BLM OREGON POST-FIRE RECOVERY PLAN

EMERGENCY STABILIZATION AND BURNED AREA REHABILITATION

PLAN TEMPLATE 2010

MILLER HOMESTEAD FIRE (G1G1)

BLM Burns District Office

OREGON STATE OFFICE

FIRE BACKGROUND INFORMATION

Fire Name	Miller Homestead
Fire Number	G1G1
District/Field Office	Burns District Office
Admin Number	LLORB00000
State	OREGON
County(s)	HARNEY
Ignition Date/Cause	07/08/2012 Lightning
Date Contained	07/24/2012
Jurisdiction	*Acres*
USFWS	1209
Private	12794
BLM	146798
Total Acres	160801
Total Costs	$8,287,000
Costs to LF20000ES (2822)	$3,552,000
Costs to LF32000BR (2881)	$4,735,000

Status of Plan Submission (check one box below)

	Initial Submission of Complete Plan
X	Updating or Revising the Initial Submission
	Amendment

PART 1 - PLAN SUMMARY

BACKGROUND INFORMATION ON FIRE.

The Miller Homestead Fire started on July 8, 2012 in Harney County, Oregon, as the result of lightning associated with dry thunderstorms. The wildfire started approximately 12 miles west of Frenchglen, Oregon, and began burning in grass and brush on BLM land. On the evening of July 8, two Single Engine Air Tankers (SEATs) dropped loads of retardant along the fire perimeter, working to slow the fire spread as winds fanned flames in all directions. The fire was estimated at 2,800 acres.

On July 9 over 40 firefighters, 10 engines, and 2 dozers worked to establish control lines around the incident. However, the fire grew considerably throughout the afternoon due to heavy, sporadic winds combined with high temperatures and low fuel moisture. The fire spread to the northeast, threatening at least two residences. Firefighters were moved to the structures to provide point protection and SEATs assisted. Burnout operations and direct attack suppression efforts limited the fire to 11,600 acres.

A Type 3 Incident Management Team from Lakeview was on site on July 10 to assist with operations and logistics for the incident. High temperatures, rocky terrain and erratic winds challenged suppression and control efforts. Active fire behavior on numerous fronts with flame lengths in excess of 10-15 feet were reported into the night. On July 10, the fire largely expanded to the west, increasing in size to 45,000 acres, and was threatening at least 3 residences, numerous outbuildings, livestock, grazing allotments, and the community of Frenchglen. A portion of Highway 205 South, south of Frenchglen, was closed in the afternoon due to wildfire along the highway and smoky conditions. One abandoned structure was lost; however, other residences received considerable structure protection from ground and air resources and avoided damage. Four SEATs, dozens of engines, dozers, and a helicopter were assisting with suppression efforts on July 10.

Sporadic winds, high temperatures, and low fuel moisture, along with rocky terrain resulted in the fire spreading to the north, northwest, and south, increasing in size to 60,000 acres on July 11. On July 12, the fire continued to spread on three fronts spreading to the north and west, increasing in size to 67,760 acres in the morning. In the afternoon strong, gusty winds, high temperatures and extremely dry fuels pushed the fire to the north, and northeast, burning actively into the night. The fire spread rapidly through grasses, sagebrush, and western juniper stands. The quick fire growth resulted in numerous residences to the north being issued a Level 3 evacuation warning, while the community of Frenchglen was issued a Level 2 evacuation warning. Another uninhabited structure was lost, in addition to some livestock, during this period of extreme fire behavior. Winds from the southwest moved the fire down an east facing slope toward Highway 205 South, with spotting occurring east of Highway 205 on the Malheur National Wildlife Refuge (further referred to as the Refuge). This resulted in the Center Patrol Road on the Refuge and Highway 205 being closed intermittently. Despite over 400 personnel, multiple helicopters, air tankers, engines, dozers and water tenders working the fire, it grew by over 42,000 acres in the afternoon and evening, bringing the total fire size to 110,000 acres.

A Type 2 Incident Management Team, under the command of Brian Watts, was delegated authority to manage the fire and assumed command on July 13. Burning activity picked up and embers spotted across a containment line, threatening the community of Frenchglen. Air support successfully stopped the progress of the spot. Slightly cooler temperatures and winds coming out of the north resulted in only moderate fire activity with slower spread and portions of the fire burning back on itself, allowing firefighters to complete more direct attack suppressions than on previous days. The fire continued to spot across Highway 205 within the Refuge, but these were able to be suppressed throughout the day. Over 450 personnel, including a dedicated structure protection division, worked the fire and the incident was being staffed 24 hours a day. By the end of the day on July 13, the fire had spread to 156,391 acres, and the threat to the community of Frenchglen and other residents had decreased, but both areas remained at a Level 2 evacuation notice. Highway 205 continued to be closed intermittently and the Center Patrol Road on the Refuge remained closed.

On July 14, growth of the fire was minimal, with most of it occurring on the northeastern perimeter. The fire increased to 160,801 acres. Between July 14 and July 24 areas in the interior continued to burn, often close to the containment line, and within dry peat soils, below the surface, on the Refuge, but fire spread was minimal. Firefighters remained in patrol status and continued holding existing control lines. At Containment on July 24, 2012 the fire had burned 160,801 acres on BLM, Refuge, and private property. See Map 1 – Burns District Boundary for the general location of the Fire, Map 2 - Fire Growth July 8, 2012 to July 13, 2012 for a visual of daily fire growth throughout the incident, and Map 3 – Surface Jurisdiction for the fire perimeter and ownership.

The Miller Homestead Fire burned through eleven allotments and numerous pastures affecting multiple permittees. Over 90% of the burned area provides habitat to sage-grouse (Preliminary General Habitat (PGH)) and pygmy rabbits, which are both BLM Special Status Species. In addition, this area provides important yearlong habitat for California bighorn sheep, pronghorn antelope, and mule deer, which are all locally important species. The burned area was also used regularly for recreation, including hunting and camping.

The fire burned through nine general vegetation types from 19 different ecological sites, covering 54 soil map units. Five separate seed mixes will be utilized in an attempt to stabilize the watersheds which are prone to wind and water erosion, and consist of areas that are unlikely to naturally re-vegetate with desirable species within the next decade. Data compiled based on a point within the fire found that precipitation during the last 50 years averages 14” and ranges from about 8.5” in drought years to 27” in exceptionally wet years. The burned are is within 10” to 15” precipitation zones, with areas of lowest precipitation occurring in the southwest increasing to a small 15" precipitation zone on top of the highest point in the northeastern part of the burned area. Typically, the driest months for the area of the fire include July, August, September and October where there has been no measureable precipitation. October tend to be the driest months with 4 and 3 years, respectively, of 0” of recordable precipitation (out of the last 50 years). July and August have one year each of zero precipitation. November, December and May have been the wettest months in most years. November and December precipitation generally comes in the form of snow, while precipitation in other months comes in the form of rain. May tends to be the wettest month

averaging 1.84” over the last 50 years. Temperature data suggests monthly average high of 83.5° F in July to a monthly average low of 23.7° F in December, with a monthly average low of 11.41° F in December of 1990 to a monthly average high of 89.51° F in August of 1967. Periodic daily highs can exceed 100° F and periodic daily lows can fall below 0° F. The coldest months tend to be December, January, February and November respectively with the warmest months consisting of August, July, September and June respectively. While this information is based on a point in the middle of the fire perimeter, patterns would be similar across the burned site, with slight variations in specific numbers. Coupled with high temperatures and low precipitation, the months of July, August and September are suitable for fires such as the Miller Homestead fire (PRISM Group, 2012). See Appendix 1-Miller Homestead Climate Data for more climate data and related graphs. Elevation ranges from about 4,200’ up to 5,440’. Four previously reseeded areas were burned but will not require reseeding again. The portion of the fire within the Andrews Resource Area will be managed using allotment and pasture fences, as well as a seeding protection fence, while within the Three Rivers Resource Area a new protection fence will be built, tying into existing allotment and pasture fences, to protect the new seedings and plantings from being grazed (by wild horses and livestock) until objectives are met. However, if objectives are not met after two growing seasons, the probability of success will be reevaluated and new management actions will be considered.

LAND USE PLAN CONSISTENCY

S2 - Ground Seeding

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals and with BLM Manual 1745 policy. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: “Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA.” V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…” Andrews RMP (RMP-24): “Manage vegetation to achieve and maintain healthy watersheds.”

Rangelands: Andrews RMP (RMP-30) – Goal 1: “Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.” Goal 2: “Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands.”

Noxious Weeds Inventory and Treatment: Andrews RMP (RMP 31) – Goal: “Control the

introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels."

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses."

S3 - Aerial Seeding

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Noxious Weeds Inventory and Treatment: Andrews RMP (RMP 31) – Goal: "Control the introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels."

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent Deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

S5 - Noxious Weeds

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious

weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Noxious Weeds Inventory and Treatment: Andrews RMP (RMP 31) – Goal: "Control the introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses."

S6 - Soil Stabilization (Other than seedling, planting)
The proposed treatments are in conformance with the Three Rivers Decision and Resource

Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

S7 - Fence/Gate/Cattleguard

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

Grazing Management: Three Rivers RMP (2-33) – GM1.2: "…Stocking levels will be reviewed and adjusted, if necessary and in accordance with the results of monitoring studies…" GM1.3: "Utilize rangeland improvements, as needed, to support achievement of multiple-use management objectives…" Andrews RMP (RMP-54) Goal: "Manage for a sustained level of livestock grazing while maintaining healthy public land resources."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses."

S8 - Road/Trail Water Diversion

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas

where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

S9 - Cultural Protection (Stabilization/Patrol)
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Cultural Resources: Three Rivers RMP (2-152) - CR1: Protect the cultural and paleontological values in the RA from accidental or intentional loss, while providing special emphasis to high value sites and conserving those resources of overriding scientific or historic importance." Andrews RMP (RMP-40): Goal 1 "Preserve, protect, and manage cultural resources in accordance with existing laws, regulations, and Executive Orders, in coordination/consultation with the Burns Paiute Tribe, other American Indian tribes, Harney County Historical Society and other heritage groups to make cultural resources available for appropriate uses by present and future generations."

S12 - Closures (area, OHV, livestock)
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend

categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

Grazing Management: Three Rivers RMP (2-33) – GM1.2: "…Stocking levels will be reviewed and adjusted, if necessary and in accordance with the results of monitoring studies…" GM1.3: "Utilize rangeland improvements, as needed, to support achievement of multiple-use management objectives…" Andrews RMP (RMP-54) Goal: "Manage for a sustained level of livestock grazing while maintaining healthy public land resources."

Wild Horses: Three Rivers RMP (2-43) – WHB1: "Maintain healthy populations of…wild horses and burros in the Warm Springs HMA." Andrews RMP (RMP-50) Goal: Manage and maintain healthy wild horse herds in established HMAs at AMLs to maintain a thriving natural ecological balance between wild horse populations, wildlife, livestock, vegetation resources, and other resource values…"

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the

integrity of ecosystems consistent with appropriate fire regimes and land uses."

S13 - Monitoring
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Objectives specific to each treatment can be found under that treatment, and would be applicable to the monitoring of that issue as well.

S14 - Other Treatments
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

R4 - Seedling Planting
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human

influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses."

R5 - Noxious Weeds

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites

which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Noxious Weeds Inventory and Treatment: Andrews RMP (RMP 31) – Goal: "Control the introduction and proliferation of noxious weeds and reduce the extent and density of established populations to acceptable levels."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to list special status species or jeopardize the continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

Wildland Fire Management: Andrews RMP (RMP-57) Goal 2: Restore and maintain the integrity of ecosystems consistent with appropriate fire regimes and land uses."

R6 - Soil Stabilization (Other than seedling, planting)

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens

Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Soil Management: Three Rivers RMP (2-15) – SM1: "Prevent deterioration of soil resources by ensuring the BLM-administered lands are in stable or upward observed apparent trend categories as outlined in BLM Handbook H1734-2." SM1.2: "Rehabilitate burned areas where erosion hazard is high and/or natural revegetation potential is low." SM2: "Rehabilitate areas with specific localized soil erosion problems and reduce accelerated (human influenced) sediment delivery to fluvial systems." Andrews RMP (RMP-21) – Goal 1: "Manage soils on public lands to maintain, restore, or improve soil erosion classes, watershed health, and areas of fragile soils."

R7 - Fence/Gate/Cattleguard

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Vegetation: Three Rivers RMP (2-51) – V1: "Maintain, restore, or enhance the diversity of plant communities and plant species in abundance and distributions, which prevent the loss of specific native plant community types or indigenous plant species within the RA." V1.6: Apply approved weed control methods including manual, biological, and chemical control methods…in an integrated pest management program to prevent the invasion of noxious weeds into areas presently free of such weeds and to improve the ecological status of sites which have been invaded by weeds…" Andrews RMP (RMP-24): "Manage vegetation to achieve and maintain healthy watersheds."

Rangelands: Andrews RMP (RMP-30) – Goal 1: "Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles." Goal 2: "Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands."

Grazing Management: Three Rivers RMP (2-33) – GM1.2: "…Stocking levels will be reviewed and adjusted, if necessary and in accordance with the results of monitoring studies…" GM1.3: "Utilize rangeland improvements, as needed, to support achievement of multiple-use management objectives…" Andrews RMP (RMP-54) Goal: "Manage for a sustained level of livestock grazing while maintaining healthy public land resources."

Special Status Species: Three Rivers RMP (2-56) – SSS2: "Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government." SSS3: "Ensure that BLM-authorized actions within the RA do not result in the need to lost special status species or jeopardize the

continued existence of listed species…" Andrews RMP (RMP-34) – "Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings."

Wildlife: Three Rivers RMP (2-66) – WL2.4: "Provide water in mule deer summer range where that habitat component is deficient." WL3: "Manage forage production to support big game population levels identified by ODFW." WL7: "Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA." WL7.5 "Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…" WL7.13 "Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient." Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms."

Biological Diversity: Three Rivers RMP (2-20) – BD1: "Maintain viable populations of native plants and animals well distributed throughout their geographic range." BD3: "Maintain representative examples of the full spectrum of ecosystem's biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation."

R9 - Cultural Protection (Stabilization/Patrol)
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Cultural Resources: Three Rivers RMP (2-152) - CR1: Protect the cultural and paleontological values in the RA from accidental or intentional loss, while providing special emphasis to high value sites and conserving those resources of overriding scientific or historic importance." Andrews RMP (RMP-40): Goal 1 "Preserve, protect, and manage cultural resources in accordance with existing laws, regulations, and Executive Orders, in coordination/consultation with the Burns Paiute Tribe, other American Indian tribes, Harney County Historical Society and other heritage groups to make cultural resources available for appropriate uses by present and future generations."

R11 - Facilities
The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Rangelands: Andrews RMP (RMP-30) – Goal 1: “Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.” Goal 2: “Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands.”

Grazing Management: Three Rivers RMP (2-33) – GM1.2: “…Stocking levels will be reviewed and adjusted, if necessary and in accordance with the results of monitoring studies…” GM1.3: “Utilize rangeland improvements, as needed, to support achievement of multiple-use management objectives…” Andrews RMP (RMP-54) Goal: “Manage for a sustained level of livestock grazing while maintaining healthy public land resources.”

Special Status Species: Three Rivers RMP (2-56) – SSS2: “Maintain, restore or enhance the habitat of candidate, State of Oregon listed and other sensitive species to maintain the populations at a level which avoid endangering the species and the need to list the species by either the State of Oregon or Federal Government.” SSS3: “Ensure that BLM-authorized actions within the RA do not result in the need to lost special status species or jeopardize the continued existence of listed species…” Andrews RMP (RMP-34) – “Maintain, restore, or improve Special Status plant populations and animal habitats; manage public lands to conserve or contribute to the recovery of threatened or endangered species; and prevent future ESA listings.”

Wildlife: Three Rivers RMP (2-66) – WL2.4: “Provide water in mule deer summer range where that habitat component is deficient.” WL3: “Manage forage production to support big game population levels identified by ODFW.” WL7: “Restore, maintain, or enhance the diversity of plant communities and wildlife habitat in abundances and distributions which prevent the loss of specific native plant community types or indigenous wildlife species habitat within the RA.” WL7.5 “Adjust overall grazing management practices as necessary to protect special status species and to maintain or enhance their habitat…” WL7.13 “Provide water for wildlife species in areas where that habitat component has been specifically identified as deficient.” Andrews RMP (RMP-33) – Goal: Provide diverse, structured, resilient, and connected habitat on a landscape level to support viable and sustainable populations of wildlife, fish, and other aquatic organisms.”

Biological Diversity: Three Rivers RMP (2-20) – BD1: “Maintain viable populations of native plants and animals well distributed throughout their geographic range.” BD3: “Maintain representative examples of the full spectrum of ecosystem’s biological communities, habitats, and their ecological processes. Provide for the increase of scientific understanding of biological diversity and conservation.”

R12 - Closures (area, OHV, livestock)

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives.

Rangelands: Andrews RMP (RMP-30) – Goal 1: “Maintain, restore or improve the integrity of desirable vegetation communities including perennial, native, and desirable introduced plant species. Provide for their continued existence and normal function in nutrient, water, and energy cycles.” Goal 2: “Manage rangeland habitats so that forage, water, cover, structure, and security necessary to meet the life history requirements of wildlife are available on public lands.”

Wild Horses: Three Rivers RMP (2-43) – WHB1: “Maintain healthy populations of…wild horses and burros in the Warm Springs HMA.” Andrews RMP (RMP-50) Goal: Manage and maintain healthy wild horse herds in established HMAs at AMLs to maintain a thriving natural ecological balance between wild horse populations, wildlife, livestock, vegetation resources, and other resource values…”

R13 - Monitoring

The proposed treatments are in conformance with the Three Rivers Decision and Resource Management Plan (ROD/RMP), date approved September 1992 and Andrews/Steens Decision and Resource Management Plan (ROD/RMP), date approved August 2005, even though they are not specifically provided for, because it is clearly consistent with the following LUP goals. The proposed treatments would forward the RMP goals and objectives. Objectives specific to each treatment can be found under that treatment, and would be applicable to the monitoring of that issue as well.

COST SUMMARY TABLES

Emergency Stabilization (LF20000ES)

Action/ Spec #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2012	FY 2013	FY 2014	FY 2015	Totals by Spec.
S1	Planning (Project Management)	WM'S	29	$8,862.07	$53,000	$104,000	$50,000	$50,000	$257,000
S2	Ground Seeding	Acres	36,633	$ 66.50	$1,388,000	$1,048,000	$ 0	$ 0	$2,436,000
S3	Aerial Seeding	Acres	4,705	$ 80.55	$295,000	$84,000	$ 0	$ 0	$379,000
S4	Seedling Planting								
S5	Noxious Weeds	Acres	160,830	$ 0.09	$ 0	$15,000	$ 0	$ 0	$15,000
S6	Soil Stabilization (Other than seedling, planting)	#	282	$ 546.10	$11,000	$143,000	$ 0	$ 0	$154,000
S7	Fence/Gate/Cattleguard	Miles	31	$7,165.61	$ 0	$225,000	$ 0	$ 0	$225,000
S8	Road/Trail Water Diversion	#	15	$1,133.33	$ 0	$17,000	$ 0	$ 0	$17,000
S9	Cultural Protection (Stabilization/Patrol)	WM'S	1	$10,000.00	$ 0	$10,000	$ 0	$ 0	$10,000
S10	Tree Hazard Removal								
S11	Facilities								
S12	Closures (area, OHV, livestock)	Acres	160,801	$ 0.22	$ 0	$28,000	$4,000	$4,000	$36,000
S13	Monitoring	WM'S	1	$14,000.00	$ 0	$12,000	$1,000	$1,000	$14,000
S14	Other Treatments	Acres	20	$ 450.00	$ 0	$9,000	$ 0	$ 0	$9,000
[redacted]	**TOTAL COSTS (LF20000ES)**				**$1,747,000**	**$1,695,000**	**$55,000**	**$55,000**	**$3,552,000**
OTHER FUND CODE TOTALS:					[redacted]				
[redacted]	TOTAL COSTS (???)								
[redacted]	TOTAL COSTS (???)								
[redacted]	TOTAL COSTS (???)								

Burned Area Rehabilitation (LF32000BR)

Action/ Spec #	Planned Action	Unit (Acres, WMs, Number)	# Units	Unit Cost (If Appl.)	FY 2012	FY 2013	FY 2014	FY 2015	Totals by Spec.
R1	Planning (Project Mgmt)	WM'S	1	$10,000.00	$ 0	$ 0	$5,000	$5,000	$10,000
R2	Ground Seeding								
R3	Aerial Seeding								
R4	Seedling Planting	#	9,082	$ 365.56	$ 0	$30,000	$2,779,000	$511,000	$3,320,000
R5	Noxious Weeds	Acres	322,232	$ 3.14	$ 0	$ 0	$506,000	$506,000	$1,012,000
R6	Soil Stabilization (Other than seedling, planting)	#	25	$1,080.00	$ 0	$ 0	$ 0	$27,000	$27,000
R7	Fence/Gate/Cattleguard	Miles	58	$4,913.79	$ 0	$63,000	$177,000	$45,000	$285,000
R8	Road/Trail Water Diversion								
R9	Cultural Protection (Stabilization/Patrol)	WM'S	2	$10,000.00	$ 0	$ 0	$10,000	$10,000	$20,000
R10	Tree Hazard Removal								
R11	Facilities	#	2	$8,500.00	$ 0	$ 0	$17,000	$ 0	$17,000
R12	Closures (area, OHV, livestock)	WM'S	2	$10,000.00	$ 0	$ 0	$10,000	$10,000	$20,000
R13	Monitoring	WM'S	2	$12,000.00	$ 0	$ 0	$12,000	$12,000	$24,000
R14	Additional Treatments								
	TOTAL COSTS (LF32000BR)				**$0**	**$93,000**	**$3,516,000**	**$1,126,000**	**$4,735,000**
OTHER FUND CODE TOTALS:									
	TOTAL COSTS (???)								
	TOTAL COSTS (???)								
	TOTAL COSTS (???)								

PART 2 - POST-FIRE RECOVERY ISSUES

EMERGENCY STABILIZATION ISSUES

1 - Human Life and Safety

In many areas the fire burned rapidly and with great intensity when wind driven, consuming virtually everything in its path. The fire burned utility lines, range facilities, such as fences and pipelines, and two known structures (both located on private property). Primary activities in the fire area include livestock grazing, wildlife viewing, camping, and hunting. Fire exposed large expanses of soils to future erosion events. Human life and safety may be put at risk in the area during storm events that cause erosion. Appendix 2 – Miller Homestead Photos provides examples of rock fragmentation of rim rock, rolling to Highway 205 and wind erosion occurring within the burned area.

Soil data shows that within the fire perimeter, over 7,020 acres of soil are highly susceptible to site degradation by wind (have one or more features that are very favorable for degradation, Web Soil Survey). An additional 129,474 acres are moderately susceptible to site degradation, with 16,440 acres of that being susceptible specifically to wind erosion (Web Soil Survey). Soil data shows that over 10,390 acres are highly vulnerable to wind erosion following fire, prior to reestablishing adequate cover on the burned site, and over 16,500 acres are moderately vulnerable to wind erosion (Web Soil Survey). Data from the P-Hill Remote Automated Weather Station (RAWS) show that sustained wind speeds are over 20 miles per hour approximately 2% of the time, usually occurring between March and May, and in November. However, gusts of 20 miles per hour are common throughout the area and will also result in erosion. The location of the fire adjacent to Highway 205, and including multiple major county roads, makes blowing dust and sand from the burned area a hazard to motorists traveling along these roads. Appendix 2 - Miller Homestead Photos has pictures of soil movement by wind. In addition, the fire burned through rim rock that runs adjacent to Highway 205, which is downslope of the rim. The loss of vegetation within this area has decreased the stability of rocks in the rim and on the slope, increasing potential for rock fragmentation. This increases the risk of rocks breaking off of the rim and rolling into the road, increasing the risk to human life . See Appendix 2 - Miller Homestead Photos for pictures of boulders that fragmented from the rim and rolled to Highway 205.

The community of Frenchglen is located just outside the fire perimeter, and sits at the bottom of a steep drainage that begins within the fire perimeter. In 2008, western juniper trees located within this drainage, just upslope from Frenchglen, received a cut and leave treatment. A period of high precipitation resulting in erosion and run-off within the burned area, may result in large quantities of water travelling down this drainage, moving these cut junipers into the community and putting human life and safety at risk.

There are multiple roads that cross drainages. In areas with high risk for water erosion, sediment may clog culverts, increasing the potential for road washouts posing a risk to vehicles and human safety. Soil data shows that over 10,420 acres are highly susceptible to

site degradation from water, and 35,764 acres moderately susceptible (Web Soil Survey). Following fire, soil data shows that over 13,971 acres are highly vulnerable to water erosion following fire, prior to reestablishing adequate cover on the burned site, and over 32,212 acres are moderately vulnerable (Web Soil Survey). Water erosion can occur if precipitation falls faster than the absorption rate or when soil becomes saturated. Depending on the topographic features and soil types found in the affected area, any measurable precipitation event may result in erosion initiating from within the fire perimeter.

The entire burned area was scattered with cheatgrass (*Bromus tectorum* L. BRTE) prior to the fire, and medusahead (*Taeniatherum caput-medusae* (L.) Nevski) is in the vicinity of the fire and was present at the site of the fire camp. This puts the burned area at a high risk of becoming dominated by cheatgrass and/or medusahead rye. Soil data suggests that 133,582 acres within the fire perimeter are moderately susceptible to invasion be medusahead rye. If the burned area becomes dominated with these annual grasses, the risk of subsequent fires increases due to increased fine fuel loads, resulting in an increased risk to human life and safety, especially to the three ranches that are located within the fire perimeter and the community of Frenchglen which is located approximately one mile outside the fire perimeter.

