior to use on BLM-administered lands, thoroughly rinse to remove mud and debris from all fire suppression equipment from off-district or out of state and used to extract water from lakes, ponds, streams, or spring sources. Examples of this equipment are helicopter buckets, draft hoses, and screens. After cleaning the equipment, disinfect it to prevent the spread of invasive aquatic species. Do not rinse equipment with disinfectant solutions within 100 feet of natural water sources. GJFO suppression equipment used to extract water from sources known to be contaminated with invasive aquatic species, as

identified by the US Fish and Wildlife Service and Colorado Parks and Wildlife, also shall be disinfected beforehand on lands administered by the GJFO.

WFM-12: Vehicle and equipment shall be washed before being assigned to fires to minimize the spread of noxious weeds. Larger fires with incident management teams assigned may need to have a weed wash station.

Emergency Stabilization and Rehabilitation

WFM-13: Stabilize areas that have low potential to naturally revegetate and that have high wind and soil erosion potential. Treatments include the following:

- **a)** Installing water bars and other drainage diversions, culverts along fire roads, dozer lines, and other cleared areas;
- **b)** Seeding and planting to provide vegetative cover;
- **c)** Spreading mulch to protect bare soil and discourage runoff;
- **d)** Repairing damaged roads and drainage facilities;
- **e)** Clearing stream channels of structures or debris that is deposited by suppression activities;
- **f)** Installation of erosion control structures;
- **g)** Installation of channel stabilization structures;
- **h)** Fence or restrict areas to livestock and wild horse and burro grazing to promote success of natural revegetation or establishment of seeded species;
- **i)** Lands may be temporarily closed to other uses during emergency stabilization and rehabilitation practices if activities inhibit treatment;
- **j)** Repair or replace range improvements and facilities; and
- **k)** Monitor emergency stabilization and rehabilitation treatments.

Best Management Practices

Fuels Management

WFM-14: Construct fuel breaks or green strips to protect wildland-urban interface communities and provide for firefighter safety by using mechanical, chemical, biological, and prescribed fire treatment methods.

WFM-15: Construct fuel breaks and green strips in areas containing a good understory of native perennials in order to successfully compete with and deter the establishment and spread of annual species.

WFM-16: Seed fuels treatments in areas that do not have a good understory of desirable native perennials that can successfully compete with annual weed species.

WFM-17: Where practicable, use large-scale landscape planning to connect fuel treatments and avoid small piecemeal projects.

WFM-18: Plan for maintenance cycles and maintain fuel treatments to ensure effectiveness.

WFM-19: Prevent seeded species from being grazed during the first two growing seasons (>18 months) following seeding, or until site-specific analysis and/or monitoring data indicates that vegetation cover, species composition and litter accumulation are adequate to support and protect watershed values, meet vegetation objectives and sustain grazing use

WFM-20: Provide fire prevention and mitigation outreach information and education to communities within the GJFO.

WILDERNESS, WILDERNESS STUDY AREAS, AND LANDS WITH WILDERNESS CHARACTERISTICS (WSA)

Standard Operating Procedure

WSA-1: All Wilderness Study Areas will be managed in accordance with BLM Handbook H-8550-1, Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1995).

References

BLM (United States Department of the Interior, Bureau of Land Management). 1995. Handbook H-8550-1. Interim Management Policy and Guidelines for Lands Under Wilderness Review. Release 8-66. BLM, Washington, DC. July 5, 1995. 74 pp.

FORESTRY (F)

Standard Operating Procedures

F-1: No fuel wood cutting of live trees will be allowed for cottonwood, willow, alder; unless resource objectives allow otherwise.

F-2: No forestry harvest or collection of products will be allowed during the winter closure timing restraints (November 30 – May 1).

F-3: Trees marked for wildlife protection and/or "Seed Tree Do Not Fall" will not be allowed to be harvested for any type of forestry products.

F-4: Harvest plans will be completed on all commercial sales within woodlands and forests, showing access roads, decks and skid trail locations. Approval of these plans by the BLM Authorized Officer is required before harvest can start.

Best Management Practices

F-5: The closure of new roads will be considered and planned for during sale preparation in accordance with existing policy.

F-6: Clear cuts will be considered for use in the pinyon-juniper and aspen types in critical big game winter ranges and other areas where economically feasible.

F-7: Clear cuts will be considered for use in restoring aspen sites.

F-8: Cuts that thin the pinyon-juniper canopy cover to 20 percent or less will be favored for use in bighorn sheep ranges. These cuts will focus on the smaller trees in the stand,

F-9: Large conifer seed trees (three to seven trees per acre) will be left where practical as wildlife shelter on south facing slopes of big game winter ranges to ensure the succession of quality snags.

F-10: An average of three to seven trees per acre of the largest nonhazardous snags, particularly those adjacent to openings and open water will be left on commercial sale areas.

F-11: Sale areas with less than 15 percent ground cover in the understory on critical deer and elk winter ranges will be seeded using a mixture of grasses, forbs, and shrubs and will be paid for with wildlife funds.

F-12: Minimum of 180 year rotation will be allowed for pinyon-juniper stands. Other species will be managed on a rotation of sufficient length to produce cavity trees for flickers and small owls.

F-13: A minimum 50 foot buffer will be maintained along all riparian areas.

F-14: Snags with existing cavities or nests will be priority for retention.

F-15: Snag diameter for retention will be the largest class on site and will be retained in clusters if possible.

F-16: If site potential allows, will retain 5-7 snags per acre, preferably in a clumped configuration.

F-17: If possible, will retain at least 15 live trees per acre for future snag recruitment. Recruitment snags will not have to be structurally superior; live tree with forked and broken tops may be preferred.

F-18: Do not disturb or destroy active or inactive nests of raptors which are reused.

F-19: Avoid heavy equipment use in stands of cottonwood, willow, and alder. If heavy equipment use is necessary, allow on a case by case basis and mitigate for adverse impacts.

F-20: Allow dead and down collection of cottonwood for personal use.

F-21: Protect seed and important wildlife habitat trees in pinyon-juniper stands.

F-22: Allow removal of pinyon-juniper encroachment utilizing mechanical, biological, and chemical treatments. Allow tree harvesting for Christmas trees and transplants other woodland products and biomass reduction.

F-23: Minimize disturbance to the soil such that surface runoff does not result in sediment transport into waterbodies. Concentrate skidding on as few skid trails as needed.

F-24: Limit primary skid trails to 10 percent of the total working area.

F-25: Avoid widespread or random skidding patterns with repeated passes.

F-26: Minimize placement and use of skid trails in ephemeral drainages. If skid trails must be within or cross an ephemeral drainage, additional BMPs are needed to protect water quality.

F-27: Minimize the extent of gouges or trenches upon the ground surface that are created by the skidding of trees or logs.

F-28: On sloping terrain, skid trails shall follow along the land contours and shall be kept to 25 percent grade or less when practical.

F-29: Establish decks at locations where soil disturbance is minimized.

F-30: Maintain as close to normal (pre-construction) streamflow by maintaining depth, width, gradient and capacity of the stream channel at the crossing.

F-31: Perform construction, installation, and removal work during low-water flow if circumstances allow.

F-32: Stabilize the approachways and/or stream crossing locations so sediment is not transported into the stream.

F-33: Approaches to the stream are relatively flat to better control runoff.

F-34: The crossing can be installed at a right-angle (90 degrees) to the stream channel so crossing distance is minimized.

F-35: Any trees removed during these processes will be purchased by the applicant prior to construction. The applicant is responsible for a per-cord fee.

Guidelines for Christmas Tree and Firewood Harvesting

F-36: Vehicle use is restricted to existing roads and trails. Do not drive off road.

F-37: Do not damage adjacent trees.

F-38: When cutting down standing trees, cut the stump 12 inches or less, or as close to the ground as possible.

F-39: Scatter lopped branches at least 50 feet from the stump.

F-40: Do not top a larger tree to obtain a Christmas tree.

F-41: Do not harvest any trees within 100 feet of a spring or creek unless trees are identified for selective removal to meet resource objectives.

F-42: Please pack out your trash as well as trash left by others.

F-43: No harvesting when soils are saturated to a depth of 3 inches to prevent damage to roads.

F-44: The GJFO closes annually to firewood harvesting on November 30. Firewood harvesting reopens in the spring based on road conditions.

LIVESTOCK GRAZING

Standard Operating Procedures

LG-1: Follow the Grazing Guidelines established along with the Colorado Standards for Rangeland Health.

LG-2: Protect seedings from grazing for one full year and through the growing season of the second year. Some seedings established during adverse weather cycles may need protection for a longer period.

LG-3: New fences shall be constructed to BLM standards allowing for the appropriate wildlife passage. Fences constructed will comply with applicable wildlife fence standards, such as those described in BLM Handbook H-1741-1, Fencing (BLM 1989).

LG-4: Bird and wildlife ramps shall be installed in all troughs.

LG-5: Access routes to functioning range improvements shall be retained to allow for periodic maintenance and prevent cross country travel.

LG-6: Continue to maintain range improvement projects to support proper livestock management including optimal distribution.

LG-7: Rangeland and vegetation monitoring will be conducted to detect changes in grazing use, trend, and range conditions. These data will be used to support and direct grazing management decisions. These efforts will help ensure that livestock grazing meets objectives for rangeland health and resolves conflicts with wildlife or other resources.

LG-8: Grazing management decisions will be based on inventory and monitoring data, both short-term and long-term, which will be jointly developed by grazing permittees and the appropriate federal land management agency.

LG-9: All water development activities for livestock grazing use that exceed the minimum depletion level established by US Fish and Wildlife Service must comply with all US Fish and Wildlife Service fees and prescribed mitigations to offset water depletion in the Colorado River.

LG-10: Surface-disturbing activities will be coordinated with livestock grazing permittees to minimize the effects of the surface disturbance on other approved operations. To the maximum extent practicable, this effort will include consulting on scheduling of operations to mutually minimize effects.

LG-11: Any damage to the function of range improvements (e.g., fence damage, cattle guard cleaning, livestock loss) from other approved operations will be repaired immediately or remedied by the operator causing the damage.

LG-12: Well pads, pits, and other facilities that could be hazardous to livestock will be fenced to keep livestock out and the fences maintained in functioning condition.

Best Management Practices

LG-13: Development of springs and seeps or other projects affecting water and associated resources shall be designed to maintain the associate riparian area and assure attainment of standards.

LG-14: Disturbance to established rangeland study sites shall be avoided to provide for the continuation of monitoring efforts which involves comparisons of data to previous records of that site.

LG-15: Facilities shall be constructed a minimum of 0.125-mile from livestock gathering spots such as water sources and gathering facilities to prevent disruption of the use of these facilities and potential damage to the facility by livestock.

LG-16: Exclosures may be established in areas where the vegetative potential of the area is questionable or to compare the effectiveness of grazing management.

LG-17: Livestock grazing could be used as an intensively managed prescriptive grazing practice to control cheatgrass and noxious or invasive weeds.

LG-18: Use grazing systems that contain rotation, deferment, and rest to produce a mosaic of habitat patches and increases the density, height and distribution of native plants.

LG-19: Rotate livestock use areas year to year – avoid grazing in the same place at the same time each year.

LG-20: Avoid re-grazing the same plants in one growing season.

LG-21: Adjust grazing seasons to benefit both warm and cool season grass species by providing periodic rest from grazing for each type.

LG-22: Avoid grazing an area during the spring and fall period in one year's time.

LG-23: Allow for adequate litter cover following grazing use to protect soil surface and enhance soil moisture retention.

LG-24: For spring grazing ensure livestock are removed early enough so that sufficient soil moisture remains for plant recovery.

LG-25: Allow for rest/recovery periods before or after grazing during critical growth periods. Recovery shall include the production of seed to allow for the regeneration of desirable plant species.

LG-26: Occasional grazing use during the dormant season will provide rest during the growing season and will allow plants to recover.

LG-27: Adjust intensity, timing and/or duration of grazing during periods of drought.

LG-28: Manage livestock grazing, including dormant season use, to ensure adequate residual grass cover remains when soil moisture or wildlife habitat is of concern.

LG-29: Proper utilization allows stubble for root and crown protection, litter accumulation for organic matter contribution to the soil, cover and habitat for wildlife and forage availability for grazing animals utilizing the area. Generally utilization levels shall be based upon recovery periods and other resource objectives. Suggested utilization guidelines would be:

a) In areas Not Meeting Land Health Standards and cattle grazing is a causative factor, limit utilization on key species to 30 percent during the critical growth period and 40percent during the dormant season.

b) In areas Meeting Land Health Standards limit utilization on key species to 40 percent during the critical growth period and 50 percent during the dormant season.

c) If wildlife/livestock conflicts exist annual utilization would be read before the next seasons growth begins to account for all uses and demands on the plants.

d) The exception to these guidelines is if the permittee can convince the authorized officer that they have the knowledge, ability and commitment to implement a grazing system that should result in improvements to the ecosystem.

LG-30: Limit use in areas of valuable woody plants during times when they are selected.

LG-31: Avoid the following grazing management practices:

a) Long seasonal use with no recovery time;

b) Heavy use that stresses plants;

c) Little or no re-growth before winter - little stubble for root crown protection;

d) Use at the same time every year - repeating the stress;

e) No rest or growing season recovery - little recovery with long seasons of use;

f) Little or ineffective herding;

g) Salt placed in the same locations year after year;

h) Livestock left behind after pasture moves; and

i) Grazing during the critical growth period year after year.

LG-32: When using livestock to control noxious or invasive weeds, match animal dietary preference or tolerance to the target species.

LG-33: Use the target weed's phenology when developing a grazing strategy.

LG-34: Manage heavy grazing on target weed species to account for any intermixed desirable species.

Vegetation/Riparian Zone Grazing Management Guidelines

LG-35: To reduce negative impacts to grazing, determine the critical period(s) of a riparian site, and then limit grazing during the critical period(s) to no more often than once every three or four years. Critical periods and impacts are likely to be either in late spring-early summer, when stream banks are more easily broken down by trampling; or late summer-early fall, when excessive browsing man damage vegetation. Each site has its own critical period that shall be

individually determined. Important critical period variables are soil moisture, plant species composition, and animal behavior patterns. Site may be grazed every year if use does not occur during the critical period(s). Extended periods of rest or deferment from grazing may be needed to enable recovery of badly degraded sites. Graze earlier in the season when cattle use uplands (Mosley et al. 1997)

LG-36: To maintain stream bank stability, limit cattle access to surface water when adjacent stream banks and shorelines are overly wet and susceptible to trampling and sloughing. Stream bank trampling can often be reduced by capitalizing on the natural foraging behavior of cattle. Cattle generally avoid grazing excessively wet sites or in cold-air pockets. Cattle seek out wind-swept ridges, and they graze on upland forage when it is more palatable than forage in riparian areas. Avoid hot season grazing of riparian areas. (Mosley et al. 1997)

LG-37: To graze a site more than once per growing season, moisture and temperature conditions shall be conducive to plant growth. For such sites, allow a recovery period of at least 30 to 60 days, depending on vegetation type, before re-grazing within the same growing season. Grazing more often and for shorter periods-that is, 3 weeks or less at a time-is preferable to fewer and longer grazing periods. (Mosley et al. 1997)

LG-38: To control the timing, frequency, and intensity of cattle grazing, consider creating smaller riparian pastures with similar, or homogonous, features. Adjusting timing, frequency, and intensity of grazing in individual pasture units is more important than adopting a formalized grazing season. (Mosley et al. 1997)

LG-39: To protect stream banks, prevent cattle from congregation near surface waters; fencing, supplemental feeding, and herding methods work best. Provide remote watering systems for cattle. Manage the riparian area as a separate and unique pasture. Inappropriate cattle grazing will usually first be evidenced by excessive physical disturbance to stream banks and shorelines (Mosley et al. 1997)

LG-40: On riparian areas that are determined to be non-functioning or functioning at risk as a result of livestock grazing impacts, limits of bank disturbance will be determined and included within the *Terms and Conditions* of the Grazing Permit.

LG-41: In general, utilization standards in riparian areas should be no more than 30 percent use of current the year's growth on woody species and a minimum of 4 inches of stubble height shall remain at the end of the grazing period.

LG-42: To protect stream banks, discourage trailing up and down the channel by placing logs across trails, perpendicular to the stream channel.

LG-43: Adjust intensity, timing and/or duration of grazing during periods of drought.

References

BLM Handbook H-1741-1, Fencing (BLM 1989)

Mosley, J.C., P.C. Cook, A.J. Griffis, and J. O'Laughlin. 1997. Guidelines for Managing Cattle Grazing in Riparian Areas to Protect Water Quality: Review of Research and Best Management Practices Policy. Report No. 15. University of Idaho, Moscow, ID. December 1997.

RECREATION (REC)

Standard Operating Procedures and Best Management Practices

GJFO recreation management relies heavily on community partnerships and employs the basic concept of the four E's - Engineering, Education, Enforcement and Evaluation. Partnerships and the four E's provide an effective recreation management framework. The following SOPs and BMPs are categorized using that framework. The following SOPs and BMPs are arranged to correspond with those four general categories.

Partnerships

REC-1: Develop and maintain partnerships with recreation-based organizations and service providers. These partnerships should engage partners in the planning, implementation and monitoring of recreation opportunities and facilities on BLM-managed public lands.

REC-2: Administer ERMAs and SRMAs (and associated RMZs) cooperatively through partnership agreements (example memorandum of understanding) between managing partners (e.g. recreation organizations, municipal governments) and the BLM GJFO that outline administrative roles and responsibilities.

REC-3: Consider administering specific recreation facilities (e.g. campgrounds) cooperatively through partnership agreements with partner organizations or businesses.

Recreation Facilities and Trails (Engineering)

REC-4: Utilize current GJFO "Trail Development Process" and "Trail Design Criteria" guidance (see Appendix M) to create and maintain a sustainable recreational route system that helps achieve recreation and other resource use objectives while protecting natural and cultural resources. (BLM 2014 and 2005).

REC-5: Reroute or close trails that create resource damage and/or trespass on private property.

REC-6: For recreation facility development utilize the BLM Guidelines for a Quality Built Environment manual (BLM 2010)

REC-7: Develop and maintain recreation visitor use data monitoring systems to track visitor use trends.

REC-8: Work with targeted recreation users and managing partners to protect and enhance targeted recreation opportunities in ERMAs and SRMAs.

REC-9: Work with partners (e.g., recreation organizations, municipal governments) to develop connectivity to adjoining urban trails to provide safe access to public lands, alternative transportation options, and improved recreational opportunities.

REC-10: In ERMAs, avoid management actions that attract or concentrate recreation use at sites of other authorized uses (e.g. camping near stock ponds.)

REC-11: In ERMAs, locate new recreation facility developments so as to mitigate recreation impacts on other resource uses and developments.

REC-12: In SRMAs, locate new developments for other resource uses so as to mitigate impacts to targeted recreation resources.

REC-13: Develop recreation facilities at primary access points that may include, but are not limited to, parking/staging areas that accommodate targeted users, vault toilets, informational kiosks and shade shelters.

REC-14: Work with private landowners and recreationists to avoid trespass issues where public and private lands interface.

REC-15: Work with community partners, and utility permit applicants to minimize the impact to recreation from utility developments in ROW corridors and/or Renewable Energy Emphasis areas (wind and solar) that overlap ERMAs and SRMAs.

REC-16: Use guidance from EPA "Best Management Practices for Lead at Outdoor Shooting Ranges" (EPA 2005) in areas where intensive recreational target shooting occurs.

Recreation Information and Education

REC-17: Provide clear, consistent, and standardized messaging to the public regarding recreation opportunities and regulations on BLM-managed public lands. This messaging should be included in digital communications (websites,

social media), print media (brochures, kiosk displays), signage, and personal contacts with recreation customers (office visits, phone calls, field contacts).

REC-18: Utilize information portals (e.g. information/education kiosks, signs, brochures, maps, websites) and management strategies (i.e. onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about targeted recreation opportunities in ERMAs and SRMAs.

REC-19: Clearly identify primary access points to recreation areas both onsite (signs and developed recreation facilities) and offsite (digital and print media, recreation service providers.)

REC-20: In ERMAs, utilize information portals (e.g. information/education kiosks, signs, brochures, maps, websites) and management strategies (e.g. onsite staff and/or volunteer information, education, and enforcement patrols) to inform recreation participants about other resource uses in the area, and appropriate recreation behavior that mitigates impacts to operations and facilities of other resource uses.

REC-21: Work with cooperators and partners to provide visitor information and education resources that help achieve area recreation management objectives and the objectives of adjoining or overlapping designations (e.g. WSAs, LWC units, ACECs, wildlife emphasis areas and RMAs).

REC-22: Work with managing partners (local clubs, businesses and municipalities) to develop appropriate marketing strategies and informational materials (e.g. maps, brochures) that help achieve specific recreation management objectives.

REC-23: Clearly identify RMA/RMZ boundaries using a variety of communication tools and/or barriers including, but not limited to, digital and/or print media, signs and/or fencing, and natural topographic features. Boundary identification strategies should generally employ the most practical, cost-effective, and least obtrusive materials and methods that are still effective for attaining desired management results. For example, periodic boundary identification signs may be sufficient to contain use along portions of an RMZ boundary. If signing alone proves ineffective, fencing or other physical barriers can be installed.

REC-24 : In areas where intensive recreational target shooting occurs, work with volunteers and managing partners to develop and communicate shooting range safety rules, etiquette and stewardship messages.

REC-25: Promote the seven standard principles of Leave No Trace (www.lnt.org) outdoor ethics through print and electronic media, and through

personal communications with recreationists participating in non-motorized recreation activities on BLM-managed public lands.

REC-26: Promote the principles of Tread Lightly (www.treadlightly.org) outdoor ethics through print and electronic media, and through personal communications with recreationists participating in recreation activities on BLM-managed public lands.

Recreation Monitoring (Enforcement and Evaluation)

REC-27: Special Recreation Permits will contain noxious weed management stipulations (e.g., pre-event inventories to avoid infested areas, event management to avoid or isolate activities that could cause weed introduction or spread, monitoring and treatment of infestations exacerbated by the activity, and other appropriate noxious weed management stipulations).

REC-28: Lands may be temporarily closed to other uses during recreation events performed under special recreation permit (e.g., equestrian endurance rides or motorcycle events).

REC-29: In SRMAs, monitor outcome attainment and preferences through customer assessments (e.g. focus group interviews of visitor studies) on five year intervals or as funding allows. Monitor activity participation and RSCs annually during the primary use season of mid-April through October.

REC-30: Manage recreation to minimize or prevent adverse effects to biological and cultural resources using the Recreation Guidelines to Meet Public Land Health Standards on Bureau of Land Management Lands in Colorado (BLM 2000).

REC-31: Ensure all recreation management actions in areas overlapping ACECs help protect the relevance and importance criteria of those ACECs. Conduct social and physical monitoring to determine if recreation use is consistent with specific ACEC goals, objectives and resource protection measures. Promote stewardship of ACEC resources by providing opportunities for visitors to learn about those resources.