Objective: Provide safety and protection for the general public residing in and travelling in the vicinity of the burned area. Provide safety and protection for the work crews doing ES activities for the entire period of time such activities are being conducted in this area.

2 - Soil/Water Stabilization

Post fire, during the dry hot months of August and September, and to a certain extent October, depending on the year, soils are susceptible to wind erosion with no vegetation or biological soil crusts to hold them in place. As the fall precipitation begins, generally starting in October or November, soils susceptible to water erosion become vulnerable to overland flow which will transport valuable seed containing top soil away from the area. If seeds cannot establish and germinate, water erosion will continue across the area with the Spring precipitation and snow melt. The fire removed most of the aboveground plant material and exposed the soil surface to the forces of wind and water. Portions of the fire occurred on steep and rocky slopes. Aboveground vegetation was burned to soil surface throughout most of the fire. Raindrops will dislodge soil particles and increase the likelihood of movement by water or wind. There are 54 soil map units within the burned area. Of these, 37 of them are at least moderately susceptible to site degradation (wind or water). These soils account for 146,651 acres of the burned area. Of these acres, 70,784 are also moderately to highly vulnerable to erosion (wind or water) following fire and prior to adequate cover reestablishing. Multiple drainages located within the fire perimeter are susceptible to water erosion due to the steep topography in those areas (Web Soil Survey). Over 91% of the burned area is susceptible to erosion from wind or water. Since the fire consumed soil organic matter and coarse debris in most parts of the burn, the potential for runoff generation from a given precipitation event has increased. Burned rim areas, having lost the organic structure that had helped stabilize the rocks, are at risk for rock fragmentation and movement. Areas of greatest impact are Highway 205 (blowing dust, fragmenting rock, and runoff), community of Frenchglen (blowing dust, and runoff), and residences near and within the burn perimeter (blowing dust, and runoff). Decreases in vegetation, debris, and litter cover, increases in runoff generation, and decreases in soil

structure and cohesion (due to loss of organic matter) result in increased susceptibility of soils to erosion from sheet flow. On steeper slopes, there is also increased risk of rill erosion, in addition to an increased risk of rock fragmentation. Loss of soil through wind or water will reduce the overall site productivity and favor introduced annual plants such as cheatgrass and medusahead. The increase of annual plants will increase the bare ground exposure and the likelihood of future fires, dominance by annual plants, and a reduction of desirable vegetative species. Closing the area, temporarily (until objectives are met; however, if objectives are not met after two years the probability of success will reevaluated and new management considered) to livestock grazing, allowing seedings to become established and natural recovery to occur, will promote stabilization of soils.

See Map 4, 5, and 6 for General Vegetation, General Soils, and Ecological Sites within the burned area.

Objective: Re-establish vegetative cover to reduce the effects of erosion, sedimentation, and rock fragmentation.

Treatments that will apply to this issue are S2, S3, S6, S7, S8, S12, S13, and S14.

3 - Habitat for Federal/State Listed, Proposed, or Candidate Species

Greater sage-grouse (Centrocercus urophasianus), a candidate for federal listing as Threatened or Endangered and a BLM sensitive species, are found within the treatment area. The area is densely populated by sage-grouse (based on Oregon Department of Fish and Wildlife information and lek counts), with 147,133 acres (91% of the burned area) within the fire perimeter designated as Preliminary Priority Habitat (PPH) and 11,728 acres (7% of the burned area) designated as Preliminary General Habitat (PGH). There are seven known leks within the fire perimeter. Seeding and planting plugs of sagebrush within areas of sage-grouse habitat would increase the rate of sagebrush recovery in burned areas, help prevent the area from becoming annual grasslands, and promote the recovery of important sage-grouse habitat. If the area was to become dominated by annual grasses, the fire return interval on the burned area would be decreased, with fires becoming more common, and the timeframe for plant community succession to occur with more desirable species, such as sagebrush, would decrease. Appendix 2 – Miller Homestead Photos document sage-grouse presence within the perimeter of the Miller Homestead Fire.

Pygmy rabbits, a BLM Sensitive species, are known to exist in several sites that burned in the fire. Areas to the southwest of the fire had been surveyed but most areas on the southern half of the fire, which was probably suitable habitat, has not been surveyed yet.

Objective: Utilize treatments to stabilize the site by establishing perennial vegetation and restoring a diversified habitat desirable by sage-grouse and other locally important wildlife species.

Additional treatments that apply to this issue, but located under other issues are: S3 and S14.

4 - Critical Heritage Resources

Approximately 40 known cultural heritage sites were burned during this fire, including both

historic and prehistoric sites. The area has been utilized historically and prehistorically by Native Americans, as well as by numerous ranchers and homesteaders over the last 150 years. Since the fire removed covering vegetation, artifacts on the surface will be easy to see for several years post fire; therefore, there is a high risk to artifacts from surface collecting and acts of vandalism. Site integrity is reduced through erosion; established vegetation helps prevent this site context loss or destruction. As perennial vegetation becomes established on the site, this risk will decrease. However, if only small annual species were to become established, many artifacts may remain visible for many years due to the generally short stature of these species. Drill seeding and other on the ground stabilization methods may negatively affect Cultural Heritage Resources that were not previously discovered and avoided.

Objective: Protect sites by promoting the establishment of perennial vegetation while identifying, buffering, and avoiding cultural resource sites, as well as increasing the law enforcement patrol in the area.

Additional treatments that apply to this issue, but located under other issues are: S2, S3, and S6.

5 - Invasive Plants and Weeds

Lands in and around the Miller Homestead Fire area are being invaded by exotic plant species that threaten native plants and the biotic diversity of the areas. Monitoring shows that there are 8 known noxious weed species present within the perimeter, including: bull thistle (Cirsium vulgare (Savi) Ten.) – 4 sites totaling less than 0.01 acre, Canada thistle (Cirsium arvense (L.) Scop.) – 36 sites totaling 14.2 acres, Dalmatian toadflax (Linaria dalmatica (L.) Mill.) – 1 site for less than 0.01 acre, diffuse knapweed (Centaurea diffusa Lam.) – 1 site for 0.8 acre, Mediterranean sage (Salvia aethiopis L.) – 2 sites totaling 39.8 acres, perennial pepperweed (Lepidium latifolium L.) – three sites totaling 0.1 acre, scotch thistle (Onopordum acanthium L.) – 4 sites totaling 3.2 acres, and whitetop (Cardaria draba (L.) Desv.) – 10 sites totaling 1.5 acres. There are also numerous noxious weed sites just outside the perimeter of the fire including: Russian knapweed (Acroptilon repens (L.) DC.), spotted knapweed (Centaurea stoebe L. ssp. micranthos (Gugler) Hayek), puncturevine (Tribulus terrestris L.), and medusahead (Taeniatherum caput-medusae (L.) Nevski), as well as those species also found within the fire perimeter. Medusahead is an aggressive annual grass introduced from Eurasia, subsequently spreading over millions of acres in the semi-arid west. Expansion of medusahead into the Wyoming sagebrush steppe plant communities is becoming an issue in Harney County, and there are numerous small patches near the perimeter of the fire. Annual grasses are able to take advantage of winter precipitation and can easily become established. Medusahead tends to form monoculture stands that endanger native flora and fauna as it invades and expands across rangelands. Equally critical are the economic losses to rural communities as medusahead-dominated ranges have suffered a 40 to 75% reduction in grazing capacity. These forage losses negatively impact both domestic animals and wildlife species and threaten the viability of ranching operations and community stability in these areas. These species can form blankets of fine fuel in areas they dominate, affecting the frequency of future fires. Introducing plants that can compete with these invasive species, and are more desirable, helps support ecosystem services, i.e. soil stabilization and wildlife habitat values.

The combination of bare ground, ample nutrients, and sources of seeds means that the likelihood of noxious weed invasion into the burn is high, and especially along Highway 205 where noxious weeds are common east of the highway and around the 59.6 acres within the fire perimeter where noxious weeds currently exist, often on Wyoming sagebrush sites. Research and management have found ecological sites such as this to be vulnerable to invasive species, specifically medusahead.

We have a number of large-scale examples on our district of what happens to lands that are not treated after a fire and become infested with annual grasses. These species capitalize on newly released nutrients, just as the native plants do, and within a few years, areas can become dominated by annual grasses. These areas have little or no chance of rehabilitation given our current levels of technological expertise.

Through the Harney County Cooperative Weed Management Area (HC-CWMA) Partnership, we have conducted several broad-scale trials to determine which herbicides will work best to kill an acceptable percentage of the target plant (annual grasses) while minimizing damage to non-target desirable species. Data shows that an early fall application of Imazapic (common name “Plateau”) at 6 oz./acre flown on is extremely effective (Johnson D.D. and K.W. Davies 2011, Davies, K.W. and R.L. Sheley 2011, Davies, K.W. 2010). See appendix 8 for the potential herbicides and application rates for specific weed species.

Objective: Conduct stabilization actions to limit the expansion of invasive species. Limit establishment invasive weeds by conducting weed inventories followed by treatment of identified individuals and populations.

Additional treatments that apply to this issue, but located under other issues are: S2, and S3.

BURNED AREA RECOVERY ISSUES

1 - Lands Unlikely to Recover Naturally

Repair or improve lands unlikely to recover naturally from wildland fire damage by emulating historical or pre-fire ecosystem structure, function, diversity, and dynamics consistent with existing land management plans.

The Miller Homestead Fire occured within multiple precipitation zones ranging from 10” to 15”. The vegetative communities within the perimeter were comprised of Wyoming big sagebrush (Artemisia tridentata Nutt. ssp. wyomingensis Beetle & Young) or low sagebrush (Artemisia arbuscula Nutt.) overstory with the perennial understory dominated by bluebunch wheatgrass (Pseudoroegneria spicata (Pursh) Á. Löve ssp. spicata), Thurber’s needlegrass (Achnatherum thurberianum (Piper) Barkworth), bottlebrush squirreltail (Elymus elymoides (Raf.) Swezey), and Indian ricegrass (Achnatherum hymenoides (Roem. & Schult.) Barkworth). Research suggests that Wyoming big sagebrush re-establishes into burned areas from the outside edge inward at a very slow rate. It would be expected that it may

take decades or more for the area burned by the fire to recover without treatment.

Some areas within the Miller Homestead Fire experienced high severity burning, which consequently resulted in high mortalities of perennial species and a depletion of the soil seed bank. This change on the site will increase the likelihood of future establishment of cheatgrass and other invasive species. The fire has created optimal conditions for the establishment of vast acreages of annual grasses. Some areas within the burn are in lower ecological condition and are highly susceptible to annual grass invasion. This is primarily because there may not be enough residual seed in the soils within these portions of the burned area to re-establish native species naturally. Cheatgrass is the most common invasive species within the fire perimeter and would be expected to dominate portions of the area without treatment; medusahead invasion is also expected without treatment due to the presence of medusahead near the fire camp location. Since cheatgrass was known to exist on the site, and there is medusahead in the vicinity (and was potentially within the burn in small amounts), there is increased risk that desirable perennial native species will not reestablish in the burned area before exotic annual grasses spread and occupy the area. If conditions, including precipitation amounts, were guaranteed to be favorable, natives could recover in several years, but we are unable to predict when these conditions will occur. There are many examples in the Great Basin of post fire annual grass communities persisting for long periods of time and leading to a compressed fire cycle. It is unlikely that desired native plants will reestablish at acceptable levels, in an acceptable management timeframe, absent treatment in areas where annual grasses become established.

The Miller Homestead Fire burned crucial habitat for a variety of wildlife including mule deer, pronghorn antelope, pygmy rabbit, and sage-grouse; as well as a variety of raptors and migratory birds. Quality habitat for sage-grouse, pygmy rabbit, and big game was lost when the wildfire burned the area. Sagebrush and other shrubs provide cover, forage, nesting habitat and cover for wildlife species. Sage-grouse and pygmy rabbits are sagebrush obligates, meaning they cannot persist in the area without adequate sagebrush habitat (Patterson 1952, Green and Flinders 1980). The pygmy rabbit was recently petitioned for listing, but found not warranted for listing by the USFWS. The greater sage-grouse (hereafter sage-grouse) was also petitioned, but was found warranted for federal listing, but precluded by other higher priority species. Sage-grouse is a Candidate Species. Both species are BLM Sensitive Species. Habitat consumed in the fire supported some of the highest known concentrations of sage-grouse and pygmy rabbits in the District (ODFW and BLM survey data). Populations and habitat for both species have decreased over the past half century (at least). Recovery or maintenance of remaining populations is dependent on providing adequate amounts of healthy, later seral sagebrush communities distributed across a large landscape (Hagen 2011, Weiss and Verts 1984).

The completion of the rehabilitation efforts will be in accordance with the Standards and Guidelines for Rangeland Health, maintain sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soils moisture loss by evaporation. The action will ensure that there is progress towards the attainment of the Standards and Guidelines for Rangeland Health. Multiple use concepts have been considered throughout the Stabilization and Rehabilitation efforts for the Miller Homestead Fire to ensure that the efforts are completed in a sustainable manner and are in the context of multiple use.

2 - Weed Treatments
Invasive and noxious weeds are expected to be a problem within the area. These species will need to be aggressively treated to eliminate the spread and prevent new infestations as the vegetation recovers. Large amounts of vegetation within the fire perimeter burned, leaving areas of bare ground, and increasing the probability that noxious and invasive plants (primarily cheatgrass and medusahead) will become established. Currently 9 species of invasive weeds, including cheatgrass, are known to occur in the area burned by the Miller Homestead Fire. Although it is unknown how suppression efforts or stabilization will affect the spread of invasive weeds, based on observations following recent wildfires, invasive weeds, particularly annual grasses and thistles, re-establish aggressively. Sources that could spread weeds in the burned area are hunters or other recreational uses, wind, water, wildlife, wild horses, and livestock.

Chemical treatment of noxious weeds will be completed under the ES Plan. It is estimated that these noxious weed areas will require three years (the first year under emergency stabilization activities) of treatment to control these species. There are areas where annual grass infestation will reduce seedling establishment due to invasive annual weed competition.

Medusahead tends to form monoculture stands that endanger native flora and fauna as it invades and expands across rangelands. Equally critical are the economic losses to rural communities as Medusahead-dominated ranges have suffered a 40 to 75% reduction in grazing capacity. These forage losses negatively impact both domestic animals and wildlife species and threaten the viability of ranching operations and community stability in these areas. Most of the lands within the fire perimeter have acceptable remnant populations of desirable native vegetation which would respond favorably to fall herbicide treatments for annual grasses.

We have a number of large-scale examples on our district of what happens to annual grass infested lands that are not treated after a fire. Annual grasses capitalize on the newly released nutrients, just as the native plants do, and within a few years, the areas becoming dominated by annual grasses have little or no chance of rehabilitation given our current levels of technological expertise.

3 - Tree Planting
N/A

4 - Repair/Replace Fire Damage to Minor Facilities
Within the perimeter of the Miller Homestead Fire, fences and gates were damaged to varying extent as the fire burned through multiple allotment boundary and pasture fences. While these fences will not be crucial to protecting the seeded and planted areas, repairing these fences will be critical to ensure full recovery of the vegetation while providing limits to grazing activities and to manage grazing between pastures and allotments once grazing returns to the area. In addition to the numerous interior fences, cattle guards, a pipeline, and wildlife guzzlers were burned in the Miller Homestead Fire. These facilitates will need to be repaired or replaced. Approximately 38 miles of fence, 0.4 mile of water pipeline at a spring development, and one wildlife guzzler have suffered some degree of damage during the fire. The majority of the fences within the area were steel post construction; however, there were fences that consisted primarily of wood posts. Repair/replacement of these range

improvements is needed to control livestock and prevent trespass livestock from straying into rehabilitated areas in violation of nonuse agreements and ensure that grazing management systems can be resumed following successful rehabilitation efforts. Damage to the fences generally consists of wire which burned hot and lost the galvanized coating/tensile strength, and burned wood posts, braces, and gates. The fences provide for rotation grazing management systems throughout the affected allotments and effective livestock management following vegetation establishment will not be possible without these interior fences.

Without these fences the Standards and Guidelines for Rangeland Health cannot be achieved. The pipeline is part of a spring development, that transported water from the spring to a trough and waterhole, and is needed to promote proper livestock distribution while creating an additional water sources for wildlife and wild horses. One guzzler had its apron destroyed during the wildfire. The guzzler provided a water source for wildlife, including California big horn sheep, in areas that are generally water limited. Without these crucial water sources, wildlife populations will not exist within otherwise suitable habitats.

PART 3 - DESCRIPTION OF TREATMENTS

Issue 1 - Human Life and Safety

S3 Aerial Seeding

A. Treatment/Activity Description

Approximately 4,705 acres within the Miller Homestead Fire will be aerially seeded. The area to be seeded is adjacent to Highway 205 and consists of a rim and steep slope leading down to the highway. This area will be seeded to help stabilize the soils along the rim that runs to the west of Hwy 205, reducing the potential for overland flow to erode the site, as well as decrease opportunities for noxious and invasive species to become established. Seeding will be done utilizing fixed wing aircraft. Seeding will occur in the late fall to early winter, which is the time research suggests will be most successful for the selected seeding species. The aerial seed mix consists of species selected for specific characteristics (from USDA Plants, 2012). Forage Kochia (*Bassia prostrata* (L.) A.J. Scott) has been shown to compete extremely well against aggressive, exotic annual weeds such as cheatgrass, Russian thistle and medusahead. Plantings of forage kochia can decrease densities of annual weeds, thus decreasing fire intervals of degraded rangelands while providing valuable forage to livestock, and forage and cover for wildlife and upland game birds. While research is still very limited on forage kochia use by sage-grouse, observations of sage-grouse using forage kochia have been made (Waldron, 2002). Forage kochia is also high in protein, testing at over 20% in July, which can help wildlife meet protein requirements later in the year (Smith, 2006). Bluebunch wheatgrass is very drought resistant, persistent, and adapted to stabilization of disturbed soils. Its drought tolerance, combined with extensive root systems and good seedling vigor, make this species ideal for reclamation in areas receiving 10 to 20 inches annual precipitation. Great Basin Wild Rye (*Leymus cinereus* (Scribn. & Merr.) Á. Löve is well adapted to stabilizing disturbed soils. Basin wildrye's drought tolerance, combined with fibrous root system, fair seedling vigor, and ability to stabilize soil make it desirable for reclamation in areas receiving 8 to 20 inches annual precipitation. Since basin wildrye is a tall upright bunchgrass, it is considered excellent cover habitat for small animals and birds, excellent nesting cover for upland birds, and excellent standing winter feed and cover for big game animals. Crested wheatgrass (*Agropyron cristatum* (L.) Gaertn.) is a large perennial grass which is drought tolerant. Crested wheatgrass possesses a deep root system with early growth giving it an advantage when competing in an area threatened by annual grasses. Their drought tolerance, fibrous root systems, good seedling vigor, and ability to quickly stabilize soils and slow runoff make this species ideal for reclamation in areas with 8 to 20 inches annual precipitation. Western wheatgrass (*Pascopyrum smithii* (Rydb.) Á. Löve) is well suited for stabilization of disturbed soils because of its strong spreading rhizomes. Its relatively good drought tolerance combined with strong rhizomatous root systems and adaptation to a variety of soils makes this species ideal for reclamation in areas receiving 12 to 20 inches annual precipitation.

See Maps 4, 5, and 6 for General Vegetation, General Soils, and Ecological Sites within the burned area.

See Map 8 for the proposed aerial seeding location.

B. How does the treatment relate to damage or changes caused by the fire?

The seeding will help to increase ground cover rapidly and help to reduce the potential for erosion, rock fragmentation, and establishment of invasive species. Species and method selected have proven to be successful in the area. The goal of the treatment is to establish protective ground cover of perennial vegetation to protect the exposed soils from wind and water erosion, and to stabilize the rim rock, decreasing the risk of rocks entering the highway. Failure to complete seeding operations will leave the burn area open to erosion, proliferation of invasive plants, and pose a risk to those travelling along Highway 205 and down slope from the burned rim.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Seeding following a wildfire for stabilization, rehabilitation and to reduce invasive weeds is within policy and guidance. The area selected for aerial seeding is adjacent to Highway 205 and consists of a rim that slopes down to the highway. The majority of this area is unsuitable for drill seeding due to rockiness, slope, and the presence of numerous cultural sites. It is also adjacent to numerous known weeds sites, increasing the risk for noxious weed invasion into the burned area. Seed costs will be more expensive than drill seeding because of the high rates for use of an aircraft. One airplane can cover approximately 1,000 acres per day depending on a number of factors. The application cost of aerial seeding is fairly high, but the risk of not seeding is the loss of species and structural diversity that will reduce the overall short and long-term value of the land, as well as the continued loss of stability along the rim, that poses a threat to those travelling along the highway. The cost of the treatment will be offset by the reduction of risk to those along Highway 205 and downslope from the rim rock, and the improvement in biological integrity and production of the area.

S6 Soil Stabilization (Other than seedling, planting)

A. Treatment/Activity Description

The Miller Homestead Fire burned through multiple major drainages, and burnt to bare soil in many areas. This increases the amount of runoff that will occur in the area. Approximately 200 erosion control structures will be placed within major drainages. Locations will depend on access and material availability to construct the structures. Dams will be constructed of weed-free straw or rock placed on the surface (no ground disturbance) and anchored to resist movement. Height and width will depend on channel morphology and potential for water movement; dams placed within the same drainage would be place on alternating sides of the drainage to help create a natural sinuosity. This would be done in the fall of 2012 (FY13). A BLM Hydrologist would determine the exact locations of the check dams. These structures will be located in drainages known to have large amounts of runoff, as well as in drainages immediately upslope from Highway 205, the community of Frenchglen, and other residential areas to protect the grade from further damage due to flooding and sediment deposits. Also along Highway 205, a sediment fence approximately 1000 feet long will be placed in order to stop sediment from moving downslope and entering the highway corridor.

In addition, catchment basins will be cleaned to collect sediment and ash that is transported down slope by precipitation until plant cover increases enough to protect the site. A dozer or excavator will be utilized to clean the catchment basins. Cleanout will begin in October to prepare for fall rains. Cleanout may also occur in the late spring of 2013 to remove collected sediment and allow catchment basins to continue to collect sediment and ash. No more than 81 catchment cleanouts will occur, and these will only occur if needed. Cultural clearances will be conducted prior to any ground disturbing activities. If found, such resources would be avoided where needed to comply with applicable laws, polices, or agreements. See Map 9 for estimated areas of check dams and locations of catchment basins. See Appendix 3 for a breakdown of costs associated with these treatments.

B. How does the treatment relate to damage or changes caused by the fire?

Surviving vegetation will not express to any significant degree until spring 2013. Some plants may green up in the fall following fall rainfall, but the growth will be limited by the low precipitation and night temperatures. Large areas of bare soil and ash will continue to be present for the fall, winter and the early spring. Approximately 87% of the annual precipitation falls from October thru June. Spring runoff in March and April will occur before residual plants grow to any extent, moving ash and soil off site. The debris dams will help to slow the flow of water and allow the soil to drop out of suspension.

These structures would slow runoff, reducing the effects of water erosion, thereby limiting soil loss and excessive sediment deposits off site. Highway 205, the community of Frenchglen, and other residential areas would be protected from post-fire flooding and debris deposition.

The BLM administered lands burned during the fire contain numerous drainages and intermittent creeks. The fire burned with greatest intensity in areas upslope from many of these drainages. There will be little revegetation in the fall of the year. The majority of soil and ash movement will occur during fall and early winter rains. Another flush will likely occur with snow melt in the spring. The sediment catchments will contain the sediment movement. The sediment threatens down slope private structures, the community of Frenchglen, and travelers on Highway 205.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

These activities are essential in implementing the stabilization effort. The treatment is worthy of the investment and expense to assure that soil loss can be reduced by slowing sediment flow with the use of erosion control structures. In addition, these check dams and the sediment fence would protect Highway 205, the community of Frenchglen, and other residential areas within and near the fire from damage due to large runoff events and debris and sediment deposits. The treatment will help to trap sediment in channels and prevent the creation of gullies. The investment, if successful, will eliminate the necessity of gully treatments that would require the use of heavy equipment and investment large amounts of dollars. The creation of gullies would also indicate a loss of top soil and a reduction in overall site productivity and sustainability. Catchment clean out represents a small investment for the protection of private structures in the Frenchglen area, recreation sites, and Highway 205. The treatments are within the scope of the Three Rivers RMP and

Andrews RMP, and Oregon State laws. Cleaning existing catchments will reduce the cost of construction and engineering needed for the development of new catchment basins.

S8 Road/Trail Water Diversion

A. Treatment/Activity Description

There are 15 culverts located within the burned area on Harney County maintained roads. Since these culverts will be affected by the fire, a cooperative agreement with future responsibilities will be made between the BLM and Harney County, and Wyden Amendment funding will be sought through the Oregon/Washington State Office. In addition to culvert cleaning, this treatment will include spot cleaning ditches located along 45 miles of roads within and adjacent to the burned area and monitor these areas to ensure that runoff is able to continue flowing through the culverts and ditches, and that no pooling occurs due to clogged culverts, which could result in roads being washed out.. See Map 9 for locations of culverts to be cleaned.

B. How does the treatment relate to damage or changes caused by the fire?

Sediment threatens to clog culvertsand drainages that transport the runoff under roads within and near the burned area. If sediment were to clog these culverts, it would result in pooling along the road, and possibly washout the road, increasing the risk to human safety and property of those driving along these roads.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Culvert and drainage clean out represents a small investment for the protection of roads and human safety within and adjacent to the burned area. The treatments are within the scope of the Three Rivers RMP and Andrews RMP, and Oregon State laws. Cleaning of culvertsand drainages will reduce the risk of roads washing out and decrease the risk of people travelling along these roads. Cleaning of culvert will occur under the Wyden Amendment.

S14 Other Treatments

A. Treatment/Activity Description

In a drainage immediately east of the fire perimeter and west of the community of Frenchglen there is an area (approximately 20 acres) that received a cut and leave juniper treatment in 2008. Due to the increased risk of large runoff events, these downed trees now pose a threat to the community of Frenchglen. In order to reduce the risk of these trees being moved into the community of Frenchglen, the downed trees in this area will be hand piled outside the major drainage channel. This will be done by the Burns Interagency Fire Zone in the fall/winter of 2012.

B. How does the treatment relate to damage or changes caused by the fire?

The Miller Homestead Fire removed vegetation throughout most of the burn area, leaving large areas of only mineral soil. Without vegetation to help capture precipitation and slow water runoff, large runoff events are expected. Since the drainage containing these downed juniper trees are near the bottom of the drainage and less than 0.25 miles from the community of Frenchglen, they are at risk of being moved into the community, posing a risk to human safety.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

While this hand pile treatment will cost $9,000 that is a small price to pay to protect human life and property within the community of Frenchglen. This treatment is within policy and complies with the Andrews RMP.

Issue 3 - Habitat for Federal/State Listed, Proposed, or Candidate Species

S2 Ground Seeding

A. Treatment/Activity Description

This treatment consists of drill seeding 36,633 acres on the Miller Homestead Fire. The seeding will be done utilizing rangeland drills. Seeding will occur in the fall and early winter of 2012, and possibly into 2013. A combination of native and desirable non-native species will be utilized in all seed mixes. Four different seed mixes were selected by the I.D. team with utilization of each mix determined by: 1) the given sites risk for annual grass establishment (i.e. “low cheatgrass risk” and “high cheatgrass risk”) and 2) the potential to reestablish Wyoming big sagebrush (primarily if ARTRW had existed on the site prior to the fire). The first mix, the high cheatgrass risk mix, is for areas at lower elevations and/or southern aspects where cheatgrass has been observed to aggressively establish following disturbance, and/or on sites known to have high densities of cheatgrass before the fire and likely to show large increases in annual grasses if left untreated. The second mix, the low cheatgrass risk mix, is for areas less conducive to cheatgrass establishment and/or sites that had scattered or no cheatgrass before the fire. Approximately 25,717 acres will be seeded using the high cheatgrass risk mix and approximately 5,022 acres will be seeded with the low cheatgrass risk mix. In addition to these, both the high and low cheatgrass risk mixes will have Wyoming big sagebrush seed added to them and for seeding on an additional 1,565 and 3,416 acres, respectively, making up the third and fourth mixes. An additional 913 acres of Wyoming big sagebrush will be seeded alone for the fifth mix. Discs on the drills will be dropped to achieve full depth up to 3 inches with some tubes pulled. This method increases variation for seed sites and reduces the visual impression of vegetative rows across the treatment area, while allowing for a single seeding treatment; therefore saving money. The species in these seed mixes were selected for specific characteristics (from USDA Plants, 2012). Western yarrow (*Achillea millefolium* L.) is a key sage-grouse food. This native forb adds complexity to the seed mix and provides a seed source for sage grouse. Tailcup Lupine (*Lupinus caudatus* Kellogg) is an important component to sage-grouse habitat and a native forb which provides complexity to the seed mix. Wyoming big sagebrush is a key component in core sage-grouse habitat. Evergreen leaves and abundant seed production provide an excellent winter food source to numerous species of large mammals including mule deer, black-tailed deer, white-tailed deer, elk, pronghorn antelope, bighorn sheep and jack rabbits. There are several other animal species having an obligate relationship with big sagebrush including sage-grouse, sharp-tailed grouse, pygmy rabbits, sage thrashers, sage sparrows and Brewer’s sparrow. Crested wheatgrass is a large perennial grass which is drought tolerant. Crested wheatgrass possesses a deep root system with early growth giving it an advantage when competing in an area threatened by annual grasses. Their drought tolerance, fibrous root systems, good seedling vigor, and ability to quickly stabilize soils and slow runoff make this species ideal for reclamation in areas with 8 to 20 inches annual precipitation. Great Basin Wild Rye is well adapted to stabilizing disturbed soils. Basin

wildrye's drought tolerance, combined with fibrous root system, fair seedling vigor, and ability to stabilize soil make it desirable for reclamation in areas receiving 8 to 20 inches annual precipitation. Since basin wildrye is a tall upright bunchgrass, it is considered excellent cover habitat for small animals and birds, excellent nesting cover for upland birds, and excellent standing winter feed and cover for big game animals. Indian ricegrass is a native perennial bunch grass used for erosion control, forage and cover. This grass adds complexity to the seed mix and performs well in precipitation zones of less than 10". It is well adapted to stabilization of disturbed sandy soils in mixes with other species. It is naturally an early invader onto disturbed sandy sites. Due to the abundance of plump, nutritious seed produced by Indian ricegrass, it is considered an excellent food source for birds, such as mourning doves, pheasants, and songbirds. Rodents collect the seed for winter food supplies and it is considered good cover habitat for small animals and birds. Bottlebrush squirreltail is a short-lived native perennial grass which can act as an early-seral species by competing with and replacing annual weedy species following fire. Its ability to germinate in the late fall and very early spring, at a wide range of temperatures, adds to its capability to compete with cheatgrass. Bluebunch wheatgrass is very drought resistant, persistent, and adapted to stabilization of disturbed soils. Its drought tolerance, combined with extensive root systems and good seedling vigor, make this species ideal for reclamation in areas receiving 10 to 20 inches annual precipitation. Lewis flax (*Linum lewisii* Pursh) is a forb noted for its erosion control abilities, as well as its forage value for wildlife. This forb has also been used as a fire suppressant species. Dryland alfalfa (*Medicago sativa* L.) is a long-lived perennial legume which provides necessary nitrogen to the soil to enable the growth of other native species throughout the area. Alfalfa is an excellent food for antelope, deer, elk, Canada goose, and sage and sharp-tail grouse. It is fair food for sandhill crane, mallard, Hungarian partridge, and pheasant. Forage Kochia has been shown to compete extremely well against aggressive, exotic annual weeds such as cheatgrass, Russian thistle and medusahead. Plantings of forage kochia can decrease densities of annual weeds, thus decreasing fire intervals of degraded rangelands while providing valuable forage to livestock, and forage and cover for wildlife and upland game birds. While research is still very limited on forage kochia use by sage-grouse, observations of sage-grouse using forage kochia have been made (Waldron, 2002). Forage kochia is also high in protein, testing at over 20% in July, which can help wildlife meet protein requirements later in the year (Smith, 2006). Seed mix tables are shown in Appendix 5.

Proposed restoration activities especially those involving drill seeding are considered undertakings warranting review and compliance with Section 106 of the National Historic Preservation Act. This work needs to be conducted in consultation with the State Historic Preservation Officer, affected Indian tribes and others as appropriate. BLM is developing specific plans for conducting archaeological survey and site identification services focusing on emergency stabilization of burned areas including ground seeding and aerial seeding where these activities have the potential to affect cultural properties. It is cautiously estimated that nearly 36,000 acres of proposed ground seeding will require cultural resources inventory prior to drill seeding in the Miller Homestead Fire area. Cultural clearances will be conducted prior to seeding.

See Maps 4, 5, and 6 for General Vegetation, General Soils, and Ecological Sites within the burned area. See Map 7 for proposed locations of seedings by seed mix. See Appendix 3 for a breakdown of the cost estimate for drill seeding.

B. How does the treatment relate to damage or changes caused by the fire?

The fire burned with high intensity and resulted in severe fire effects. Plant mortality appears to be high in the burned area. The area also contains invasive annual grasses as a plant community component. The burn was fueled to some level by exotic annual grasses and by perennial native grasses and sagebrush. In the Great Basin it has been found, by research and management that once annual grasses ecologically dominate a plant community and establish shorter fire return intervals, the plant community is unlikely to return to a native plant community. Additionally, annual grass communities are known to transition to other noxious weed dominated communities. The proposed treatment will provide direct competition to the establishment of new annual grass seedlings by species that have been shown to compete successfully with annual grasses and diminish their invasive ability. Studies and experience across the Great Basin have found poor success at establishing perennial native species into areas dominated by invasive annual grasses. Some non-natives, specifically crested wheatgrass and forage kochia, have been found to be more successful. These species can effectively compete with the annual grasses (more so than native perennial species). It has been our experience that to establish the desired ground cover and stabilize these burned areas, nonnative plants that have high germination rates and establish quickly on the site, are not only necessary, but when they are included in a diverse seed mix in proper proportions, actually aid in the establishment of seeded natives and recruitment of adjacent native species into the stabilization and rehabilitation area. Follow up restoration, herbicide, and seeding can trend the community back toward a natural community with properly functioning ecological processes. Non-natives like crested wheatgrass can establish faster than native perennials and the addition of natives into mix will allow for establishment of natives. Forage kochia will also provide highly nutritious forage for wildlife and cattle when grazing resumes on the site. Seeding the burned area is intended to forestall the conversion of the burned areas from sagebrush steppe to an annual grass compressed fire cycle plant community. Seeding of native and desirable non-native perennial species will help to limit the expansion of the invasive species, facilitate weed control treatments, and trend the plant community from a non-native annual grass dominated community back towards a more desirable native community.. It will also promote soil stability and provide vegetative cover reducing the potential for erosion. Wyoming sagebrush mortality appears to be very high in the burned area. Wyoming sagebrush can take decades or more to reestablish naturally following fire. Due to the large size of the fire, many areas are too far from surviving Wyoming sagebrush plants to utilize that seed; therefore, to increase recovery of the shrub component, sagebrush seed will have to be brought in. Seeding sagebrush increases the potential for a more rapid succession toward a desirable plant community, similar to the potential natural community, which is critical for restoration of sage-grouse and pygmy rabbit habitat. By drill seeding during the first winter post-fire and using species that have been shown to successfully establish in this kind of situation, we have a better chance of success at establishing more desirable ground cover and forestalling or completely preventing a conversion to an annual grass dominated site.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Seeding will stabilize the soils and limit expansion of invasive species. Species selected are

readily available in most years and have been proven to be effective in these environments. The selection of crested wheatgrass, forage kochia, and native species in the seed mix provides what experience and research have generally shown to be the best chance for successful post-fire seeding in an area described as a Wyoming big sagebrush ecological sites that already have exotic annual grasses. Since exotic annual grasses are already established in the burned area, the chances for successfully establishing only native species, by any method, has a much lower probability of success than including crested wheatgrass and forage kochia with native species. Successful establishment will help limit herbicide treatments to spot treatments instead of large scale broadcast type treatments, due to decreasing the risk of large scale weed invasions. If invasive annuals dominate the site, productivity and land value will decrease. Seeding sagebrush will increase the presence of Wyoming big sagebrush throughout the large burned area. This will provide a seed source for Wyoming sagebrush that can be naturally spread throughout the rest of the burned area. While sagebrush seed can be expensive, it is an important component of sage-grouse habitat. Therefore, the cost of seeding sagebrush is little compared to the cost of losing approximately 147,133 acres of core sage-grouse habitat. Large amounts of dollars and energy will be required to reverse the trend caused by the fire. Cultural surveys and mitigation are required of Federal agencies prior to conducting ground disturbing activities, including drill seeding. Cultural surveys conducted by BLM personnel do not cost more than contracted cultural surveys, and are as effective. The proposal is within policy, complying with the Three Rivers RMP and the Andrews RMP. The costs are in line with other alternatives, because there is a reliable supply of crested wheatgrass seed, it is easily produced, and it is cheaper than many other species. Drill seeding is more successful than aerial seeding and other methods of broadcast seeding from ground vehicles.

S7 Fence/Gate/Cattleguard

A. Treatment/Activity Description

The Miller Homestead Fire burned through multiple allotment and pasture boundary fences that are needed to keep livestock out of the burned area until objectives are met. Approximately 11.4 miles of 4-wire fence will be reconstructed along identified portions of the fire. Of these miles of fence to be reconstructed, approximately 2 miles fall on the boundary of, or across private property. These fences are included since they were originally constructed by the BLM and have valid Rangeland Improvement Project System (RIPS) numbers, and are needed by the BLM to properly control livestock within the respective allotments. In addition, 20 miles of new temporary fence will be constructed to keep wild horses and livestock out of the majority of the burn and the reseeded area. Approximately 10.5 miles of protection fence is needed in a large pasture that was only 33% burned in the fire, and is the largest pasture available for wild horse use within the Herd Management Area (HMA). The remaining 9.5 miles is needed in a different pasture to regulate livestock movement within the pasture and protect a seeded area. All fencing would be required to limit domestic livestock and wild horse grazing until objectives are met. If objectives are not met after two growing seasons, the probability of success will be reevaluated and new management actions will be considered. Temporary cattleguards (2) will be installed where the fence crosses Foster Flat/Matties Ark Camp and Jack Mountain roads, which are main roads and receive regular use. Gates will be installed at all other places the fence crosses roads. In addition, two double gates will be installed, one at each corner of the new protection fence. This will allow the smooth and safe removal of wild

horses from within the burned area. Cultural clearances will be conducted prior to new fence construction. If found such resources would be avoided where needed to comply with applicable laws, polices, or agreements. See Map 9 for locations of temporary protection fence, temporary cattleguard locations, and fence reconstruction points. See Appendix 3 for a breakdown of costs associated with fences.

B. How does the treatment relate to damage or changes caused by the fire?

The reconstruction, and construction, of these fences will allow the area to be rested from grazing by wild horses and domestic livestock. Wild horses and cattle have the propensity to congregate on the burned area and utilize the new, green grasses and forbs. Utilization by wild horses or cattle immediately following burning, especially at above average utilization levels, could slow, or even postpone vegetation recovery, as well as potentially decreasing the success of seedings and plantings. Establishment of perennial plants will help to stabilize the soil surface by increasing soil cover and decreasing the chances of wind and water erosion. Established plants will also reduce the influence of raindrops by absorbing the force of their impact. The installation of the cattleguards will occur where the road crosses the fence, allowing continued access across the burned area for administrative purposes, permittee access, private land owner access, and recreation access. A gate would be ineffective at these points due to the amount of traffic these roads receive, and the likelihood of a gate being left open or damaged if locked, allowing wild horses and livestock back into the protected area.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The fencing treatment is in conformance with the Three Rivers RMP and the Andrews RMP. The treatment invests $219,174 in fencing to facilitate the recovery of burned areas, while continuing to provide wild horses with needed habitat, eliminating the need to gather the over 200 horses that are part of the Warm Springs HMA. Control of livestock, especially in drier habitats will help to move the burned plant communities toward perennial plant dominance, as well as protect the small unburned islands that provide refuge for wildlife remaining in the burned area.

S12 Closures (area, OHV, livestock)

A. Treatment/Activity Description

The majority of the burned area, including all seeded areas, would be temporarily closed to wild horse and the entire area would be closed to domestic livestock grazing until vegetation objectives are met (densities greater than 3 plants/meter squared). If after two growing seasons objectives are not met, the probability of success will be reevaluated and new management actions will be considered. This closure will be accomplished by monitoring the area, as well as by the construction of a temporary protection fence. The closure to livestock grazing will be done using agreements between the BLM and affected permittees, or with a grazing decision. The closure may result in some concentrated use along the fence, by both wild horses and livestock attempting to access preferred water sources or grazing areas. However, this would be expected to be temporarily, since the unburned portion of the grazing pasture and HMA is large enough to meet habitat requirements. Since the entire HMA has little elevation and climate variation, it is not expected that this temporary closure will affect seasonal movement of wild horses.

Appendix 6 shows Burned Allotment Acres, AUMs, and Permittee Numbers.

Approximately 58,183 acres of Warm Springs Herd Management Area and 731 acres of South Steens Herd Management Area, both of which have over 200 horses in them were within the fire perimeter. However, the portion of the South Steens Herd Management Area that burnt is not regularly used by wild horses since it is separated from the rest of the HMA by Highway 205. In order to protect the portions of the burned area that are seeded or planted from wild horses in the Warm Springs HMA, a protection fence around these areas is necessary to the success of these sites. Once the protection fence is completed, it will be necessary for the wild horses within the protected area to be relocated from the burned portion to the unburned portion of the HMA, using a helicopter, to provide necessary forage while allowing vegetation recovery in the burned areas. Wild horses, like livestock, tend to congregate on areas of lush green vegetation, which is palatable. Therefore, wild horses often congregate within seeded and burned areas as soon as any green-up occurs. Congregation and subsequent grazing of these areas would result in many plants being pulled up from the soil, as well as slowing down the establishment of these plants. The removal of wild horses from this area may require multiple flights to remove all wild horses, and to remove any wild horses that manage to get back into the area. In addition, the protection fence will separate wild horses from many of the reliable water sources within the HMA. In order to ensure water availability to the wild horses, water will likely have to be hauled during the period the protection fence is in place.

B. How does the treatment relate to damage or changes caused by the fire?

The fire caused loss of forage and cover in the fire perimeter. Reintroduction of wild horses and livestock to areas that have been seeded or have native vegetation capable of recovering, prior to objectives being met may slow recovery. By removing wild horse and domestic livestock grazing until objectives are met increases the chances of seeding and planting success, and of natural recovery in non-seeded areas.

In order for the vegetation within the burn to recover, and the seeding and planting treatments to be successful, it is necessary to remove wild horses from the area. Removal of wild horses from areas seeded or planted is necessary to ensure that seeded and planted species have an opportunity to become established on the site, allowing the site to return to a condition appropriate for wild horse use. Hauling water will allow wild horses to remain within the HMA and ensure their water requirements are met.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Site recovery direction requires limits on grazing in these post-wildland fire situations. The treatment invests $219,174 in fencing to facilitate recovery of burned areas, this cost is necessary to keep wild horses out of the area, and much more inexpensive than removing the over 200 horses from the Warm Springs HMA. Control of wild horses and livestock, especially in drier habitats, will help to move the burned plant communities toward perennial plant dominance. Fences will be removed after objectives are met (refer to the Monitoring Plan for objectives).

The removal of wild horses from the portion of the burned area that is reseeded/planted will increase the chances for success at these sites. The more successful these treatments are,

the fewer future costs will be to maintain the desired plant community. In addition, the protection fence and relocation of horses from within the protected area to unburned portions of their HMA, along with water hauling, is much more cost effective than the complete removal of over 100 horses from the Warm Springs HMA, since complete removal would also require short-term holding costs.

S13 Monitoring

A. Treatment/Activity Description

Monitoring would be implemented in treatment areas to determine treatment need and success. Monitoring for vegetation, including seedings and planting, would be implemented beginning in fall 2012 by establishing photo and study plots, and visually inspecting the area. Existing monitoring plots will be utilized when possible. The plots would be read and photos taken in the spring of 2013, 2014, and 2015. Monitoring for treatment needs (i.e. culvert/ditch cleanout, catchment basin cleanout, etc…) will occur on a semi-annual basis, and will include photographs. This monitoring will determine if treatments are necessary or not. Monitoring specifics, including objectives are found within the monitoring plan. See Map 11 for estimated locations of new monitoring plots. Monitoring for weeds is not included under this treatment, but under S5 since the SWAT crew uses Early Detection/Rapid Response (monitoring and treatment) and the associated costs are not able to be seperated.

Compliance monitoring will also be conducted for the livestock closure. Compliance monitoring will also be conducted to ensure that seedings have sufficiently protected and stabilized cultural resource sites.

B. How does the treatment relate to damage or changes caused by the fire?

Monitoring of treatments is important to determine success and need of treatments, preventing treatments from occurring unless deemed necessary. Establishment of study sites will aid in determining whether appropriate seed species were utilized in this area. Rangeland monitoring provides a baseline for future land activities on this site, as well as provide additional data on appropriate ESR techniques when fires occur in the future. Compliance monitoring for both livestock and cultural resources will ensure that the appropriate measures are being taken, to establish the seeding and protect cultural resources, as required by law.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Monitoring is an essential component for any BLM activity and helps to justify current actions and plan for additional ESR actions. Such visits help to protect the investment made by the BLM and potential partners for this type of project. The treatments would be monitored under ES &BAR for three years in accordance with BLM standards, and would continue to be monitored on a 5-10 year rotation.

Issue 4 - Critical Heritage Resources

S9 Cultural Protection (Stabilization/Patrol)

A. Treatment/Activity Description

The Burns District Law Enforcement Officer will increase patrol in the Miller Homestead Fire until perennial vegetation becomes estabilshed enough to cover cultural heritage sites and the risk of surface collection or vandalism decreases.

B. How does the treatment relate to damage or changes caused by the fire?

Approximately 40 known cultural heritage sites were burned during this fire, including both historic and prehistoric sites. The area has been utilized historically and prehistorically by Native Americans, as well as by numerous ranchers and homesteaders over the last 150 years. Since the fire removed covering vegetation, artifacts on the surface will be easy to see for several years post fire; therefore, there is a high risk to artifacts from surface collecting and acts of vandalism. As perennial vegetation becomes established on the site, this risk will decrease. However, if only small annual species were to become established, many artifacts may remain visible for many years due to the generally short stature of these species.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The proposed treatment will help meet objectives of the Bureau of Land Management's ES&R program to reduce the risk of cultural resource looting, as discussed in H-1742-1 Burned Area Emergency Stabilization and Rehabilitation Handbook.

Issue 5 - Invasive Plants and Weeds

S5 Noxious Weeds

A. Treatment/Activity Description

During the first year, the portion of the burn that is the highest risk for noxious weeds will be inventoried. The majority of this inventory will be in the portion of the burn directly adjacent to Highway 205 and along the major roads within the fire perimeter. This inventory will determine the extent of noxious weeds expansion, and small areas will be spot treated with the appropriate approved herbicide or effective mechanical treatment, to prevent expansion when possible. Through a contract, the BLM will utilize the Strategic Weed Accelerated Treatment (SWAT) crew for Early Detection and Rapid Response (EDRR). Large areas of noxious weeds, if found, will be identified and treated in subsequent years. The Burns District Weeds Specialist will work with the SWAT crew to inventory and spray identified weeds patches. Identified areas will be mapped and entered into GIS. Large patches will be mapped for future treatments. See appendix 8 for the potential herbicides and application rates for specific weed species.

See Maps 4, 5, and 6 for General Vegetation, General Soils, and Ecological Sites within the burned area.

B. How does the treatment relate to damage or changes caused by the fire?

Within the Miller Homestead Fire, 59.6 acres of 8 species of noxious weeds were present prior to the fire, in addition to areas of cheatgrass. The fire burned in areas where annual

grass is common in the community and medusahead and other noxious weeds are known to be present adjacent to the burned area, including at the location of the fire camp. In many areas within the fire, it burned to mineral soil leaving a receptive seed bed for the expansion of invasive species. The inventory and treatment will help to keep small infestations small. Larger areas will be identified for a broadcast treatment. This method is currently being utilized on the Burns District with exceptional results.

The proposed re-seeding would enable sufficient key herbaceous plant seedling and young plant recruitment. In addition, seedling establishment would reduce soil compaction and aid in proper permeability and infiltration rates. Reduced soil compaction would increase the production of the dominant and/or co-dominant native perennial grass and forb components on the range sites. The seeding would provide direct competition between invasive noxious weeds and perennial vegetation limiting infestations

Without intervention, noxious and invasive weeds could spread and dominate the area causing increased fire occurrence and associated suppression costs and a loss of ecological diversity and integrity.

An aggressive early detection-rapid response action is a priority for the BLM to ensure that other noxious weeds and annuals do not establish on the site. A thorough noxious weed inventory with spot treatments the first year post-fire will help detect any areas where noxious weeds may begin to establish. Follow up treatments are needed each year to eradicate noxious weeds that may try to establish on the site. Proliferation of noxious weeds may impact grazing, recreation, and wildlife and resource values in an area.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

This method will be effective at treating new populations created by firefighting activity and the fire, but will not treat areas where the noxious weeds were known to exist. Only 59.6 acres of noxious weeds had been found in the burned area prior to the fire. Large areas of bare ground within the burned area is it risk of the establishment of many low successional invasive species, including many of our noxious weeds, and the area is more susceptible to invasion. The most likely sources of new noxious weeds are vehicles, people, animals, wind and water. An aggressive early detection-rapid response action is a priority for the BLM to ensure that other noxious weeds and annuals do not establish on the site. Treating newly discovered noxious weed infestations will help the burned area recover with desirable vegetative species. Treatment of new, small, noxious weed infestations is more likely to be successful than treating large established infestations. Treating noxious weeds on the public lands is expensive. It only becomes more expensive as infestations are allowed to become established and expand. Burns District will use the most applicable approved herbicides to treat weed infestations. Herbicides and adjuvant will be used in compliance with label instructions.

The proposed treatments will help meet objectives of the Bureau of Land Management’s ES&R program to mitigate the adverse effects of fire on the local resources in a cost effective and expeditious manner and to minimize the possibility of wildland fire recurrence and/or invasive plant establishment and proliferation.

Issue 1 - Lands Unlikely to Recover Naturally

R4 Seedling Planting

A. Treatment/Activity Description

The locations for sagebrush planting were selected by determining which sites had the highest chance of success based on suitable soil conditions(indicated by soil survey data), site conditions (precipitation, aspect, etc.), opportunity for spread (slope), and known vegetation present prior to the burn (based on ecological site inventory data i.e. the vegetation included dominance or co-dominance by big sagebrush prior to burn). Since sagebrush spreads slowly under natural conditions (Miller et al. 2011, Baker 2011, BLM 2004), planting plugs would create patches of sagebrush habitat within the interior of the burn which would create suitable small "islands" of habitat, increases sagebrush habitat connectivity across the burn, and allows for expansion of sagebrush from the edges of these islands outward towards the perimeter of the burn rather than limited to expansion only from the edge of the burn towards the interior.