REC-32: Adapt specific recreation regulations (e.g. camping stay limits) if monitoring indicates that recreation use is causing unacceptable resource damage or is compromising achievement of recreation or other resource use objectives.

REC-33: Coordinate with partner groups to complete resource monitoring requirements.

References

BLM. 2000. Recreation Management Guidelines to Meet Public Land Health Standards on Bureau of Land Management Lands in Colorado. Lakewood, CO. Bureau of Land Management. December 2000. Available online at: http://www.blm.gov/co/st/en/BLM_Information/newsroom/2000/recguidefnr/guide_final.html)

BLM. 2005.Grand Junction Field Office. "Trail Design Criteria."

BLM. 2010. Guidelines for a Quality Built Environment, First Edition, December 2010

BLM. Grand Junction Field Office, 2014. "Trail Development Process." (in progress)

United States Environmental Protection Agency. 2005. Best Management Practices for Lead at Outdoor Shooting Ranges, EPA-902-B-01-001 Revised June 2005 Region 2

LANDS AND REALTY (LR)

Standard Operating Procedures

LR-1: Power lines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996" (Avian Power Line Interaction Committee 2006). Right-of-way applicants shall assume the burden and expense of proving that proposed pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the BLM Authorized Officer.

LR-2: Rights-of-way and other lands and realty authorizations, including power lines, pipelines, transmission corridors, energy development sites and related development, and gravel pits, will contain noxious and invasive plant management terms or stipulations for all ground-disturbing actions. These will include conducting a pre-disturbance noxious weed inventory, designing to avoid or minimize vegetation removal and weed introduction or spread, managing weeds during the life of the right-of-way or authorization to prevent or minimize weed introduction or spread, abandoning the right-of-way or authorization to establish competitive vegetation on bare ground areas, and monitoring revegetation success and weed prevention and control for a reasonable number of years.

LR-3: Rights-of-way will be constructed to avoid physical damage to range improvements and rangeland study areas.

LR-4: The right-of-way holder shall notify the BLM Authorized Officer at least 48 hours prior to the commencement construction, reclamation, maintenance, or any surface-disturbing activities under this grant. LR

LR-5: Copies of the right-of-way grant with the stipulations shall be kept on site during construction and maintenance activities. All construction personnel shall review the grant and stipulations before working on the right-of-way or permitted area.

LR-6: All facilities shall be labeled with the authorization number, operator, and contact information.

LR-7: No signs or advertising devices shall be placed on the premises or on adjacent public lands, except those posted by or at the direction of the BLM Authorized Officer.

LR-8: The Holder shall promptly remove and dispose of all waste caused by its activities. The term "waste" as used herein means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, petroleum products, ashes, and equipment. No burning of trash, trees, brush, or any other material shall be allowed.

LR-9: The Proponent (applying for new ROW) shall notify all existing right-of-way holders in the project area prior to beginning any surface-disturbance or construction activities. The Holder shall obtain an agreement with any existing right-of-way holders or other parties with authorized facilities that cross or are adjacent to those of the holder to assure that no damage to an existing right-of-way or authorized facility will occur. The agreement(s) shall be obtained prior to any use of the right-of-way or existing facility.

LR-10: The Holder shall participate in the formation of a Road User's Association for the road if new rights-of-way are granted for use of the existing road. All new users will be required to join the association.

LR-11: The Holder will provide a performance bond for the authorized facility, acceptable to the BLM Authorized Officer, in the amount of $(_) that must be maintained in effect until restoration of the right-of-way has been accepted by the BLM Authorized Officer. The bond shall be furnished by the holder within 30 days of signing the grant (___) and shall be applied to all additional authorizations associated with the project as necessary.

LR-12: Incorporate conditions of approval and mitigation measures from the Final Programmatic EIS on Wind Energy Development on BLM-administered Lands in the Western US, as applicable (BLM 2005).

LR-13: Incorporate conditions of approval and mitigation measures from the Solar Energy PEIS, as applicable (*pending completion of Solar PEIS*).

LR-14: All construction activities shall be confined to the minimum area necessary. The exterior boundaries of the construction area shall be clearly flagged prior to any surface-disturbing activities.

LR-15: Existing roads will be used wherever possible. Additional roads shall be kept to the minimum. Route locations must be approved by the BLM prior to construction.

LR-16: When blasting is necessary, the following precautions will be used:

- **a)** In areas of human use, blasting blankets will be used.
- **b)** Landowners or tenants in close proximity to the blasting will be notified in advance of the blasting so that livestock and other property can be adequately protected.
- **c)** Access to the blasting area will be restricted by construction personnel stationed at each end of the area to be blasted.
- **d)** Blasting within 0.25-mile of federally-owned or controlled springs and flowing water wells must be approved in writing by the area manager.
- **e)** No blasting will be permitted within 0.25-mile of historic trails, natural areas, identified archaeological sites, and recreation areas.
- **f)** Powder magazines will be located out of sight or at least 0.5-mile from roads. Loaded shot holes will not be left unattended. Approval from the area manager will be obtained for the magazine locations.

LR-17: **(MLP)** Roads will be constructed and maintained to BLM road standards [BLM Manual 9113 (BLM 2011a)]. All vehicle travel will be within the approved driving surface.

Standard Operating Procedures for Pipeline Projects

LR-18: A preconstruction field conference shall be requested by the grantee at least five working days prior to any construction activities unless otherwise agreed upon by the BLM Authorized Officer.

LR-19: Once the pipeline is constructed, the grantee/operator shall restore the existing roadway to meet or exceed conditions prior to construction. The preconstruction width of the driving surface shall also be restored and erosion control structure installed subject to approval of the BLM Authorized Officer. The grantee/operator shall be responsible for road maintenance from the beginning to completion of operations. This may include, but not be limited to, blading the roadway, cleaning ditches and drainage facilities, dust abatement, or other requirements as directed by the BLM Authorized Officer.

LR-20: Construction width shall include the existing road. The pipeline shall be located two to three feet from the edge of the ditch along the existing road. The existing road shall be on the working side of the trench.

LR-21: The grantee shall accomplish the crossing of the pipeline owned by (company name) in accordance with an agreement between the grantee/operator.

LR-22: Pipeline location warning signs shall be installed within five days of construction completion. Each sign shall be permanently marked with the right-of-way serial number.

Standard Operating Procedures for Geophysical Exploration

LR-23: The operator will furnish a map with the Notice of Intent showing approximate line to be used. A map will also be filed with the Notice of Completion showing the completed line. The map will be of a minimum scale of 0.5-inch equals 1.0 mile.

LR-24: Rehabilitation of disturbed areas is to be done concurrent with the geophysical operations.

LR-25: Blasting or vibrating within 0.25-mile of federally-owned or controlled springs and flowing water wells or cultural resource sites must be approved in writing by the area manager.

LR-26: Plugging of drill holes will conform to the Colorado Reclamation Standards Abandoned Drill Holes Act. Drill hole cuttings will be returned to the hole.

LR-27: No blading or other dirt work will be allowed without written permission from the area manager.

LR-28: Standard Terms and Conditions described in BLM Handbook H-3150-1: Onshore Oil and Gas Geophysical Exploration Surface Management Requirements (BLM 1994 Rev. 2007).

Best Management Practices

LR-29: Coordinate with the Colorado Parks and Wildlife early in the sale process on proposals to sell public land encumbered by a small capacity wildlife water development.

References

Avian Power Line Interaction Committee. 2006. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996. Edison Electric Institute, Avian Power Line Interaction Committee, and the California Energy Commission. Washington, DC, and Sacramento, CA.

BLM. 2011a. H-9113-1 Road Design Handbook. Bureau of Land Management, Washington, D.C.

_____. 1994. BLM Handbook H-3150-1: Onshore Oil and Gas Geophysical Exploration Surface Management Requirements. BLM, Washington, DC. Rev. 2007.

_____. 2005. Bureau of Land Management Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. BLM, Washington, DC. June 2005.

MINERALS AND ENERGY (M&E)

Actions involving minerals and energy are governed by:

- Minerals Leasing Act of 1920 (30 U.S.C 181 *et seq*);
- Federal Oil and Gas Royalty Management Act (30 U.S.C. 1718(b));
- Federal Onshore Oil and Gas Leasing Reform Act (30 U.S.C. 226(g));
- 43 CFR 8900 et seq.
- Federal On Shore Orders 1-7
- 43 CFR 3809 Regulations (Locatable Minerals Management)

Standard Operating Procedures

Standard Operating Procedures are measures that are required in most circumstances. Some are based on laws and policy while others are specific to the planning area to achieve resource management objectives.

Geophysical Exploration

M&E-1: If operations open an existing fence, temporary gates will be installed for use during the course of operations, or the fence will be immediately repaired. On completion of operations, fences will be restored to their original condition or better.

M&E-2: When saturated soil conditions exist on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads, and locations.

M&E-3: For geophysical operations, specialized low surface impact equipment (wide- or balloon-tired vehicles, all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

M&E-4: Prohibit the use of subsurface explosives and vibrosis buggies within 0.25 miles of all spring sources and perennial streams.

M&E-5: Powder magazines will be located at least a mile from traveled roads, unless otherwise authorized after analysis or review. Loaded shot holes and charges will be attended at all times.

M&E-6: Materials or equipment related to project activities (e.g., trash, flagging, lath) will be removed to an authorized disposal site.

M&E-7: Project materials which could be a hazard to public health, safety or resource values will be stored in appropriate secondary containment. No oil or lubricants will be drained onto the ground surface.

M&E-8: Shot-hole cuttings will be returned to the hole, or an alternative plan will be submitted for BLM approval.

Reducing Fluid Mineral Development Footprint

M&E-9: Surface disturbing actions will be sensitive to natural resource protection. When surface disturbance in sensitive areas is unavoidable, they will be minimized to the greatest extent practicable, especially near drainage features and on soils mapped as being saline (see Glossary).

M&E-10: Utilities such as gas and water lines, power lines and roads will be located in common corridors where practicable.

Administrative / General and Planning

M&E-11: **(MLP)** Consider site specific soil and vegetative characteristics and reclamation potential in project design and layout.

M&E-12: **(MLP)** Design and construct energy service roads to a safe and appropriate standard, no higher than necessary to accommodate their intended use.

M&E-13: **(MLP)** Locate and construct roads and other linear facilities to follow the contour of the landform or mimic lines in the vegetation.

M&E-14: **(MLP)** A pre-construction meeting will be held with the BLM before and to facilitate implementation of plans and ensure compliance with stipulations or conditions of approval. The BLM will be notified at least 48 hours prior to construction or reclamation work.

M&E-15: By November 1 each year, companies will provide georeferenced spatial data depicting as-built locations of all facilities, wells, roads, pipelines, power lines, reservoirs, discharge points, and other related facilities to the BLM for all Master Development Plans where construction and development have been completed.

M&E-16: Where winter range areas are not protected by lease stipulations, operations such as construction, drilling, completion, work-overs and other

intensive activities will be avoided from January 1 to March 1 to minimize impacts to wintering big game.

M&E-17: Before activities take place, every pad, access road, or facility site will have an approved surface drainage plan (storm water management plan) for establishing positive management of surface water drainage, to reduce erosion and sediment transport. The drainage plan will include adaptive BMPs, monitoring, maintenance and reporting. BMPs may include run-on/run-off controls such as surface pocking or revegetation, ditches or berms, basins, and other control methods to reduce erosion. Pre-construction drainage BMPs will be installed as appropriate.

M&E-18: **(MLP)** Before surface disturbance, agreements will be obtained with all existing rights-of-way holders, authorized users and pipeline operators affected by permitted activities. If Agreement cannot be reached, the operator will comply with the law or regulations.

M&E-19: Disclosure of hydraulic fracture fluids per COGCC rule 205A will be done using FracFocus.org 30 days following the conclusion of the hydraulic fracturing treatment and in no case later than 90 days after the commencement of such hydraulic fracturing treatment.

Pre-Construction

M&E-20: Stakes, snow fence or flagging will be installed to mark boundaries of permitted areas of disturbance, including pre-construction BMPs and soils storage areas and be maintained in place until final construction cleanup is completed.

M&E-21: **(MLP)** Pre-construction drainage BMPs will be installed as appropriate, per the approved surface/storm drainage water management, plan to protect stream drainages and to reduce erosion and sediment transport.

M&E-22: **(MLP)** Surveys for raptor nests, sensitive plant and animal species and cultural resources will be conducted prior to construction activities following BLM survey standards. Survey results will be submitted to the BLM for analysis and recommendations before project approval.

Construction

M&E-23: **(MLP)** All routes shall be built and maintained to BLM Manual Section 9113 standards for road shape and drainage features (BLM 2011a) or where appropriate BLM Manual Section 9116 standards for primitive roads. For drainage crossings, culverts should be sized for the 50 year storm event with no static head and to pass a 100-year event without failing. Site specific conditions may warrant BLM to require designs for larger events (e.g. 75-100 year storm events). Large culverts and bridges shall be designed and constructed per BLM Manual 9112 (large culverts and bridges) (BLM 2009a). Large culverts and bridges shall be designed to pass a 100-year storm event (minimum).

M&E-24: As detailed in the site plan for surface/storm water management, drainage from disturbed areas will be confined or directed to minimize erosion, particularly within 100 feet of all drainages. No runoff, including that from roads, will be allowed to flow into intermittent or perennial waterways without first passing through sediment-trapping mechanisms such as vegetation, anchored bales or catchments.

M&E-25: **(MLP)** Topsoil stripping will include all growth medium present at a site (following initial clearing of large trees, etc.), as indicated by color or texture. Stripping and storage depth may be specified during the onsite inspection. All stripped topsoil /growth medium will be salvaged, segregated and stored in a manner that extends biological viability and protects it from loss. Topsoil and all growth medium will be replaced prior to seedbed preparation. No topsoil will be stripped or segregated when soils are saturated or frozen below the stripping depth.

M&E-26: **(MLP)** Access roads requiring construction with cut and fill will minimize surface disturbance and consider the character of the landform's contours, visual contrasts, the cut materials, the depth of cut, where the fill material will be deposited and other resource concerns.

M&E-27: **(MLP)** Fill material will not be cast over hilltops or into drainages without BLM approval.

M&E-28: **(MLP)** When saturated soil conditions existing on access roads or location, or when road rutting becomes deeper than 3 inches, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads and locations.

M&E-29: **(MLP)** Construction activities at drainage crossings (e.g., burying pipelines, installing culverts) will be timed to avoid high flow conditions. Construction activities that affect stream flow will consist of either a piped stream diversion or the use of a coffer dam and pump to divert flow around the disturbed area.

M&E-30: **(MLP)** When activity in a wetland is unavoidable, the operator will reduce impacts through the use of oak or HDP mats and will restore all temporarily disturbed wetlands or riparian areas, consulting with the BLM to determine appropriate mitigation, including verification of native plant species to be used in restoration.

M&E-31: **(MLP)** All stream crossings affecting perennial streams or streams supporting riparian habitat shall be professionally engineered (design, construction, and maintenance).

M&E-32: **(MLP)** Where the access road crosses small drainages and intermittent streams not requiring culverts, low water crossings shall be used.

The road will dip to the original streambed elevation of the drainage and the crossing will prevent any blockage or restriction of the existing channel. Material moved from the banks of the crossing will be stockpiled nearby for later use in reclamation. Gravel, riprap, or concrete bottoms may be required in some situations.

M&E-33: **(MLP)** All pipeline welds within 100 feet of a perennial stream will be x-rayed to prevent leakage into the stream. Where pipelines cross streams that support Federal or State-listed threatened or endangered species or BLM-listed sensitive species, additional safeguards such as double-walled pipe, and remotely-actuated block or check valves on both sides of the stream may be used.

M&E-34: **(MLP)** Water from hydrostatic testing of pipelines will be filtered of sediments prior to discharge. Energy dissipating methods such as straw-bales, wattles, and vegetative buffers will be in place before any discharge of water.

M&E-35: **(MLP)** Baseline information of channel characteristics and riparian vegetation present must be documented before actions are permitted to disturb riparian areas and the stream channel.

Drilling

M&E-36: **(MLP)** Pits that may contain liquid, such as reserve pits, produced water pits, frac-water pits, cuttings trenches (if covered by water/fluid), and evaporation pits, will install and maintain netting to prevent entry or use by migratory birds. They will be fenced on three sides before drilling activity and closed off on the fourth side after drilling is completed.

M&E-37: If any pit that may contain liquid is constructed with a slope steeper than 3:1, or if the pit is lined, escape ramps will be installed every 50 feet along the pit slope and at each corner to allow escape by livestock and wildlife

M&E-38: Fluids will be confined to pits and all pits that may contain liquids will be lined to protect groundwater. Liners will be maintained in good condition, with no tears or holes, until they are removed when the reserve pit is closed.

M&E-39: Pits will be constructed so that water will not run into them. Fluid levels will be maintained below 2 feet of the lowest point of containment.

Utilization and Production

M&E-40: Operations will not damage, disrupt or interfere with water flows and/or improvements associated with springs, wells, or impoundments.

M&E-41: Regularly scheduled road maintenance will include, but not be limited to, crown or slope reconstruction, clean-out of ditches, culverts and catchments, replacement of the road surface and dust abatement.

M&E-42: Well pads and facilities will be kept free of unnecessary equipment, trash and other materials not in current use.

M&E-43: Pits will be promptly drained, tested, closed and reclaimed according to local state and federal regulations.

M&E-44: Dust from vehicular traffic, equipment operations, or wind events will be controlled as needed. No application of surfactants or dust agents will proceed without BLM approval. In areas with soils mapped as Mancos shale, application of water on native road surfaces will be limited, to minimize mobilization of selenium. In such areas, alternate dust abatement measures such as proper road surfacing and maintenance, and speed limits will be used, subject to BLM approval.

M&E-45: Noise will be minimized by methods such as closed compressor buildings to comply with COGCC standards for noise.

M&E-46: **(MLP)** Pipeline warning signs permanently marked with the operator's and owner's names (emergency contact) and purpose (product) of the pipeline will be installed within five days of construction completion and before use of the pipeline for transportation of product.

M&E-47: All production equipment with a chimney, vent, or stack shall be fitted with a device to prevent birds from entering or perching on the chimney, such as an excluder cone or equivalent.

M&E-48: Production facilities will be located and arranged to facilitate safety and maximize areas to be reclaimed.

M&E-49: **(MLP)** All above ground facilities should be painted a natural color selected from the BLM Standard Environmental Color Chart to minimize contrast with adjacent vegetation and/or rock outcrops. Color(s) should be selected in the field at the proposed project location and should be planned for the season with the greatest number of viewers. Selected color(s) should be one to two shades darker than those naturally occurring in the background landscape (this will also help with the effects of fading over time). The operator may need to paint drill rig anchors and those minor working tips and edges of production facilities that are subject to OSHA safety requirements a red, yellow, or orange color.

M&E-50: Standard secondary containment shall hold 110 percent of the capacity the largest single tank it contains and be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours. Earthen berms must be compacted and of fine material that will prevent seepage of any spill to surrounding area.

M&E-51: All tanks with a capacity of ten (10) barrels or greater shall be labeled or posted with the following information: A. Name of operator; B. Operator's emergency contact telephone number; C. Tank capacity; D. Tank contents; and E. National Fire Protection Association (NFPA) Label. Smaller chemical storage shall be labeled with contents and NFPA label.

M&E-52: All liquids management hoses will be stored inside secondary containment when not in use.

M&E-53: **(MLP)** All open top tanks, catchments or secondary containment vessels will be equipped with sturdy metal screening to prevent access to wildlife of all sizes to prevent entrapment and drowning of small wildlife.

Site Stabilization, Reclamation and Monitoring

M&E-54: Road and pipeline reclamation, including seedbed prep and seeding of temporarily disturbed areas will be completed within 30 days following completion of construction.

M&E-55: **(MLP)** Following completion of pad construction, topsoil storage piles, stormwater control features, and cut-and-fill slopes will be temporarily seeded, to stabilize the materials, maintain biotic soil activities, and minimize weed infestations. When this is not feasible, disturbed surfaces must be stabilized using other methods like hydro-mulch or erosion matting while vegetation is establishing. Seedbed preparation is not generally required for topsoil storage piles or other areas of temporary seeding.

M&E-56: Interim reclamation includes recontouring and revegetating the entire portion of the disturbed area except that part of the well pad needed for production activities.

a) It will be completed within six months following completion of the last well planned for the pad or after a year has passed with no new wells drilled on the pad. All areas unnecessary to production activities will be revegetated, including the area within the remaining rig anchors. In special cases, an exception to this will be requested.

b) Before interim reclamation is scheduled, the operator will meet with BLM to inspect the disturbed area, review the existing reclamation plan, and agree upon any revisions to it.

c) All parts of the area unnecessary for long-term operations will be reshaped to blend with natural topography, covered evenly with topsoil and a seedbed prepared.

d) For cut-and-fill slopes, initial reclamation will typically consist of moving fill material back into cuts, back-filling and reshaping to achieve the configuration specified in the reclamation plan. Compacted areas will be well ripped in two passes at perpendicular

directions. In fragile or loose soils, compaction techniques such as tread-walking may be necessary to prevent high erosion hazard. Topographic contours will be reshaped to blend with natural topography. These may include berms and swales to manage water drainage, support revegetation, mitigate visual impacts and maximize natural appearances.

M&E-57: Seedbed Preparation. Good seedbed preparation is key to soil stabilization, moisture infiltration, and improving the chances for revegetation success.

a) Following contouring, backfilled or ripped surfaces will be covered evenly with topsoil.

b) Within 24 hours of broadcast seeding, the spread topsoil will be roughened by a method such as pitting, raking or harrowing before seeding, to break up any crust that has formed and ensure good seed-to-soil contact.

c) To control erosion and enhance vegetative establishment on slopes steeper than 3:1, or to create a more natural looking landscape in areas of visual sensitivity, seedbed preparation may include pocking or pitting the soil material to form microbasins scaled to the site and materials. These microbasins will be constructed in irregularly spaced and irregularly aligned rows with an orientation perpendicular to the natural flow of runoff down a slope.

d) Requests to use soil amendments, including fertilizer and soil conditioners, will be submitted to the BLM for approval. Submittal will include basic information on the amendment and the purpose of its use.