Sagebrush seedlings (plugs) will be planted on 9,082 acres where the sagebrush was killed by the fire. Gathered big sagebrush seed would be sent to a nursery for growing a portion of the seedlings, in order to have some site adapted plants available for reestablishment. Seedlings will be planted by contractors in the spring of each year. It is estimated that 20% of the planted plugs will become established and survive a year after planting. See Map 7 for the proposed locations of sagebrush planting.

Cultural clearances will be conducted prior to planting. Due to approximately 1,900 acres of overlap between drill seeded and planted acres, cultural clearences will only be done on the remaining 7,182 acres. If found such resources would be avoided where needed to comply with applicable laws, polices, or agreements.

B. How does the treatment relate to damage or changes caused by the fire?

Sagebrush plugs (or bare root stock) were proposed for use based on the substantially greater establishment, long-term survival rates, and shorter period of time required to reach reproductive maturity compared to all methods of sagebrush seeding. The higher cost of using plugs relative to seeding, is offset by the higher probability of success in a achieving a more rapid recovery of sagebrush to restore critical habitat for two sagebrush obligate species, greater sage-grouse (Centrocercus urophasianus) and pygmy rabbit (Brachylagus idahoensis). Plugs are more likely to result in the persistence of these two sagebrush obligate species and reduce the potential of them being listed under ESA. The shorter time frame to restore shrub structure will improve habitat for sagebrush obligate migratory birds as well. Proposed locations of plantings are selected to maximize the chance of success, and are based on soil survey data, vegetative communities present prior to the wildfire, and potential vegetative communities based on ecological site descriptions.

Approximately 1,900 acres of overlap will occur between seedling planting and seeding. This overlap occurs in areas where reestablishing Wyoming sagebrush is essential. In areas where no seeding is planned, herbaceous plants are expected to recover rapidly, and drill seeding in these areas would damage the recovering plants and slow overall recovery.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Planting by hand is expensive because of the high labor cost. Only areas where Wyoming sagebrush existed prior to the fire are considered for planting. Sites will be selected that have soils conducive to hand planting and that have a favorable moisture regime. Planting sagebrush seedlings greatly increases the immediate presence of sagebrush within the burned area and returning the area to suitable sage-grouse habitat in a shorter time than would happen naturally or by seeding alone.

R6 Soil Stabilization (Other than seedling, planting)

A. Treatment/Activity Description

Based on past monitoring of catchment basins following a previous fire, it is estimated that by the third year, approximately 30% of the originally cleaned catchment basins will need to be cleaned a second time. The treatment will be to cleanout 25 catchment basins to remove collected sediment and ash that will be transported down slope by precipitation while plant cover increases enough to protect the site. A dozer or excavator will be utilized to clean the catchment basins. This cleanout will occur in the third year following the fire and will allow these catchment basins to continue collecting sediment and ash as needed.

B. How does the treatment relate to damage or changes caused by the fire?

The BLM administered lands burned during the fire contain numerous drainages and intermittent creeks. The fire burned with the great intensity in areas upslope from many of these drainages. As vegetation recovers to a point that it captures precipitation and reduces runoff, soil and ash will continue to move into the catchment basins. In some areas, this sediment and ash movement will be enough to fill the catchment basins. In order to ensure that these basins continue to function properly, it will be necessary to clean them again.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Catchment clean out represents a small investment for the protection of recreation sites and reduce the amount of sediment that could reach Highway 205. The treatments are within the scope of the Three Rivers RMP and Andrews RMP, and Oregon State laws. Cleaning existing catchments will reduce the cost of construction and engineering needed for the development of new catchment basins.

R9 Cultural Protection (Stabilization/Patrol)

A. Treatment/Activity Description

The Burns District Law Enforcement Officer will increase patrol in the Miller Homestead Fire until perennial vegetation becomes established enough to cover cultural heritage sites and the risk of surface collection or vandalism decreases.

B. How does the treatment relate to damage or changes caused by the fire?

Approximately 40 known cultural heritage sites were burned during this fire, including both historic and prehistoric sites. The area has been utilized historically and prehistorically by

Native Americans, as well as by numerous ranchers and homesteaders over the last 150 years. Since the fire removed covering vegetation, artifacts on the surface will be easy to see for several years post fire; therefore, there is a high risk to artifacts from surface collecting and acts of vandalism. As perennial vegetation becomes established on the site, this risk will decrease. However, if only small annual species were to become established, many artifacts may remain visible for many years due to the generally short stature of these species.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The proposed treatment will help meet objectives of the Bureau of Land Management's ES&R program to reduce the risk of cultural resource looting, as discussed in H-1742-1 Burned Area Emergency Stabilization and Rehabilitation Handbook.

R12 Closures (area, OHV, livestock)

A. Treatment/Activity Description

Approximately 58,183 acres of Warm Springs Herd Management Area and 731 acres of South Steens Herd Management Area, both of which have over 200 horses in them were within the fire perimeter. In order to protect the portions of the burned area that are seeded or planted from wild horses in the Warm Springs HMA, a protection fence around these areas is necessary to the success of these sites. In order to ensure water availability to the wild horses, water will likely have to be hauled during the period the protection fence is in place.

B. How does the treatment relate to damage or changes caused by the fire?

Hauling water will allow wild horses to remain within the HMA and ensure their water requirements are met.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Water hauling is much more cost effective than the complete removal of over 100 horses from the Warm Springs HMA, since complete removal would also require short-term holding costs.

R13 Monitoring

A. Treatment/Activity Description

Monitoring would be implemented in treatment areas to determine treatment success. Monitoring for vegetation, including seedings and planting, would be implemented beginning in fall 2012 by establishing photo and study plots, and visually inspecting the area. Existing monitoring plots will be utilized when possible. The plots would be read and photos taken in the spring of 2013, 2014, and 2015. Monitoring for treatment needs (i.e. culvert/ditch cleanout, catchment basin cleanout, etc…) will occur on a semi-annual basis, and will include photographs. This monitoring will determine if treatments are necessary or not. Monitoring specifics, including objectives are found within the monitoring plan. See Map 11 for estimated locations of new monitoring plots. Monitoring for weeds is not included under this treatment, but under S5 since the SWAT crew uses Early Detection/Rapid Response (monitoring and treatment) and the associated costs are not able to be seperated.

Compliance monitoring will also be conducted for the livestock closure. Compliance monitoring will also be conducted to ensure that seedings have sufficiently protected and stabilized cultural resource sites.

B. How does the treatment relate to damage or changes caused by the fire?

Monitoring of treatments is important to determine success and need of treatments, preventing treatments from occurring unless deemed necessary. Establishment of study sites will aid in determining whether appropriate seed species were utilized in this area. Rangeland monitoring provides a baseline for future land activities on this site, as well as provide additional data on appropriate ESR techniques when fires occur in the future.

Compliance monitoring for both livestock and cultural resources will ensure that the appropriate measures are being taken, to establish the seeding and protect cultural resources, as required by law.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

Monitoring is an essential component for any BLM activity and helps to justify current actions and plan for additional ESR actions. Such visits help to protect the investment made by the BLM and potential partners for this type of project. The treatments would be monitored under ES &BAR for three years in accordance with BLM standards, and would continue to be monitored on a 5-10 year rotation.

Issue 2 - Weed Treatments

R5 Noxious Weeds

A. Treatment/Activity Description

During the second and third year following the fire the entire burn area will be inventoried, with focus along roads, facilities, seeding, and planting locations. A contract will utilize the SWAT crew for EDRR. This inventory will focus on identifying areas of noxious weeds as well as areas where it appears that annual grasses are becoming dominant. Small infestations will be spot treated. Due to the infestation of Mediterranean Sage along Highway 205, and partially within the fire perimeter, it is expected that the Mediterranean sage will take advantage of the favorable conditions and further into the burn area. Due to the size of the existing Mediterranean sage infestation, the Burns District Weed Specialist is predicting to need treatment on approximately 300 acres surrounding it. Due to the presence of medusahead in the vicinity of the fire, and located at the fire camp, it is likely that areas of medusahead will be located within the fire perimeter. In addition, since cheatgrass was previously present in the fire area, in varying amounts, it is expected that it will take advantage of the favorable conditions to increase throughout the burn. If monitoring shows that large areas are becoming dominated by these annual grasses, they will be treated by broadcasting on the most appropriate, approved, herbicide (imazapic). It is estimated that these treatments will be needed on approximately 30,000 acres within the fire perimeter (spread over two years). These treatments, if monitoring shows that they are necessary, will occur by helicopter on approximately 7,000 acres, and by fixed wing aircraft on approximately 23,000 acres. The helicopter treatments are necessary for areas that have rough topography and other hazards that prevent the use of fixed wing application. Specifically, the helicopter treatments will occur along rims and in drainages, as needed. The

fixed wing aircraft will provide the broadcast application on areas that have less topographic variation. Aerial application of herbicides will be done by contract in the fall of 2013 and 2014. The Burns District has had success using aerial applications in the past. See Map 10 for predicted weed treatment areas. See appendix 8 for the potential herbicides and application rates for specific weed species.

There is no R14 (monitoring) weed monitoring treatment since the SWAT crew uses(EDRR (monitoring and treatment) and the associated costs are not able to be seperated. There for monitoring is included in the EDRR costs.

B. How does the treatment relate to damage or changes caused by the fire?

Within the Miller Homestead Fire, 59.6 acres of 8 different noxious weed species previously existed, in addition to numerous areas of cheatgrass and possibly unknown areas of medusahead. Burning of the existing vegetation opened up the site for weed invasion by burning to mineral soil, leaving a receptive seed bed for the expansion of invasive species, especially by species that were already present in or near the site, since seed sources are present and seeds are easily dispersed. It is expected that the areas surrounding these existing invasions will greatly increase in size unless treated prior to them becoming dominant on the site. Once they become dominant on the site, even large broadcast treatments alone would not likely be enough to return the site to a condition with functioning and desirable ecological functions. This method is currently being utilized on the Burns District with exceptional results.

The proposed re-seeding would enable sufficient key herbaceous plant seedling and young plant recruitment. In addition, seedling establishment would reduce soil compaction and aid in proper permeability and infiltration rates. Reduced soil compaction would increase the production of the dominant and/or co-dominant native perennial grass and forb components on the range sites. The seeding would provide direct competition between invasive noxious weeds and perennial vegetation limiting infestations. Without intervention, noxious and invasive weeds could spread and dominate the area causing increased fire occurrence and associated suppression costs and a loss of ecological diversity and integrity.

An aggressive early detection-rapid response action is a priority for the BLM to ensure that other noxious weeds and annuals do not establish on the site. A thorough noxious weed inventory the first year post-fire will help detect any areas where noxious weeds may begin to establish. Follow up treatments area needed each year to eradicate all noxious weeds that may try to establish on the site. Proliferation of noxious weeds may impact grazing, recreation, and wildlife and resource values in an area.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

This strategy will locate areas of new infestations, spot treating small infestations and aerially broadcast treating new areas of large infestations that were previously discovered by monitoring. An aggressive early detection-rapid response action is a priority for the BLM to ensure that other noxious weeds and annuals do not establish on the site. In addition, no large, aerial broadcast treatments will occur the first year. This will allow the BLM to determine where exactly these treatments will need to occur, if at all. Treating new weed

infestations will help the burned area recover with desirable vegetative species. Aerial broadcast treatments will allow treatment of annual grasses before they become dominant within the site, and while native species are still present. In addition, by not doing large scale broadcast treatments until the second and third years after the fire, seeded species and recovering native species have an opportunity to become established and are less likely to be damaged by herbicide treatment. Treating noxious weeds on the public lands is expensive. It only becomes more expensive as infestations are allowed to become established and expand. The proposed treatments will help meet objectives of the Bureau of Land Management's ES&R program to mitigate the adverse effects of fire on the local resources in a cost effective and expeditious manner and to minimize the possibility of wildland fire recurrence and/or invasive plant establishment and proliferation. Burns District will use the most applicable approved herbicides to treat weed infestations. Herbicides and adjuvant will be used in compliance with label instructions.

Issue 4 - Repair/Replace Fire Damage to Minor Facilities

R7 Fence/Gate/Cattleguard

A. Treatment/Activity Description

In order to protect the seeded and planted areas from wild horse and domestic livestock grazing, approximately 20 miles of temporary fence will be constructed during the first year following the fire, and it will need to be removed after vegetation objectives are met or the probabilty of success is reevaluated and new management actions considered. This temporary fence will be constructed to protect the approximately 47,607 acres that have been treated, as well as allowing the rest of the burned area to recover naturally. Removal of this fence will allow management of wild horses and domestic livestock to occur once grazing is reintroduced to the area. All associated temporary cattleguards will also be removed. Materials from this fence, including temporary cattleguards will be stored and utilized in future ESR projects. In addition to the removal of the protection fences, the Miller Homestead Fire burned through multiple allotment and pasture boundary fences that are needed to properly manage wild horses and domestic livestock grazing. Approximately 38 miles of fence within the interior of the fire perimeter will be reconstructed to allow for proper management of the burned areas following the reintroduction of grazing by wild horses and domestic livestock. Fence reconstruction will include the construction of replacement H-braces and rock cribs as needed. In all fence reconstruction, metal materials will be used to the extent possible. See Map 9 for fence locations. See Appendix 3 for a breakdown of costs associated with fences.

B. How does the treatment relate to damage or changes caused by the fire?

Wild horses and cattle have the propensity to congregate on the burned area and utilize the new, green grasses and forbs, making the protection fence necessary while native and seeded vegetation becomes established. Removal of the protection fence and cattleguards will allow the site to be managed as it was pre-fire, and in accordance with Standards and Guidelines. Removal will open up the entire Warm Springs HMA to use by wild horses following recovery of the site. The reconstruction of fences will allow the area to ensure proper livestock and wild horse management once the seeded area has been protected until

vegetation objectives are met. If after two growing seasons objectives are not met, the probabilty of success will be reevaluated and new management actions will be considered.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The fencing removal and reconstruction is in conformance with the Three Rivers RMP and the Andrews RMP. The cost of the treatment will be offset by the availability of the fence materials and cattleguards for future ES&R projects.

R11 Facilities

A. Treatment/Activity Description

One spring development and one wildlife guzzler were damaged or destroyed during the wildfire. These facilities are important to wildlife in areas of limited water, especially in drought years. Repairing/replacing these developments will ensure water availability to wildlife within the area.

B. How does the treatment relate to damage or changes caused by the fire?

The goal of repairing the spring development and wildlife guzzler is to re-establish useable habitat for wildlife, especially sensitive species like the sage grouse. Food, cover and water sites were removed by the wildfire and this treatment would repair/replace the damaged spring and guzzler aprons, restoring the functionality of these crucial water sources.

C. Why is the treatment/activity reasonable, within policy, and cost effective?

The fencing treatment and removal is in conformance with the Three Rivers RMP and the Andrews RMP. Repairing or replacing minor facilities is within policy as set forth in the BLM ES&R Handbook (H-1742-1).

PART 4 DETAILED TREATMENT COST TABLE

EMERGENCY STABILIZATION Detailed Cost Table for Miller Homestead - G1G1

EMERGENCY STABILIZATION (LF20000ES)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
S1	***Planning (Project Management)***							
	Plan Prep, layout, implementation	WM'S	5	$18,000.00	$27,000.00	$0.00	$0.00	$45,000.00
	BLM Labor	WM'S	6	$27,000.00	$27,000.00	$0.00	$0.00	$54,000.00
	Local Project Oversight	WM'S	15	$0.00	$45,000.00	$45,000.00	$45,000.00	$135,000.00
	National Project Oversight	Each	4	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$20,000.00
	Travel for Project Planning	Trip	20	$3,000.00	$0.00	$0.00	$0.00	$3,000.00
			Totals:	**$53,000.00**	**$104,000.00**	**$50,000.00**	**$50,000.00**	**$257,000.00**

EMERGENCY STABILIZATION Detailed Cost Table for Miller Homestead - G1G1

EMERGENCY STABILIZATION (LF20000ES)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
S2	***Ground Seeding***							
	Seed Purchase (Drill)	LBS (Pounds)	150,737	$907,436.74	$0.00	$0.00	$0.00	$907,436.74
	1-Drill Usage	Acres	1,411	$0.00	$7,760.50	$0.00	$0.00	$7,760.50
	Seed Mixing	LBS (Pounds)	143,650	$21,547.50	$0.00	$0.00	$0.00	$21,547.50
	2-Drill Usage	Acres	11,749	$0.00	$64,619.50	$0.00	$0.00	$64,619.50
	3-Drill Cart Usage	Acres	23,517	$0.00	$129,343.50	$0.00	$0.00	$129,343.50
	Seed Storage	LBS (Pounds)	143,650	$11,492.00	$0.00	$0.00	$0.00	$11,492.00
	Tractor Rental - 8 Tractors x 2 Months	Each	16	$0.00	$48,000.00	$0.00	$0.00	$48,000.00
	3-Drill Cart Mobilization	Each	10	$0.00	$25,000.00	$0.00	$0.00	$25,000.00
	1-Drill Contract	Acres	1,411	$0.00	$21,165.00	$0.00	$0.00	$21,165.00
	Seed Transportation	Days	10	$8,000.00	$0.00	$0.00	$0.00	$8,000.00
	2-Drill FA Per Diem	Days	480	$0.00	$14,400.00	$0.00	$0.00	$14,400.00
	2-Drill Force Account Labor	Days	600	$0.00	$210,000.00	$0.00	$0.00	$210,000.00
	1-Drill Mobilization	Each	3	$0.00	$6,000.00	$0.00	$0.00	$6,000.00
	3-Drill Cart Contract	Acres	23,517	$0.00	$352,755.00	$0.00	$0.00	$352,755.00
	2-Drill Tractor Fuel	Other	9,600	$0.00	$40,800.00	$0.00	$0.00	$40,800.00
	CUltural Clearance	Acres	36,633	$439,596.00	$0.00	$0.00	$0.00	$439,596.00
	Contract Admin. Travel/Vehicles	Total	1	$0.00	$20,000.00	$0.00	$0.00	$20,000.00
	1-Drill Contract Administration	WM'S	4	$0.00	$36,000.00	$0.00	$0.00	$36,000.00
	3-Drill Contract Administration	WM'S	8	$0.00	$72,000.00	$0.00	$0.00	$72,000.00
			Totals:	**$1,388,000.00**	**$1,048,000.00**	**$0.00**	**$0.00**	**$2,436,000.00**

EMERGENCY STABILIZATION Detailed Cost Table for Miller Homestead - G1G1

EMERGENCY STABILIZATION (LF20000ES)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
S3	***Aerial Seeding***							
	Seed Mixing	LBS (Pounds)	66,488	$9,973.20	$0.00	$0.00	$0.00	$9,973.20
	Aerial Seeding Contract Administration	Days	7	$0.00	$3,500.00	$0.00	$0.00	$3,500.00
	Seed Storage (Boise)	LBS (Pounds)	66,488	$5,319.04	$0.00	$0.00	$0.00	$5,319.04
	Travel/Vehicle Costs	Trip	6	$0.00	$900.00	$0.00	$0.00	$900.00
	Seed - Aerial Mix	LBS (Pounds)	66,488	$279,914.48	$0.00	$0.00	$0.00	$279,914.48
	Contract Aerial Mix	Acres	4,705	$0.00	$79,985.00	$0.00	$0.00	$79,985.00
			Totals:	**$295,000.00**	**$84,000.00**	**$0.00**	**$0.00**	**$379,000.00**
S5	***Noxious Weeds***							
	Noxious Weed Early Detection/Rapid Re	Total	1	$0.00	$15,000.00	$0.00	$0.00	$15,000.00
			Totals:	**$0.00**	**$15,000.00**	**$0.00**	**$0.00**	**$15,000.00**
S6	***Soil Stabilization (Other than seedling,***							
	Catchment Basin Cleanout	Number	81	$0.00	$80,514.00	$0.00	$0.00	$80,514.00
	Cultural Clearances	Days	3	$1,350.00	$0.00	$0.00	$0.00	$1,350.00
	Hydrologist- Dam Locations	WM'S	1	$9,300.00	$0.00	$0.00	$0.00	$9,300.00
	Check Dam Installation	Each	200	$0.00	$35,900.00	$0.00	$0.00	$35,900.00
	Sediment Fence Construction	Feet	1,000	$0.00	$5,000.00	$0.00	$0.00	$5,000.00
	Dozer Fuel (2)	Days	16	$0.00	$8,000.00	$0.00	$0.00	$8,000.00
	Dozer Operator	Days	24	$0.00	$9,600.00	$0.00	$0.00	$9,600.00
	Travel/Vehicle	Trip	24	$0.00	$3,600.00	$0.00	$0.00	$3,600.00
			Totals:	**$11,000.00**	**$143,000.00**	**$0.00**	**$0.00**	**$154,000.00**

EMERGENCY STABILIZATION Detailed Cost Table for Miller Homestead - G1G1

EMERGENCY STABILIZATION (LF20000ES)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
S7	***Fence/Gate/Cattleguard***							
	Temporary Protection Fences 1&2 Const	Miles	20	$0.00	$75,500.00	$0.00	$0.00	$75,500.00
	Sage-grouse reflectors for fence w/in 1.2	Miles	2	$0.00	$3,200.00	$0.00	$0.00	$3,200.00
	Existing Fence Reconstruction/Repair	Miles	12	$0.00	$59,211.60	$0.00	$0.00	$59,211.60
	Cattleguard Purchase	Each	2	$0.00	$7,000.00	$0.00	$0.00	$7,000.00
	Materials for fence reconstruction	Miles	12	$0.00	$12,369.00	$0.00	$0.00	$12,369.00
	Cultural Clearance	Acres	240	$0.00	$2,880.00	$0.00	$0.00	$2,880.00
	Post/Wire/Stays for New Fences	Miles	20	$0.00	$65,100.00	$0.00	$0.00	$65,100.00
			Totals:	**$0.00**	**$225,000.00**	**$0.00**	**$0.00**	**$225,000.00**
S8	***Road/Trail Water Diversion***							
	Culvert Cleaning - Wyden Amendment I	Each	15	$0.00	$5,400.00	$0.00	$0.00	$5,400.00
	Clean Ditches to Promote water flow	Days	15	$0.00	$11,250.00	$0.00	$0.00	$11,250.00
			Totals:	**$0.00**	**$17,000.00**	**$0.00**	**$0.00**	**$17,000.00**
S9	***Cultural Protection (Stabilization/Patr***							
	Cultural Resource Patrol	Total	1	$0.00	$9,500.00	$0.00	$0.00	$9,500.00
			Totals:	**$0.00**	**$10,000.00**	**$0.00**	**$0.00**	**$10,000.00**
S12	***Closures (area, OHV, livestock)***							
	Wild Horse Water Hauling	WM'S	1	$0.00	$10,000.00	$0.00	$0.00	$10,000.00
	Livestock Compliance	Weeks	6	$0.00	$4,200.00	$4,200.00	$4,200.00	$12,600.00
	Vehicle Travel to Check Compliance	Days	14	$0.00	$2,100.00	$0.00	$0.00	$2,100.00
	Wild Horse Relocation	Hours	15	$0.00	$11,250.00	$0.00	$0.00	$11,250.00
			Totals:	**$0.00**	**$28,000.00**	**$4,000.00**	**$4,000.00**	**$36,000.00**

EMERGENCY STABILIZATION Detailed Cost Table for Miller Homestead - G1G1

EMERGENCY STABILIZATION (LF20000ES)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
S13	***Monitoring***							
	Travel for Monitoring	Days	22	$0.00	$600.00	$1,350.00	$1,350.00	$3,300.00
	Monitoring Closures	Days	5	$0.00	$2,250.00	$0.00	$0.00	$2,250.00
	Monitoring Treatments	WM'S	1	$0.00	$9,500.00	$0.00	$0.00	$9,500.00
			Totals:	**$0.00**	**$12,000.00**	**$1,000.00**	**$1,000.00**	**$14,000.00**
S14	***Other Treatments***							
	Down Juniper Removal	Acres	20	$0.00	$9,000.00	$0.00	$0.00	$9,000.00
			Totals:	**$0.00**	**$9,000.00**	**$0.00**	**$0.00**	**$9,000.00**
			TOTAL COSTS: (LF20000ES)	**$1,747,000.00**	**$1,694,000.00**	**$56,000.00**	**$56,000.00**	**$3,553,000.00**

BURNED AREA REHABILITATION Detailed Cost Table for Miller Homestead - G1G1

BURNED AREA REHABILITATION (LF32000BR)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
R1	***Planning (Project Mgmt)***							
	Project Planning	WM'S	1	$0.00	$0.00	$4,500.00	$4,500.00	$9,000.00
			Totals:	**$0.00**	**$0.00**	**$5,000.00**	**$5,000.00**	**$10,000.00**