M&E-58: Seed Mixes. Seed mixes will typically consist of native, early-succession species, or species with the ability to establish quickly in disturbed soil areas. Non-native species considered desirable under special circumstances, such as sterile non-native grasses will be submitted to the BLM for approval before use.

a) Seed mix composition will be calculated based on the number of Pure Live Seed per pound rather than percentage by weight. Seeding rate in pounds per acre will be based on the total number of Pure Live Seeds per square foot.

b) Weed free seed will be used. It will contain no noxious, prohibited, or restricted weed seeds and no more than 0.5 percent by weight of any other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. To maintain quality, purity, germination, and

yield, only tested, certified seed for the current year, with a minimum germination rate of 80 percent and a minimum purity of 90 percent will be used unless otherwise approved by BLM in advance of purchase. Seed shall be viability-tested in accordance with State law(s) and within nine months before purchase.

c) Seed mixes for temporary use may contain one or more sterile hybrid grasses or other non-native cover crop in addition to native perennial species, if pre-approved by BLM.

d) For private surfaces, BLM-approved seed mixes will be recommended, but the surface landowner has ultimate authority over the seed mix to be used in reclamation.

e) Seed tags or other official documentation of the seed mix will be supplied to the BLM for approval at least 14 days before the date of proposed seeding. Seed that does not meet the above criteria will not be applied to public lands. A Sundry Notice describing the completed work, the weed-free certification, and the seed tag(s) will be submitted BLM within 30 days after seeding.

M&E-59: Seeding Procedures

a) Seeding will be conducted no more than 24 hours following completion of final seedbed preparation (see Seedbed Prep).

b) Where practical, seed will be planted by drill-seeding to a depth of 0.25 to 0.5 inch along the contour of the site. Drill seeding will be followed by culti-paction to enhance seed-to-soil contact and prevent losses of both. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover. Hydro-seeding and hydro-mulching may be used in temporary seeding or in areas where drill-seeding or broadcast-seeding/ raking are impracticable. Hydro-seeding and hydro-mulching must be conducted in two separate applications to ensure adequate seed-to-soil contact.

c) If interim revegetation is unsuccessful, reseedings will be repeated annually until satisfactory vegetative cover has been achieved. Requirements for reseeding of temporary areas will be considered on a case-by-case basis. Seeding will be considered successful when the site is protected from erosion and revegetated with a vigorous, self-sustaining, and diverse cover of native (or otherwise approved) plant species. BLM shall not require reseeding during periods that have proven less than optimal.

M&E-60: Mulch

a) Mulch will be applied within 24 hours following completion of seeding. Where areas have been drill- or broadcast-seeded and raked, certified weed-free straw or certified weed-free native grass hay mulch will be crimped into the soil. Hydro-mulching may be used in areas of interim reclamation where crimping is impractical, in areas of interim reclamation that were hydroseeded, and in areas of temporary seeding regardless of seeding method.

b) Mulch will not be applied in areas where erosion potential necessitates use of a biodegradable erosion-control blanket (straw matting).

M&E-61: Cut and fill slopes will be protected against erosion by contour grading, microbasins or other measures approved by the BLM. Well anchored BMPs such as biodegradable matting, weed-free bales or wattles may also be used on cut-and-fill slopes and along drainages to protect against soil movement.

M&E-62: The reclaimed pad will be protected from disturbance by a fence to exclude livestock grazing for the first two growing seasons or until seeded species are firmly established, whichever comes later. Seeded species will be considered firmly established when perennial grass and forb species are at least 80 percent cover of that of the surrounding or reference area.

M&E-63: Monitoring. Because weed and reclamation management activities are components of a long-term process, monitoring and reporting are integral to and long-term commitment to land health.

a) All sites considered as "operator reclamation in progress" will be routinely monitored for reclamation success. Reports will be submitted to the BLM by December 1 of each year. Annual reports will include whether accomplishment of objectives appears likely and of not, what corrective actions are proposed.

b) All sites will be routinely monitored for the presence of noxious weeds or other undesirable plant species as set forth in the joint BLM/US Forest Service Noxious and Invasive Weed Management Plan for Oil and Gas Operators. Pesticide Use Proposals will be approved by the BLM before application of herbicides. Annual weed monitoring reports shall be submitted to the BLM by December 1. They will include weed species found (listed by common names), total acres infested with weeds, total acres treated, treatment methods, and total pounds of active ingredient of pesticides applied. All Noxious Weed Inventory and Pesticide Application records for that year will be included with the report.

M&E-64: Visual Resources

a) Every proposal will include a detailed, site-specific description and plan of how it will meet the VRM Class of the area where it is proposed. As much as possible all proposed features will be located and placed to avoid or minimize visibility from travel corridors, residential areas, and other sensitive observation points.

b) To the extent practical, existing vegetation shall be preserved when clearing and grading for pads, roads, and pipelines. Cleared trees and rocks may be salvaged for redistribution over reshaped cut-and-fill slopes or along linear features.

c) Above-ground facilities will be painted a non-reflective natural color selected to minimize contrast with adjacent vegetation or rock outcrops. Colors may be specified by the BLM on a project-by-project basis.

d) Adaptive management techniques may be applied before or after construction to mitigate straight-line visual contrast effects of pad margins, cut and fill slopes, pipeline alignments or other cleared vegetation. This could include additional tree removal along contrasting edges, to create irregularly shaped openings or more natural-looking mosaic patterns, or treating surfaces to mitigate visual contrasts in color or surface texture.

Best Management Practices

BMPs are adaptive state-of-the-art mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. Numerous BMPs for oil and gas development are also incorporated into the general oil and gas development requirements. These include minimizing the number and size of pads through use of multiple well designs and directional drilling; centralizing fracing and water management; minimizing road footprints; centralized support facilities such as tank batteries; collocating utilities and pipelines in common corridors and aligning them along roadways; and implementing intensive interim reclamation practices. The BLM encourages applicants to include in their proposals BMPs such as those identified. If not, BLM will likely require them. Actual BMPs proposed or required during the permitting process to mitigate impacts are expected to vary according to technologies and site-specific needs. BMPs will also be expected to change over the life of a project, being adaptively updated in response to monitoring and changing project conditions. Additional practices could be required or withdrawn, or modified in response to changing activities or future planning. Such adaptive changes to BMPs may generally be implemented without further review or land use planning, but will be analyzed during the NEPA analysis associated with the permitting process. Monitoring and adaptive management practices will help to refine and clarify needed BMPs, consistent with the goals and objectives of this plan.

The listed BMPs are not intended to be complete but to simply offer operators and resource staff examples of commonly used methods to reduce impacts that sometimes result when fluid mineral development occurs. More fluid mineral development BMPs can be found at blm.gov/bmp.

Geophysical Exploration

M&E-65: Specialized low surface impact equipment (wide- or balloon-tired vehicles, all-terrain vehicles) or helicopters may be used for activities in off-road areas to protect fragile soils and or other resource values.

M&E-66: **(MLP)** Pre-mobilization inspection will be performed to insure that all construction equipment and vehicles are clean and free of weeds, weed seed, soil and vegetative material prior to moving onto public lands. Driving through or parking on noxious weed infestations will be avoided.

Reducing Fluid Mineral Development Footprint

M&E-67: **(MLP)** The operator will co-locate multiple wells on well pads and use directional drilling to reduce the number of pads and roads.

M&E-68: **(MLP)** The operator will use centralize completions to reduce the number of truck trips, expense, exhaust emissions and fugitive dust.

M&E-69: **(MLP)** To minimize construction disturbance, truck traffic, dust and other impacts to air quality, soils and wildlife, centralized production facilities will be used for all natural gas liquids and produced water.

M&E-70: **(MLP)** Telemetry will be used to remotely monitor producing wells and facilities to reduce vehicular traffic. During winter closures, unavoidable monitoring and or maintenance activities will be conducted between 9 a.m. and 3 p.m., to the extent practical.

Administrative / General and Planning

M&E-71: **(MLP)** To limit surface disturbance and associated impacts to natural resources, all actions will consider the character of the topography and landform. Deep vertical cuts, long or steep fill slopes and side cuts across steep slopes will be avoided. Rights-of-way will be shared, and structures and facilities will be grouped.

M&E-72: **(MLP)** Drilling will be done with 'closed loop' systems as much as possible, particularly in areas where water resources are most vulnerable, including: soils mapped as alluvial, colluvial, and glacial deposits; near springs and perennial water sources; in important groundwater recharge areas; and within municipal watersheds.

M&E-73: **(MLP)** Chemicals used in the fracturing process will be biodegradable, non-toxic, pH neutral, residual free, non-corrosive, non-polluting and non-hazardous in the forms and concentrations being used. Documentation

in the form of Material Safety Data Sheets will be reviewed by operator for compliance prior to use and Material Safety Data Sheets will remain on site at all times such chemicals are present.

M&E-74: **(MLP)** In municipal watersheds, the operator will develop and implement a Watershed Protection Plan. This plan will characterize baseline hydrologic and hydrogeologic conditions such as but not limited to: water chemistry, water quantity, groundwater flow patterns, connectivity between geologic formations, and communication between surface and groundwater. The operator will collaborate with all watershed stakeholders in development of the plan.

M&E-75: **(MLP)** Adopt BMPs per the BLM and US Forest Service Noxious and Invasive Weed Management Plan for Oil and Gas Operators (BLM and US Forest Service 2007).

M&E-76: Incorporate BMPs and conditions of approval from the Final Programmatic EIS for Geothermal Leasing in the Western US, as applicable (BLM and US Forest Service 2008).

Pre-Construction

M&E-77: **(MLP)** Pre-mobilization inspections will be performed to be sure that all construction equipment and vehicles are clean and free of soils, weeds, weed seed and vegetative material prior to moving onto public lands. Driving through or parking on noxious weed infestations will be avoided.

Construction

M&E-78: **(MLP)** Surface disturbing actions associated with development of fluid minerals will follow Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book) (BLM 2007b).

M&E-79: **(MLP)** Where feasable, entrances to construction locations will be covered by gravel "track pads" to prevent sediment and weed seeds from being tracked in and out of the site.

M&E-80: **(MLP)** In areas of mapped Mancos Shale, saline soils, or fragile soils, groundwater will not be discharged to surface water drainages, to minimize mobilization and transport of selenium, salts and sediment within the Colorado River Basin.

M&E-81: **(MLP)** Where linear disturbance is proposed, edges of vegetation removal will be 'feathered,' to avoid long linear habitat edges and support habitat complexity for wildlife. Additional trees will be removed along such edges to create irregularly shaped openings and more natural mosaic habitat.

M&E-82: **(MLP)** Cleared vegetation smaller than four inches in diameter will be stockpiled, shredded, and salvaged with topsoil. Cleared vegetation larger than four inches in diameter will be scattered over disturbed areas to accomplish reclamation objectives. Excessive vegetation larger than four inches in diameter may be removed from public land or shredded in place to be salvaged with topsoil. A wood cutting permit will be purchased from BLM for material removed from the site.

M&E-83: **(MLP)** Windrowing of Topsoil. [Use where appropriate based on topography – may not be appropriate for pads in steep areas or where pad size should be minimized.] Topsoil shall be windrowed around the perimeter of surface disturbance to create a berm that limits and redirects stormwater runoff and extends the viability of the topsoil per BLM Topsoil Best Management Practices (BLM 2009 PowerPoint presentation available upon request from the Grand Junction Field Office). Topsoil shall also be windrowed, segregated, and stored along disturbed surfaces or linear features for later spreading across the disturbed corridor during final reclamation. Topsoil berms shall be promptly seeded to maintain soil microbial activity, reduce erosion, and minimize weed establishment.

M&E-84: **(MLP)** Cattle guards will be installed and maintained whenever access roads intersect existing gates or fences.

Drilling

M&E-85: **(MLP)** Catalytic converters will be installed on all internal combustion engines to minimize emissions to Tier 3 levels.

M&E-86: Hazardous substances will not be used in drilling, testing, or completion operations, nor introduced at any time into the reserve or cuttings pit.

Utilization and Production

M&E-87: **(MLP)** Secondary containment shall include a study corrugated metal wall to create a basin, be lined with a heavy impervious poly liner and be protected with a gravel surface. Small hoppers or drip pans shall be installed at all loadout connections to catch drips and small leaks.

M&E-88: When special resource values are at risk, such as crucial wildlife areas, companies controlling access into these areas will gate and lock roads or restrict use to authorized users.

M&E-89: Speed control measures will be in place on all project related unpaved roads to reduce fugitive dust.

M&E-90: **(MLP)** Use enclosed tanks instead of open tanks or pits to reduce fugitive VOC emissions.

M&E-91: **(MLP)** Use vapor recovery units on oil, condensate, and produced water storage tanks to reduces fugitive VOCs and recovers BTU-rich vapors for sale or use on site.

M&E-92: **(MLP)** Use and maintain proper hatches, seals, and valves to minimize VOC emissions.

M&E-93: **(MLP)** Optimize glycol circulation and Install Flash Tank Separator (FTS) to capture methane and reduce VOC emissions on glycol dehydrators.

M&E-94: **(MLP)** Replace wet seals with dry seals in centrifugal compressors. Centrifugal wet seal compressor emissions from the seal oil degassing vent can be reduced by the replacement of wet seals with dry seals that emit less methane and have lower power requirements.

M&E-95: Reduce gas leaks and emissions from reciprocating compressors by the economic replacement of rod packing at frequent intervals.

M&E-96: Reduce methane and VOC emissions by installing or replacing high-bleed pneumatic devices with low-bleed pneumatic devices.

M&E-97: Reduce methane emissions by installing plunger lifts and smart automation systems which monitor well production parameters.

M&E-98: Implement a Direct Inspection & Monitoring Program which identifies and cost effectively fixes fugitive gas leaks using Leak Detection, Infrared Camera, Organic Vapor Analyzer, Soap Solution, Ultrasonic Leak Detectors, Measurement, Calibrated Bagging, Rotameters, and/or High Volume Samplers.

Site Stabilization, Reclamation and Monitoring

M&E-99: **(MLP)** During interim reclamation contour land forming will be used to create a visual barrier to the permanent structures location on the site.

M&E-100: **(MLP)** Re-topsoil and revegetate access road cut & fill slopes, backslopes and road shoulders, and borrow ditches. Also, revegetating the travel surface of surfaced roads and turnarounds, where practical. With low traffic roads, this will result in a hardpan, two-track road that is stable and requires less maintenance.

References

BLM. 1992. Handbook H-3042-1: Solid Minerals Reclamation. Release 3-275. BLM, Washington, DC. February 2, 1992. 104 pp.

_____. 2002. Handbook H-3600-1: Mineral Materials Disposal. Release 3-315. BLM, Washington, DC. February 22, 2002. 171 pp.

_____. 2011a. H-9113-1 Road Design Handbook. Bureau of Land Management, Washington, D.C.

BLM and US Forest Service (United States Department of the Interior, Bureau of Land Management, and United States Department of Agriculture, National Forest Service). 2007. Noxious and Invasive Weed Management Plan for Oil and Gas Operators: Grand Junction Field Office and Grand Valley Ranger District. BLM, Grand Junction Field Office, Grand Junction, CO. March 2007.

_____. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development – The Gold Book. BLM/WO/ST-06/021+3071/REV 07. BLM, Denver, CO. 84 pp.

_____. 2008. Record of Decision, Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States – Appendix B. BLM Washington Office. December 2008.

RENEWABLE ENERGY (RE)

Standard Operating Procedures

RE-1: Authorize rights-of-way by applying appropriate BMPs from the BLM Record of Decision for Implementation of a Wind Energy Development Program (BLM 2005), land use restrictions, stipulations, and mitigation measures.

References

BLM (United States Department of the Interior, Bureau of Land Management). 2005. Record of Decision for Implementation of a Wind Energy Development Program and Associated Land Use Plan Amendments. BLM, Washington, DC. December 15, 2005.

TRANSPORTATION AND ACCESS (TA)

Standard Operating Procedures

TA-1: Continue coordination with counties and other agency road entities to promote utilization of best management practices for road maintenance they perform within GJFO boundaries.

Maintain an inventory of existing road and trail systems.

TA-2: **(MLP)** BLM Manual 9113, Roads (BLM 2011a) and BLM Handbook 9113-2, Roads – Inventory and Maintenance (BLM 2011b) will be used to guide all maintenance and road construction designs and requirements. Include definitions for functional road classification and maintenance levels for BLM roads.

TA-3: All highway rights-of-way and other road authorizations will contain noxious and invasive weed stipulations that include prevention, inventory,

treatment, and revegetation or rehabilitation. Road abandonment will include at least three years of post-abandonment monitoring and treatment.

TA-4: All travel management decisions will concur with the Bureau of Land Management, Grand Junction Field Office Travel Management Plan.

Best Management Practices

TA-5: In order to ensure public access and safety, the GJFO shall continue an active road maintenance program employing the use of redesign, blading, brush removal for sight distance as appropriate, scarification, graveling, water barring, low water crossings, spur ditching, seeding and installation/cleaning of culverts.

TA-6: NEPA Requirements – No new NEPA analysis will be required for road maintenance activities within the defined maintenance disturbance/easement footprint, which is defined as previously disturbed or maintained. Disturbance outside of the defined maintenance disturbance/easement footprint or road realignment will be subject to additional NEPA compliance.

References

BLM. 2011a. H-9113-1 Road Design Handbook. Bureau of Land Management, Washington, D.C.

BLM. Grand Junction Field Office Travel Management Plan (See Appendix M, Travel Management Plan, in the Grand Junction Field Office Proposed RMP/Final EIS)

RECLAMATION (R)

The objectives of interim reclamation are to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize loss of habitat, forage, and visual resources during the life of the well or facilities.

The long-term objective of final reclamation is to return the land to a condition approximating that which existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, standards will be enforced to meet objectives for site stability, visual quality, hydrological function, and vegetative productivity.

Standard Operating Procedures

R-1: A reclamation plan will be provided to the BLM with the original proposed action or when activities are needed. The plan will follow the BLM Colorado Northwest District Template for Reclamation Plans (BLM 2012). Reclamation plans will discuss interim and final reclamation activities. The plan will include provisions for

a) Reclamation Timeline

b) Pre-disturbance Planning recommendations if applicable

c) Vegetation Monitoring Plan

d) Stabilization and Stormwater

e) Dust Abatement

f) Vegetation Clearing

g) Topsoil Management

h) Pit Closures if applicable

i) Recontouring and Seedbed Preparation

j) Application of Topsoil & Revegetation

k) Fencing

l) Management of Invasive, Noxious, and Non-Native Species

Best Management Practices

R-2: Trees and vegetation will be left along the edges of the pads whenever feasible to provide screening.

R-3: (MLP) To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, debris, and rock over recontoured cut and fill slopes.

R-4: To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops).

R-5: Production facilities will be clustered and placed away from cut and fill slopes to allow the maximum recontouring of cut and fill slopes.

R-6: **(MLP)** All long-term above ground structures will be painted [Covert Green] (from the BLM "Supplemental Environmental Colors" chart) to blend with the natural color of the late summer landscape background.

R-7: Projects should be located to take advantage of existing vertical features, such as landforms or existing stands of vegetation to provide visually screening.

R-8: **(MLP)** Projects should not be located in visually exposed locations, such as ridgelines and hilltops.

R-9: **(MLP)** Projects should be located in areas that will minimize the amount of cut-and-fill needed to meet natural grade.

R-10: **(MLP)** Linear disturbances (roads and pipelines) should follow the natural contours of the landscape as much as possible.

R-11: Project design should take into consideration any existing vegetation surrounding the project that can be used for visual screening. Care should be taken to preserve the integrity of the vegetation and the vegetation should remain standing and undamaged when the cut-and-fill slopes are recontoured.

R-12: **(MLP)** Thinning and feathering of existing vegetation may also be used in areas where clearing within dense vegetation is required. Thinning and feathering will reduce the hard line between new construction and existing vegetation and will emulate the forms of natural clearings.

R-13: **(MLP)** Production facilities should be placed to maximize recontouring of the cut-and-fill slopes and interim reclamation. Facilities should be oriented in the direction that is least visually obtrusive and should be clustered to reduce the overall impact and the area that will need to be visually mitigated. Facilities should be located away from the cut-and-fill slopes and, if possible, near the access road or entrance to the pad to maximize the total surface area that can be reclaimed.

R-14: **(MLP)** Cut-and-fill slopes should be recontoured to the approximate original contour or consistent with the adjacent topography so that the reclaimed landscape features blend into the natural surroundings.

R-15: **(MLP)** Berms may be utilized to provide visual screening, but should be used only when it makes sense when viewing the surrounding natural environment and should blend with the adjacent topography.

R-16: **(MLP)** Cleared vegetation and rocks salvaged during construction should be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features to emulate the color and texture closer to that of the natural landscape and to help create microclimates to encourage vegetation growth. The material should be placed so that it appears to be naturally deposited.

R-17: **(MLP)** Above ground facilities should be painted a natural color selected from the BLM Standard Environmental Color Chart to minimize contrast with adjacent vegetation and/or rock outcrops. Color(s) should be selected in the field at the proposed project location and should be planned for the season with the greatest number of viewers. Selected color(s) should be one to two shades darker than those naturally occurring in the background landscape (this will also help with the effects of fading over time).

References

BLM (United States Department of the Interior, Bureau of Land Management). 1985a. BLM Manual 9113: Roads. Release 9-247. BLM, Washington DC. June 7, 1985. 83 pp.

_____. 1985b. BLM Handbook 91 13-2, Roads – Inventory and Maintenance. Release 9-250. BLM, Washington DC. December 19, 1985. 18 pp.

_____. 2012. Draft BLM Colorado Northwest District Template for Reclamation Plans- (Final expected June 2012).

Appendix Q

Biologic Opinion for the Grand Junction Field Office

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
445 West Gunnison, Suite 240
Grand Junction, Colorado 81501-5711

IN REPLY REFER TO:
ES/GJ-6-CO-15-F-003
TAILS: 06E24100-2015-F-003

April 27, 2015

Memorandum

To: Field Manager, Grand Junction Field Office, Bureau of Land Management, Grand Junction, Colorado

From: Acting Western Colorado Supervisor, Western Colorado Ecological Services Office, Grand Junction, Colorado

Subject: Biological Opinion – Revision of the Resource Management Plan for the Grand Junction Field Office

This responds to your October 3, 2014, submission of a biological assessment (BA), to the US Fish and Wildlife Service (Service) requesting formal Section 7 consultation on the effect of the subject project on species and habitats listed under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.; [Act]). The project described in your memorandum and the accompanying BA occurs on the Grand Junction Field Office (GJFO) located in Garfield, Mesa, and Montrose Counties, Colorado. We received your request on October 3, 2014.

The Bureau of Land Management (BLM) is proposing a revised Resource Management Plan (RMP). The RMP provides direction for managing public lands administered by the BLM's GJFO in Colorado. The BA describes the effects caused by implementing the RMP. The revised RMP replaces the previous 1987 RMP, and is a refinement of the preferred alternative (Alternative B) described in the Draft RMP, released on January 25, 2013.

The GJFO determined there are 12 federally listed, and one candidate species affected by the proposed action. The species identified by the BLM as potentially affected by the proposed action are listed in Table 1 below. Since the BA was originally submitted in October 2014, the Service listed the Gunnison sage-grouse (*Centrocercus minimus)* (GUSG), as a threatened species (79 FR 69192), and concurrently designated critical habitat for the GUSG (79 FR 69312). Therefore, there are 13 federally listed species within the GJFO.