BURNED AREA REHABILITATION Detailed Cost Table for Miller Homestead - G1G1

BURNED AREA REHABILITATION (LF32000BR)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
R4	***Seedling Planting***							
	Cultural Clearences	Acres	7,182	$0.00	$0.00	$43,092.00	$43,092.00	$86,184.00
	Collecting/Planting Contract Administrat	Days	60	$0.00	$0.00	$12,000.00	$12,000.00	$24,000.00
	Cost to grow plugs	Each	3,996,080	$0.00	$0.00	$2,237,804.80	$0.00	$2,237,804.80
	Collect Seeds for Plugs	Total	2	$0.00	$30,000.00	$30,000.00	$0.00	$60,000.00
	Travel/Supplies	Other	30	$0.00	$0.00	$2,250.00	$2,250.00	$4,500.00
	Seedling Planting Contract	Acres	9,082	$0.00	$0.00	$454,100.00	$454,100.00	$908,200.00
			Totals:	**$0.00**	**$30,000.00**	**$2,779,000.00**	**$511,000.00**	**$3,320,000.00**
R5	***Noxious Weeds***							
	Noxious Weed Early Detection/Rapid Re	Acres	321,602	$0.00	$0.00	$160,801.00	$160,801.00	$321,602.00
	Plateau Fixed Wind Aerial Contract	Acres	23,000	$0.00	$0.00	$80,500.00	$80,500.00	$161,000.00
	Med. Sage Treatment - 300 acres	Acres	600	$0.00	$0.00	$7,500.00	$7,500.00	$15,000.00
	Aerial Contract Administration	WM'S	4	$0.00	$0.00	$18,000.00	$18,000.00	$36,000.00
	Plateau Purchase	Acres	30,000	$0.00	$0.00	$90,150.00	$90,150.00	$180,300.00
	Plateau Helicopter Aerial Contract	Acres	7,000	$0.00	$0.00	$133,000.00	$133,000.00	$266,000.00
	Liberate Purchase	Acres	30,000	$0.00	$0.00	$12,750.00	$12,750.00	$25,500.00
	Recon. Aerial Herbicide Application	Hours	8	$0.00	$0.00	$3,200.00	$3,200.00	$6,400.00
			Totals:	**$0.00**	**$0.00**	**$506,000.00**	**$506,000.00**	**$1,012,000.00**
R6	***Soil Stabilization (Other than seedling,***							
	Catchment Basin Clean - 30% of basins	Number	25	$0.00	$0.00	$0.00	$27,250.00	$27,250.00
			Totals:	**$0.00**	**$0.00**	**$0.00**	**$27,000.00**	**$27,000.00**

BURNED AREA REHABILITATION Detailed Cost Table for Miller Homestead - G1G1

BURNED AREA REHABILITATION (LF32000BR)

Spec #	Treatment / Action	Type of Units	# of Units	FY2012 Cost	FY2013 Cost	FY2014 Cost	FY2015 Cost	Total Costs
R7	***Fence/Gate/Cattleguard***							
	Fence Reconstruction	Miles	38	$0.00	$52,260.00	$146,328.00	$0.00	$198,588.00
	Protection Fence Removal	Miles	20	$0.00	$0.00	$0.00	$45,000.00	$45,000.00
	Materials - Fence Reconstruction	Miles	38	$0.00	$10,850.00	$30,380.00	$0.00	$41,230.00
			Totals:	**$0.00**	**$63,000.00**	**$177,000.00**	**$45,000.00**	**$285,000.00**
R9	***Cultural Protection (Stabilization/Patr***							
	Cultural Resource Patrol	WM'S	2	$0.00	$0.00	$9,500.00	$9,500.00	$19,000.00
			Totals:	**$0.00**	**$0.00**	**$10,000.00**	**$10,000.00**	**$20,000.00**
R11	***Facilities***							
	Guzzler Replacement	Each	1	$0.00	$0.00	$12,000.00	$0.00	$12,000.00
	Spring Repair	Total	1	$0.00	$0.00	$5,000.00	$0.00	$5,000.00
			Totals:	**$0.00**	**$0.00**	**$17,000.00**	**$0.00**	**$17,000.00**
R12	***Closures (area, OHV, livestock)***							
	Wild Horse Water Hauling	WM'S	2	$0.00	$0.00	$10,000.00	$10,000.00	$20,000.00
			Totals:	**$0.00**	**$0.00**	**$10,000.00**	**$10,000.00**	**$20,000.00**
R13	***Monitoring***							
	Monitoring Closures	Days	10	$0.00	$0.00	$2,250.00	$2,250.00	$4,500.00
	Monitoring Treatments	WM'S	2	$0.00	$0.00	$9,500.00	$9,500.00	$19,000.00
			Totals:	**$0.00**	**$0.00**	**$12,000.00**	**$12,000.00**	**$24,000.00**
			TOTAL COSTS: (LF32000BR)	**$0.00**	**$93,000.00**	**$3,515,000.00**	**$1,125,000.00**	**$4,733,000.00**
	Other Fund Code Totals							
			????					**$0.00**
			????					**$0.00**

ESRS Plan Part 4 - Detailed Cost Table

????					**$0.00**

PART 5 - SEED LISTS

DRILL SEED

Species	Scientific Name	% PLS	PLS Seeds / sq. ft.	PLS Seeds / ac.	Seeds / lb (bulk)	Total Seeds / Acre (Bulk)	Drill Seedings (Acre)	Lbs / Acre	Total Lbs.	Cost / Lb	Total Cost
Crested Wheatgrass, Hycrest II	Agropyron cristatum x A. desertorum	80.8%	7.56	329,314	180,000	407,819	3,416.2	1.8	6,251.6	$ 4.00	$31,027.53
Great Basin Wildrye, Tetra	Leymus cinereus	76.5%	1.06	46,174	144,000	60,358	3,416.2	0.3	1,093.2	$ 11.11	$15,995.23
Indian Ricegrass, Nezpar	Achnatherum hymenoides (Roemer & J.A. Schultes) Ba	76.0%	0.54	23,522	235,000	30,951	3,416.2	0.1	341.6	$ 12.76	$5,786.28
Bottlebrush Squirreltail, Toe Jam Creek	Elymus elymoides ssp. Californicus	67.5%	0.22	9,583	192,000	14,197	3,416.2	0.1	170.8	$ 25.00	$5,983.85
Bluebunch Wheatgrass	Pseudoroegneria spicata spp. spicata	76.5%	0.89	38,768	125,680	50,678	3,416.2	0.3	1,059.0	$ 6.75	$9,549.18
Lewis Flax	Linum lewisii	76.0%	0.07	3,049	295,000	4,012	3,416.2	0.0	34.2	$ 20.93	$ 917.34
Alfalfa, Ledak	Medicago sativa	80.8%	0.57	24,829	226,800	30,748	3,416.2	0.1	375.8	$ 3.42	$1,592.93
Forage Kochia	Bassia prostrata	51.0%	0.18	7,841	395,000	15,374	3,416.2	0.0	68.3	$ 12.00	$1,145.92
Crested Wheatgrass, Hycrest II	Agropyron cristatum x A. desertorum	80.8%	11.36	494,842	180,000	612,807	25,716.8	2.8	70,721.2	$ 4.00	$350,358.06
Great Basin Wildrye, Tetra	Leymus cinereus	76.5%	0.6	26,136	144,000	34,165	25,716.8	0.2	4,629.0	$ 11.11	$65,410.57
Indian Ricegrass, Nezpar	Achnatherum hymenoides (Roemer & J.A. Schultes) Ba	76.0%	0.27	11,761	235,000	15,475	25,716.8	0.1	1,285.8	$ 12.76	$20,327.29
Bottlebrush Squirreltail, Toe Jam Creek	Elymus elymoides ssp. Californicus	67.5%	0.09	3,920	192,000	5,808	25,716.8	0.0	514.3	$ 25.00	$18,018.30
Bluebunch Wheatgrass	Pseudoroegneria spicata spp. spicata	76.5%	0.52	22,651	125,680	29,609	25,716.8	0.2	4,629.0	$ 6.75	$39,536.86
Lewis Flax	Linum lewisii	76.0%	0.07	3,049	295,000	4,012	25,716.8	0.0	257.2	$ 20.93	$6,905.69
Alfalfa, Ledak	Medicago sativa	80.8%	0.68	29,621	226,800	36,682	25,716.8	0.1	3,343.2	$ 3.42	$14,389.70
Forage Kochia	Bassia prostrata	51.0%	0.27	11,761	395,000	23,061	25,716.8	0.0	771.5	$ 12.00	$14,377.20
Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	16.0%	11.48	500,069	2,500,000	3,125,430	3,416.2	0.2	683.2	$ 21.00	$89,675.25
Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	16.0%	11.48	500,069	2,500,000	3,125,430	915.6	0.2	183.1	$ 21.00	$24,034.50
Forage Kochia	Bassia prostrata	51.0%	0.18	7,841	395,000	15,374	5,021.8	0.0	100.4	$ 12.00	$1,684.49
Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	16.0%	11.48	500,069	2,500,000	3,125,430	1,565.2	0.2	313.0	$ 21.00	$41,086.50
Crested Wheatgrass, Hycrest II	Agropyron cristatum x A. desertorum	80.8%	11.36	494,842	180,000	612,807	1,565.2	2.8	4,304.3	$ 4.00	$21,323.82
Great Basin Wildrye, Tetra	Leymus cinereus	76.5%	0.6	26,136	144,000	34,165	1,565.2	0.2	281.7	$ 9.80	$3,511.66
Indian Ricegrass, Nezpar	Achnatherum hymenoides (Roemer & J.A. Schultes) Ba	76.0%	0.27	11,761	235,000	15,475	1,565.2	0.1	78.3	$ 12.76	$1,237.18
Bottlebrush Squirreltail, Toe Jam Creek	Elymus elymoides ssp. Californicus	67.5%	0.09	3,920	192,000	5,808	1,565.2	0.0	31.3	$ 25.00	$1,096.65
Bluebunch Wheatgrass	Pseudoroegneria spicata spp. spicata	76.5%	0.52	22,651	125,680	29,609	1,565.2	0.2	281.7	$ 6.75	$2,406.33
Alfalfa, Ledak	Medicago sativa	80.8%	0.68	29,621	226,800	36,682	1,565.2	0.1	203.5	$ 3.42	$ 875.80
Forage Kochia	Bassia prostrata	51.0%	0.27	11,761	395,000	23,061	1,565.2	0.0	47.0	$ 12.00	$ 875.04
Crested Wheatgrass, Hycrest II	Agropyron cristatum x A. desertorum	80.8%	7.56	329,314	180,000	407,819	5,021.8	1.8	9,189.9	$ 4.00	$45,610.34
Great Basin Wildrye, Tetra	Leymus cinereus	76.5%	1.06	46,174	144,000	60,358	5,021.8	0.3	1,607.0	$ 11.11	$23,512.93
Indian Ricegrass, Nezpar	Achnatherum hymenoides (Roemer & J.A. Schultes) Ba	76.0%	0.54	23,522	235,000	30,951	5,021.8	0.1	502.2	$ 12.76	$8,505.80
Bottlebrush Squirreltail, Toe Jam Creek	Elymus elymoides ssp. Californicus	67.5%	0.22	9,583	192,000	14,197	5,021.8	0.1	251.1	$ 25.00	$8,796.23

Bluebunch Wheatgrass	Pseudoroegneria spicata spp. spicata	76.5%	0.89	38,768	125,680	50,678	5,021.8	0.3	1,556.8	$ 6.75	$14,037.25
Lewis Flax	Linum lewisii	76.0%	0.07	3,049	295,000	4,012	5,021.8	0.0	50.2	$ 20.93	$1,348.50
Western Yarrow	Achillea millefolium var. occidentalis	81.0%	0.78	33,977	3,411,818	41,947	5,021.8	0.0	50.2	$ 26.11	$1,305.50
Alfalfa, Ledak	Medicago sativa	80.8%	0.57	24,829	226,800	30,748	5,021.8	0.1	552.4	$ 3.42	$2,341.60
TOTALS:			85.05	3,704,778	17,790,738	12,165,737		12.8		$ 450.75	$894,587.30

AERIAL SEED

Species	Scientific Name	% PLS	PLS Seeds / sq. ft.	PLS Seeds / ac.	Seeds / lb (bulk)	Total Seeds / Acre (Bulk)	Aerial Seedings (Acre)	Lbs / Acre	Total Lbs.	Cost / Lb	Total Cost
Great Basin Wildrye, Tetra	Leymus cinereus	76.5%	0.79	34,412	144,000	44,984	4,705.0	0.2	1,129.2	$ 11.11	$16,428.51
Crested Wheatgrass, Hycrest II	Agropyron cristatum x A. desertorum	80.8%	35.91	1,564,240	180,000	1,937,139	4,705.0	8.7	40,886.5	$ 4.00	$202,419.56
Bluebunch Wheatgrass	Pseudoroegneria spicata spp. spicata	76.5%	0.84	36,590	125,680	47,831	4,705.0	0.3	1,364.4	$ 6.75	$12,150.00
Forage Kochia	Bassia prostrata	51.0%	0.91	39,640	395,000	77,725	4,705.0	0.1	470.5	$ 12.00	$10,959.89
Western wheatgrass	Pascopyrum smithii	80.8%	5.28	229,997	115,000	284,826	4,705.0	2.0	9,410.0	$ 3.25	$37,994.02
TOTALS:			43.73	1,904,879	959,680	2,392,503		11.3		$ 37.11	$279,951.98

SEEDLINGS

Seedling Species	Scientific Name	Acres of Seedlings planted.	# of Seedlings per Acre	Total # of Seedlings	Cost / Seedling	Total Cost
Wyoming Big Sagebrush, Wyoming	Artemisia tridentata wyomingensis	9,082.0	440	3,996,080	$ 0.56	$2,237,804.80
TOTALS:		9,082.0	440	3,996,080		$2,237,804.80

PART 6 - NATIVE/NON-NATIVE PLANT WORKSHEET

A. Proposed Native Plants in Seed Mixtures (Both ES & BAR Treatments)

1. Are the native plants proposed for seeding adapted to the ecological sites in the burned area?

Yes [X] No [ ] Rationale:

All of the native plants proposed for this stabilization and rehabilitation project are documented as being found within the fire perimeter prior to the area burning. They are all also found on similar sites located in the vicinity of the burned area.

2. Is seed or seedlings of native plants available in sufficient quantity for the proposed project?

Yes [ ] No [X] Rationale:

All seed and seedlings of the selected native plants are generally available in a quantity sufficient for the proposed project. However, there have been multiple large scale fires this year, which will result in a greater demand for seed and seedlings and may result substitutions of proposed seed species occurring. Many of the substitutions would be substituting one variety for another or adjusting the amounts of the desired native species. The species that is most likely to be limited in availability will be Wyoming big sagebrush; requests for this species have already exceeded the predicted availability nationwide. By planning on collecting sagebrush seed to use in growing seedlings, the chance of facing a shortage of seedlings is decreased.

3. Is the cost and/or quality of the native seed reasonable given the project size and approved fiel unit management and Plan objectives?

Yes [X] No [ ] Rationale:

The natives selected for the seed mix were chosen by researching the past history of success in similar areas within the district and weight was given to germination, availability, and price.

4. Will the native plants establish and survive given the environmental conditions and the curren or future competition from other species in the seed mix or from exotic plants?

Yes [X] No [ ] Rationale:

There are no species that are aggressive or highly competitive with desired native species proposed in the seed mix (crested wheatgrass and forage kochia have been shown to be highly competitive with annual grasses). The mix is designed to provide a diverse cover of perennial vegetation and minimize the invasion of cheatgrass and other undesirable species that typically invade wildfire sites. The selected native species have been shown to establish on burned sites, even with the presence of some exotic species.

5. Will the existing or proposed land management practices (e.g. wildlife populations, recreation use, livestock, etc.) maintain the seeded native plants in the seed mixture when the burned area is re-opened?

Yes [X] No [ ] Rationale:

All the native species included in this mix were components of the burned area prior to the fire occuring, and have proven to be compatible with the current land management. There is no information to suggest that they would not be compatible with the current land management for the area.

B. Proposed Non-native Plants in Seed Mixtures (Both ES & BAR Treatments)

1. Is the use of non-native plants necessary to meet objectives, e.g., consistent with applicable approved field unit management plans?

Yes [X] No [ ] Rationale:

It has been our experience that to establish the desired ground cover and stabilize these burned areas, nonnative plants that have high germination rates and establish quickly on the site, are not only necessary, but when they are included in a diverse seed mix in proper proportions, actually aid in the establishment of seeded natives and recruitment of adjacent native species into the stabilization and rehabilitation area. Asay et al. (2001) found that on Wyoming big sagebrush sites, with a high threat of invasion from annual grasses, using non-native species can be a practical revegetation option. Pellant (1990) found the non-native species are often able to decrease the fire interval due to their ability to remain green later than native species. Davies et al. (2010) found that the spread of invasive plants such as cheatgrass and medusahead can be reduced by establishing competitive non-native vegetation adjacent to areas that are infested.

2. Will non-native plants meet the objective(s) for which they are planted without unacceptably diminishing diversity and disrupting ecological processes (nutrient cycling, water infiltration, energy flow, etc.) in the plant community?

Yes [X] No [ ] Rationale:

It is anticipated that the seed mixture identified for this project will increase diversity and improve ecological processes, by establishing perennial vegetation that is able to compete with annual invasive species. Multiple competitive species were selected to ensure diversity would remain present on the site and ecological processes would be able to function properly. Sites dominated by annual grasses do not have proper ecological functioning.

3. Will non-native plants stay on the site they are seeded and not significantly displace or interbreed with native plants?

Yes [X] No [ ] Rationale:

There are no species in the recommended seed mix that have been known to significantly increase their range. Also the species recommended have not been shown to interbreed with native species or displace them.

C. Proposed Seed Species - Native & Non-Natives (Both ES & BAR Treatments)

Non-native Plants	Native Plants
Alfalfa, Ledak (Medicago sativa)	Bluebunch Wheatgrass (Pseudoroegneria spicata spp. spicata)
Crested Wheatgrass, Hycrest II (Agropyron cristatum x A. desertorum)	Bottlebrush Squirreltail, Toe Jam Creek (Elymus elymoides ssp. Californicus)
Forage Kochia (Bassia prostrata)	Great Basin Wildrye, Tetra (Leymus cinereus)
	Indian Ricegrass, Nezpar (Achnatherum hymenoides (Roemer & J.A. Schultes) Ba)
	Lewis Flax (Linum lewisii)
	Western Yarrow (Achillea millefolium var. occidentalis)
	Western wheatgrass (Pascopyrum smithii)
	Wyoming Big Sagebrush, Wyoming (Artemisia tridentata wyomingensis)

PART 7 - COST-RISK ANALYSIS

A. Probability of Treatments Successfully Meeting Objectives

Action/ Spec #	Planned ES Action (LF20000ES)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
S2	Ground Seeding	Acres	36633	$2,436,000.00	75%
S3	Aerial Seeding	Acres	4705	$380,000.00	65%
S5	Noxious Weeds	Acres	160830	$15,000.00	90%
S6	Soil Stabilization (Other than seedling, planting)	Acres	282	$153,000.00	85%
S7	Fence/Gate/Cattleguard	Miles	31.4	$225,000.00	99%
S8	Road/Trail Water Diversion	Miles	15	$17,000.00	99%
S9	Cultural Protection (Stabilization/Patrol)	Each	1	$10,000.00	60%
S12	Closures (area, OHV, livestock)	Each	160801	$36,000.00	95%
S13	Monitoring	Acres	1	$15,000.00	99%
S14	Other Treatments	Each	20	$9,000.00	99%
				$3,296,000.00	

Action/ Spec #	Planned BAR Action (LF32000BR)	Unit (acres, WMs, Number)	# Units	Total Cost	% Probability of Success
R4	Seedling Planting	Acres	9082	$3,321,000.00	20%
R5	Noxious Weeds	Acres	322232	$1,012,000.00	90%
R6	Soil Stabilization (Other than seedling, planting)	Acres	25	$27,000.00	99%
R7	Fence/Gate/Cattleguard	Miles	58	$285,000.00	99%
R9	Cultural Protection (Stabilization/Patrol)	Each	2	$19,000.00	60%
R11	Facilities	Each	2	$17,000.00	99%
R12	Closures (area, OHV, livestock)	Each	2	$20,000.00	99%
R13	Monitoring	Acres	2	$24,000.00	99%
				$4,725,000.00	

B. Cost Risk Summary

1. Are the risks to natural resources and private property acceptable as a result of the fire if the following actions are taken?

Proposed Action Yes [X] No [ ] Rationale for Answer:

It is essential to re-establish perennial vegetation to retain soil and a desirable vegetative community on these sites. The proposed seed mix will provide sufficient species diversity to meet Standards and Guidelines for Rangeland Health and reduce the likelihood of future large-scale fire events from occurring on the treatment area.

No Action Yes [ ] No [X] Rationale for Answer:

No action would likely result in an annual grass dominated system altering the fire regime and exposing the site to accelerated erosion on a frequent basis. An annual grass dominated system is not good sage-grouse or pygmy rabbit habitat and would not result in the return of 147,133 acres within this fire to core sage-grouse habitat.

Alternative(s) Yes [ ] No [X] Rationale for Answer:

No Alternative has been identified at this time.

2. Is the probability of success of the proposed action, alternatives or no action acceptable given their costs?

Proposed Action Yes [X] No [ ] Rationale for Answer:

With the exception of extreme periods of drought, treatments of this type have been very successful in the past.

No Action Yes [ ] No [X] Rationale for Answer:

No action would expose the area to invasion by annual grasses resulting in repeated risk from fire and erosion, and loss of core sage-grouse and pygmy rabbit habitat.

Alternative(s) Yes [ ] No [X] Rationale for Answer:

No Alternative has been identified at this time.

3. Which approach will most cost-effectively and successfully attain the objectives and therefore is recommended for implementation from a Cost/Risk Analysis standpoint?

Proposed Action [X]
Alternative(s) [ ]
No Action [ ]
Comments:
Based on past experience and the best available science, the proposed action is the most prudent and cost effective course of action.

C. Risk of Resource Value Loss or Damage

No Action - Treatments not Implemented

Resource Value	N/A	None	Low	Med	High
Unacceptable Loss of Topsoil					X
Weed Invasion					X
Unacceptable Loss of Vegetation Diversity					X
Unacceptable Loss of Vegetation Structure					X
Unacceptable Disruption of Ecological Processes					X
Off-site Sediment Damage to Private Property					X
Off-site Threats to Human Life				X	
Other-loss of Access Road Due to Plugged Culverts					X

Proposed Action - Treatments Successfully Implemented

Resource Value	N/A	None	Low	Med	High
Unacceptable Loss of Topsoil				X	
Weed Invasion				X	
Unacceptable Loss of Vegetation Diversity			X		
Unacceptable Loss of Vegetation Structure			X		
Unacceptable Disruption of Ecological Processes			X		
Off-site Sediment Damage to Private Property				X	
Off-site Threats to Human Life			X		
Other-loss of Access Road Due to Plugged Culverts			X		

PART 8 - MONITORING PLAN

S2 - Ground Seeding

Identify the objective of the treatment:

The objective of the ground seeding treatment is to have perennial native and desirable non-native grass species occupying the site at densities greater than 3 plants/meter2 by the end of the third growing season post fire (2015). Establishment of perennial grass species at this density will serve to: 1) stabilize soil on the site, 2) compete with annual grass and noxious weed establishment, 3) promote proper hydrologic functioning (tied to soil stabilization), 4) enhance biotic integrity by establishing a diversity of functional groups, and 5) augment succession back towards a sagebrush-steppe system. Seeding will be done in the fall (period dependent upon climatic conditions). It is imperative that the site be seeded the fall following the fire before there is undue competition from annual and noxious weed species.

Describe how implementation will be monitored:

The ground seeding will be monitored to insure that the treatment is conducted as specified in the plan. Work that is contracted will be inspected by a COR/PI certified BLM employee to ensure contract specifications are met. BLM personnel will work closely together both in completing the in-house work and in overseeing contract work to assure that treatments are accomplished in a professional manner as specified in the plan. Specifics, such as weather, seeding rate, species, and general conditions that could influence the outcome of the treatment, will be noted in the project file. GPS polygons will be collected for all treated areas to ensure that treatments are implemented as planned. On the ground adjustments that are done will be documented and updated information will be put into treatment files.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

The fire will be monitored each year for three years (2013-2015) with an annual monitoring summary report that will be completed by early September of each year (2013-2015). At least one monitoring plot will be established for each treatment, with treatments being: 1) high cheatgrass risk, 2) high cheatgrass risk w/ARTRW, 3) “low cheatgrass risk, and 4) low cheatgrass risk w/ARTRW. An effort will be made to choose study sites that are representative of the burned area so that monitoring data reflects the actual degree of recovery. This will be done by stratifying the treated area by several parameters such as soil types, slopes, soil surface rock, and ecological sites, then placing study sites accordingly. Where possible, these study sites will tie into existing rangeland trend plots where baseline data is available for comparison. Proposed locations for monitoring plots have been selected (see Map 11 - Monitoring), although they will likely move slightly after ground truth assessments have been done. The monitoring protocol that will be followed on these plots utilizes the Pace 180 Method (Johnson and Sharp IN PRESS), supplemented with the Step-Point and Density (0.25 m2 frame) methodologies (Herrick et. al. 2005; Sampling

Vegetation Attributes 1999) to identify success of rehab efforts and time of recovery (see attached document - Fire Rehabilitation Monitoring Protocol). This methodology was chosen for compatibility with established trend plots and sage-grouse habitat inventory implemented June 2012. Each of these trend plots will also have permanent 3’ x 3’ plot and landscape photos associated with them.

S3 - Aerial Seeding

Identify the objective of the treatment:

The objective of the aerial seeding treatment is to have perennial grass species occupying the site at densities greater than 3 plants/meter2 by the end of the third growing season post fire (2015), where site conditions allow. Establishment of perennial grass species at this density will serve to: 1) stabilize soil on the site - important for public safety associated with highway 205 being downslope of the seeding polygon, 2) compete with annual grass establishment, 3) promote proper hydrologic functioning (tied to soil stabilization), 4) enhance biotic integrity by establishing a diversity of functional groups, and 5) augment succession back towards a sagebrush-steppe system. Seeding will be done in the fall/winter.

Describe how implementation will be monitored:

The aerial contract will be monitored by a COR/PI certified BLM employee to ensure contract specifications are met. Specifics, such as weather, seeding rate, species, and general conditions that could influence the outcome of the treatment, will be noted in the project file.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

GPS flight lines from the pilot will be retained by the BLM to ensure contract compliance. Any discrepancies noted during on-the-ground checking or via the flight record will be noted. Two plots will be established off of Highway 205 to assess the effectiveness of the aerial seeding. Map 11 - Monitoring indicates the proposed locations for the two aerial seeding monitoring plots, although these could shift slightly in location after ground truth assessment is done.

The monitoring protocol on these plots utilizes the Pace 180 Method (Johnson and Sharp IN PRESS), supplemented with the Step-Point and Density (0.25 m2 frame) Methodologies (Herrick et. al. 2005; Sampling Vegetation Attributes 1999) to identify success of rehab efforts and time of recovery (see attached document - Fire Rehabilitation Monitoring Protocol). This methodology was chosen for compatibility with established trend plots and sage-grouse habitat inventory implemented June 2012. Each of these trend plots will also have permanent 3’ x 3’ plot and landscape photo associated with them.

S5 - Noxious Weeds

Identify the objective of the treatment:

The objective is to minimize noxious weed establishment within the burned area. Most noxious weeds are opportunistic at acquiring readily available resources following a disturbance, such as a fire. Monitoring shows that there are 8 known noxious weed species present within the perimeter, including: bull thistle, Canada thistle, Dalmatian toadflax, diffuse knapweed, Mediterranean sage, perennial pepperweed, scotch thistle, and whitetop. There are also numerous noxious weed sites just outside the perimeter of the fire including: Russian knapweed, spotted knapweed, puncturevine, and medusahead. There is a likelihood that weeds on and adjacent to this disturbed area will readily establish in open niches. Aggressive treatment methods of establishing weed populations, such as EDRR, are the most effective way to keep weed populations in check until perennial grass densities/competition is strong enough to inhibit noxious weed establishment. See appendix 8 for the potential herbicides and application rates for specific weed species.

Describe how implementation will be monitored:

The SWAT crew will make site visits, prioritizing sites with high potential for noxious weed establishment, and treat any small establishing populations with the appropriate approved herbicides. Application of all herbicides will follow given products directions for appropriate application rates (specific to species being targeted). All located populations of noxious weeds will be recorded (GPS'd and logged into a database) to track effectiveness (see below).

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

All located populations of noxious weeds will be documented, recorded (GPS'd), entered into the appropriate database, and monitored for re-establishment of populations. Tracking of treated populations of noxious weeds, as well as newly located populations will give a good indicator of the effectiveness of treatment. Also, during the seasonal monitoring of seeding treatments (See S2 & S3), the areas will be inventoried for presence of noxious weeds. Any noxious weed populations located will be reported to the SWAT crew, whom will treat the noxious weeds with the appropriate approved herbicides.

S6 - Soil Stabilization (Other than seedling, planting)

Identify the objective of the treatment:

The erosion control structures are intended to slow overland flow, reduce channel cutting, and catch sediments being carried by water. As such, less soil would be lost to water erosion and subsequently less sediment deposition would occur below and off the burned area. Treatment will be considered effective if 75% or more of the erosion control structures hold (i.e. do not "blow out") after the first year.

Describe how implementation will be monitored:

BLM Operations staff would work closely together as the erosion control structures are

installed to ensure that the structures are done professionally and as specified in the plan. Periodic spot checks will be done, and when needed, corrections will be made to bring quality up to standards.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

The erosion control structures will be visited later in the year and will be inspected for intactness.

S7 - Fence/Gate/Cattleguard

Identify the objective of the treatment:

The objective of the repair and addition of the new exclosure fences is to keep cattle and wild horses from impacting the ESR seeding and sagebrush planting by removing (and keeping out) 100% of the cattle and wild horses from this portion of the allotments until the seeding treatments vegetation objectives are met. If after two growing seasons objectives are not met, the probabilty of success will be reevaluated and new management actions will be considered (see “effectiveness” criteria for S2 and S3).

Describe how implementation will be monitored:

New exclosure fencing will be completed by BLM or by contract. The contracts will be monitored by a COR/PI certified BLM employee to assure contract specifications are met.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Livestock and wild horse closures and compliance will be monitored by BLM range staff. Range staff will spot check the fence and site periodically to ensure compliance. This will occur until livestock grazing is permitted to resume (see “effectiveness” criteria for S2 and S3).

S8 - Road/Trail Water Diversion

Identify the objective of the treatment:

The treatment will be to clean 15 culverts and ditches located along roads within and adjacent to the burned area to ensure that runoff is able to continue flowing through the culverts and ditches, and that no pooling occurs due to clogged culverts, which could result in roads being washed out.

Describe how implementation will be monitored:

BLM Operations staff would work closely together to conduct cleaning operations as specified in the plan, while working under a cooperative agreement with the County (using Wyden Amendment funding). Periodic spot checks will be done, and when needed,

corrections will be made to bring quality up to standards.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Culvert and drainages will be visited later in the year and will be inspected for intactness.

S9 - Cultural Protection (Stabilization/Patrol)

Identify the objective of the treatment:

The objective of this treatment is to patrol the burned area in order to decrease the incidence of looting and vandalism of cultural resources until vegetation recovers enough to cover cultural resources within the area burned by the Miller Homestead Fire.

Describe how implementation will be monitored:

The implementation of this treatment will be monitored by the Burns District BLM and the Law Enforcement Officer will report on any looting or vandalism, or attempts of looting or vandalism.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Effectiveness will be monitored by the number of incidents where looting or vandalism of cultural resources is prevented.

S12 - Closures (area, OHV, livestock)

Identify the objective of the treatment:

The objective of the repair and addition of the new exclosure fences is to keep cattle and wild horses from impacting the ESR seeding and sagebrush planting by relocating wild horses from within the burned area to the unburned portion of the HMA (and keeping out) as well as keeping livestock from the protected portion of the allotments until the seeding treatments for two growing seasons or until objectives have been met (see “effectiveness” criteria for S2 and S3). In order to meet this objective wild horses will need to be relocated from the area within the protection fence, this will be done using a contracted helicopter.

Describe how implementation will be monitored:

New exclosure fencing will be completed by BLM or by contract. The contracts will be monitored by a COR/PI certified BLM employee to assure contract specifications are met. For the relocation, monitoring will be done before and during the relocation with BLM staff/contractors to inventory the entire area found within the protection fence. The area will be re-inventoried after the wild horse relocation to also ensure that all horses are relocated to the unburned portion of the HMA. All activities with wild horses will be under the direction of the Wild Horse and Burro program, and they will be responsible to determine when and

where water needs to be hauled.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Livestock and wild horse closures and compliance will be monitored by BLM range staff. Range staff will spot check the fence and site periodically to ensure compliance. This will occur until livestock grazing is permitted to resume (see “effectiveness” criteria for S2 and S3). Effectiveness of the relocation will be monitored during and after occurance. Objectives will be achieved when 100% of the wild horses found within the protection fence are removed. Water hauling effectiveness will be determined by ensuring water is hauled to locations where it is needed, when it is needed, and provides a major habitat component for wild horses.

S13 - Monitoring

Identify the objective of the treatment:

Management staff will oversee that monitoring and year end reporting is completed in accordance to timelines (See S3).

Describe how implementation will be monitored:

Rangeland trend monitoring and ESR monitoring is monitored by the ESR coordinator with assistance from the range staff. Additional staff may be brought on to assist with monitoring.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Monitoring studies will be completed as scheduled and results maintained as part of the project record.

S14 - Other Treatments

Identify the objective of the treatment:

The objective of this treatment would be to hand pile all downed juniper in the drainage adjacent to the community of Frenchglen to prevent downed juniper from being moved into the community during erosion events.

Describe how implementation will be monitored:

The Burns Interagency Fire Zone will complete hand piling.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Effectiveness will be monitored following completion of the hand piling. Objectives will be achieved when there are no downed junipers or hand piles in the bottom of the drainage.

R4 - Seedling Planting

Identify the objective of the treatment:

Due to poor success rates of sagebrush establishing from seeding treatments, coupled with encouraging results from plug seeding treatments from the EOARC (Eastern Oregon Agriculture Research Center), and others, we've chosen to attempt to get more funding for plug seeding than purchasing of sagebrush seed to be applied in initial seeding treatments. It is the Burns BLM I.D. teams conclusion (based upon local research, experience, and knowledge) that planting sagebrush plugs offers the highest chance to reestablish sagebrush for obligate species such as sage-grouse and pygmy rabbits.

Describe how implementation will be monitored:

The sagebrush plug seeding will be monitored to ensure that the treatment is conducted as specified in the plan. Work that is contracted will be inspected by a COR/PI certified BLM employee to ensure contract specifications are met. BLM personnel will work closely together both in completing the in-house work and in overseeing contract work to assure that treatments are accomplished in a professional manner as specified in the plan. Specifics, such as weather and other conditions that could influence the outcome of the treatment, will be noted in the project file. GPS polygons will be collected for all treated areas to ensure that treatments are implemented as planned. On the ground adjustments that are done will be documented and updated information will be put into treatment files.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Sagebrush plug seeding treatment will be monitored all years following treatment until the summer of 2015. Success of this treatment will be based upon survival of over 20% of the planted plugs within the monitoring period. Proposed locations for monitoring plots have been selected (Map 11 - Monitoring), although they will likely move slightly after ground truth assessments have been done.

The monitoring protocol that will be followed on these plots utilizes the Pace 180 Method (Johnson and Sharp IN PRESS), supplemented with the Step-Point and Density (0.25 m2 frame) Methodologies (Herrick et. al. 2005; Sampling Vegetation Attributes 1999) to identify success of rehab efforts and time of recovery (see attached document - Fire Rehabilitation Monitoring Protocol). This methodology was chosen for compatibility with established trend plots and sage-grouse habitat inventory implemented June 2012. Each of these trend plots will also have permanent 3' x 3' plot and landscape photos associated with them.

R5 - Noxious Weeds

Identify the objective of the treatment:

The objective is to minimize noxious weed establishment within the burned area. Most noxious weeds are opportunistic at acquiring readily available resources following a disturbance, such as a fire. Monitoring shows that there are 8 known noxious weed species present within the perimeter, including: bull thistle, Canada thistle, Dalmatian toadflax, diffuse knapweed, Mediterranean sage, perennial pepperweed, scotch thistle, and whitetop. There are also numerous noxious weed sites just outside the perimeter of the fire including: Russian knapweed, spotted knapweed, puncturevine, and medusahead. There is a likelihood that weeds on and adjacent to this disturbed area will readily establish in open niches. Aggressive treatment methods of establishing weed populations, such as EDRR, are the most effective way to keep weed populations in check until perennial grass densities/competition is strong enough to inhibit noxious weed establishment.

Describe how implementation will be monitored:

The SWAT crew will make site visits, prioritizing sites with high potential for noxious weed establishment, and treat any located establishing populations with the appropriate approved herbicides. Application of all herbicides will follow given products directions for appropriate application rates (specific to species being targeted). All located populations of noxious weeds will be recorded (GPS'd and logged into a database) to track effectiveness (see below). See appendix 8 for the potential herbicides and application rates for specific weed species.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

All located populations of noxious weeds will be recorded (GPS'd) and tracked in success years for re-establishment of populations. Tracking of treated populations of noxious weeds, as well as newly located populations will give a good indicator of the effectiveness of treatment. Also, during the seasonal monitoring seeding treatments (See S2 & S3), the areas will also be inventoried for presence of noxious weeds. Any noxious weed populations located will be reported to the SWAT crew, whom will treat the noxious weeds with the appropriate approved herbicides.

R6 - Soil Stabilization (Other than seedling, planting)

Identify the objective of the treatment:

The erosion control structures are intended to slow overland flow, reduce channel cutting, and catch sediments being carried by water. As such, less soil would be lost to water erosion and subsequently less sediment deposition would occur below and off the burned area. Treatment will be considered effective if 75% or more of the erosion control structures hold (i.e. do not "blow out") after the first year.

Describe how implementation will be monitored:

BLM Operations staff would work closely together as the erosion control structures are

installed to ensure that the structures are done professionally and as specified in the plan. Periodic spot checks will be done, and when needed, corrections will be made to bring quality up to standards.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

The erosion control structures will be visited later in the year and will be inspected for intactness.

R7 - Fence/Gate/Cattleguard

Identify the objective of the treatment:

Approximately 38 miles of fence within the interior of the fire perimeter will be reconstructed to allow for proper management of the burned areas following the reintroduction of grazing by wild horses and domestic livestock. The objective of the repair of existing fence and the removal of the 20 miles of protection fence is to be able to properly manage allotments and associated pastures following the return of grazing into the area.

Describe how implementation will be monitored:

Fence reconstruction and removal of the protection fence will be completed by BLM or by contract. The contracts will be monitored by a COR/PI certified BLM employee to assure contract specifications are met.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

BLM staff will monitor fence reconstruction and removal for completion.

R9 - Cultural Protection (Stabilization/Patrol)

Identify the objective of the treatment:

The objective of this treatment is to patrol the burned area in order to decrease the incidence of looting and vandalism of cultural resources until vegetation recovers enough to cover cultural resources within the area burned by the Miller Homestead Fire.

Describe how implementation will be monitored:

The implementation of this treatment will be monitored by the Burns District BLM and the Law Enforcement Officer will report on any looting or vandalism, or attempts of looting or vandalism.

Describe how effectiveness will be monitored, how it will be measured, and within

what time period:

Effectiveness will be monitored by the number of incidents where looting or vandalism of cultural resources is prevented.

R11 - Facilities

Identify the objective of the treatment:

One spring development and one wildlife guzzler were damaged or destroyed during the wildfire. These facilities are important to wildlife in areas of limited water, especially in drought years.

Describe how implementation will be monitored:

Spring repair and guzzler reconstruction will be completed by BLM Operations staff.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Structures will be visited following reconstruction to check for completion and functionality.

R12 - Closures (area, OHV, livestock)

Identify the objective of the treatment:

The objective of this treatment is to provide wild horses with water following construction of the protection fences and the relocation of horses from the burned area to the unburned portion of the HMA. The burned area that the wild horses will be excluded from includes some of the best water sources within the HMA. Hauling water would ensure that wild horses meet their habitat needs will exclosed from the burned area.

Describe how implementation will be monitored:

Monitoring will be done be the Wild Horse and Burro Specialist, who will identify the need and the locations water needs to be hauled to, as well as the success of the treatment.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Effectiveness will be monitored following water hauling activities, by observing wild horses within the HMA and monitoring the HMA to ensure that the water requirement for wild horses is being met.

R13 - Monitoring

Identify the objective of the treatment:

Management staff will oversee that monitoring and year end reporting is completed in

accordance to timelines (See S3).

Describe how implementation will be monitored:

Rangeland trend monitoring and ESR monitoring is monitored by the ESR coordinator with assistance from the range staff. Additional staff may be brought on to assist with monitoring.

Describe how effectiveness will be monitored, how it will be measured, and within what time period:

Monitoring studies will be completed as scheduled and results maintained as part of the project record.

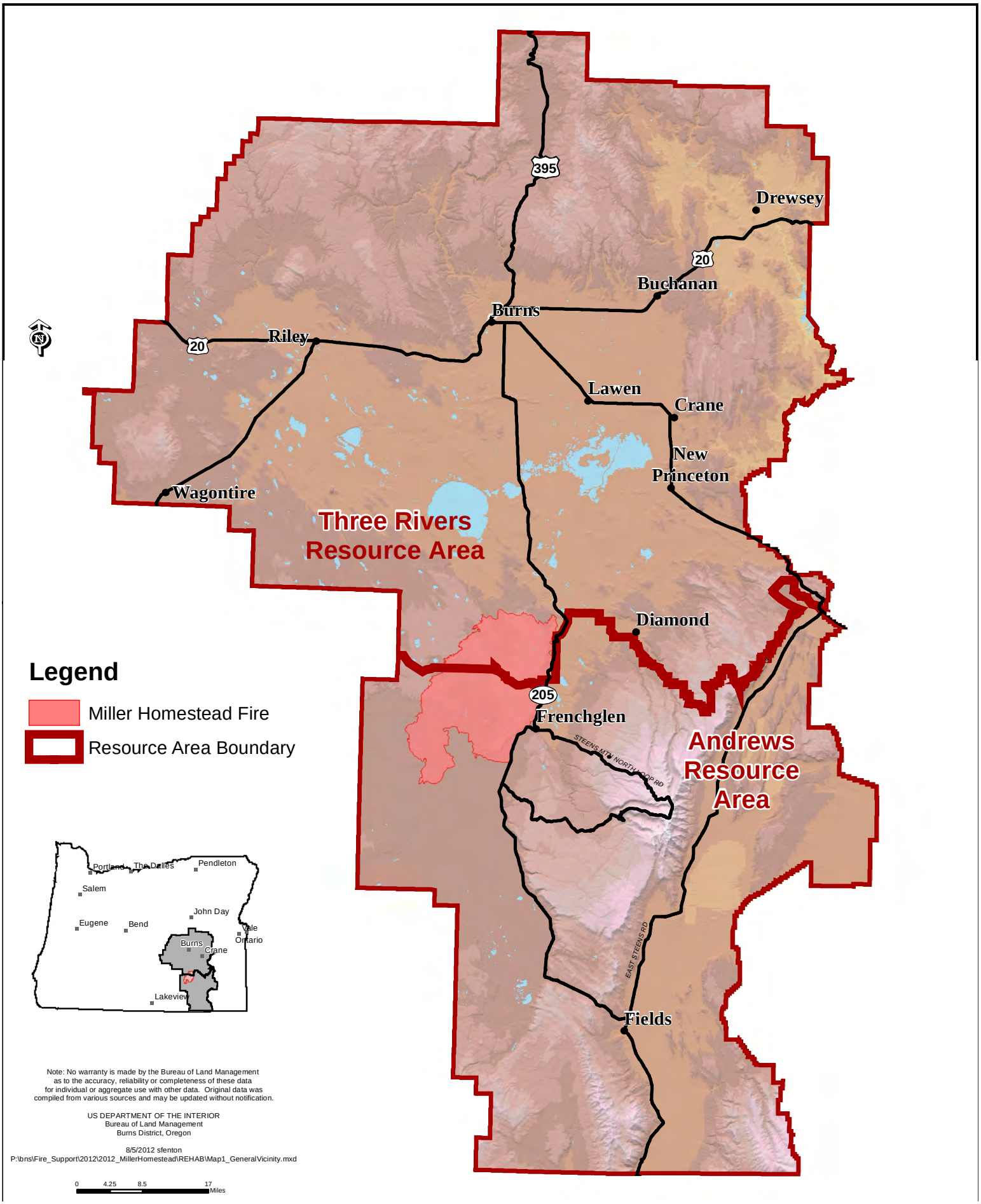
PART 9 - MAPS

1. - Map 1 - Burns District Boundary
2. - Map 2 - Fire Growth July 8 to July 13, 2012
3. - Map 3 - Surface Jurisdiction
4. - Map 4 - General Vegetation
5. - Map 5 - General Soils
6. - Map 6 - Ecological Sites
7. - Map 7 - Drill Seeding & Sagebrush Planting
8. - Map 8 - Aerial Seeding
9. - Map 9 - Reconstruction and Stabilization
10. - Map 10 - Projected Weed Treatment Areas
11. - Map 11 - Monitoring

Map 1

Burns District Boundary

MILLER HOMESTEAD ESR



Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

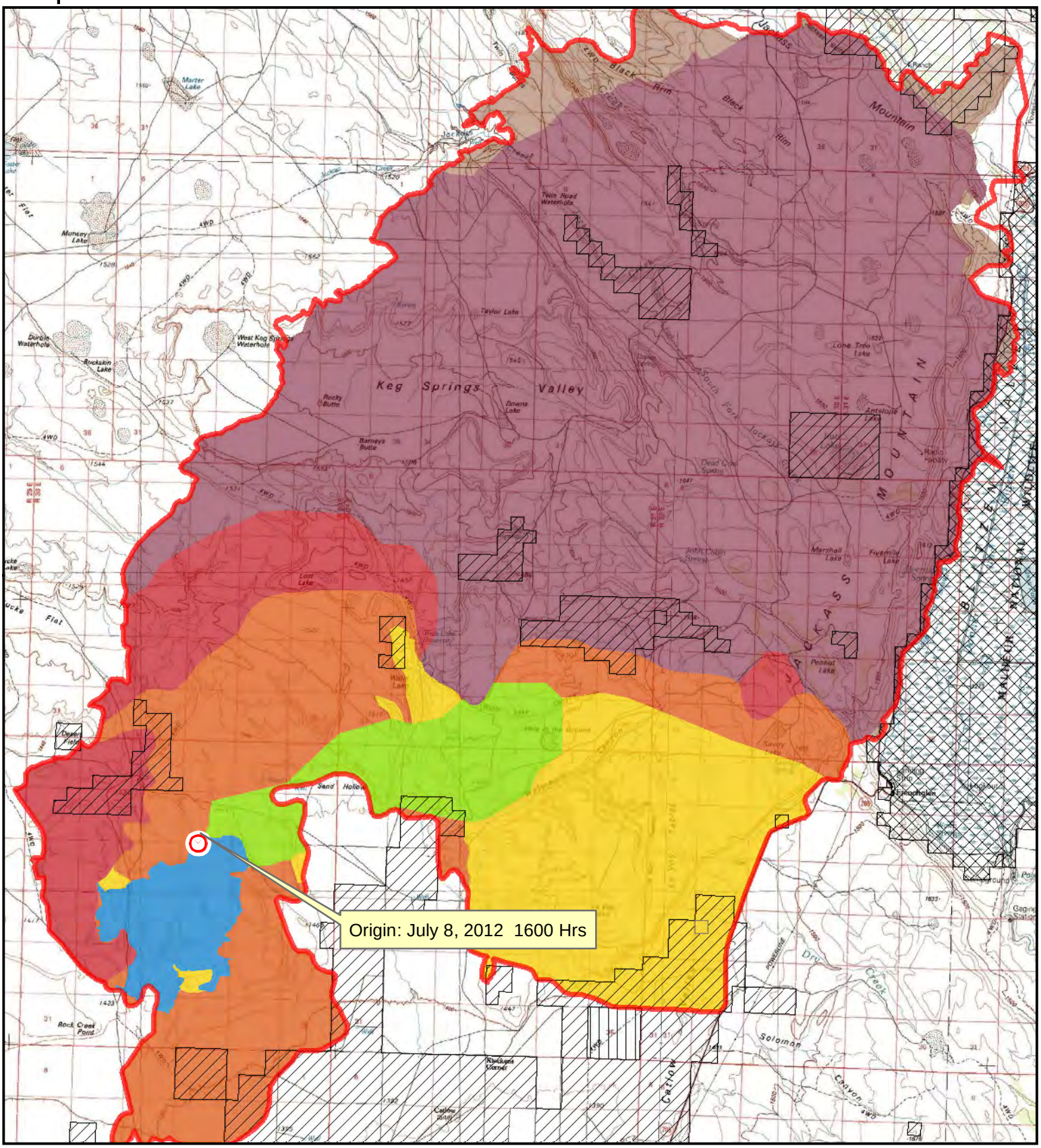
8/5/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map1_GeneralVicinity.mxd

0 4.25 8.5 17 Miles

Fire Growth July 8, 2012 to July 13, 2012

Map 2

MILLER HOMESTEAD ESR



Final Fire Perimeter
July 8, 2012
July 9, 2012
July 10, 2012
July 11, 2012
July 12 -A.M., 2012
July 12 -P.M., 2012
July 13, 2012

Land Status

Bureau of Land Management
Private
State Agency
U.S. Fish and Wildlife Service

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

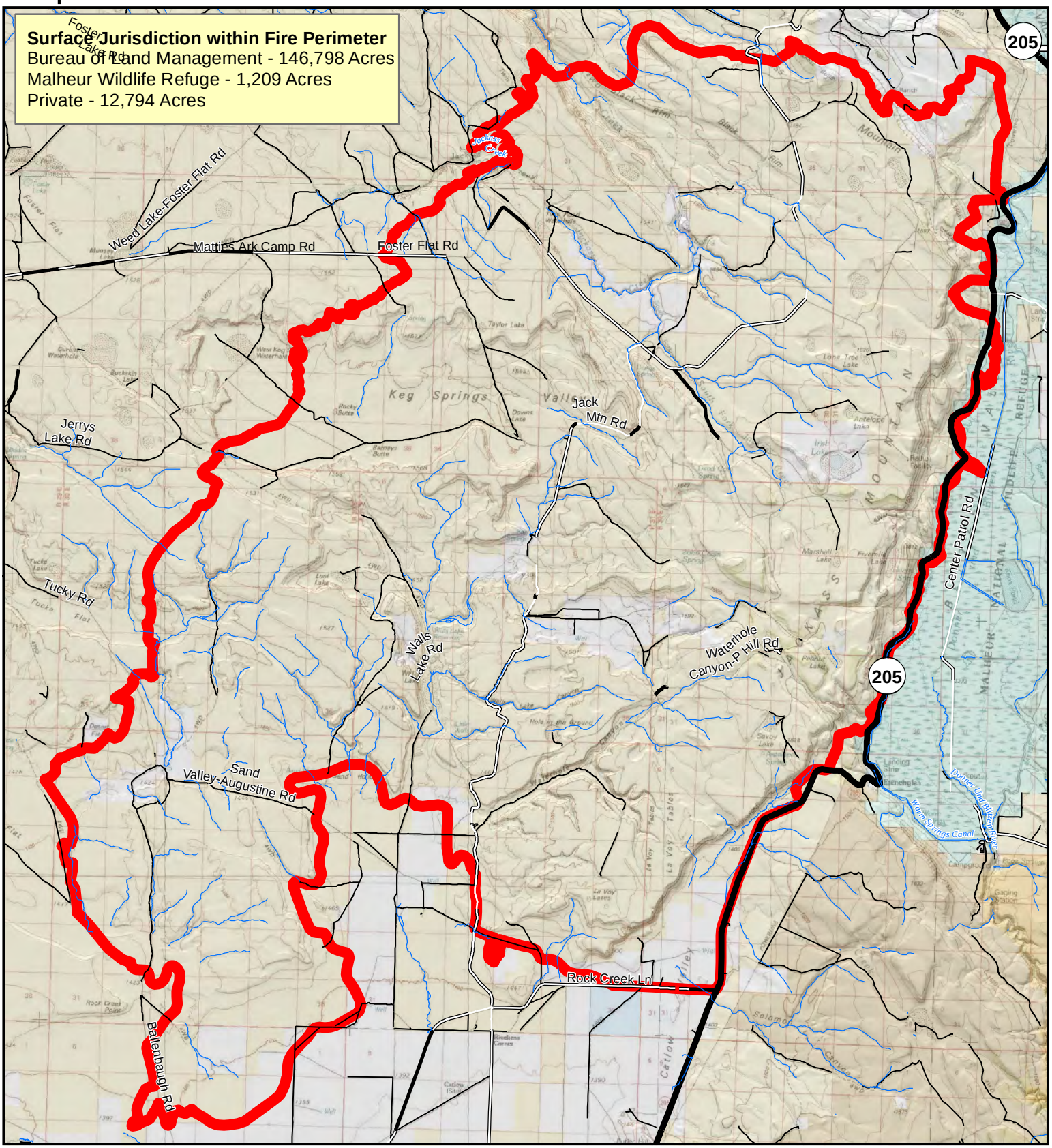
0 1 2 4
Miles

8/6/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map2_FireProgression.mxd