Table 1
List of Threatened, Endangered, Proposed and Candidate Species Addressed in Grand Junction Field Office RMP Biological Assessment

Common Name	Species Name	Federal Status[1]
Listed Species for Potential Consultation		
Plants		
Colorado hookless cactus	*Sclerocactus glaucus*	T
DeBeque phacelia[2]	*Phacelia submutica*	T
Parachute penstemon[2]	*Penstemon debilis*	T
Ute ladies'-tresses	*Spiranthes diluvialis*	T
Fish		
Colorado pikeminnow[2]	*Ptychocheilus lucius*	E
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T
Razorback sucker[2]	*Xyrauchen texanus*	E
Bonytail[2]	*Gila elegans*	E
Humpback chub[2]	*Gila cypha*	E
Birds		
Mexican spotted owl	*Strix occidentalis lucida*	T
Greater sage-grouse	*Centrocercus urophasianus*	C
Gunnison sage-grouse[2]	*Centrocercus minimus*	T
Western yellow-billed cuckoo[3]	*Coccyzus americanus*	T
Mammals		
Canada lynx	*Lynx canadensis*	T

[1]Status: E = Endangered; T = Threatened; P = Proposed for listing; C = Candidate for listing
[2]Critical Habitat

[3]Critical habitat proposed

The BLM made the following effects determinations for listed, proposed, or candidate species and critical habitat, where applicable:

May affect, not likely to adversely affect:
Parachute penstemon*
Ute ladies'-tresses
Greenback cutthroat trout
Mexican spotted owl
Greater sage-grouse
Gunnison sage-grouse critical habitat
Western yellow-billed cuckoo
Canada lynx

May affect, likely to adversely affect:
Colorado hookless cactus
DeBeque phacelia*

Colorado pikeminnow*
Razorback sucker*
Bonytail*
Humpback chub*
Gunnison sage-grouse

*Includes critical habitat.

Based on our review of the information provided in your BA, we concur with the determination that the proposed action may affect, but is not likely to adversely affect the Parachute penstemon and its critical habitat, Ute ladies' tresses, greenback cutthroat trout, Canada lynx, Mexican spotted owl, western yellow-billed cuckoo, and may affect, but is not likely to adversely affect critical habitat for Gunnison sage-grouse. While we recognize the direction included in the RMP to conserve the greater sage-grouse and would like to continue working with you on this species' conservation, this is a candidate species and an official determination under section 7 consultation is inappropriate. We will not consider the greater sage-grouse further herein.

We also agree with your determination of may affect, and likely to adversely affect, for the following species: Colorado hookless cactus, DeBeque phacelia, and Gunnison sage-grouse, Colorado pikeminnow, razorback sucker, bonytail, and humpback chub. We address these species in the biological opinion (BO) below.

Section 7 (a) (4) of the Act requires conferencing with the Service when a proposed action is likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat. Because the BA concluded that the proposed action is not likely to adversely affect proposed critical habitat for the western yellow-billed cuckoo, we assume that BLM's conclusion is that implementation of the revised RMP is not likely to destroy or adversely modify their critical habitat. Since conferencing is not required, critical habitat issues for this species will not be further addressed herein.

CONSULTATION HISTORY

The consultation history for the proposed action consists of informal discussions with the Northwest Level One Team, and discussion between the Service and the BLM.

The Service issued two programmatic section 7 BOs in western Colorado, analyzing water depletions resulting from the BLM's activities in the Colorado River basin. These consultations include the December 19, 2008, "Programmatic Biological Opinion (PBO) for Water Depletions Associated with the BLM's Fluid Mineral Program within the Upper Colorado River Basin in Colorado" (ES/GJ-6-CO-08-F-006), and the February 25, 2009, "PBO for Water Depletions Associated with BLM's projects (excluding Fluid Mineral Development within the Upper Colorado River Basin in Colorado" (ES/GJ-6-CO-08-F-0010). Both BOs address adverse effects to the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail, and their respective critical habitats, associated with depletions resulting from projects and activities in the revised RMP. Water depletions resulting from oil and gas exploration and development on the

GJFO fall under the two respective BLM PBOs. Therefore, the section 7 consultation requirement for the Colorado River fishes is fulfilled.

On July 27, 2010, the Service provided concurrence of may affect, not likely to adversely affect the Colorado hookless cactus (Tails: 65413-2010-I-0138) for the Integrated Weed Management Plan (IWMP) for the GJFO. On September 24, 2014, the Service provided concurrence of may affect, not likely to adversely affect the Parachute penstemon and DeBeque phacelia, and their respective critical habitat (06E24100-2014-I-0185) for effects caused by the IWMP.

On November 12, 2012, the Service issued BO number ES/GJ-6-CO-12-F-006 (Tails: 06E24100-2012-F-0020). This opinion documented the effects of livestock grazing to listed plant species within the GJFO (among other field offices).

This BO is based on the BA prepared for the proposed action, previous programmatic BAs and BOs pertaining to vegetation management and livestock grazing applicable to the GJFO for plant species, listing and critical habitat decision documents, information contained in scientific literature, and other sources of information. For GUSG the BLM used the GUSG Rangewide Conservation Plan (RCP) (GUSG Rangewide Steering Committee (GSRSC) 2005), our January 11, 2013, proposed rule of endangered status for the GUSG, our January 11, 2013, proposed rule to designate critical habitat, final listing and critical habitat rules of November 20, 2014, information contained in scientific literature, and other sources of information. A complete administrative record of this consultation is on file in the Service's Western Colorado Office, Grand Junction, Colorado.

BIOLOGICAL OPINION

PROPOSED ACTION

The proposed action consists of implementation of the revised RMP for the GJFO of the BLM. The RMP provides strategic guidance for future management of BLM lands managed by the GJFO. The RMP provides a decision-making framework and guides resource management programs, practices, uses, and projects. The RMP revision does not include specific project and activity decisions. Those decisions are made later, after more detailed analysis and further public involvement.

Key Decisions

The proposed RMP revision contains the following key components and decisions that comprise the GJFO's management system.

- The establishment of goals, objectives, actions, allowable uses, allocations, restrictions, and prohibitions.
- The establishment of desired outcomes, including multiple-use goals and objectives. Goals are expressed as desired condition in the form of aspirations for which the BLM's management area direction, objectives and standards and guidelines have been directed.
- The establishment of management requirements, including measures or criteria that will

be applied in order to guide day-to-day activities. These are primarily expressed as standards and guidelines.

- The designation of lands managed for their Wilderness Characteristic and other special designations.
- The identification of river segments suitable for inclusion in the National Wild and Scenic Rivers System.
- The establishment of monitoring and evaluation requirements.

The following programs are implemented under the RMP decision framework; their goals and objectives in the RMP are outlined below. These goals and objectives are selected from Table 2-2 on page 2-22 of Volume 1 of the RMP. It is not a complete list of the plan's goals and objectives; the selections were included for their relevance to the proposed RMP's actions, allowable uses, restrictions and prohibitions that are most relevant to the species for which BLM has sought consultation. More information on specific actions and requirements, stipulations, etc., for each objective is contained in Table 2-2 of the RMP. Note that references in the goals and objectives below are to Appendices in the RMP itself, not this BO, unless otherwise noted).

➢ **Areas of Critical Environmental Concern (ACECs)**

- **GOAL (ACEC-G1)**: Manage ACECs to protect significant resource values and prevent damage to important natural, biological, cultural, recreational, or scenic resources and values, or to protect life and safety from natural hazards.
  - **Objective: (ACEC-O1)** Continue to manage those areas within the GJFO that require some special management and that meet the criteria for ACEC designation.
  - ❖ **Action (ACEC-A1):** Designate the following areas as ACECs (123,400 acres). (Figure 2- 66, Appendix A):
    - Atwell Gulch (2,900 acres);
    - Badger Wash (2,200 acres);
    - Dolores River Riparian (7,400 acres);
    - Indian Creek (2,300 acres);
    - Juanita Arch (1,600 acres);
    - Mt. Garfield (2,400 acres)
    - The Palisade (32,200 acres);
    - Pyramid Rock (1,300 acres);
    - Roan and Carr Creeks (33,600 acres);
    - Rough Canyon (2,800 acres);
    - Sinbad Valley (6,400 acres);
    - South Shale Ridge (28,200 acres); and
    - Unaweep Seep (85 acres).

➢ **Comprehensive Travel and Transportation Management Plan**

- **GOAL (CTTM-G1)**: Manage the travel system to support the BLM mission, achieve resource management goals and objectives, and provide for appropriate public and administrative access.

- Objective (CTTM-O1): Maintain a comprehensive travel network that best meets the full range of public, resource management, and administrative access needs.

- **GOAL (CTTM-G2)**: To manage a comprehensive travel and transportation management system that allows for diverse recreational use of motorized and non-motorized interests; promotes the safety of all users; minimizes conflicts among Federal land uses; communicates with the public about available opportunities, and monitors the effects of use.
  - Objective (CTTM-O2): Seek to effectively manage new modes of travel that cannot be foreseen through this planning effort.
  - Objective (CTTM-O3): Manage motorized travel consistent with outcomes defined by resource programs.
  - Objective (CTTM-O4): Manage non-motorized travel consistent with outcomes defined by resource programs.
  - Objective (CTTM-O5): Manage travel through route designations within Zone L to be consistent with the following recreation and resource objectives:

    - **Watershed and Soils**
      - Manage to maintain or contribute to long term improvement of surface and groundwater quality.
      - Promote geomorphic balance.
      - Meet Public Land Heath Standard 1 for soils and 5 for water quality.
      - Minimize salt and sediment production to natural background rates.
      - Preserve and promote soil productivity.
    - **Special Status Species (Plants)**
      - Meet Public Land Heath Standard 3 for plant communities and 4 for Special Status and Threatened & Endangered species and their habitats.
      - Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by Colorado Natural Heritage Program (CNHP).
    - **Vegetation**
      - Manage vegetation to meet BLM Standards for Public Land Health while taking into account site potential, and site-specific management objectives. Ensure vegetation resources are managed to achieve balance in soil and watershed protection, wildlife habitat, livestock grazing, forestry, and biodiversity values, while maintaining or enhancing special status species habitat.
    - **Recreation**
      - Ensure route connectivity between the extensive recreation management area (ERMA) and the Grand Valley OHV special recreation management area (SRMA). To provide a transition zone between the high-use urban interface area directly north of Grand Junction, allow higher route density along the ERMA's interface with the Grand Valley OHV SRMA at 27 ¼ Road, with route density generally decreasing as the trail system extends

to the northwest toward 25 Road and 21 Road (Travel Management Zone L).

The RMP designates motorized travel areas having existing developed road and/or motorized trail systems that, for the most part, serve current recreation and resource access needs for a particular area. The road and motorized trail system in motorized suitable areas will generally not be considered for expansion or substantial alteration of the transportation system. The RMP designates 126,200 acres closed to motorized use; 925,200 acres are closed to cross-country travel, with travel authorized on designated routes, and retains 10,200 acres of open motorized use (including cross-country travel).

➢ **Fish and Wildlife**

Habitat standards and desired wildlife populations levels are determined by Colorado Parks & Wildlife (CPW) and Service species-specific plans and strategies in order to meet BLM Colorado's Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 1997).

- **GOAL: (FW-TW-G1) Provide** terrestrial habitats for abundance and diversity of native and desirable nonnative wildlife species to attain or maintain self-sustaining populations.
  - **Objective (FW-TW-O1):** Maintain and improve BLM lands for priority habitat requirements for the following high-value species:
    - •Critical and severe winter range, winter concentration areas, intact security areas, production areas, and big game migrations corridors for big games species (e.g., mule deer *(Odocoileus hemionus)*, elk *(Cervus canadensis)*, pronghorn antelope *(Antilocapra americana)*, bighorn sheep *(Ovis canadensis)*, moose *(Alces alces)*; and
    - •Proper functioning condition riparian and wetland habitat for all species (see Vegetation—Riparian section).
  - **Objective (FW-BG-O1):** Provide sufficient forage, cover, and protection from disturbance for large ungulates (deer, elk, bighorn sheep, pronghorn antelope, and moose) to maintain healthy viable populations across the landscape commensurate with BLM Colorado's Standards for Public Land Health (BLM 1997a).
  - **Objective (FW-BG-O2):** Protect State wildlife areas from surface occupancy and surface disturbing activities to protect the values for which they were established.
  - **Objective (FW-BG-O3):** Minimize habitat fragmentation and restore habitat connectivity on big game winter ranges, winter concentration areas, severe winter ranges, and movement corridors.
  - **Objective (FW-P-O1):** Improve pronghorn antelope habitat on BLM lands.

- ***Wildlife Emphasis Areas***

  A Wildlife Emphasis Area (WEA) is an area of high wildlife value and significance for wildlife species including but not limited to both species of sage-grouse, pronghorn antelope, mule deer, elk, bighorn sheep, white-tailed prairie dog (*Cynomys leucurus*), and kit fox (*Vulpes macrotis*). Fire rehabilitation efforts and vegetation treatments to improve

land health and/or wildlife habitat are not considered ground disturbance, as described in the actions under each emphasis area below. Wildlife emphasis areas are not designations, but rather polygons where more management emphasis is placed on protection and enhancement of the wildlife resource.

- **Objective (WEA-O1):** Emphasis areas meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado (BLM 1997). Prioritize those areas that do not meet land health standards as management action areas where actions are taken to work toward meeting land health standards.
- **Objective (WEA-O7):** Maintain or improve wildlife habitat in the Glade Park wildlife emphasis area (27,200 acres) with an emphasis on GUSG, mule deer, and elk habitat (Figure 2-1, Appendix A in BA).
- Objective (WEA-O16): Maintain or improve wildlife habitat in the Timber Ridge wildlife emphasis area (11,800 acres) with an emphasis on habitat for mule deer, elk, and [Gunnison] sage-grouse (Figures 2-1 [Alternative B] and 2-2 [Alternative C], Appendix A in BA).

➢ **<u>Fluid Mineral (Oil and Gas, Geothermal, and Oil Shale Resources)</u>**

- **GOAL (FM-G1):** Provide opportunities for environmentally responsible exploration and development of fluid mineral resources subject to appropriate BLM policies, laws, and regulations.
- **Objective (FM-O1):** Facilitate orderly, economic, and environmentally sound exploration and development of oil and gas and geothermal resources, using the best available technology.
- **Objective (OS-O1):** Maintain opportunities to lease oil shale with further National environmental Policy Act (NEPA) analysis while minimizing impacts to other resources.
- **Objective (MLP-O1):** Promote a proactive approach to planning for oil and gas development in the proposed Shale Ridges and Canyons Master Leasing Plan (MLP) area based on known resource values and reasonably foreseeable oil and gas development. Manage oil and gas operations in the Shale Ridges and Canyons MLP area to prevent degradation of sensitive soils, special status species, and other resources. All management objectives, goals, and actions are the same for the mineral leasing plan (MLP) and the entire GJFO decision area unless otherwise stated.
- **Objective (MLP-O2):** Limit air quality degradation within the MLP analysis area by ensuring that land use activities are in compliance with Federal, State, and local regulations.
- **Objective (MLP-O3):** Manage and protect surface water and groundwater in order to maintain or contribute to the long term improvement of surface and ground water quality and minimize or control elevated levels of salt, sediment, and selenium contributions to water resources. All streams on public lands in the MLP Analysis Area that meet or exceed State water quality standards, and that have acceptable channel stability, will be maintained in the present condition through limited management. Streams not meeting State standards, or having unstable channels, will be improved in order to meet minimum standards through intensive management.

- **Objective (MLP-O4):** Ensure that surface disturbances do not cause accelerated erosion (such as rills, soil pedestals, and actively eroding gullies) on a watershed scale (e.g., sixth hydrologic unit code scale). Minimize or control elevated levels of salt, sediment, and selenium contribution from public lands to rivers. Maintain or improve soil productivity, preserve proper function and condition of uplands, and ensure that surface disturbances do not cause accelerated erosion.
- **Objective (MLP-O5):** Manage for a healthy diversity of successional-stage plant communities and properly functioning riparian zones within the MLP analysis area.
- **Objective (MLP-O6):** Protect occupied and suitable habitat for Federal proposed, candidate, and threatened or endangered species, and protect occupied habitat for BLM sensitive species necessary for:
    - Maintenance and recovery of proposed, candidate, and threatened or endangered species and
    - Support of BLM sensitive species and significant plant communities, consistent with BLM policy on special status species management (BLM manual 6840, BLM 2008c, cited in BA).
- **Objective (MLP-O7):** Sustain the integrity of the sagebrush biome in order to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of Greater sage-grouse and other sagebrush dependent species.
- **Objective (MLP-O8):** Maintain and improve BLM lands for priority habitat requirements for the following high-value species: Critical and severe winter range, winter concentration areas, production areas, and big game migrations corridors for big games species (e.g., mule deer, elk, pronghorn antelope, bighorn sheep, and moose. Maintain and improve lands for priority habitat requirements for highly valued species such as, but not limited to, cold water sport fishes. Protect State wildlife areas from unnecessary surface occupancy and surface disturbing activities.
- **Objective (MLP-O13):** Provide for protection of ACEC resource values by reducing impacts from oil and gas development in these areas.

Table 2 provides statistics for the amount of BLM lands available for oil and gas leasing as well as those available acres where stipulations or other restrictions may apply to future leases.

Table 2.

Bureau Grand Junction Field Office	**Proposed Action**
Federal Mineral Acres	1,236,100
Acres Withdrawn from Leasing	0
Acres Administratively Not Available for Leasing	243,500
Acres Available for Leasing	992,600
No Surface Occupancy	436,600
Timing Limitation	382,900
Controlled Surface Use	493,900
Standard Lease Terms	992,600

The proposed action includes the projection of well pads and access road miles (future leases), and corresponding disturbance acres on the GJFO, for years 2009-2029. The reasonably Foreseeable Development Scenario of Oil and Gas development on existing leases is presumed to follow BLM Instruction Memorandum No. CO-2013-033, dated July 15, 2013, and BLM Instruction Memorandum No. 2014-100.

- **Locatable Minerals, Mineral Materials, and Non-energy Leasable Minerals**

  - **GOAL (LM-G1)**: Provide opportunities to develop locatable minerals, mineral materials, and non-energy leasable minerals consistent with other resource goals and uses to meet local and national energy and mineral needs.
    - **Objective (LM-O1):** Facilitate environmentally responsible exploration and development of locatable minerals subject to BLM policies, laws, and regulations.
    - **Objective (MM-O1):** Manage mineral material (salable minerals) resources to provide for the needs of individuals, municipalities, and businesses while ensuring compatibility with other resource objectives.
    - **Objective (NEL-O1):** Provide opportunities for non-energy leasable exploration and/or development subject to standard stipulations (e.g., NSO, CSU, and TL).

- **Forestry**

Under the RMP, the BLM proposes to use a variety of silvicultural techniques and harvest systems to manage for healthy forests and woodlands while offering a variety of forest products and meeting other resource objectives for the following forestry and woodland types: pinyon/juniper, ponderosa pine, Douglas-fir, aspen, spruce/fir.

- **Lands and Realty**

  - **GOAL (LR-G1):** Meet resource needs while providing public use authorizations such as Rights-of-Way (ROWs), renewable energy sources, permits, and leases.
    - **Objective (LR-O1):** Provide for the development and operation of transportation systems, pipelines, transmission lines, communication sites, renewable energy resources, and other land use authorizations in an environmentally responsible and timely manner.
    - **Objective (LR-O2):** Manage corridors for public utilities and other facilities, and establish new corridors in an environmentally responsible manner as necessary to meet future demands and protect sensitive resources.
    - **Objective (LR-O3):** Provide for the development and operation of actions for leases, permits, and easements authorized under, 43 CFR 2920 (such as site facilities and commercial filming) in an environmentally responsible and timely manner.
    - **Objective (LR-O4):** Resolve trespass uses as they are identified and prioritized.
    - **Objective (LR-O5):** Consolidate the BLM's land ownership patterns through land tenure adjustments for improved management efficiency, and acquire from willing sellers suitable private land with special resource values.
    - **Objective (LR-O6):** Acquire lands or interests in lands through exchanges, purchases, easements, or donations to facilitate resource goals and objectives.

- **Objective (LR-O7):** Withdraw lands from the public land laws or mining laws where necessary to meet resource and other management objectives of the BLM or other Federal agencies.

➢ **Livestock Grazing**

The RMP livestock grazing goal is to provide adequate forage for livestock while attaining healthy rangelands, in accordance with land health standards and in balance with other resources and uses, to contribute to local economies, ranching livelihoods, and rural western character integral to many communities. Objectives within the goal relevant to this BO include:

- **Objective LG-01:** Meeting the forage demands of livestock operations based on current active preference animal unit-months (AUMs) while meeting the BLM Standards for Public Land Health and Guidelines for Livestock Grazing in Colorado (BLM 1997a) (Appendix E);
- **Objective LG-02:** Provide periodic rest during active growth periods of forage plants to maintain or improve plant vigor and health; and
- **Objective LG-03:** Manage livestock to maintain and/or improve sage-grouse habitat.

➢ **Recreation and Visitor Services**

- **GOAL REC-G1:** Produce a diversity of quality recreational opportunities that support outdoor-oriented lifestyles and add to participants' quality of life, enhance the quality of local communities, and foster protection of natural and cultural resources.

- **DeBeque Area Recreation Objective (REC-O5):** If feasible, provide for recreation opportunities near the town of DeBeque that enhance and protect sensitive cultural and biological resources, while providing a diverse mix of recreation activities and experiences, including intermediate to expert level singletrack motorcycling and mountain biking, and motorcycle trials riding utilizing the area's unique natural topography and scenery to enhance users' experiences. To a secondary extent, provide for shared compatible uses such as 4x4 and all-terrain vehicle (ATV) touring, hiking, and horseback riding.
- **Grand Valley Shooting Ranges ERMA [Extensive Recreation Management Area] Objective (REC-ERMA-O12):** Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus (*Sclerocactus glaucus*), water quality (lead contamination, non-point source erosion/sedimentation into the Colorado River).
- **Gunnison Bluffs ERMA Objective (REC-ERMA-O16):** Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus, cliff-nesting raptors, paleontological resources, and cultural resources.
- **Horse Mountain ERMA Objective (REC-ERMA-O19):** Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado

hookless cactus, water quality (non-point source erosion/sedimentation into the Colorado River).

- **Horse Mountain ERMA RMZ 2 – C Road OHV Open Area 180 acres, Objective (REC-ERMA-022:** Through the life of the plan, manage this area to minimize recreation impacts to other resources, with special consideration given to protection/mitigation of the following resources: Colorado hookless cactus, water quality (non-point source erosion/sedimentation into the Colorado River).

➢ **Soil Resources**

The soil resource goal in the RMP is to ensure upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, minimizes surface runoff (Land Health Standard 1), and minimizes soil erosion. Objectives within the goal include relevant to this BO include:

- **Objective (S-O1):**
  1. Minimize or control elevated levels of salt, sediment, and selenium contribution from Federal lands to river systems in the planning area.
  2. Maintain or improve soil productivity, including retention of topsoil quality and reestablishing soil capability, potential, and functionality when disturbed.
  3. Preserve proper function and condition of upland soils.
  4. Ensure surface disturbances do not cause accelerated erosion (e.g., rills, soil pedestals, actively eroding gullies) on a watershed scale (e.g., sixth hydrologic unit code scale).

➢ **Special Status Species**

- **GOAL: SSS-G1:** Manage special status species habitats to provide for their conservation and restoration as part of an ecologically healthy system.
- **Objective (SSS-O1):** Maintain or improve the quality of listed (i.e., threatened or endangered) and sensitive species habitat by managing public land activities to support species recovery and the benefit of those species.
- **Objective SSS – Fish (SSS-F-O1):** For Fish: Maintain or improve the quality of listed (threatened or endangered) fish and sensitive fish habitat by managing public land activities to support species recovery and the benefit of those species.

➢ **GOAL 2** SSS - Plants and Terrestrial Wildlife (PTW-G1): Manage special status species and their habitats to provide for their conservation and restoration as part of an ecologically healthy system, and support the goals contained in Standard 4 of the Colorado Standards for Public Land Health (BLM 1997) (see Appendix E).

- **Objective (SSS-PTW-O1):** To conserve plants and animals (and their habitats) listed by Federal and Colorado governments as threatened, endangered, sensitive or species of concern, and to conserve plants and animals that are candidates for these lists with the overall objective of improving their populations so that they can be removed from these lists.

- **Objective (SSS-P-O1):** Promote maintenance and recovery of federally listed, proposed, and candidate plant species by protecting occupied habitat. Protect occupied habitat for all BLM sensitive plant species and significant plant communities as defined and tracked by CNHP.
- **Objective (SSS-M-O1):** Protect breeding habitats of migratory birds with emphasis on avoiding impacts to nesting birds to comply with the Migratory Bird Treaty Act (MBTA).
- **Objective (SSS-R-O1):** Maintain and improve BLM lands for raptor nesting and fledging habitat.
- **Objective (SSS-BGE-O1):** Maintain and improve BLM lands for eagle nesting, fledging, foraging and roosting habitat. Protect the bald and golden eagle concentration, nesting, and nest buffer areas by prohibiting activities during certain times of the year consistent with CPW's most recent raptor recommendations.
- **Objective (SSS-WS-O1):** Provide healthy and productive habitat for waterfowl and shorebirds.
- **Objective (SSS-SG-O1):** Advance the conservation of Gunnison and greater sage-grouse and their habitat in accordance with current national, State, and local working group recommendations and policy as well as the most current scientific literature and research.
- **Objective (SSS-RA-O1):** Maintain and improve BLM lands for priority reptile and amphibian habitat.
- **Objective (SSS-B-O1):** Maintain and improve BLM lands for bat roosting, maternity sites and winter hibernacula.
- **Objective (SSS-RO-O1):** Maintain and improve BLM lands for river otter *(Lontra canadensis)* habitat.
- **Objective (SSS-CL-O1):** Maintain and improve BLM-managed portions of Canada Lynx Analysis Units for Lynx habitat.
- **Objective (SSS-KF-O1):** Maintain and improve BLM lands for kit fox habitat.
- **Objective (SSS-PD-O1):** Maintain or improve white-tailed prairie dog habitat and distribution (Figure 2-73, Appendix A).

➢ **<u>Vegetation</u>**

The RMP's general vegetation goal is restore and maintain healthy, productive plant communities of native and other desirable species at self-sustaining population levels commensurate with the species' and habitats' potentials. Ensure plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations and ecological processes (based on Land Health Standard 3). Objectives within the goal include relevant to this BO include:

- **Objective (VG-O1):** Manage for a healthy diversity of successional-stage plant communities.
- **Objective (VG-O2):** Provide the public with native plant materials through the sale of wilding permits (e.g., live plants and plant material products exceeding personal use amounts), commercial seed-collecting permits, and free use permits (consistent with 43 CFR 8365.1-5, IM No. 2013-176 Seed Collection Permitting and Pricing Policy

within the BLM, and BLM Manual 5500 [Nonsale Disposals]), while protecting other resources.

- **Vegetation – Adaptive Drought Management**

  - **GOAL (VADM-G1):** Develop management prescriptions for all surface-disturbing resource uses during times of extended drought.
  - **Objective (VADM-O1):** Establish criteria for restricting activities during drought.

- **Vegetation – Desired Plant Communities**

  - **Goal VDPC-G1**: Manage pinyon-juniper, upper and lower elevation sagebrush, salt desert shrub, forests and woodlands, and riparian areas (the dominant plant communities of the GJFO planning area) as desired plant communities or to emphasize native vegetation, wildlife habitat, watershed health, and biodiversity.
  - **Objective VDPC-O1**: Manage vegetation to meet BLM Standards for Public Land Health and Guidelines for Livestock Grazing Management in Colorado while taking in to account site potential as determined by ecological site inventories, Range/Ecological Site Descriptions, Soils, completed Land Health Assessments, and site specific management objectives.
  - **Objective VDPC-O2:** Manage vegetation resources to balance soil and watershed protection, wildlife habitat, livestock grazing, forestry, and biodiversity values, while maintaining or enhancing special status species habitat.
  - **Objective VDPC-O3:** In lower-elevation vegetation, occupied by the potential natural community, manage for a late- or mid-seral stage as the desired plant community.

  - **Goal VDPC-G2**: Manage the salt desert shrub communities to maintain viable populations of kit fox, burrowing owl (*Athene cunicularia*), white-tailed prairie dog, and other obligate species. Preserve undisturbed patches of salt desert shrub communities with little to no cheatgrass (*Bromus tectorum)*, halogeton (*Halogeton glomeratus)*, or other exotic species. Identify and initiate restoration and rehabilitation of unhealthy areas.

  - **GOAL VDPC-G3:** Manage the sagebrush *(Artemisia* spp.*)* biome to maintain viable populations of sagebrush-obligate species. Identify and initiate restoration and rehabilitation of sagebrush habitat, while maintaining a mosaic of canopy cover and successional stages. Maintain or improve sage-grouse winter habitat.
  - **Objective (VDPC-O4):** Manage the salt desert shrub community to improve vigor, composition, diversity, and cover of native understory species and biological soil crusts.
  - **Objective (VDPC-O5):** Maintain or improve high-quality sagebrush habitats consistent with the natural range of variability for sagebrush communities. Restore the species composition and diversity of seral stages of sagebrush communities.
  - **Objective (VDPC-O6):** Sustain, restore, and rehabilitate the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of sagebrush-obligate species.

- **GOAL (VDPC-G4):** Manage the sagebrush biome to maintain viable populations of greater and GUSG and other sagebrush-obligate species. Identify and initiate restoration and rehabilitation of sagebrush habitat while maintaining a mosaic of canopy cover and successional stages.
  - **Objective (VDPC-O7):** Maintain or improve high-quality sagebrush habitats consistent with the natural range of variability for sagebrush communities. Restore the species composition and diversity of successional stages of sagebrush communities.
  - **Objective (VDPC-O8):** Prioritize the following areas for Land Health Assessments, vegetation restoration efforts, and protection of existing intact environments: 1-4. Restoration plans would emphasize increasing patch size and connectivity through vegetation treatments. Disturbances should also be consolidated through BMPs to reduce disturbance and maintain sagebrush-obligate species.

- **GOAL (VDPC-G5):** Manage mountain shrub communities to maintain vigorous stands of deciduous shrubs.
  - **Objective (VDPC-O9):** Emphasize perpetuating late- to mid-seral plant communities that provide suitable habitat for wildlife.

➢ **<u>Vegetation – Forestry/Woodlands (VFW)</u>**

- **GOAL VFW-G1:** Maintain and restore pinyon-juniper woodlands to meet requirements for land health and to supply wildlife habitat, livestock forage, and consumer products (e.g., posts, poles, firewood, and biomass).
  - **Objective VFW-O1:** Manage for pinyon pine *(Pinus edulis)* and juniper with a balance of seral stages.

- **GOAL (VFW-G2):** Maintain forests and woodlands for a healthy mix of successional stages within the natural range of variation that incorporates diverse structure and composition.
  - **Objective (VFW-O2):** Manage ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii)*, aspen *(Populus tremuloides)*, and spruce/fir to mimic natural stand conditions and natural regeneration.

➢ **<u>Vegetation – Riparian</u>**

- **GOAL VR-G1:** Manage riparian habitat in compliance with the Land Health Standard 2: Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbances such as fire, severe grazing, or 100-year floods. Riparian vegetation captures sediment and provides forage habitat and biodiversity. Water quality is improved or maintained. Stable soils store and release water.
  - **Objective (VR-O1)**: Protect and restore riparian areas/wetlands through sound management practices.

- **Vegetation – Weeds**

  - **GOAL (VW-G1):** Reduce the occurrence of noxious and invasive species through the use of an Integrated Pest Management Program across the planning area.
  - **Objective (VW-O1)**: Apply integrated control methods (physical, cultural, biological, chemical, fire) to noxious and invasive pest populations.
  - **Objective (VW-O2):** Require weed prevention on appropriate actions authorized within the planning area.

- **Water Resources**

  The RMP goal for water resources is to protect, preserve, and enhance watershed functions in the capture, retention, and release of water in quantity, quality, and time to meet ecosystem and human needs.

  - **Objective (W-O1):** Manage public land activities to maintain or contribute to the long term improvement of surface and ground water quality and minimize or control elevated levels of salt, sediment, and selenium contribution from Federal lands to water resources in the planning area.
  - **Objective (W-O2):** Ensure streams on BLM lands are in geomorphic balance (e.g., stream channel size, sinuosity, slope, and substrate are appropriate for its landscape setting and geology) with the water and sediment being supplied by the watershed (e.g., no accelerated erosion, deposition, or head-cutting) and ensure that land use does not impede the natural hydrograph (e.g., allows timing, magnitude and duration of peak, high and low flow events by minimizing surface disturbance, erosion, and sedimentation of streams).
  - **Objective (W-O3):** Provide sufficient water quantity on BLM lands for multiple use management and functioning, healthy riparian, wetland, aquatic, and upland systems.
  - **Objective (W-O4):** Protect municipal watersheds and source water protection areas on public land that provide drinking water to local communities.
  - **Objective (W-O5):** Characterize, monitor, maintain, and/or restore surface/groundwater quality and quantity to sustain designated beneficial uses in cooperation with other Federal, local, and State agencies and private entities.
  - **Objective (W-O6):** Manage public lands to maintain functioning condition of all parameters within the hydrologic cycle including groundwater quantity and quality. Ensure the consumption of water resources on public lands resulting from Federal actions do not jeopardize the sustainability of water resources or associated riparian/wetland habitats.

- **Wild Horses**

  - **GOAL (WH-G1)**: Manage the administratively designated Little Book Cliffs Wild Horse Range (LBCWHR) to sustain a healthy viable wild horse population while maintaining a thriving natural ecological balance of resources and uses. (Figure 2-4, Appendix A).
  - **Objective (WH-O1):** Emphasize protection of wild horses in the LBCWHR and minimize impacts to their population and habitat.

- **Objective (WH-O2):** Emphasize management of wild horses in the LBCWHR.
- **Objective (WH-O3):** Manage vegetative communities within the LBCWHR to maintain a forage base to support the established appropriate management level.
- **Objective (WH-O3):** Manage vegetative communities within the LBCWHR to maintain a forage base to support the established appropriate management level.
- **Objective (WH-O4):** Protect wild horses in the LBCWHR by limiting activities which disturb or harass wild horses during critical time periods.

➢ **Wildland Fire Management**

The GJFO proposes to use a full range of wildfire management actions, from full suppression to resource benefits on unplanned ignitions. Actions with implications and potential to adversely affect threatened and endangered species are:

- **Action WFM-A1:** Allow unplanned fire on 857,400 acres for resource benefit to manage diversity in desired plant communities in those areas identified in Figure 2-76 in Appendix A (RMP), approximately 81 percent of public lands in the GJFO.
- **Action WFM-A2:** Suppress all fires in Salt Desert Shrub communities to protect these communities that are not adapted to fire and to reduce cheatgrass invasion.
- **Action WFM-A3:** Implement fuels treatments actions that may include, but are not limited to:
  - ✓ Mechanical treatments, including mowing, weed-whacking, chopping (roller chopper), chipping, grinding (hydro-ax), chaining, tilling, and cutting.
  - ✓ Manual treatments, including hand cutting (chainsaw/handsaw) and hand-piling.
  - ✓ Prescribed fire, including pile and broadcast burning.
  - ✓ Chemical spraying or biological treatments, such as insects or goats.
  - ✓ Seeding, including aerial or ground application.
  - ✓ Commercial stewardship projects.

- **Action WFM-A4:** Use a combination of planned and unplanned fire along with fuels treatments including mechanical, manual, chemical, and seeding to meet resource objectives.
- **Action WFM-A5:** Prioritize vegetation treatments that are designed to strategically reduce wildfire threat in areas of high fire risk rather than where the probability of fire is low and the potential for natural post-fire recovery is high.

ACTION AREA

Action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). The action area for the proposed action consists of the BLM's GJFO, the nearly 1.1 million acres of BLM-administered lands and 1.2 million acres of Federal mineral estate within the GJFO planning area. BLM lands within the Dominguez-Escalante and McInnis Canyons National Conservation Areas are covered by separate RMPs and not included in the GJFO RMP revision. The action area includes the area described in BOs ES/GJ-6-CO-08-F-006 and ES/GJ-6-CO-08-F-0010.

STATUS OF THE SPECIES

The provided species descriptions, and life histories, and are incorporated herein, where appropriate, by reference.

Colorado Hookless Cactus

The Unita Basin hookless cactus was listed as a threatened species in 1979 (44 FR 58868). On September 15, 2009, the Service officially recognized the taxonomic split of this species into three distinct species, one of which is the Colorado hookless cactus (*Sclerocactus glaucus*) (74 FR 47112).

Colorado hookless cactus is a small ball or barrel-shaped cactus endemic to Montrose, Delta, Mesa, and Garfield Counties in western Colorado. Current data indicate that this species is currently known from about 98 occurrences totaling approximately 19,000 individuals (FWS 2010). These occurrences cover approximately 1,700 square miles, with an estimated 618,000 acres of potential habitat (FWS 2010). This species has two population centers, one associated with the Gunnison River and its tributaries near the City of Delta, and the other with the Colorado River and its tributaries near DeBeque, Colorado. Colorado hookless cactus was originally listed as threatened on October 11, 1979 (44 FR 58868), with revised listing due to taxonomic changes published on September 15, 2009 (74 FR 47112). Critical habitat has not been proposed for this species. The *Recovery Outline* (FWS 2010) presents an updated and thorough review of the species' status.

Habitat

Colorado hookless cactus grows primarily in the salt desert shrub community on alluvial terraces associated with the Gunnison and Colorado Rivers. Soils are commonly derived from Mancos shale often with a thin over layer of alluvium, and range from fine silty clay to coarse gravel with volcanic cobbles and boulders scattered on the surface. The dominant co-occurring plant species include *Atriplex confertifolia, Artemisia nova, Opuntia* spp., *Echinocereus triglochidiatus, Pleuraphis jamesii,* and *Acnatherum hymenoides*. Populations also occur in big sagebrush and the transition zone with pinyon-juniper woodland. Within these communities, Colorado hookless cactus is often found under small nurse shrubs, especially *Atriplex confertifolia*. In many Colorado hookless cactus populations, exotics occur, especially *Bromus tectorum* and/or *Halogeton glomeratus*, and *Acroptilon repens* along drainages. Typical elevations for the species range from 4,593 to 6,562 feet (1,400 to 2000 meters) above mean sea level (Heil and Porter 2004). According to the North Delta LHA report, BLM considers the Mancos shale communities that the cactus occurs in to have little resilience to disturbance due to soil chemistry and structure and the small amount of available moisture (BLM 2002).

Species Description and Life History

Colorado hookless cactus grows from a taproot and typically has a single stem that can grow to about 5 inches (12 cm) tall, with large individuals attaining heights of 11 inches (28 cm). Mature stem diameter may reach to 3.5 inches (9 cm) (Heil and Porter 2004), with large individuals growing to 4 or 5 inches (12-13 cm) (in CRVFO, some individuals are 12-13 cm) in girth. Tubercles are arranged into prominent longitudinal ribs. On the apex of each tubercle is an areole from which clusters of spines radiate. The central spine in each cluster is typically hookless. The large, funnel-shaped, pink flowers bloom from late April to May, with the small barrel-shaped fruits maturing in May and June. Flowers are hermaphroditic. Based upon preliminary breeding system studies by Tepedino, this species is believed to be primarily outcrossing (Heil and Porter 1994). Outcrossing presumably requires an insect vector for pollen transfer. Seed longevity in the ground, germination cues, and seed dispersal mechanisms for this species remain unstudied.

In addition to reproducing sexually, Colorado hookless cactus can produce new stems vegetatively by budding. New stem buds appear from beneath the main stem base, and may number from one to many. Field observations indicate that mild to moderate tissue damage, including herbivory by rodents and rabbits and crushing by vehicles, can stimulate budding (Conner 2011, pers. comm.). Presumably if the caudex is sufficiently damaged, no new buds can sprout and an individual dies. Individual cactus stems also appear to be able to sustain physical damage. Partially uprooted cacti and those with apparent herbivore or crushing damage have been observed to heal over and survive (BLM 2009; Conner 2011, pers. comm.).

Abundance and Viability

For each occurrence in their database, CNHP assesses the estimated viability of a species or ecological integrity of its community using ranks from A to D for excellent to poor. Of the 98 CNHP occurrences of Colorado hookless cactus, approximately 22 percent are ranked excellent to good (A, B, or BC), 10 percent fair (C), and 6 percent fair to poor (CD or D). The remainder are either considered historic because they have not been confirmed in over 20 years (42 percent, H rank), extirpated (1 percent, E rank), or they could not be ranked for a variety of reasons. The 21 occurrences ranked A or B represent at least 1,000 individuals (FWS 2010).

In addition to the known 98 occurrences recorded by CNHP, more than 6,000 individuals were recently found during surveys for an electric transmission line and a proposed wastewater evaporation pond facility in Delta County (BIO-Logic 2008, 2009). These additional 6,000 plants bring the estimated total individuals range-wide to approximately 19,000 (FWS 2010). Those 6,000 individuals would most likely be ranked A-B by CNHP, with the result that at least 37 percent of the estimated known individuals are in occurrences currently considered viable or ecologically intact.

DeBeque Phacelia

DeBeque phacelia (*Phacelia submutica*) is an herbaceous annual currently known from 22 occurrences distributed among nine populations spanning the Mesa and Garfield County line

near DeBeque, Colorado. The total known distribution includes approximately 625.9 acres within an area 19 miles long and 11 miles wide (76 FR 45054) at elevations ranging from 5,000 to 7,150 feet (1,525 to 2,180 meters; Service 2013). This species was listed as threatened on July 27, 2011 (76 FR 45054). The final listing rule provides a thorough review of the species' status. Critical habitat for the species was designated on August 13, 2012 (77 FR 48367).

The number of plants varies widely from year to year depending on climatic conditions. The fluctuation in numbers indicates that many seeds remain dormant in the seed bank during unfavorable years for germination. As such, it is difficult to estimate the total population size. Upper counts from surveys over the past 30 years estimated a total of 68,731 individuals (Service 2013). The final listing rule provides a thorough and up-to-date review of the status of the species.

Habitat

DeBeque phacelia is endemic to clay badland soils derived from the Atwell Gulch and Shire members of the Wasatch formation. It occurs in small patches (1 to 100 m^2) on uniquely textured soils that differ in an as yet unquantified way from adjacent soils. Preliminary results from studies conducted by the United States Geological Survey (USGS) indicate that soils in occupied habitat have higher clay content than adjacent unoccupied soils. Soil color ranges from chocolate to purple brown to gray or tan and are alkaline (pH 7 to 8.9), highly erosive, and exhibit dramatic shrink-swell activity due to their high clay content. They are especially susceptible to compaction when wet (76 FR 45054; 76 FR 45078).

The badlands occupied by DeBeque phacelia support stands of salt desert scrub and big sagebrush shrubland within pinyon-juniper woodland. Cover of other plant species is typically less than 10 percent. Associates include *Grindelia fastigiata, Eriogonum gordonii, Monolepis nuttalliana, Oenothera caespitosa,* and *Bromus tectorum*. Occurrences are typically located on moderately steep slopes, benches, and ridge tops adjacent to valley floors at elevations ranging from 5,000 to 7,150 feet (1,524 to 2,179 meters) above mean sea level (76 FR 45054; 76 FR 45078).

Species Description and Life History

DeBeque phacelia is a low-growing spring annual establishing from a thin tap root. Stems reach 0.8 to 3 inches (2 to 7.6 cm) in length, and typically branch at the base, with most branches held low to the ground in a rosette pattern. The tubular flowers are hermaphroditic, yellowish-white, and very small in size, with petals generally not exceeding 0.19 inches (4 to 5 mm) in length (76 FR 45054). Preliminary results from a breeding system study indicate that breeding occurs by self-pollination within individual flowers, without the need for an insect vector (Langton 2011, in litt.). The blooming period is from late April to late June, with fruits maturing from mid-May through early July, and seed dispersal complete by early July.

Once the plants have set fruit, they dry in the summer heat and are dislodged or disintegrate, often leaving no trace. Seed dispersal appears to be by gravity and possibly dislodged plants. It is thought that this species depends upon cracks in the soil surface to provide a favorable

environment for seed germination. Germination cues remain unknown, but based on research on other rare desert annuals (Levine et al. 2008) may involve interactions between temperature and moisture (76 FR 45054).

DeBeque phacelia depends on its seed bank for long-term survival. By storing viable genetic stock in the ground, individuals can "wait out" unfavorable environmental conditions. The buffering effect of a seed bank depends upon seed and germinant survival rates and how these factors are affected by environmental variation (Doak et al. 2002; Meyer et al. 2006). Seed bank vital rates remain unknown for this species. Given the importance of the seed bank to species health, preventing damage to or destruction of the seed bank is an important management consideration for DeBeque phacelia. Identifying occupied habitat can be challenging since plants may remain dormant underground during certain years and because emerged plants often disappear shortly after the growth period.

Abundance and Viability

New occurrences of this species have been found as recently as 2011. The estimated total number of plants range-wide varies between 7,767 and 68,371 per year. Of the 22 occurrences in the CNHP database, 7 have been ranked as A or B (two of these were ranked as B-C). These seven occurrences account for 66 percent of the known individuals based on counts recorded in good years in which germination rates were high (76 FR 45054).