Surface Jurisdiction

MILLER HOMESTEAD ESR

Map 3



Final Fire Perimeter

Streams

Bureau of Land Management

U.S. Fish and Wildlife Service

State

Private/Unknown

BLM Wilderness Study Area

Steens Mtn Wilderness

Open Roads

Paved Road

Non-Paved Improved Road

Natural/Unknown Road Surface

Highways

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

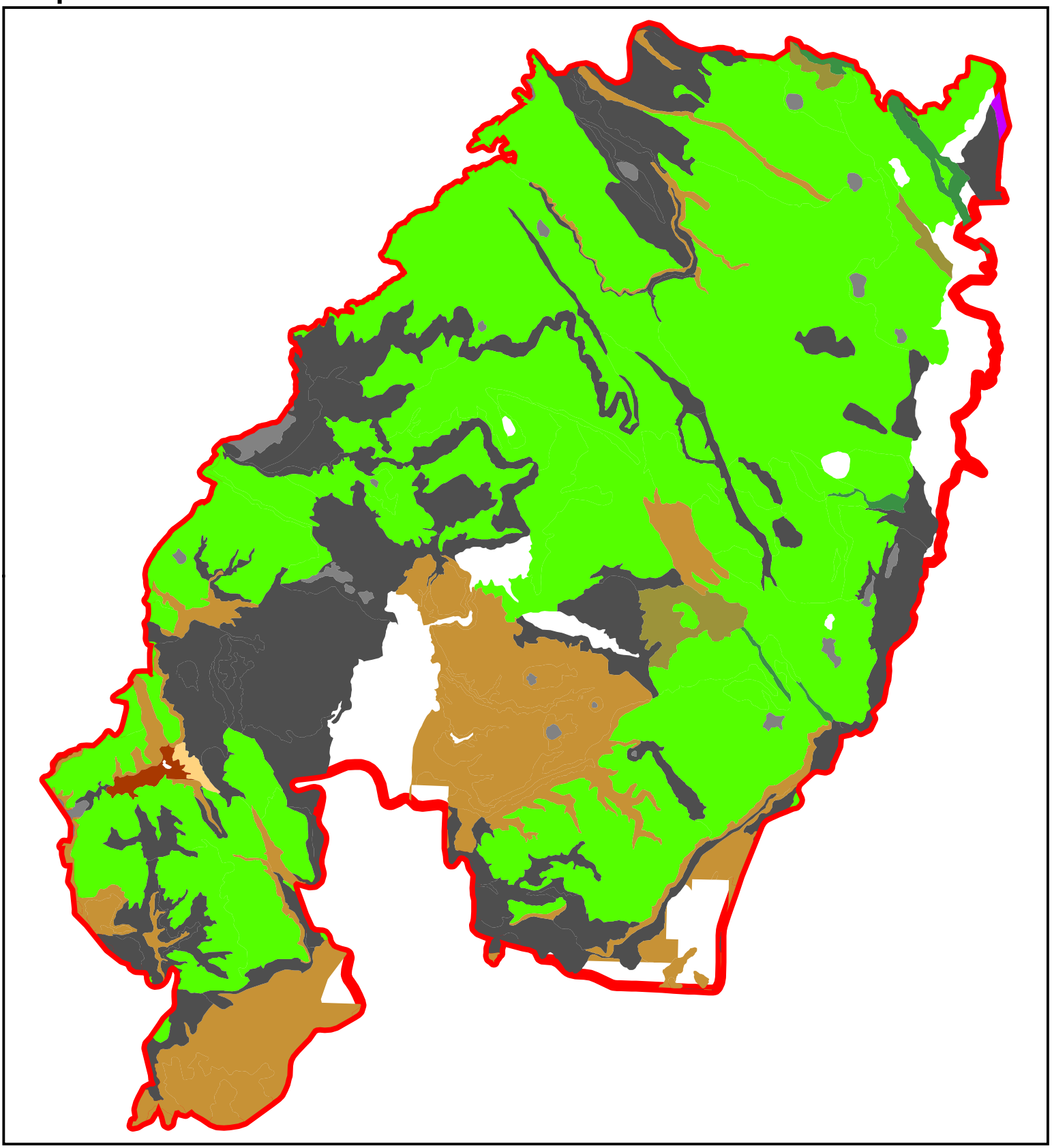
0 1 2 4
Miles

8/6/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map3_LandStatus.mxd

General Vegetation

MILLER HOMESTEAD ESR

Map 4



- Final Fire Perimeter
- Big Sagebrush/Annual Grassland
- Big Sagebrush/Crested Wheatgrass
- Big Sagebrush/Perennial Grassland
- Crested Wheatgrass
- Juniper/Big Sagebrush
- Juniper/Low Sagebrush
- Low Sagebrush/Grassland
- Rabbitbrush/Grassland
- Silver Sagebrush/Grassland
- Unassigned

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

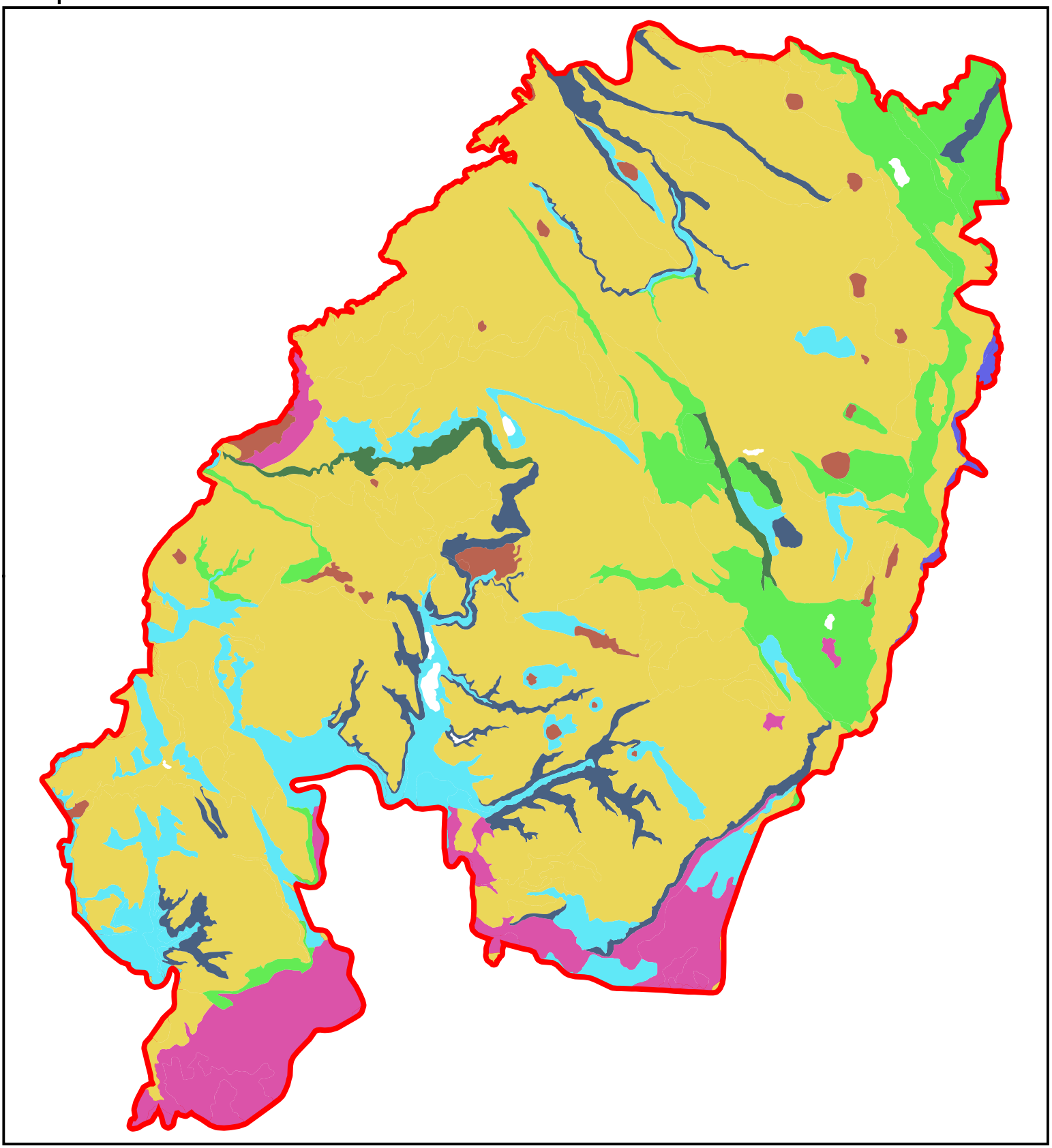
0 1 2 4
Miles

8/6/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map4_GeneralVegetation.mxd

General Soils

MILLER HOMESTEAD ESR

Map 5



Final Fire Perimeter
Felcher-Skedaddle
Fury-Skunkfarm-Housefield
Merlin-Observation-Lambring
Ninemile-Westbutte-Carryback
Poujade-Ausmus-Swalesilver
Raz-Brace-Anawalt
Reallis-Vergas-Lawen
Spangenburg-Enko-Catlow

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

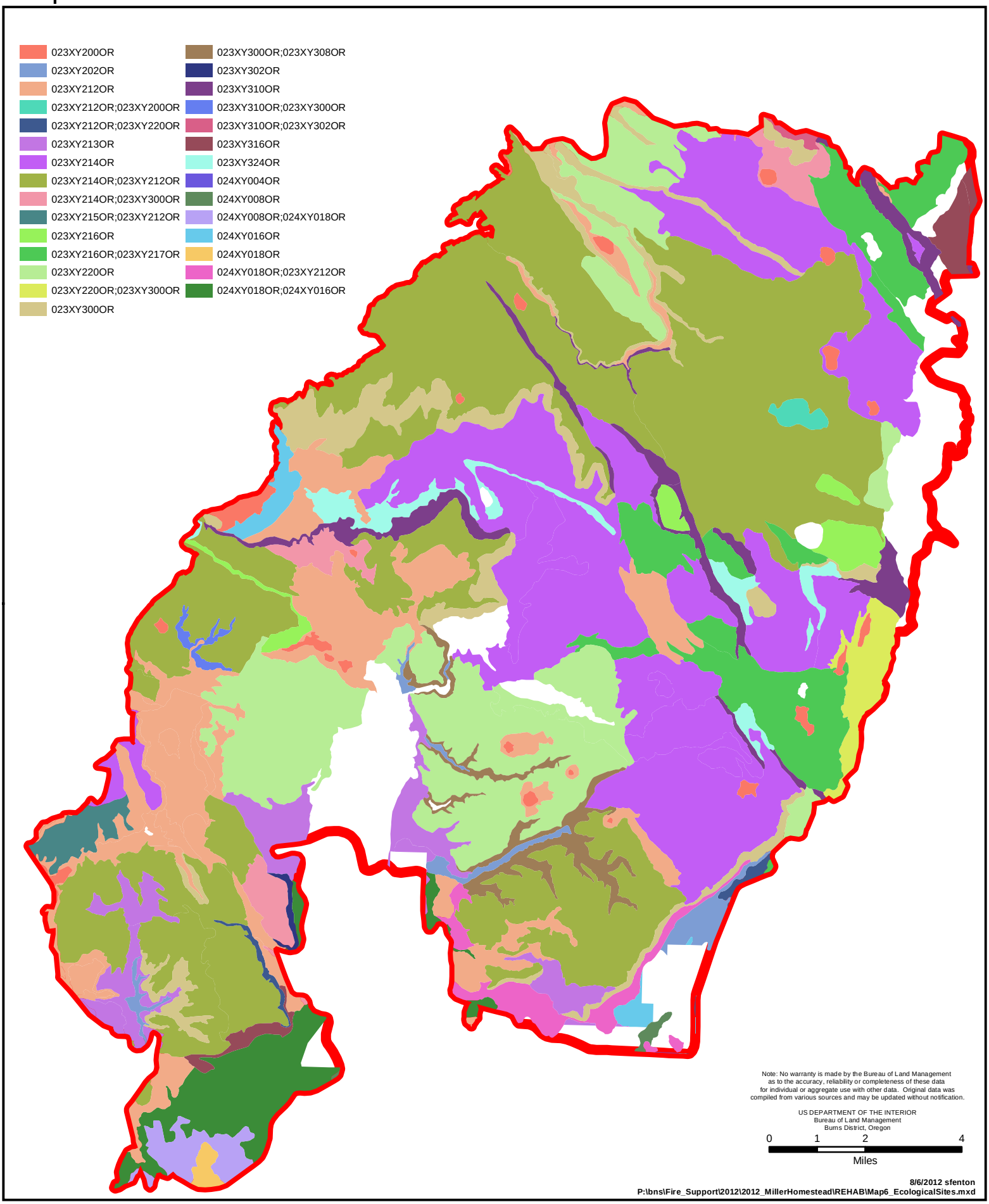
0 1 2 4
Miles

8/6/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map5_GeneralSoils.mxd

Ecological Sites

MILLER HOMESTEAD ESR

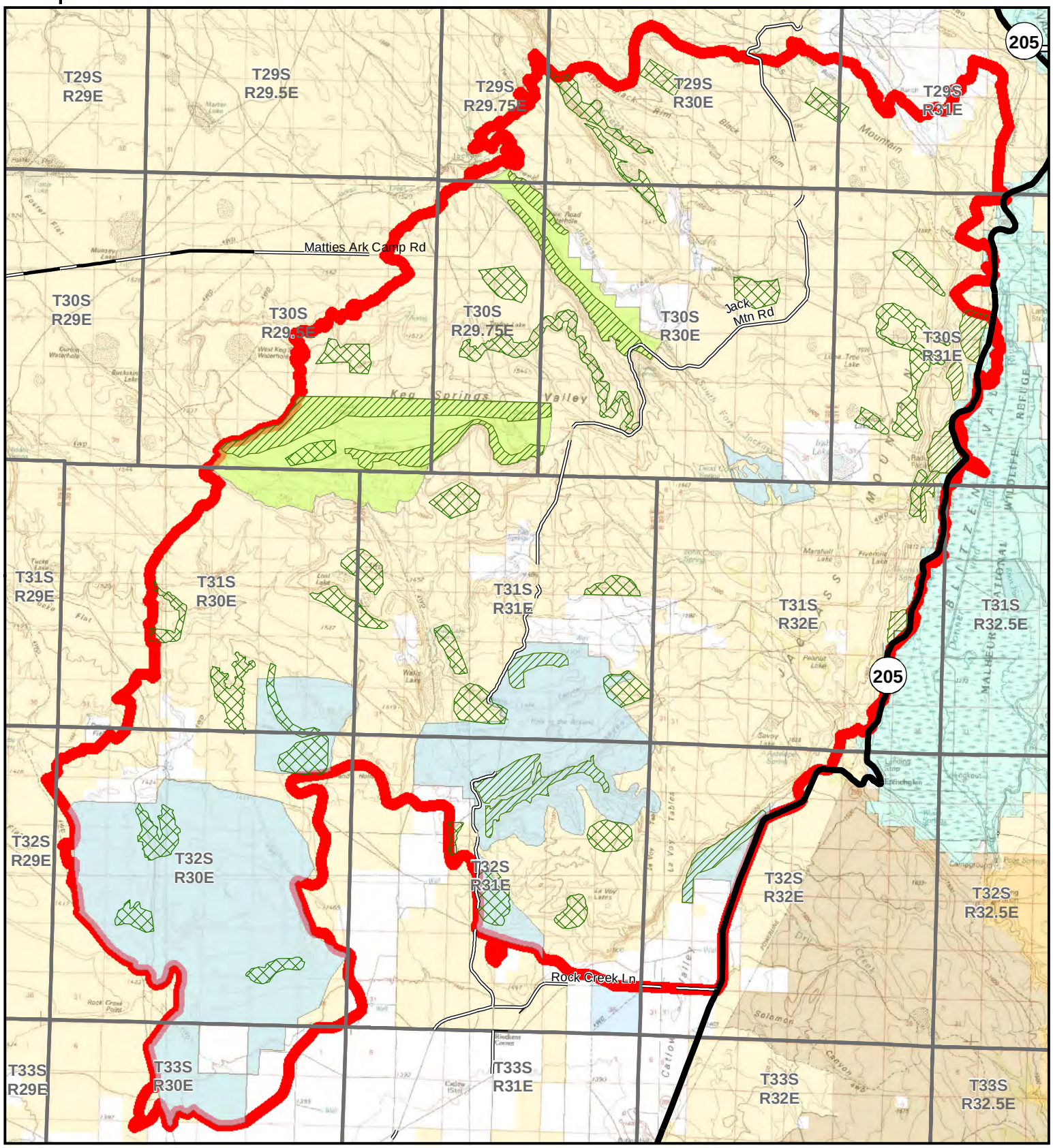
Map 6



Drill Seeding and Sagebrush Planting

MILLER HOMESTEAD ESR

Map 7



Range Seeding - High Mix
Range Seeding - Low Mix
Shrub Planting
Shrub Seeding
Final Fire Perimeter

Bureau of Land Management
U.S. Fish and Wildlife Service
State
Private/Unknown
BLM Wilderness Study Area
Steens Mtn Wilderness

Open Roads

Paved Road
Non-Paved Improved Road
Natural/Unknown Road Surface
Highways

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

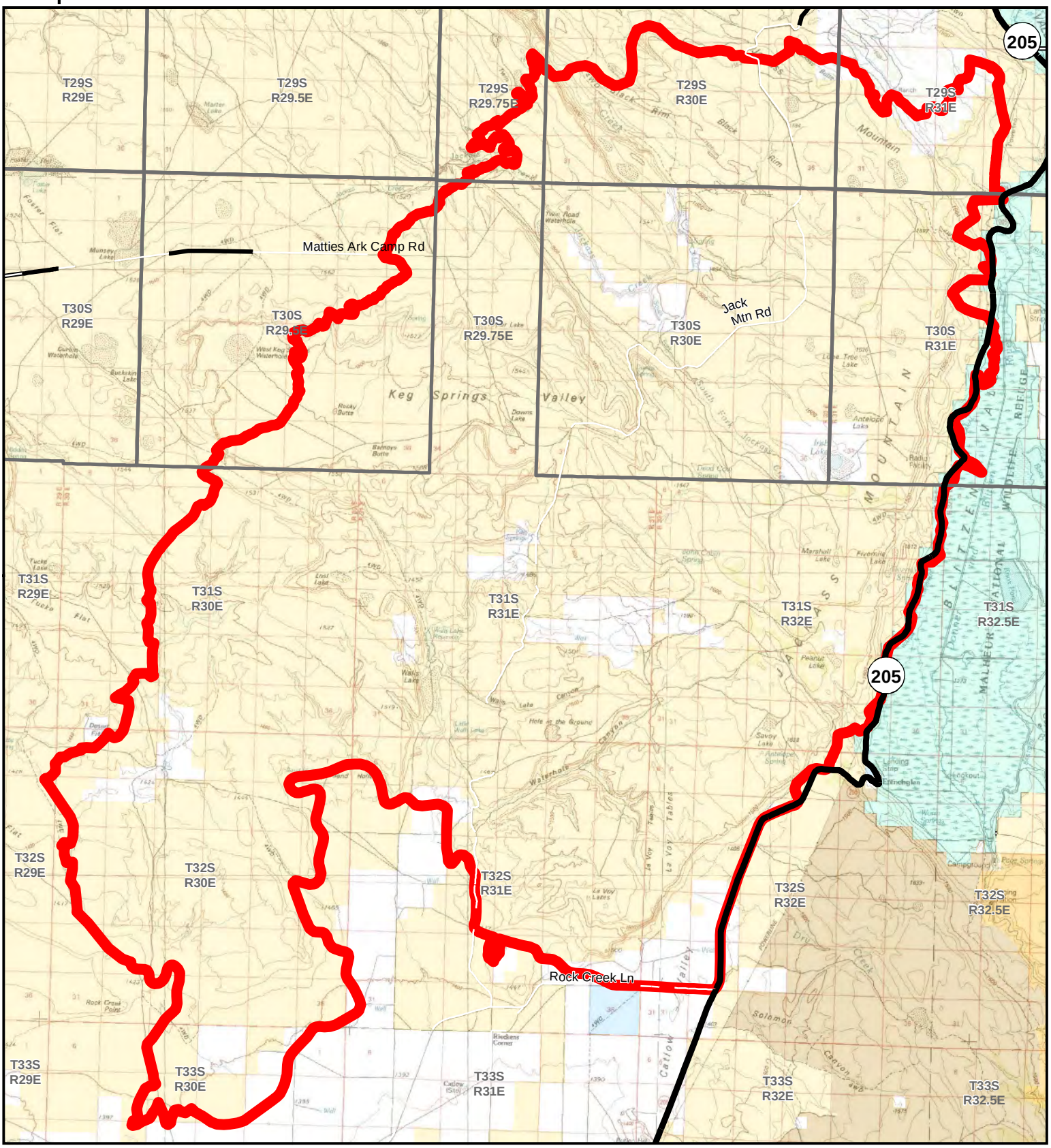
0 1 2 4
Miles

8/11/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map7_DrillSeedingSBPlanting.mxd

Aerial Seeding

MILLER HOMESTEAD ESR

Map 8



Aerial Seeding

Final Fire Perimeter

Bureau of Land Management

U.S. Fish and Wildlife Service

State

Private/Unknown

BLM Wilderness Study Area

Steens Mtn Wilderness

Not All Roads Are Shown

Highways

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

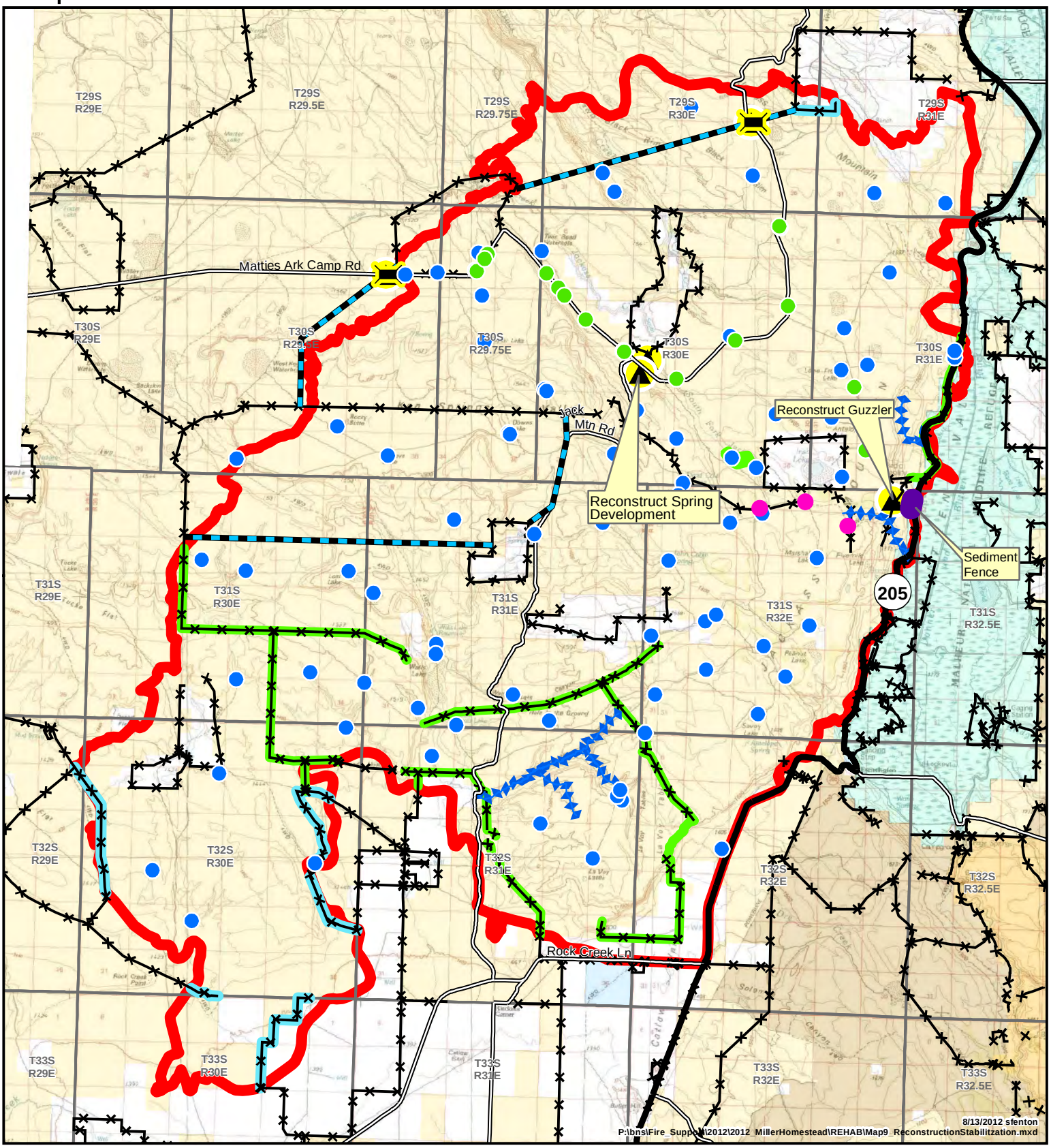
0 1 2 4
Miles

8/11/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map8_AerialSeeding.mxd

Reconstruction and Stabilization

MILLER HOMESTEAD ESR

Map 9



Reconstruct Fence (ES) - 12 Miles
Reconstruct Fence (BAR) - 37 Miles
New Protection Fence - 20 Miles
Replace Fence Feature
Sediment Fence