Critical Habitat

The Service designated 25,484 acres of critical habitat within nine critical habitat units covering Federal, State, and private lands (77 FR 48367). Critical habitat was defined primarily by a minimum convex polygon around all known and historic populations, plus a 100-meter buffer outside of the polygons. The critical habitat units are identified as: Sulphur Gulch, Pyramid Rock, Roan Creek, DeBeque, Mount Logan, Ashmead Draw, Baugh Reservoir, Horsethief Mountain, and Anderson Gulch.

The Final Rule identifies the following Primary Constituent Elements for critical habitat:

1. Suitable soils and geology: Within the Atwell Gulch and Shire members of the Wasatch formation, areas 1 to 100 m^2 in size on colorful exposures of chocolate to purple brown to gray or tan soils. These areas have a higher clay content and different texture than adjacent soils. Areas include clay soils that shrink and swell dramatically, and are alkaline, with a pH between 7 and 8.9.
2. Topography: Moderately steep slopes (2 to 42 degrees), benches, and ridge tops adjacent to valley floors.
3. Elevation and climate: Elevations ranging from 4,600 to 7,450 feet, and climatic conditions similar to those around DeBeque, Colorado.
4. Plant community: Barrens from 1 to 100 m^2 in size with less than 20 percent plant cover in the least vegetated portions of the site. Clay badlands occurring in patches of salt desert scrub and big sagebrush shrubland within pinyon-juniper woodland. Associates include *Grindelia fastigiata, Eriogonum gordonii, Monolepis nuttalliana, Oenothera caespitosa*, and nonnatives such as *Bromus tectorum*.

5. Maintenance of the seed bank and appropriate disturbance levels: Within suitable soils and geology, undisturbed areas, and areas with light disturbance when dry, and no disturbance when wet.

Gunnison Sage-grouse

Species Description

Sage-grouse are the largest grouse in North America. Sage-grouse (both greater and Gunnison) are most easily identified by their large size, dark brown color, distinctive black bellies, long pointed tails, and association with sagebrush habitats. They are dimorphic in size, with females being smaller. Both sexes have yellow-green eye combs, which are less prominent in females. Sage-grouse are known for their elaborate mating ritual where males congregate on strutting grounds called leks and ''dance'' to attract a mate. During the breeding season, males have conspicuous filoplumes (specialized erectile feathers on the neck), and exhibit yellow-green apteria (fleshy bare patches of skin) on their breasts (Schroeder et al. 1999 in 79 FR 69192). Gunnison sage-grouse are smaller in size, have more white barring in their tail feathers, and have more filoplumes than greater sage-grouse.

Life History

Gunnison and greater sage-grouse depend on a variety of shrub-steppe habitats throughout their life cycle and are considered obligate users of several species of sagebrush (Patterson 1952, p.42; Braun et al. 1976; Schroeder et al. 1999; Connelly et al. 2000; Connelly et al. 2004, Miller et al. in press). Dietary requirements of the two species are also similar, being composed of nearly 100 percent sagebrush in the winter, and forbs and insects as well as sagebrush in the remainder of the year (Wallestad et al. 1975, p. 21; Schroeder et al. 1999, p. 5; Young et al. 2000, p. 452). Gunnison and greater sage-grouse do not possess muscular gizzards and, therefore, lack the ability to grind and digest seeds (Leach and Hensley 1954, p. 389). In addition to serving as a primary year-round food source, sagebrush also provides cover for nests and chicks (Connelly et al. 2000). Thus, sage-grouse distribution is strongly correlated with the distribution of sagebrush habitats (Schroeder et al. 2004, p. 364). Connelly et al. (2000) segregated habitat requirements into four seasons: (1) breeding (2) summer - late brood rearing (3) fall and (4) winter. Depending on habitat availability and proximity, some seasonal habitats may be indistinguishable. The Gunnison Sage-grouse Rangewide Steering Committee (GSRSC) (2005, p. 27-31) segregated habitat requirements into three seasons: (1) breeding (2) summer–late fall and (3) winter. For purposes of this finding, the seasons referenced in GSRSC (2005) are used because that publication deals specifically with GUSG. Sage-grouse exhibit strong site fidelity (loyalty to a particular area) to seasonal habitats, which includes breeding, nesting, brood rearing, and wintering areas, even when the area is no longer of value Connelly et al. 2004, p. 3-1). Adult sage-grouse rarely switch among these habitats once they have been selected, limiting their adaptability to changes. Sage-grouse distribution is associated with sagebrush (Schroeder et al. 2004 p. 364), although sagebrush is more widely distributed than sage-grouse because sagebrush does not always provide suitable habitat due to fragmentation and degradation (Schroeder et al. 2004, pp. 369, 372).

Status and Distribution

The Service listed the GUSG as an endangered species on November 20, 2014 (79 FR 69192). Concurrently, the Service designated 1,429,551 million acres of critical habitat for the species in nine southwestern Colorado counties and two southeastern Utah counties (79 FR 69312). Following is a brief description of the current distribution of the species' range-wide population and trends. A detailed discussion of GUSG taxonomy, the species description, historical distribution, habitat, and life-history characteristics can be found in the Service's 12-month finding for the GUSG (75 FR 59804).

Based on historical records, museum specimens, and potential sage grouse habitat, Schroeder et al. (2004) concluded that GUSG historically occurred in southwestern Colorado, northwestern New Mexico, northeastern Arizona, and southeastern Utah. Accounts of GUSG in Kansas and Oklahoma, as suggested by Young et al. (2000), are not supported with museum specimens and Schroeder et al. (2004) did not consider those two states within the historic range of GUSG. The GUSG historical (presettlement) range is estimated to have been 55,350 square kilometers (km2) (21,370 square miles [mi2]) (GSRSC 2005).

Gunnison sage-grouse currently occur in seven widely scattered and isolated populations in Colorado and Utah, occupying 3,795 square kilometers (km2) (1,511 square miles [mi2]) (GSRSC 2005; CDOW 2009a). The seven populations are Gunnison Basin, San Miguel Basin, Monticello–Dove Creek, Piñon Mesa, Crawford, Cerro Summit–Cimarron–Sims Mesa, and Poncha Pass (FR 69192). Population trends over the last 12 years indicate that six of the populations are in decline, with some increasing since 2011. The largest population, the Gunnison Basin population, while showing variation over the years, has been relatively stable through the period (CDOW 2010; CPW 2012). Six of the populations are very small and fragmented (all with less than 40,500 hectares (ha) (100,000 acres [ac]) of habitat likely used by grouse and, with the exception of the San Miguel population, less than 50 males counted on leks (communal breeding areas)) (CDOW 2009b; CPW 2012). The San Miguel population is the second largest and comprises six fragmented subpopulations.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State of private actions which are contemporaneous with the consultation process. The implementing regulations for section 7(a)(2) define the "action area" as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 *CFR* 402.02).

Colorado Hookless Cactus

Status of the Species in the Action Area

Within the action area, the Colorado hookless cactus occurs primarily near DeBeque, Colorado, (north and south of Interstate 70) and in the Whitewater, Colorado, area. The Denver Botanic Gardens, in collaboration with the BLM, conducts on-going cactus monitoring of several populations within the action area west of DeBeque and north of Mesa. Monitoring data indicate the species is stable throughout its range (DePrenger-Levin and Kao 2013).

On November 15, 2012, the Service issued BO number ES/GJ-6-CO-12-F-006. The opinion evaluated the effects of livestock grazing on the Colorado hookless cactus, DeBeque phacelia, and the clay-loving wild buckwheat on three BLM Field Offices including the GJFO. The 2012 BO found that grazing activities would cause adverse effects to the Colorado hookless cactus, but that these activities would not jeopardize the continued survival of the cactus. The BLM does not anticipate additional effects to the Colorado Hookless cactus caused by the grazing program.

Past and Present Impacts

The primary threats to Colorado hookless cactus are (Service 2010):

- Natural gas exploration and production
- Pipelines, utilities, and other rights-of-way (ROWs)
- Off-highway vehicle activity
- Livestock grazing and trampling
- Herbicides and pesticides
- Hybridization
- Illegal human collection
- Potential water developments
- Climate change

Threats to the species within the GJFO include habitat degradation as a result of livestock trampling and grazing, non-native halogeton and cheatgrass encroachment, energy development, recreation, and unauthorized collection. Predation by rabbits and cactus-borer beetle (*Moneilema semipunctatum*) may also be a significant source of mortality (Service 2010). Of the 3,200 acres of habitat for the Colorado hookless cactus, 2,700 acres are currently under existing leases.

DeBeque Phacelia

Status of the Species in the Action Area

There are 19,600 acres of critical habitat within the action area. Of the nine designated critical habitat units (CHUs), unit 2 (Pyramid Rock) is the largest at approximately 17,321 acres located west of the town of DeBeque, Colorado.

On November 15, 2012, the Service issued BO number ES/GJ-6-CO-12-F-006. The opinion evaluated the effects of livestock grazing on the Colorado hookless cactus, DeBeque phacelia,

and the clay-loving wild buckwheat on three BLM Field Offices including the GJFO. The 2012 BO found that grazing activities would cause adverse effects to the DeBeque phacelia and its critical habitat, but that these activities would not jeopardize the continued existence of the species. Further, the Service found that the grazing program will not result in the destruction or adverse modification of critical habitat for DeBeque phacelia.

Past and Present Impacts

The primary threats to DeBeque phacelia are as follows (Service 2013):

- Oil and gas development
- Utility and energy corridors
- Livestock use and trampling
- OHV use
- Invasive nonnative plants
- Water reservoirs
- Climate change and drought

DeBeque phacelia is especially vulnerable to habitat loss by virtue of being restricted to the barren and semi-barren habitat of specific members of the Wasatch geological formation that has a limited distribution within the Piceance Basin (Ladyman 2003). Its habitat coincides with high potential natural gas reserves and has historically been affected by activities associated with resource extraction. Activities that lead to significant soil disturbance, or progressive soil erosion, eliminate or sharply reduce the seed bank, which appears to be the mechanism by which populations survive. Additionally, surface-disturbing activities can introduce and spread weeds resulting in altered plant communities that threaten DeBeque phacelia. Impacts on DeBeque phacelia have also been documented from OHV use and livestock trampling (Service 2013). Of the 19,600 acres of critical habitat designated for the DeBeque Phacelia, 19,400 acres are currently under existing leases.

Gunnison sage-grouse

Status of the Species within the Action Area

The action area for the proposed RMP encompasses lands within the GJFO including GUSG habitat defined as "occupied," and "unoccupied" as described in the final rule (79 FR 69312). Within the GJFO, GUSG occur on the Glade Park/Pinon Mesa and northern Uncompahgre Plateau areas in the southwestern part of the Field Office Planning Area.

Piñon Mesa Population—The Piñon Mesa population occurs on the northwestern end of the Uncompahgre Plateau in Mesa County, Colorado about 35 km (22 mi) southwest of Grand Junction, Colorado. Gunnison sage-grouse likely occurred historically in all suitable sagebrush habitat in the Piñon Mesa area, including the Big Dominguez watershed area of the Uncompahgre Plateau, southeast of Piñon Mesa proper (Rogers 1964). Their current distribution is approximately 18,080 ha (44,678 ac) (GSRSC 2005) which, based on a comparison of potential presettlement distribution, is approximately six percent of presettlement habitat on the northern portion of the Uncompahgre Plateau in Mesa County, Colorado, and Grand County,

Utah. The 2014 population estimate was 182 birds (CPW 2014a), much greater than the 2012 estimate of 54 birds. This increase is likely due to the transplanting of 93 grouse to Piñon Mesa population between the fall of 2012 and spring of 2014 (CPW 2014b and the discovery of two additional leks in 2012 (CPW 2012). Population estimates from 1996 to 2014 are below the population target of 200 breeding birds (based on a 10-year average) for the Piñon Mesa population, as set forth by the RCP (CPW 2014a; GSRSC 2005). Of 12 known leks, only 4 were active in 2012 (CPW 2012).

Threats

The primary threats to the GUSG within the GJFO include:

- Habitat Loss, degradation and Fragmentation from Residential, Commercial and Agricultural conversion and urbanization
- Fire
- Invasive species
- Recreation

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Colorado hookless cactus and DeBeque phacelia

As stated in the consultation history, the Service concurred with the determination of may affect, not likely to adversely affect the Colorado hookless cactus and the DeBeque phacelia for the IWMP. In addition, the Service addressed the adverse effects to the Colorado hookless cactus and the DeBeque phacelia caused by livestock grazing on the GJFO in BO number ES/GJ-6-CO-12-F-006 (Tails: 06E24100-2012-F-0020). The proposed action (revised RMP) will not cause additional effects from grazing or weed management. Therefore, the effects of grazing and weed management have been fully considered and the section 7 requirement has been satisfied for the Colorado hookless cactus and the DeBeque phacelia. Adverse effects to these plant species may result from implementation of vegetation management, comprehensive travel and transportation management under the proposed action. Specifically, the designation of routes within the GJFO is likely to result in negative effects to these species. In addition, adverse effects to the plant are likely to occur from the presence of wild horses and the issuance of permits to drill on existing leased lands.

Actions that affect listed plant species may result in the following general effects:

Direct mortality - Mortality can result from crushing, trampling, or physically removing plants. Contact with herbicides or other chemicals, can also cause direct mortality. Where occurrences of a plant are small, loss of a portion of the plants can compromise its viability. Loss of occurrences can compromise species viability due to reduced genetic diversity and a reduced ability to withstand natural or man-made disturbances.

Loss of vigor or reduced reproductive success - Trampling and coming in contact with chemicals may not always result in mortality. However, exposure to these impacts can reduce vigor, which affects the plant's ability to reproduce and sustain the population. The consumption of flowers, seeds, stems, and foliage of special status plants (herbivory) can reduce reproductive success, or in some cases result in death. Dust deposited on special status plants may reduce their photosynthetic ability, or the ability of pollinators to transfer pollen between plants.

Direct loss of potential or occupied habitat - Direct habitat loss results when habitat is physically destroyed or converted to a form that is unsuitable for the impacted species. Direct habitat loss can be short term or permanent. Surface-disturbing activities, such as construction and use of roads, trails, parking lots, buildings, power poles, wind turbines, and ponds, may result in permanent loss of occupied or potentially occupied habitat. This would reduce the total habitat capable of supporting listed plant populations and fragment remaining populations.

Short-term, temporary habitat loss can occur with habitat improvement projects, such as those addressing encroaching junipers in sagebrush or salt desert shrub habitats. Closure or reclamation of disturbed areas may eventually restore lost habitat. However, disturbance can require years or decades for recovery to pre-disturbance condition. If reclamation does not result in habitat suitable for sustaining special status plants, habitat may be permanently lost.

Changes in habitat structure - A canopy cover of shrubs offers habitat characteristics that appear to be favorable for several special status plant species, such as Colorado hookless cactus, to germinate and become established. Shrubs may protect some special status plants from herbivory or trampling and may provide improved moisture availability or reduced moisture loss under the canopy. Surface-disturbing activities that significantly reduce the percent canopy cover of shrubs may allow increased herbivory or moisture loss, resulting in decreased vigor or mortality of special status plants.

Competition - Changes in species composition also affect listed plant populations. Proliferation of noxious weeds or other invasive plants may render habitat unsuitable by outcompeting listed plants for water and nutrients or by preventing seedling germination and establishment. Occupied Colorado hookless cactus habitat that is dominated by cheatgrass appears to inhibit seedling cactus germination, thereby threatening the long-term viability of this population. In some cases, increases in canopy cover and density of native species, particularly grasses, can compete with listed plants for limited water and nutrients.

Other species, such as DeBeque phacelia thrive in environments where vegetation is sparse and competition is low. Increases in vegetation cover (following disturbances, such as fire or seeding) may cause competition with special status plants, resulting in decreased vigor or mortality.

Loss of pollinators or pollinator habitat - Actions that disturb pollinators or that destroy their habitat can have a detrimental effect on plant species. Long-term loss of pollinators can reduce the reproductive ability of these plant species and affect maintenance and genetic diversity of populations.

Habitat fragmentation - Habitat becomes fragmented when contiguous habitat is broken into smaller blocks by surface- disturbing activities and distances between suitable habitat patches increase. Because pollinators fly only limited distances, they are less likely to use small and isolated patches of habitat. Habitat fragmentation can effectively isolate pollinators from special status plants. Smaller populations receive fewer pollinator visits, so seed production is lower in small populations.

Small population size decreases reproductive success and increases inbreeding and loss of genetic variation. As a result, fragmentation may lower population viability and increase local population extinction risk (Kolb 2008). Herbivory does not decrease with population size. Instead, it enforces fragmentation by further reducing the number of flowering individuals (Kolb 2008). Closure and rehabilitation of roads in listed plant habitat may benefit the long-term survival of populations by decreasing habitat fragmentation.

Soil compaction - Soil compaction resulting from heavy equipment or vehicle travel may reduce soil pore size, inhibit water infiltration, and restrict root penetration, thereby inhibiting maintenance and establishment of special status plants.

Erosion or sedimentation - Special status plants may be washed away or their roots may be exposed by erosion from surface-disturbing activities, such as blading or bulldozing for roads. Special status plants may be buried by sedimentation resulting from disturbances upslope of special status plant populations.

Alteration of hydrologic conditions - Some special status plant species (such as Ute ladies'-tresses orchid), which are dependent on seasonally flooded environments, sub-irrigated soils, or seeps, may be negatively affected by changes in surface or groundwater flow.

Changes in fire regime - Changes in species composition, either in special status plant habitat or in adjacent plant communities, may alter the natural fire regime to which the plants are adapted. Cheatgrass, a highly flammable annual grass, may drastically increase the fire frequency in special status plant habitat, affecting the survivability and viability of the population.

Habitat restoration - This can result from vegetation management projects, hydrologic function restoration, invasive species removal, historic fire regimes restoration, grazing management alteration, or other methods. However, any habitat restoration project for special status plants must be designed specifically for the individual plant species and its specific habitat and site conditions. Generalized habitat restoration projects that do not focus on special status plant needs can have negative effects on these species.

Comprehensive Travel and Transportation Management

The BA assumes that certain distances between an activity/action and federally listed plants or habitats, trigger an effect to the species. However, the magnitude of the effect was not defined in the document. We contacted the BLM to confirm that an activity/action within 200 meters of a federally listed plant or plant population triggered a may affect conclusion with regard to that activity/action. If the activity/action occurs within 20 meters of a plant or plant population, the action would cause adverse effects to the plants. An additional assumption is that in some situations, route designations under the revised RMP may fall within 20 meters of unknown locations of federally listed plants, plant populations, and critical habitat (if applicable), causing adverse effects.

As stated above, the proposed RMP designates 126,200 acres closed to motorized use; 925,200 acres closed to cross-country travel, with travel authorized on designated routes, and retains 10,200 acres of open (cross-country) motorized use. The change in management from open cross-country motorized travel to restricting motorized travel to designated routes represents a significant reduction in potential direct and indirect effects to federally listed plants. However, the restriction of motorized use to designated routes is still likely to result in adverse effects to listed plants in proximity to the designated routes.

Direct effects on listed plants from recreation include surface disturbing activities, such as construction of developed recreation facilities, motorized or off-road vehicle (OHV) use, and foot or horse travel. Dispersed recreation off existing roads or trails can result in direct mortality of listed plant species from crushing, trampling, or uprooting. Indirect effects may also occur from recreational use, such as soil compaction, changes in vegetation composition and structure, and loss of vegetative cover; all of which may degrade habitat. Additionally, increased disturbance can result in the spread and establishment of noxious weed populations. The levels of impact are related to the duration, intensity, and expanse of recreation, and are expected to increase with increased visitation. The risk of impacts is greatest in areas where concentrated human activity, such as Special Recreation Management Areas (SRMAs) and Extensive Recreation Management Areas (ERMAs), overlap with habitat for listed plant species. In general, SRMAs, and ERMAs would avoid much of the currently occupied habitats for special status plant species; however, in some areas the BLM will employ adaptive management to protect special status species if impacts occur. Impacts would be more likely to occur in areas that have not been previously inventoried (i.e. unknown occurrences). Travel routes would be planned to avoid known occurrences.

Oil and Gas Development

Direct impacts associated with oil and gas development include habitat disturbance, fragmentation, and destruction; as well as direct mortality from construction equipment, land clearing activities, and vehicle use. The construction of access roads, well pads, pipelines, buildings, holding tanks, and other infrastructure associated with oil and gas development can fragment or degrade habitat, and result in indirect effects such as erosion, sedimentation, and establishment of noxious weeds.

Colorado Hookless Cactus

Under the proposed RMP, 56.4 miles of routes open to the public are located within 200 meters of known Colorado hookless cactus occurrences. Approximately 11 miles of open routes are county maintained where the BLM has limited discretion. Approximately 48 miles of existing routes are proposed for closure and rehabilitation. Approximately 4 miles of routes will be designated within 20 meters of known Colorado hookless cactus occurrences, thus causing adverse effects as described above, and 1.1 miles of routes would be restricted to administrative and permitted use. There will be 5.8 miles of routes within 20 meters of known occurrences proposed for closure and rehabilitation. The BLM also anticipates impacts to plants, in the form of trampling, caused by cross-country foot and horse travel.

As stated above, approximately 2,700 acres of Colorado hookless cactus habitat is currently under existing leases. Since the conservation framework in the revised RMP cannot affect currently leased lands in any meaningful way, we anticipate a full spectrum of impacts described above may occur, including the potential loss of cactus plants. We further anticipate that BLM will work with any applicant and the Service to minimize negative effects to the plants to the maximum extent practicable through conditions of approval for applications for permits to drill.

Wild Horses

Under the revised RMP, the BLM will continue to manage the 35,200-acre Little Book Cliffs Wild Horse Range (LBCWHR) located northwest of Palisade, CO. Colorado hookless cactus occurrences have been recorded in this area, and may be trampled and/or habitat degradation may occur. The LBCWHR will be managed at an appropriate management level, currently identified as 90-150 wild horses, although this number may be adjusted if warranted by range conditions.

At this broad programmatic scale, it is not possible to quantify the loss of plants impacted by implementation of the proposed action. The conservation measures for listed species within the revised RMP should significantly reduce impacts to federally listed plants and critical habitat (as appropriate). We anticipate a low level of mortality of plants relative to the populations of Colorado hookless cactus within the GJFO.

DeBeque phacelia

The BLM stated that numerous actions, stipulations, BMPs and other measures section 4.2.1 (in the BA) would be implemented under the RMP to protect the DeBeque phacelia and its habitat throughout the planning area. However, their determination indicated that adverse effects from livestock grazing and travel management are still anticipated.

The BLM identified 1.4 miles of designated routes within 200 meters of known DeBeque phacelia populations, including 0.9 miles of county- maintained roads where the BLM may lack discretion, and did not identify any routes occurring within 20 meters of known occurrences. However, consistent with our assumption, unknown individuals or populations, and critical

habitat may occur within 20 meters of designated routes. Thus, these routes are likely to cause adverse effects the species and critical habitat.

The RMP will retain the 1,300-acre Pyramid Rock ACEC and designate the 28,200-acre South Shale Ridge ACEC, which both contain critical habitat for the DeBeque phacelia, specifically the Pyramid Rock and Sulphur Gulch CH Units. The Pyramid Rock ACEC contains only a small portion of the Pyramid Rock CH Unit, but the South Shale Ridge ACEC includes all of the Sulphur Gulch CH Unit. Stipulation NSO-12 (ACECs) prohibits surface occupancy and surface-disturbing activities within each ACEC. All nine critical habitat units will be subject to Stipulations CSU-9 (Sensitive Plant Species Occupied Habitat), NSO-13 (Critical Habitat), LN-3 (Biological Inventories in known or suspected habitat) and LN-4 (Botanical Inventories in known habitat of T & E plant species).

As stated above, approximately 19,400 acres of DeBeque phacelia habitat is currently under existing leases. Since the conservation framework in the revised RMP cannot affect currently leased lands in any meaningful way, we anticipate a full spectrum of impacts described above may occur, including the potential loss of these plants. We further anticipate that BLM will work with any applicant and the Service to minimize negative effects to the plants to the maximum extent practicable through conditions of approval for applications for permits to drill.

At this broad programmatic scale, it is not possible to quantify the loss of plants impacted by implementation of the proposed action. The conservation measures for listed species and critical habitat within the revised RMP should significantly reduce, and may eliminate future impacts to federally listed plants and critical habitat (as appropriate). We anticipate a low level of mortality of plants relative to the populations within the GJFO.

Gunnison sage-grouse

Factors to be Considered

Gunnison sage-grouse depend on sagebrush for their survival and persistence, and the historic and current distribution of the GUSG closely matches that of sagebrush (Patterson 1952; Braun 1987; Schroeder et al. 2004, and references therein). Habitat fragmentation resulting from human development patterns is especially detrimental to GUSG because of their dependence on large expanses of sagebrush (Patterson 1952; Connelly et al. 2004; Connelly et al. 2011) and more contiguous sagebrush habitats (Rogers 1964; Wisdom et al. 2011). In addition, female Gunnison and greater sage-grouse exhibit strong site fidelity to nesting locations (Connelly et al. 1988; Young 1994; Lyon 2000, Connelly et al. 2004, Holloran and Anderson 2005). Sage-grouse often will continue to return to altered breeding habitats (leks, nesting areas, and early brood-rearing areas), despite any past failures in nesting or productivity (Rogers 1964; Wiens and Rotenberry 1985; Young 1994; Lyon 2000, Connelly et al. 2004; Holloran and Anderson 2005). Consequently, there may be lags in the response of GUSG to development or habitat changes, similar to those observed in other sagebrush obligate birds (Wiens and Rotenberry 1985).

The distribution of sage-grouse habitat is naturally disconnected due to the presence of unsuitable habitats such as forests, deserts, and canyons across the landscape (Rogers 1964). However, the onset of Euro-American settlement in the 1800s resulted in significant human alterations to sagebrush ecosystems throughout North America, primarily as a result of urbanization, agricultural conversion, and irrigation projects (West and Young 2000; Miller et al. 2011). Areas in Colorado that supported basin big sagebrush were among the first sagebrush community types converted to agriculture because their soils and topography are well-suited for agriculture (Rogers 1964). Decreases in the abundance of sage-grouse paralleled the loss of range (Braun 1998), and a gradual but marked decrease in sage-grouse distribution and numbers in Colorado had begun around 1910 (Rogers 1964).

Sagebrush habitats within the range of GUSG are becoming increasingly fragmented as a result of various changes in land uses and the expansion in the density and distribution of invasive plant species (Oyler-McCance et al. 2001; Schroeder et al. 2004). Based on spatial modeling, a variety of human developments including roads, energy development, residential development, and other factors known to cause habitat decline were correlated with historical loss of range and extirpation of Gunnison and greater sage-grouse (Wisdom et al. 2011). The model indicated that no secure areas (areas where the risk of extirpation appears low) of occupied range are evident for GUSG (Wisdom et al. 2011). Landscapes containing large and contiguous sagebrush patches and sagebrush patches in close proximity had an increased likelihood of sage-grouse persistence (Wisdom et al. 2011).

The degree to which habitat fragmentation prevents a species' movement across the landscape depends, in part, on that species' ability to move large distances and thereby adjust to changes on the landscape. Sage-grouse are wide-ranging and capable of making large seasonal movements, because they require a diversity of seasonal habitats (Connelly et al. 2000, and references therein). Movements as great as 56 km (35 mi) have been documented in the Gunnison Basin (Phillips 2013). In contrast, the maximum recorded movement distance of GUSG in the Monticello population is 8.2 km (5.1 mi), associated with winter movement (Ward 2007). Prather (2010) noted that such behavior may be due to the presence of large areas of piñon -juniper (i.e. less suitable habitats) which bracket currently occupied habitat in the Monticello population area. Population dynamics of greater sage-grouse in northwestern Colorado functioned at much smaller scales than expected for a species capable of moving large distances (Thompson 2012), suggesting that large expanses of contiguous sagebrush habitat may not be necessary for sage-grouse survival. The majority of juvenile dispersal was intra-population movement (within one breeding population), with only one inter-population movement (between separate breeding populations) observed during the study (Thompson 2012). As a result, juvenile recruitment into home breeding ranges ranged between 98 and 100 percent (Thompson 2012). Based on observed bird dispersal in that study, gene flow and connectivity can likely be maintained for populations within 5 to 10 km (most dispersals were less than 10 km) and possibly as far as 20 km (the maximum dispersal distance of birds studied) in greater sage-grouse (Thompson 2012). Because bird movements likely vary by population and area, their susceptibility to habitat loss and degradation may also differ. We expect that where habitat is already more limited (quantity and quality) and isolated, such as in the six satellite populations, habitat loss and decline will have more serious consequences in terms of population fitness and survival. Where habitat is already severely limited or degraded, or where sage-grouse

populations are small, any loss of habitat may impact those populations. In addition, habitat loss impacts are expected to be greater in important seasonal habitats, such as areas used during moderate to severe winters, or in lekking, nesting, or brood-rearing habitats (GSRSC 2005).

The decline or loss of lek and brood-rearing habitats can have serious consequences for sage-grouse population viability by reducing reproductive success and recruitment (survival of young to breeding age). Limitations in the quality and quantity of nesting and early brood-rearing habitats, in particular, are especially important because GUSG population dynamics are most sensitive during these life-history stages (GSRSC 2005). Juvenile recruitment is one of the most important demographic factors influencing or limiting sage-grouse population growth rates and viability (Connelly et al. 2004, GSRSC 2005).

Roads

Impacts to GUSG from roads may include direct habitat loss, direct mortality, barriers to migration corridors or seasonal habitats, facilitation of predation and spread of invasive vegetative species, and other indirect influences such as noise (Forman and Alexander 1998).

Roads have been shown to fragment GUSG habitat, with road avoidance by birds presumably to limit exposure to human activity and predation (Oyler-McCance et al. 2001). The probability of GUSG habitat occupancy (presence based on pellet surveys or sage-grouse observation) was positively correlated with distance to roads and habitat patch size (Oyler-McCance et al. 1999).

Gunnison sage-grouse may avoid road areas because of noise, visual disturbance, pollutants, and predators moving along roads, which further reduces the amount of available habitat. An unpublished study by Western State Colorado University and CPW in the Gunnison Basin found that anthropogenic noise was significantly higher at leks closer to roads and human activity centers than leks farther from those sources (Piquette et al. 2013). Leks with higher noise levels were associated with lower GUSG male counts and attendance (Piquette et al. 2013). The landscape-scale spatial model predicting GUSG nest site selection showed strong avoidance of areas with high road densities of roads classed 1 through 4 (primary paved highways through primitive roads with 2-wheel drive sedan clearance) within 6.4 km (4 mi) of nest sites (Aldridge et al. 2012). Nest sites also decreased with increased proximity to primary and secondary paved highways (roads classes 1 and 2) (Aldridge et al. 2012). Male greater sage-grouse lek attendance was shown to decline within 3 km (1.9 mi) of a deep seam natural gas well haul road where traffic volume exceeded one vehicle per day (Holloran 2005). If noise from roads interferes with mating displays, and thereby female attendance, younger males will not be drawn to the lek and eventually leks will become inactive (Amstrup and Phillips 1977; Braun 1986). However, other information (CPW 2013) suggests GUSG in the Gunnison Basin may be fairly tolerant of roads, even the more heavily used highways and county routes, and the potential direct or indirect effects of those roads.

The presence of roads increases human access and resulting disturbance effects in remote areas (Forman and Alexander 1998; Forman 2000; Connelly et al. 2004). In addition, roads can provide corridors for predators to move into previously unoccupied areas. Some mammalian species known to prey on sage-grouse, such as red fox (*Vulpes vulpes*), raccoons (*Procyon lotor*),

and striped skunks (*Mephitis mephitis*), have greatly increased their distribution by dispersing along roads (Forman and Alexander 1998; Forman 2000; Frey and Conover 2006). Corvids (Family Corvidae: crows, ravens, magpies, etc.) also use linear features such as primary and secondary roads as travel routes (Bui 2009), expanding their movements into previously unused regions (Knight and Kawashima 1993; Connelly et al. 2004). Corvids are significant sage-grouse nest predators and were responsible for more than 50 percent of nest predations in Nevada (Coates 2007).

The expansion of road networks also contributes to exotic plant invasions via introduced road fill, vehicle transport, and road maintenance activities (Forman and Alexander 1998; Forman 2000; Gelbard and Belnap 2003; Knick et al. 2003; Connelly et al. 2004). Invasive species are not limited to roadsides, but also encroach into surrounding habitats (Forman and Alexander 1998; Forman 2000; Gelbard and Belnap 2003). Upgrading unpaved four-wheel-drive roads to paved roads resulted in increased cover of exotic plant species within the interior of adjacent plant communities (Gelbard and Belnap 2003). This effect was associated with road construction and maintenance activities and vehicle traffic, and not with differences in site characteristics. The incursion of exotic plants into native sagebrush systems can negatively affect GUSG through habitat losses and conversions.

Powerlines

Depending on the infrastructure design, size, location, and site-specific factors, powerlines can directly affect greater sage-grouse by posing a collision and electrocution hazard (Braun 1998; Connelly et al. 2000) and can have indirect effects by decreasing lek recruitment (Braun et al. 2002, Walker et al. 2007), increasing predation (Connelly et al. 2004), fragmenting habitat (Braun 1998), and facilitating the invasion of exotic annual plants (Knick et al. 2003; Connelly et al. 2004).

In areas where vegetation is low and the terrain relatively flat, power poles provide an attractive hunting, roosting, and nesting perch for many species of raptors and corvids, known predators of GUSG (Steenhof et al. 1993; Connelly et al. 2000; Manville 2002; Vander Haegen et al. 2002). Power poles increase a raptor's range of vision, allow for greater speed during attacks on prey, and serve as territorial markers (Steenhof et al. 1993; Manville 2002), thereby increasing the likelihood of predation where sage-grouse occur. Golden eagle (*Aquila chryrsaetos*) predation on sage-grouse on leks increased from 26 to 73 percent of the total predation after completion of a transmission line within 200 meters (m) (220 yards (yd)) of an active sage-grouse lek in northeastern Utah (Ellis 1985). The lek was eventually abandoned, and Ellis (1985) concluded that the presence of the powerline resulted in changes in sage-grouse dispersal patterns and caused fragmentation of the habitat.

Powerlines may negatively impact sage-grouse habitats even if raptors are not present. The use of otherwise suitable habitat by sage-grouse near powerlines increased as distance from the powerline increased for up to 600 m (660 yd) (Braun 1998), indicating sage-grouse avoidance of powerlines. Based on those unpublished data, Braun (1998) reported that the presence of powerlines may limit Gunnison and greater sage-grouse use within 1 km (0.6 mi) in otherwise

suitable habitat. Based on spatial modeling, sage-grouse extirpation appears to be correlated to the presence of powerlines (Wisdom et al. 2011).

Livestock Grazing

Livestock management and domestic grazing have the potential to degrade GUSG habitat. Grazing can adversely impact nesting and brood-rearing habitat by decreasing vegetation available for concealment from predators. Decreases in vegetation may result in failures in nesting or reduced or lost productivity. Grazing also has been shown to compact soils, decrease herbaceous abundance, increase erosion, and increase the probability of invasion of exotic plant species (GSRSC 2005). The impacts of livestock operations on GUSG depend upon stocking levels and season of use.

We know that grazing can have negative impacts to sagebrush and consequently to GUSG at local scales. Impacts to sagebrush plant communities as a result of grazing are occurring on a large portion of the range of the species. Given the widespread nature of grazing within the range of GUSG, the potential for population-level impacts exists.

Livestock grazing may also have positive effects on sage-grouse under some habitat conditions. Sage-grouse use grazed meadows significantly more during late summer than ungrazed meadows because grazing had stimulated the regrowth of forbs (Evans 1986). Greater sage-grouse sought out and used openings in meadows created by cattle grazing in northern Nevada (Klebenow 1981). Also, both sheep and goats have been used to control invasive weeds (Mosley 1996 in Connelly et al. 2004; Merritt et al. 2001; Olsen and Wallander 2001) and woody plant encroachment (Riggs and Urness 1989) in sage-grouse habitat.

Fences

Effects of fencing on sage-grouse include direct mortality through collisions, creation of raptor and corvid perch sites, the potential creation of predator corridors along fences (particularly if a road is maintained next to the fence), incursion of exotic species along the fencing corridor, and habitat decline (Call and Maser 1985; Braun 1998; Connelly et al. 2000; Beck et al. 2003; Knick et al. 2003; Connelly et al. 2004). However, fences can also benefit GUSG by facilitating the management of livestock forage use and distribution to achieve desired habitat objectives (GSRSC 2005).

Sage-grouse frequently fly low and fast across sagebrush flats, and fences can create a collision hazard resulting in direct mortality (Call and Maser 1985; Christiansen 2009). Not all fences present the same mortality risk to sage-grouse. Mortality risk appears to be dependent on a combination of factors including design of fencing, landscape topography, and spatial relationship with seasonal habitats (Christiansen 2009).

Although we expect the impacts of fences to GUSG are similar to those observed in greater sage-grouse, studies on fence strike-related mortality in GUSG are more limited. However, in 10 years of tracking and studying over 1,000 radio-collared sage-grouse in Colorado, CPW has documented only two strike-related mortalities in GUSG due to fences (one confirmed case in

Poncha Pass attributed to bird release methods; and one unconfirmed case in the Gunnison Basin).

Fence posts create perching places for raptors and corvids, which may increase the ability of these birds to prey on sage-grouse (Braun 1998; Oyler-McCance et al. 2001; Connelly et al. 2004). This impact is potentially significant for sage-grouse reproduction because corvids were responsible for more than 50 percent of greater sage-grouse nest predations in Nevada (Coates 2007). Greater sage-grouse avoidance of habitat adjacent to fences, presumably to minimize the risk of predation, effectively results in habitat fragmentation even if the actual habitat is not removed (Braun 1998). Because of similarities in behavior and habitat use, the response of GUSG should be similar to that observed in greater sage-grouse.

We recognize that the stipulations, controlled surface uses, and timing limitations include exceptions, modifications, and waivers. For the purposes of this BO, we assume that the BLM granting of exceptions, modifications, or waivers, to stipulations or controlled surface uses, or timing restrictions within critical habitat for the GUSG will be extremely rare and requires separate section 7 consultation. We make this assumption for the purpose of a simplified effects analysis. It is not possible for to anticipate use of exceptions, modifications, or waivers, therefore it is not possible for us to reasonably predict the negative effects to GUSG or their critical habitat associated with their use. The use of exceptions, modifications, and waivers within critical habitat for the GUSG may require reinitiation of section 7 consultation.

Analysis of Effects of the Action

The BA concluded that implementation of the RMP where the following resources or issues occur will not affect the GUSG or its critical habitat: air and climate; wild horses; cultural resources; paleontological; visual water; wild and scenic rivers; lands with wilderness characteristics; forestry, national trails; national, State, and BLM byways; wilderness study areas; Native American tribal uses; public health and safety; socioeconomic; and environmental justice. These issues will not be further addressed within this BO.

Vegetation Management

Vegetation management and protection would impact GUSG. Management to improve and protect vegetation conditions throughout the planning area would improve vegetative cover, reduce the likelihood for erosion and sedimentation, and maintain seed banks. Most vegetation treatments would not directly affect GUSG, as a timing limitation would be applied to avoid impacts during sensitive periods. Vegetation treatments would improve habitat for GUSG in the long-term by providing more opportunities for lekking, nesting, brood-rearing, wintering, cover, and foraging. However, in the short-term, vegetation treatments may remove habitat or increase the potential for weed spread. In addition, human disturbance and noise associated with the use of heavy equipment for vegetation removal could temporarily displace GUSG from foraging, breeding, nesting, and wintering habitats.

Gunnison sage-grouse habitat would be improved and maintained through vegetation treatments, prioritizing winter sage-grouse habitat for treatment and restoration, developing restoration plans

in non-functioning habitat, reducing pinyon-juniper encroachments, increasing habitat connectivity, and managing for age class diversity. Actions to reduce pinyon-juniper woodland invasion of upper elevation sagebrush communities would benefit GUSG that require open sage parks. Monitoring after vegetation treatments would occur to evaluate success in meeting objectives. These actions would help support GUSG habitats, and are consistent with the conservation measures identified in the Piñon Mesa Conservation Plan (Piñon Mesa Gunnison Sage Grouse Working Group 2000).

Habitat Improvement

Public land management agencies should continue to improve the quality of sagebrush communities on public land through grazing management, fencing, re-seeding, fuels management, and other treatment projects (GSRSC 2005). The RMP anticipates habitat restoration and improvement, and projects will focus on removal of pinyon-juniper encroachment into sage grouse habitats and on restoration of degraded sage-grouse habitats. Some of the methods used during habitat restoration or improvement may cause short-term negative effects to GUSG. For example, use of fencing to keep livestock out of areas being rested from grazing pressure may provide perches for predators, potentially resulting in avoidance of the area by GUSG.

Weed Management

Noxious and invasive weeds are generally lower in cover and forage value to wildlife and degrade habitat by displacing and reducing optimal cover or food. The RMP goal and objectives call for control and reduction of weeds. Objective VW-O2 requires weed prevention on appropriate actions authorized within the planning area. Action VW-A3 states:
Implement preventative measures for activities associated with oil and gas operations; ROWs; range developments; special recreation permits (SRP); and construction and mechanical vegetation treatment activities as authorized in contracts and permits.

Fish and Wildlife Management

The BLM would establish ten wildlife emphasis areas on 150,000 acres to protect areas with high wildlife value and significance, focusing on protecting habitat for big game, cutthroat trout, and sage-grouse. This strategy would allow the BLM to focus their wildlife management efforts in the areas that would be most effective to preserve and protect fish and wildlife, including GUSG. The Timber Ridge and Glade Park wildlife emphasis areas will be of particular benefit to the GUSG, as these boundaries would overlap with occupied habitat for the species and a recently discovered lek in the Timber Ridge area. These wildlife emphasis areas encompass approximately 96 percent of occupied critical habitat and approximately 49 percent of unoccupied critical habitat on BLM-administered lands. The Glade Park emphasis area encompasses 10,100 acres of GUSG occupied critical habitat; this accounts for the majority (95 percent) of occupied proposed critical habitat on BLM-administered lands. Examples of management actions that will be applied in wildlife emphasis areas include stipulations on surface-disturbing activities and recreation restrictions, as well as ROW avoidance and exclusion areas, travel closures, and seasonal restrictions to maintain existing unfragmented habitat and

meet wildlife objectives. Approximately 27,200 acres of the Glade Park wildlife emphasis area will be subject to the CO-CSU-Wildlife Habitat stipulation, which would benefit GUSG by restricting surface occupancy or use within this area.

Wildland Fire Management

Wildland fire, fire suppression, and wildland fire management activities have the potential to impact GUSG through loss of sagebrush habitats, erosion, human presence, noise, habitat avoidance, weed invasion, (of particular concern is cheatgrass). These impacts could affect lekking, nesting, brood-rearing, wintering, or foraging behavior. Fire management in the RMP will allow for wildfire suppression in and near GUSG habitat, and emergency stabilization and rehabilitation treatments. Prescribed fire and fuel treatment actions will be considered in vulnerable to catastrophic wildfire events to lessen the likelihood or severity of such events impacting GUSG.

The BLM intends to avoid planned and unplanned fire in low elevation cheatgrass-infested communities, which would help protect adjacent sagebrush habitats used by GUSG. However, prescribed fire, if applied at an appropriate scale, is a viable management tool for protecting Gunnison sagebrush habitats from catastrophic wildfires (GSGRSC 2005). Using a variety of fuel treatments would have short-term effects on GUSG and habitats through vegetation removal, increased likelihood of erosion and sedimentation, human presence, and the potential for habitat avoidance. In the long term, these activities would reduce the likelihood of uncharacteristically large or intense wildfires that could damage large expanses of habitat or kill or displace wildlife. In addition, the condition of upland vegetation would be improved. Cheatgrass recolonization in prescribed burned areas is a notable concern, and reseeding efforts may be necessary to reduce the potential for invasive weeds (GSRSC 2005).

Fire management in occupied and unoccupied critical sage-grouse habitat will continue to focus on immediate suppression in sagebrush habitat, but may impact GUSG habitat in the suppression effort. We cannot predict where and when these impacts may occur, but wildlife suppression activities that impact GUSG habitats will occur under emergency consultation procedures.

Grazing

The RMP includes a number of management actions to incorporate GUSG habitat objectives and management considerations into livestock grazing management. Such measures will help to improve vegetation condition of rangeland areas and could reduce the likelihood of nonnative invasive species introduction or spread. In addition, removing, modifying, or marking fences in high risk areas will help to reduce the likelihood of injury or mortality to GUSG.

The majority of critical habitat is currently meeting land health standards (see Table 4-1 in BA). However, 28 percent of occupied habitat and 9 percent of unoccupied habitat is categorized as meeting the standards with problems, or not meeting the standards. Despite the management actions described above, reductions in herbaceous cover that fall below the Rangewide Conservation Plan habitat guidelines (GSRSC 2005) are likely to continue to occur at times.

Adverse effects from trampling of eggs or nests may also occur. This is thought to be rare but the impact is not discountable.

Our conclusion regarding the effects of grazing Federal lands within the GJFO is that, in general, implementation of the grazing program may result in minimal effects to GUSG. We conclude that substantial localized negative effects may occur from over-utilization of forage. However, we believe that on-going monitoring of range conditions will result in the appropriate modification of stocking rate, timing, duration and intensity of grazing in those areas over-utilized by livestock.

As stated above, trampling of nests, or nest abandonment may occur due to the presence of livestock. In addition, flushing of hens from active nests may result in predation of eggs. We believe there is potential for these events to occur on active allotments, but we do not have any means to meaningfully detect or measure these effects, primarily due to low sage-grouse population numbers within the GJFO. In addition, the mere presence of livestock in an area known to be occupied by GUSG may not necessarily result in exposure of the birds to these effects.

Grazing management improvement actions such as fences, corrals, windmills, and stock pond development may result in substantial negative effects to GUSG. Fences may expose grouse to increased predation risk from avian predators and collisions. The RMP provides guidance for removal, modification, and marking of livestock fences. Implementation of this guidance will likely reduce the collision risk for GUSG, but is unlikely to eliminate fence collisions. However, the mere presence of a fence within occupied habitat does not necessarily means collisions will occur.

Water developments may alter existing habitat by congregating livestock use in previously unused upland habitat or by lowering water tables associated with riparian areas. Although water developments can be used to improve overall riparian habitat condition by drawing livestock and wild ungulates away from previously degraded areas, GUSG may be exposed to mosquitoes that may carry West Nile virus, which has been known to cause population declines in wild bird populations, including sage-grouse (GSRSC 2005). We are aware of three mortalities of captive bred GUSG, so it is reasonable to assume that they are susceptible to West Nile virus based on infection and mortality in greater sage-grouse. The revised plan promotes minimizing the likelihood of providing breeding sites for mosquitoes the transmit West Nile virus. However, we conclude that in situations where ponds are developed to provide for livestock water, there is a risk for production of mosquitoes that transmit West Nile virus, resulting in the possible infection, and mortality to GUSG associated with water development project within and near grouse habitat.

Recreation and Travel Management

Habitat loss, degradation, and fragmentation from roads are a major threat to GUSG (79 FR 69162). Recreation, particularly motorized and mechanized, on or off existing roads and trails can cause disturbance to GUSG at sensitive times of the year, particularly during lekking, nesting early brood-rearing and winter. The road and motorized trail system in motorized suitable areas

will generally not be considered for expansion or substantial alteration of the transportation system. The proposed action eliminates cross-country motorized use in most of the planning area, except in a limited area. The decision to restrict motorized access to existing roads and trails is generally considered beneficial, because the risk of flushing nesting grouse and other behavioral impacts or destruction of a nest from cross-country travel will be effectively reduced or eliminated.

Under the RMP, within proposed occupied habitat, 18.4 miles of routes will be open to public use (including 1.1 miles of county-maintain roads), and 12.3 miles of routes will be restricted to administrative and permitted use only. Four tenths of a mile of existing routes will be closed and rehabilitated. Within unoccupied habitat, 68.8 miles of routes will be open to public use (including 14.7 miles of county-maintained roads), and 29.6 miles of routes will be restricted to administrative and permitted use. Up to 19.9 miles of routes will be closed and rehabilitated. Habitat loss, degradation, and fragmentation from roads are a major threat to GUSG (79 FR 69162). The collective influences of fragmentation and disturbance from roads reduces the effective habitat as they are avoided by sage-grouse (Knick et al 2011; 79 FR 69162). Impacts related to behavior disruption may occur, particularly along routes occurring in occupied habitat. However, seasonal limitations and route closures within 4 miles of leks will reduce impacts. In addition, the Timber Ridge Wildlife Emphasis Area will be limited to foot and horseback use, which is expected to reduce potential impacts to the lek in this area.

Recreation on Pinon Mesa primarily consists of hunting and mountain biking. Recreation in the area is limited to existing roads and trails. In the winter a minimal number of small game hunters use the area. In late spring and summer, mountain biking occurs within the area. Mountain biking use is not considered to be high, or to have any measurable influence on sage-grouse use in the area. Impacts from big game hunting primarily consist of temporary displacement of individuals flushed by hunters. Big game hunting is not considered a threat to GUSG. Off highway vehicles (OHV) are limited to existing roads and trails. Limited use by OHVs is expected to continue with the primary impact to grouse being disturbance. In the Pinon Mesa area, recreation is limited to areas with public access, and much of the public land is isolated from public road access points, or is often too steep for OHV use. Due to limited access to BLM lands in the area there is very low likelihood for impacts from recreation related activities.

Lands and Realty

Construction and operation of ROW facilities, such as pipelines, roads, and transmission lines, may result in habitat loss, fragmentation, and degradation. Surface disturbance during construction removes vegetation and important habitat components for GUSG and, in most cases, renders the habitat unsuitable. Rights of way, such as those for roads and industrial facilities, may lead to permanent loss of GUSG habitat. Other ROWs, such as those for pipelines or buried power lines, may lead to a more short-term loss of habitat if the area were reclaimed after construction. However, following natural succession regimes, sagebrush communities would take 20 to 30 years to return to preconstruction conditions. In addition to removing vegetation, long-term occupancy of structures and facilities leads to direct habitat loss.

Rights-of-way may also lead to habitat fragmentation and degradation. Right of way projects can reduce patch size and increase edge habitats. Since GUSG require large blocks of intact habitat, linear disturbances reduce habitat quality. Surface disturbance can also lead to new weed infestations and spread weeds where infestations already occur. Noxious and invasive weeds are often of lower value to wildlife, and degrade wildlife habitat by reducing optimal cover or food. Sagebrush-steppe communities are among the ecosystems most vulnerable to invasion and degradation by invasive weeds. Not only can invasive species outcompete most native plants when moisture is limited, they can also change site-specific fire ecology and result in the loss of critical shrub communities. The loss and degradation of sagebrush habitat can reduce the carrying capacity of local breeding populations of GUSG, especially in areas where high quality sagebrush habitat is limited (Braun 1998; Connelly et al. 2000). As such, there would likely be more impacts on GUSG and their habitat in areas where ROWs are permitted compared to areas where ROWs are excluded or avoided.

Both the construction and operation phases of ROW projects can lead to disruption impacts. Noise and an increase in human presence during construction may displace GUSG into lower quality habitat and may disrupt breeding and nesting (Holloran 2005). Although construction impacts are generally short term, many impacts would continue during routine maintenance and operation of the ROWs. Gunnison sage-grouse would likely avoid habitat in the vicinity of infrastructure (Holloran et al. 2010), resulting in indirect habitat loss. In addition, noise and an increase in traffic during ROW operation and maintenance would disturb and likely displace GUSG (Lyon and Anderson 2003; Holloran 2005). Avoidance of habitat would be most prevalent during levels of high human activity, such as ROW construction. Gunnison sage-grouse may avoid otherwise suitable habitat as the density of roads and infrastructure increases (Holloran 2005). Avian predators, particularly raptors and corvids (i.e., crows, ravens, and magpies), are attracted to overhead utility lines because they provide perches for various activities, including hunting (Avian Power Line Interaction Committee 2006). Increased predation and harassment of GUSG may occur from new ROW projects involving power lines or other tall structures (Connelly et al. 2004). However, the RMP includes management to remove or modify raptor perches, thereby reducing this threat. In addition, road ROWs may increase mammalian predator densities. Construction and operation of ROW facilities may also lead to direct mortality of GUSG. The potential for GUSG mortality from project construction would be low and likely limited to nesting hens or young chicks that have limited mobility. Direct mortality may occur from collisions with turbines, power lines, or meteorological towers or their supporting infrastructure, such as guy wires (Connelly et al. 2004; Beck et al. 2006). In addition, an increase of traffic on roads from ROW maintenance and operations can lead to direct mortality through vehicle collisions.

The RMP includes ROW exclusion areas, which are any areas within a 0.6-mile radius of any sage-grouse lek. Additionally, all occupied sage-grouse habitat and areas within a 4-mile radius of sage-grouse leks are identified as ROW avoidance areas. These measures would reduce or eliminate the above described impacts on GUSG and their habitat by restricting new ROWs.

Lands

Renewal of existing authorizations will incorporate sage-grouse conservation measures to the extent possible with the existing use. Some authorizations may necessitate the removal of GUSG habitat and may cause other indirect effects. There is no reasonable means available to predict the timing or location of rights-of-way requests, and we are unable to meaningfully predict an approximate habitat impact from such requests. However, we believe that the revised RMP directs the BLM to reduce the negative impacts of such requests, and is unlikely to result in significant losses of GUSG habitat within the planning area. This allows the BLM to require retrofitting of existing power lines with raptor perch deterrents when reauthorizing ROW permits. In addition, NSO stipulations will limit new disturbances within GUSG habitat by requiring co-location of infrastructure within existing ROW.

Energy and Mineral Development

No fluid mineral development potential occurs within or near established GUSG populations in the GJFO planning area, and no existing fluid mineral leases overlap with designated critical habitat. All occupied GUSG habitat (currently 10,600 acres) will be closed to leasing. As stated in the BA, no energy or mineral development is expected within critical habitat in the Glade Park/Pinon Mesa area. Therefore, we do not anticipate negative effects to GUSG or its critical habitat to result from energy and mineral development within the analysis area.

Species Response to Proposed Action

The nature of such a broad reaching programmatic analysis makes evaluating the species response to the proposed action difficult if not impossible to predict. The revised RMP contains direction to minimize impacts to the GUSG thus reducing the potential for adverse effects. However, project level decisions will occur with occupied habitat for GUSG habitat that will result in some of the effects detailed above. Implementation of the revised RMP is likely to result in low levels of adverse effects to GUSG, primarily as indirect effects from project level decisions. However, given the uncertainty of the timing, location, size, and extent of future actions it is not possible to meaningfully predict adverse effects caused by implementation of the revised RMP at this programmatic scale. All subsequent actions that affect GUSG will be subject to future section 7 analysis and consultation requirements.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The majority of the planning area occurs within Mesa County, Colorado which has experienced significant population growth since 1987, and population forecasts expect the growth trend will continue (Colorado Division of Local Government, State Demography Office 2013). As such, continued use and development within the planning area is expected to continue. Past, present, and reasonably foreseeable future actions and conditions on non-Federal lands in the action area that will likely continue to affect Gunnison Sage-Grouse are as follows:

- Mineral exploration and development
- Agricultural development
- ROW and infrastructure development
- Livestock grazing
- Recreation
- Road construction
- Weed invasion and spread
- Wildland fires
- Drought
- Farming

We are not aware of any specific non-Federal actions within the action area that are reasonably certain to occur that will negatively affect GUSG.

CONCLUSION

Colorado Hookless Cactus

After reviewing the current status of the Colorado hookless cactus, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's BO that implementation of the RMP, as proposed, is not likely to jeopardize the continued existence of the Colorado hookless cactus. The Service's rationale is presented below.

Implementation of the revised RMP, including the conservation measures, will reduce multiple threats to the Colorado hookless cactus by, significantly curtailing off-road and off-trail mechanized and motorized travel; implementing standard operating procedures and best management practices for soil disturbances; applying No Surface Occupancy (NSO) stipulations on steep slopes, and NSO 2 on riparian zones; incorporating conservation measures contained in the programmatic grazing BA/BO of November 15, 2012 (BLM, 2012; Service BO number ES/GJ-6-CO-12-F-006); designation of ROW exclusion and avoidance areas; and, the designation of the Pyramid Rock and Atwell ACECs.

The biggest change in the proposed action is the specific designation of routes for motorized travel. Cross-country motorized travel will not be allowed under the proposed action. Off-route motorized travel will be restricted to two specific designated areas with the GJFO, totaling 10,200 acres, a significant reduction form the 445,400 acres of cross-country travel authorized in the 1987 RMP. In addition, the GJFO proposes to close and rehabilitate 47.9 miles of existing routes within GJFO that are within 200 meters of known occurrences of the cactus.

We anticipate a low level of adverse effects to Colorado hookless cactus, but the majority of these effects will be widely distributed across cactus habitat in the GJFO and likely of low intensity and severity. Any subsequent action implemented under the revised RMP that may affect the Colorado hookless cactus or future critical habitat designations must go through separate section 7 consultation.

DeBeque Phacelia

After reviewing the current status of the DeBeque phacelia, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's BO that implementation of the RMP, as proposed, is not likely to jeopardize the continued existence of the DeBeque phacelia. The Service's rationale is presented below.

Implementation of the RMP, including the conservation measures, will reduce multiple threats to the DeBeque phacelia by significantly curtailing off-road and off-trail mechanized and motorized travel; implementing standard operating procedures and best management practices for soil disturbances; applying NSO stipulations on steep slopes; designation of ROW exclusion and avoidance areas; and, the designation of the Pyramid Rock and South Shale Ridge ACESs. Fluid minerals development will require surveys and inventories of listed plants; significant avoidance measures and stipulations are available to avoid direct impacts for most activities. In our opinion, these conservation measures are adequate to protect DeBeque phacelia from most effects & impacts. However, the BLM anticipated continuing or new adverse impacts from livestock grazing and travel management (motorized and mechanized travel).

In localized areas where DeBeque phacelia is found, 1.4 miles of routes open to public use (including 0.9 miles of county- maintained roads) occur within 200 meters of known DeBeque phacelia populations; no routes occur within 20 meters of known occurrences. Given the limited extent of nearby routes, and the general restrictions on off-road/trail motorized and mechanized travel, we expect travel related impacts on DeBeque phacelia to be lower under the RMP than previously.

The RMP will retain the 1,300 acre Pyramid Rock ACEC and designate the 28,200 acre South Shale Ridge ACEC; both contain critical habitat for the DeBeque phacelia, specifically the Pyramid Rock and Sulphur Gulch CH Units. (The Pyramid Rock ACEC contains only a small portion of the Pyramid Rock CH Unit, but the South Shale Ridge ACEC includes all of the Sulphur Gulch CH Unit.) Stipulation NSO-12 (ACECs) prohibits surface occupancy and surface-disturbing activities within each ACEC. All nine critical habitat units will be subject to Stipulations CSU-9 (Sensitive Plant Species Occupied Habitat), NSO-13 (Critical Habitat), LN-3 (Biological Inventories in known or suspected habitat) and LN-4 (Botanical Inventories in known habitat of T & E plant species).

With the travel restrictions and ACECs in place, we believe that implementation of the RMP will not jeopardize the existence of the DeBeque phacelia.

DeBeque phacelia Critical Habitat

After reviewing the current status of the critical habitat for the DeBeque phacelia, the environmental baseline for the action area, the effects of the proposed action, and any cumulative effects, it is the Service's BO that the BLM's proposed action to revise the RMP is not likely to result in destruction or adverse modification of critical habitat for DeBeque phacelia. We conclude that critical habitat will likely maintain its functionality to serve the intended conservation role for DeBeque phacelia. The proposed action will not appreciably diminish the value of critical habitat for both the survival and recovery of DeBeque phacelia.

We anticipate a low level of adverse effects to DeBeque phacelia, but the majority of these effects will be widely distributed across DeBeque phacelia habitat in the GJFO and usually of low intensity and severity. Any subsequent action implemented under the revised RMP that may affect the DeBeque phacelia or its critical habitat must go through separate section 7 consultation.

Gunnison Sage-grouse

After reviewing the current status of the GUSG, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's BO that implementation of the RMP, as proposed, is not likely to jeopardize the continued existence of the GUSG. The Service's rationale is presented below.

Implementation of the RMP, including the conservation measures and use stipulations, will reduce multiple threats to the GUSG and could restore the species to formerly occupied range through proposed habitat improvement projects. Designation of the Glade Park and Timber Ridge Wildlife Emphasis Areas will help ensure GUSG needs are considered in site-specific management decisions. However, we anticipate some low level of adverse effects to GUSG, but the majority of these effects would be widely distributed across GUSG habitat in the GJFO and likely be of low intensity and severity. Any subsequent actions implemented under the revised plan that may affect the GUSG or critical habitat must go through separate section 7 consultations.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

A. Amount or Extent of Take Anticipated

The "Effects of the Action" section above includes findings that implementation of the proposed action has the potential to cause biological effects to the GUSG that conform to the regulatory definition of take. However, the mere potential for take is not a legitimate basis for a take exemption. The Service must provide a reasoned basis for a likelihood of take in order to anticipate and exempt it. At this broad programmatic level, the best information available is not

sufficient to determine any specific level of anticipated take. However, project specific section 7 consultation analyses, subsequent to the proposed action, will reexamine this issue. Since the best information available does not permit us to determine a specific level of take, we are not exempting any take associated with implementation of the proposed action. Therefore, no reasonable and prudent measures and terms and conditions are provided below. If take is anticipated during authorization of a project level action, we will exempt such take at the project level as appropriate.

B. Effect of the Take

Not applicable

C. Reasonable and Prudent Measures and Terms and Conditions

Because there are no take exemptions provided under section 7(o) of the Act in the Opinion, the Service is not providing Reasonable and Prudent Measures or Terms and Conditions

F. Conservation Recommendations

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

We envision recovery for the Colorado hookless cactus includes sizable, stable populations maintained on conserved suitable habitat, with acceptable levels of connectivity between subpopulations for pollinator movement, gene flow, and seed dispersal. Populations will be maintained to provide sufficient representation, resiliency, and redundancy to ensure a high probability of survival for the foreseeable future. Meeting these goals will require that threats be sufficiently understood and abated. Range-wide monitoring will be necessary.

<u>The Recovery outline for the Colorado hookless cactus is as follows:</u>

Recovery needs for Colorado hookless cactus include: (1) survey to accurately document populations and suitable habitat; (2) protect and restore habitat including pollinator habitat and corridors to provide connectivity; and (3) protect individual plants and populations from direct and indirect threats. Specific actions include:

Surveys and Monitoring

- Completion of a comprehensive survey throughout the species' range. This would include areas that are not likely to be disturbed. Survey results will provide an accurate population estimate and allow us to identify core population areas so we can more effectively protect the species. This will require evaluation of habitat components likely to support Colorado hookless cactus.

- Surveys also should more accurately delineate the Colorado hookless cactus range relative to other *Sclerocactus* species.
- Locate possible population connectivity corridors.
- Continue ongoing monitoring efforts and expand monitoring to include a larger and more representative sample of occupied sites. This data should improve our understanding of trends.

Threats Abatement

- Identify sites in urgent need of habitat protection, set protection priorities, and implement protective measures. In the long run, land management agencies should establish formal land management designations to provide for long-term protection of important populations and habitat.
- Oil and gas leasing and other mineral extraction activities should avoid occupied sites and other important habitat.
- Develop and implement standard conservation measures to minimize future project and use impacts.
- Coordinate with land management agencies, project proponents, and other partners early in the planning process to limit direct and indirect impacts of planned activities.
- Prevent the collection of Colorado hookless cactus plants from natural populations.

Research

- Resolve the taxonomic status of Colorado hookless cactus regarding the species relationship with *S. parviflorus*. Secondarily, this study would assess genetic differences between Colorado hookless cactus populations.
- Continue research into Colorado hookless cactus life history and ecology, including pollinators.
- Study population dynamics and conduct a population viability analysis.
- Encourage investigations that project *Sclerocactus* species' vulnerability and response to climate change.
- Improve our understanding of livestock and native (e.g., rodent) grazing impacts.
- Monitor cactus-borer beetle (*Moneilema semipunctatum*) infestations, and study the relationship of episodic infestations with drought and other environmental factors.

Monitor changes in invasive species prevalence and impacts on Colorado hookless cactus. Additionally, continue to explore approaches to minimize the risk posed by invasives and associated remediation actions.

DeBeque phacelia

DeBeque phacelia is listed as threatened throughout its range. Conservation efforts should be to develop and implement proactive conservation measures that reduce threats to the species to the point that it no longer requires the protections of the Act and may be removed from the Federal

List of Endangered and Threatened Wildlife and Plants (delisted). Recovery efforts will focus primarily on Federal lands, since over 86.6 percent of the species' habitat occurs on these lands. By priority number, we envision recovery for DeBeque phacelia to include:

Potential criteria #1: Protect and maintain all extant populations

Potential criteria #2: Prevent or minimize habitat-disturbing threats

Potential criteria #3: Develop and implement rangewide monitoring

Gunnison Sage-grouse

The GJFO should consider full implementation of the conservation strategy presented in the GUSG Rangewide Plan. The purpose of the RCP is to identify measures and strategies to achieve the goal of protecting, enhancing, and conserving GUSG and their habitats.

Range-wide Conservation planning strategies, include, but are not limited to, the following:

1) Protect occupied habitats from permanent loss. If permanent habitat loss from development (primarily) or conversion is not addressed, successful implementation of all the other conservation strategies is not likely to be successful in conserving GUSG. An equally important strategy is preventing significant degradation, whatever the cause, of existing habitat that is seasonally important to grouse.

2) Coordinate with CPW in their effort to stabilize existing populations demographically and genetically through augmentation, and establish new populations in historically occupied habitats which are evaluated and deemed suitable.

3) Improve habitat within currently occupied and adjacent potential habitats.

4) Protect from permanent loss historically used habitats that are not currently occupied by grouse.

Additional recommendations are as follows:

- Any activity that results in the permanent loss of proposed critical habitat should include mitigation of offset such losses.
- Extend the timing restrictions on disturbances to breeding activities within areas from 0.6 to 4 miles from March 1 to July15 to protect lekking, nesting, and early brood rearing.
- Recreation - Only allow special recreation permits that have neutral or beneficial affects to occupied habitat areas.
- Lands/Realty – Retain public ownership of proposed critical habitat. Subject to valid, existing rights, co-locate new rights-of-way within existing ROWs
- Range Management - Within proposed critical habitat, incorporate GUSG habitat objectives and management considerations into all BLM grazing allotments through allotment management plans or permit renewals. Work cooperatively on integrated ranch

planning within GUSG habitat so operations with deeded/BLM allotments can be planned as single units. Design any new structural range improvements and location of supplements (i.e. salt or protein blocks) to conserve, enhance, or restore GUSG habitat through an improved grazing management system relative to GUSG objectives. When developing or modifying water developments, use best management practices to mitigate potential impacts from West Nile virus.

- Fluid Minerals - When permitting Application for Permit to Drill (APDs) on existing leases that are not yet developed, consider the development of disturbance caps to limit impacts to GUSG proposed critical habitat at local scales (e.g. within habitat units), unless compensatory mitigation demonstrates an offset of resulting habitat loss. Consider full implementation of the suggested management practices listed in RCP, Appendix L for all APD decisions.
- Incorporate "Available Conservation Measures" and "Overarching Conservation Objectives" found in the GUSG final listing rule (79 FR 69192, p. 69305-69309).

Instruction Memorandum No. CO-2013-033 provides a surface disturbance avoidance buffer for unmapped winter habitat within 4-miles of a lek. Consistent with the RCP, we recommend a 6-mile avoidance area around a lek for unmapped winter habitat.

G. Reinitiation-Closing Statement

This concludes formal consultation for the potential effects of the implementation of the revised RMP. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action (50 CFR §402.16).

We appreciate your efforts to ensure the conservation of endangered, threatened, and candidate species. If you have questions regarding this letter or your responsibilities under the Act, please contact Kurt Broderdorp at the letterhead address or phone 970-628-7186.

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