Check Dams
Culvert Cleanout
Catchment Basin Cleanout
Temporary Cattleguard
Bureau of Land Management

U.S. Fish and Wildlife Service
State
Private/Unknown
BLM Wilderness Study Area
Steens Mtn Wilderness

Final Fire Perimeter
Not All Roads Are Shown
Highways

0 0.75 1.5 3
Miles

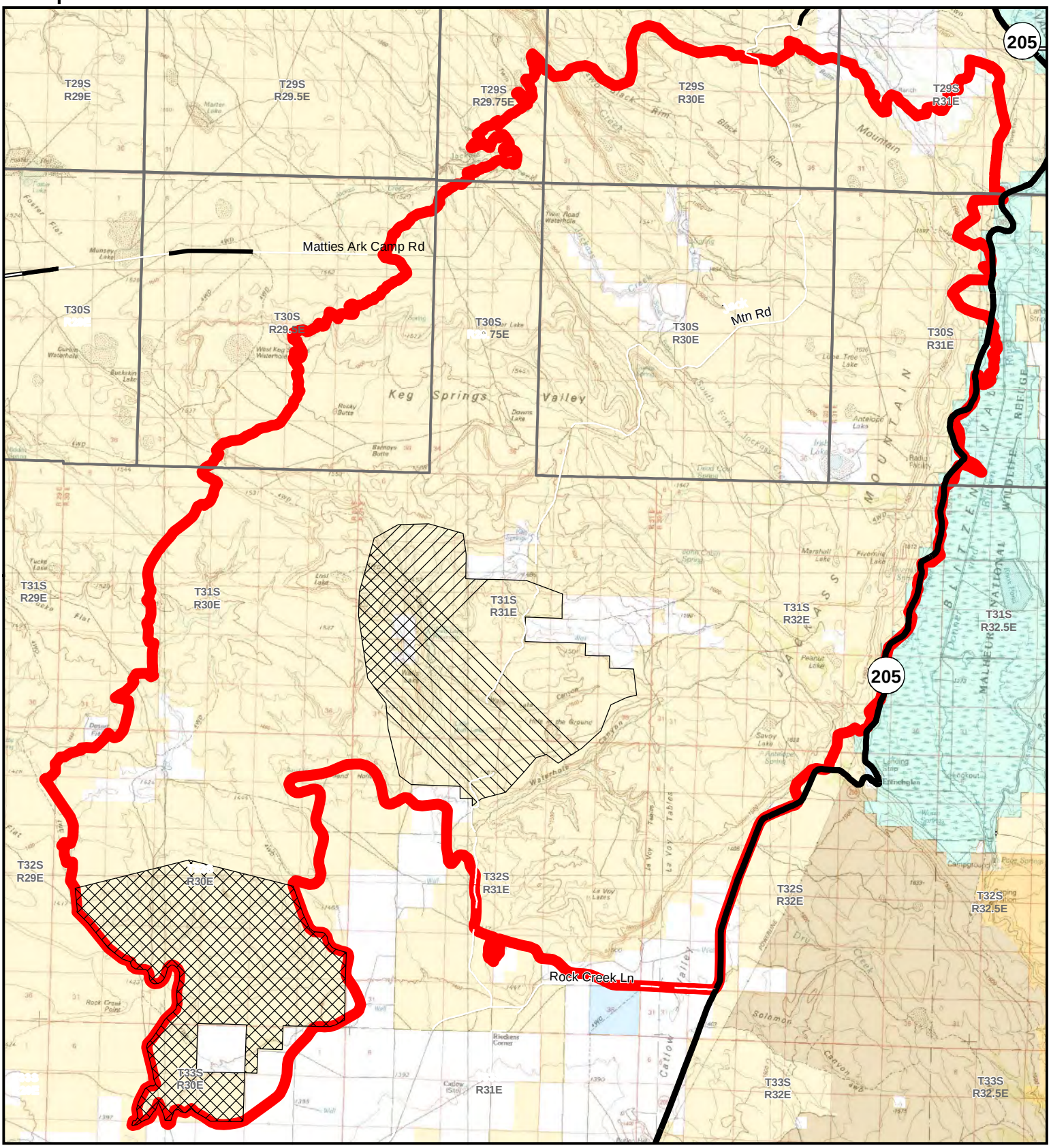
Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

Projected Weed Treatment Areas

MILLER HOMESTEAD ESR

Map 10



Fixed Wing Treatment Area 23,000 Acres

Helicopter Treatment Area 7,000 Acres

Mediterranean Sage Treatment Area - 300 Acres

Final Fire Perimeter

Bureau of Land Management

U.S. Fish and Wildlife Service

State

Private/Unknown

BLM Wilderness Study Area

Steens Mtn Wilderness

Not All Roads Are Shown

Not All Roads Are Shown

Highways

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

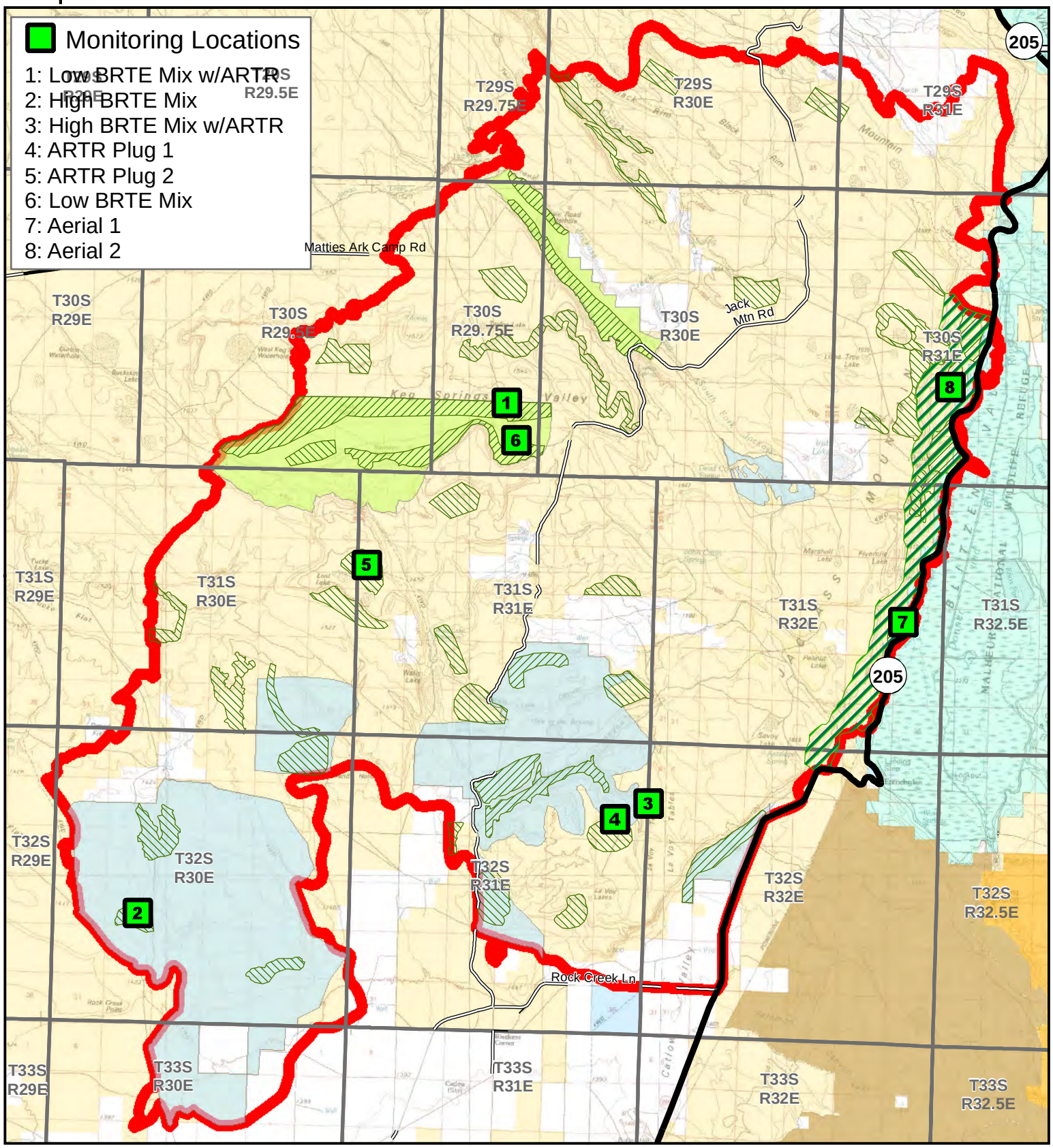
0 1 2 4
Miles

8/13/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map10_WeedTreatment.mxd

Monitoring

MILLER HOMESTEAD ESR

Map 11



Aerial Seeding
Range Seeding - High Mix
Range Seeding - Low Mix
Shrub Planting
Shrub Seeding
Final Fire Perimeter

Bureau of Land Management
U.S. Fish and Wildlife Service
State
Private/Unknown
BLM Wilderness Study Area
Steens Mtn Wilderness

Open Roads
Paved Road
Non-Paved Improved Road
Natural/Unknown Road Surface
Highways

Note: No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual or aggregate use with other data. Original data was compiled from various sources and may be updated without notification.

US DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Burns District, Oregon

0 1 2 4
Miles

8/13/2012 sfenton
P:\bns\Fire_Support\2012\2012_MillerHomestead\REHAB\Map11_Monitoring.mxd

Appendix 1 – Climate Data

Based on the coordinates, Lat: 42.9120063, Long: -119.02063, a point within the perimeter of the Miller Homestead Fire, over the last 50 years, 1961 – 2011, the average annual precipitation in the area of the Miller Homestead Fire has been 14.30 inches with the minimum annual precipitation recorded at 8.45 inches in 2002 and the maximum amount recorded at 27.04 inches in 1983. Typically, the driest months for the area of the fire include July, August, September and October where there have been no measureable amounts or precipitation. September and October tend to be the driest months with 4 and 3 years respectively of 0 inches of recordable precipitation. July and August have one year each of zero precipitation. November, December and May have been the wettest months with the majority of the November and December precipitation coming in the form of snow. May tends to be the wettest month averaging 1.84 inches over the last 50 years and tends to be a mix of rain and snow.

Temperatures over the last 50 years range from a monthly average low of 11.41°F in December of 1990 to a monthly average high of 89.51°F in August of 1967. The coldest months tend to be December, January, February and November respectively with the warmest months consisting of August, July, September and June respectively.

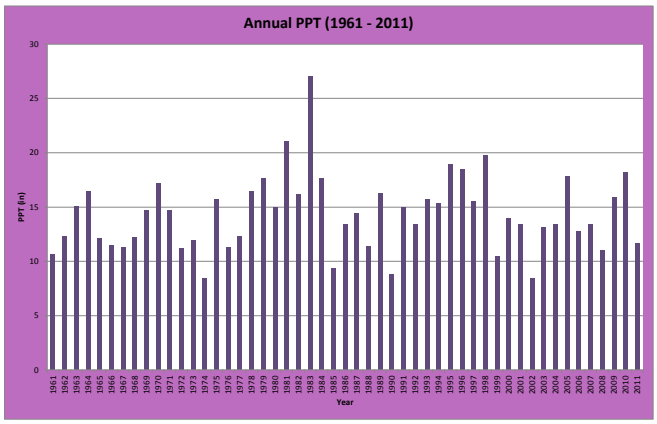
Coupled with high temperatures and low precipitation, the months of July, August and September are suitable for fires such as the Miller Homestead fire. Post fire, the dry hot months of August and September, and to a certain extent October, depending on the year, soils in the burn are susceptible to wind erosion with no vegetation or biological soil crusts to hold them in place. As the Fall precipitation begins, generally starting in October, soils susceptible to water erosion become vulnerable to overland flow which will transport valuable seed containing top soil away from the area. If seeds cannot establish and germinate, water erosion will continue across the area with the Spring precipitation and snow melt.

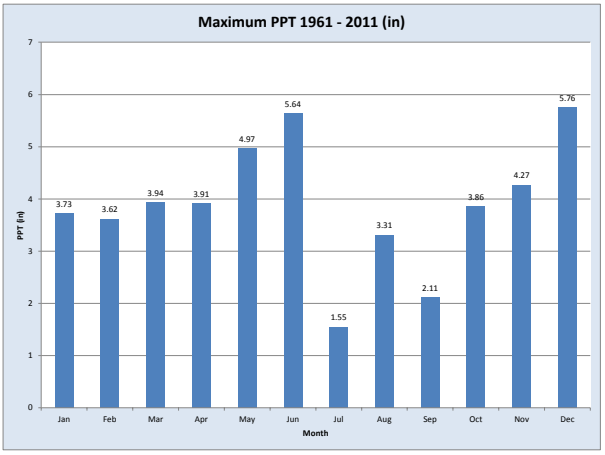
PPT 1961 - 2011 Years
(Lat: 42.9120063026026 Long: -119.020344935)

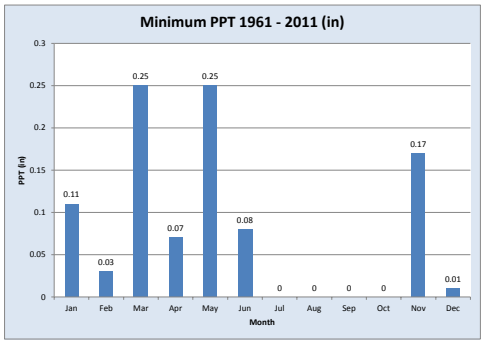
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1961	0.25	0.98	1.36	0.11	1.22	1.01	0.39	0.33	1.7	1.25	0.8	1.23	10.63
1962	0.59	0.94	0.81	0.43	2.33	0.08	0.33	0.29	0.2	3.86	1.61	0.82	12.29
1963	1.55	1.42	0.77	2.6	1.39	1.94	0.15	0.91	0.85	0.56	1.67	1.25	15.06
1964	1.21	0.03	0.82	1.1	1.97	2.64	0.97	0.99	0.07	0.47	1.88	4.31	16.46
1965	1.58	0.1	0.25	1.29	1.34	2.7	0.16	2.59	0.12	0.16	1.39	0.45	12.13
1966	1.14	0.35	0.49	0.73	0.96	1.09	0.31	0.28	1.3	0.31	2.98	1.57	11.51
1967	1.48	0.3	1.01	1.87	1.58	1.92	0.4	0.16	0.7	0.79	0.72	0.39	11.32
1968	0.85	1.48	0.41	0.15	1.03	0.42	0.04	1.92	0.09	0.58	4.27	1.01	12.25
1969	3.73	0.63	0.3	0.81	0.39	3.12	0.03	0	0.19	1.74	1.04	2.69	14.67
1970	3.4	0.59	0.79	1.06	1.84	2.77	0.1	0.04	1.02	1.24	2.86	1.46	17.17
1971	1.6	0.28	2.11	1.11	2.6	2.29	0.51	0.36	1.69	0.38	1.04	0.69	14.66
1972	2.71	0.79	1.49	0.22	0.84	0.4	0.1	0.16	0.77	0.4	1.83	1.49	11.2
1973	0.85	0.28	0.71	0.74	1.49	0.19	0.05	0.44	1.62	1.18	2.37	2.07	11.99
1974	0.43	0.38	2.11	1.15	0.38	0.13	0.85	0.48	0	0.54	0.17	1.86	8.48
1975	0.95	1.72	1.6	2.07	0.44	2.64	1.55	0.41	0	2.25	0.58	1.48	15.69
1976	0.86	1.37	0.38	0.69	0.25	1.14	0.95	3.31	1.9	0.14	0.26	0.01	11.26
1977	0.98	0.2	0.3	0.07	2.56	0.73	0.75	0.39	1.74	0.4	2.17	2.03	12.32
1978	1.62	0.91	1.25	3.91	0.56	1.3	0.36	1.68	2.11	0	1.83	0.95	16.48
1979	2.58	1.74	1.27	1.88	0.89	1.28	0.55	2.92	0.49	2.27	1.32	0.46	17.65
1980	1.81	1.25	1.45	0.81	3.17	1.59	0.51	0.16	0.97	1.24	0.87	1.17	15
1981	1.14	1.21	2.62	1.27	3.24	0.95	0.63	0.2	0.57	1.92	2.52	4.82	21.09
1982	0.6	0.86	1.3	0.83	1.15	1.42	0.62	0.59	2.1	1.94	2.24	2.51	16.16
1983	1.6	2.1	3.94	2.29	3.1	1.5	0.89	1.82	0.55	1.04	2.45	5.76	27.04
1984	0.37	1.4	2.54	1.75	1.09	2.02	0.59	1.81	0.25	2.72	2.12	1	17.66
1985	0.11	0.84	0.96	0.65	1.19	0.13	1.08	0.16	1.26	0.55	1.52	0.89	9.34
1986	0.84	3.62	1.79	0.38	2.02	0.23	0.18	0.54	2.01	0.79	0.59	0.42	13.41
1987	1.23	0.89	1.62	1.13	1.88	3.62	1.46	0.09	0	0	1.41	1.09	14.42
1988	1.3	0.38	0.8	2.36	0.86	1.08	0.01	0.31	0.47	0	2.9	0.9	11.37
1989	1.65	0.71	3.78	1.26	3.28	0.68	0.07	2.12	1.03	0.47	0.56	0.61	16.22
1990	0.34	0.29	0.59	1.34	2.45	0.37	0.19	1.03	0.01	1.19	0.67	0.36	8.83
1991	0.28	0.55	1.29	2.5	3.91	2.69	0.09	0.11	0.08	1.33	1.69	0.44	14.96
1992	0.18	0.61	0.84	0.96	0.26	3.17	0.2	0.2	0.48	2.23	1	3.27	13.4
1993	1.8	1.24	1.85	1.76	1.77	2.12	1.01	0.9	0.45	1.17	0.58	1.08	15.73
1994	0.23	2.81	0.45	1.9	3.69	0.9	0	0.07	0.45	0.78	2.13	1.92	15.33
1995	1.81	0.29	1.95	2.64	2.9	1.91	0.77	0.35	0.3	0.45	1.08	4.47	18.92
1996	2.27	0.82	1.38	2.24	3.25	1.46	0.03	0.19	0.89	1.09	1.99	2.83	18.44
1997	2.95	0.91	0.57	2.47	1.87	1.22	1.15	0.45	0.66	0.62	1.42	1.23	15.52
1998	1.9	1.19	1.76	2.18	4.97	1.84	0.42	0.01	1.33	0.68	2.08	1.39	19.75
1999	1.8	2.25	0.68	1.71	0.93	1.11	0.11	0.53	0	0.45	0.56	0.37	10.5
2000	1.81	1.66	1.24	1.92	1.12	0.42	0.19	0.03	1.01	3.08	0.92	0.6	14
2001	0.84	0.75	1.81	2.66	0.84	1.12	1.1	0.09	0.7	0.68	1.24	1.53	13.36
2002	0.87	0.41	1.41	1.68	0.73	0.81	0.42	0.07	0.46	0.18	0.35	1.06	8.45
2003	1.24	0.39	1.44	2.6	2.33	0.29	0.47	0.89	0.76	0.27	1.15	1.28	13.11
2004	0.98	1.12	0.39	1.13	2.4	0.96	0.48	1.22	0.55	2.07	0.74	1.39	13.43
2005	0.62	0.41	1.25	2.88	4.61	1.11	0.36	0.08	0.29	0.99	2.09	3.14	17.83
2006	1.77	0.81	1.32	1.93	2.19	1.04	0.32	0.05	0.32	0.48	1.73	0.8	12.76
2007	0.32	2.58	0.78	1.25	0.49	1.12	0.08	0.22	0.7	1.77	1.63	2.51	13.45
2008	2.47	1.05	0.91	0.41	1.47	0.69	0.27	0.1	0.25	0.55	1.35	1.48	11
2009	0.64	0.69	0.89	0.74	1.37	5.64	0.04	0.78	0.08	1.52	2.35	1.14	15.88
2010	2.08	0.72	1.64	1.52	2.21	2.02	0.2	0.32	0.55	2.53	1.55	2.85	18.19
2011	0.88	0.45	2.28	1.41	3.13	1.25	0.25	0.16	0.11	0.9	0.58	0.23	11.63

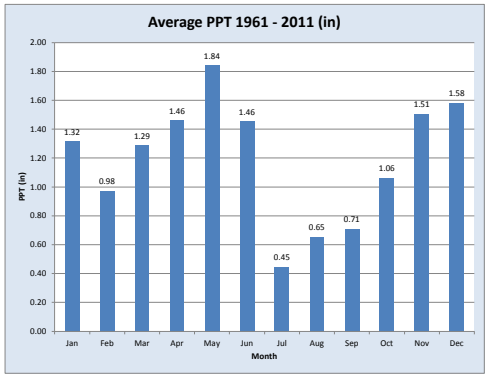
Average	1.32	0.98	1.29	1.46	1.84	1.46	0.45	0.65	0.71	1.06	1.51	1.58	14.30
QTR		3.58			4.76			1.81			4.15		

Min	1985	1964	1965	1977	1976	1962	1994	1969	1987	1987	1974	1976	2002
	0.11	0.03	0.25	0.07	0.25	0.08	0	0	0	0	0.17	0.01	8.45
Max	1969	1986	1983	1978	1998	2009	1975	1976	1978	1962	1968	1983	1983
	3.73	3.62	3.94	3.91	4.97	5.64	1.55	3.31	2.11	3.86	4.27	5.76	27.04


Annual PPT (1961 - 2011)
PPT (in)
Year

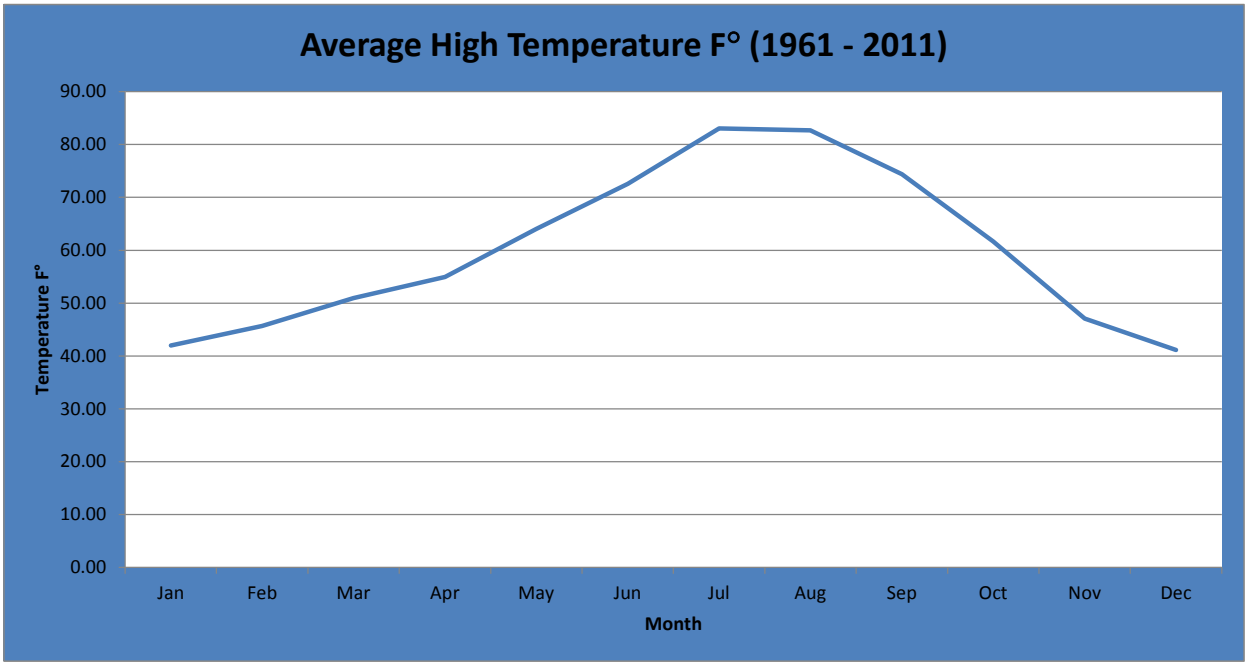

Maximum PPT 1961 - 2011 (in)
PPT (in)
3.73
3.62
3.94
3.91
4.97
5.64
1.55
3.31
2.11
3.86
4.27
5.76
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

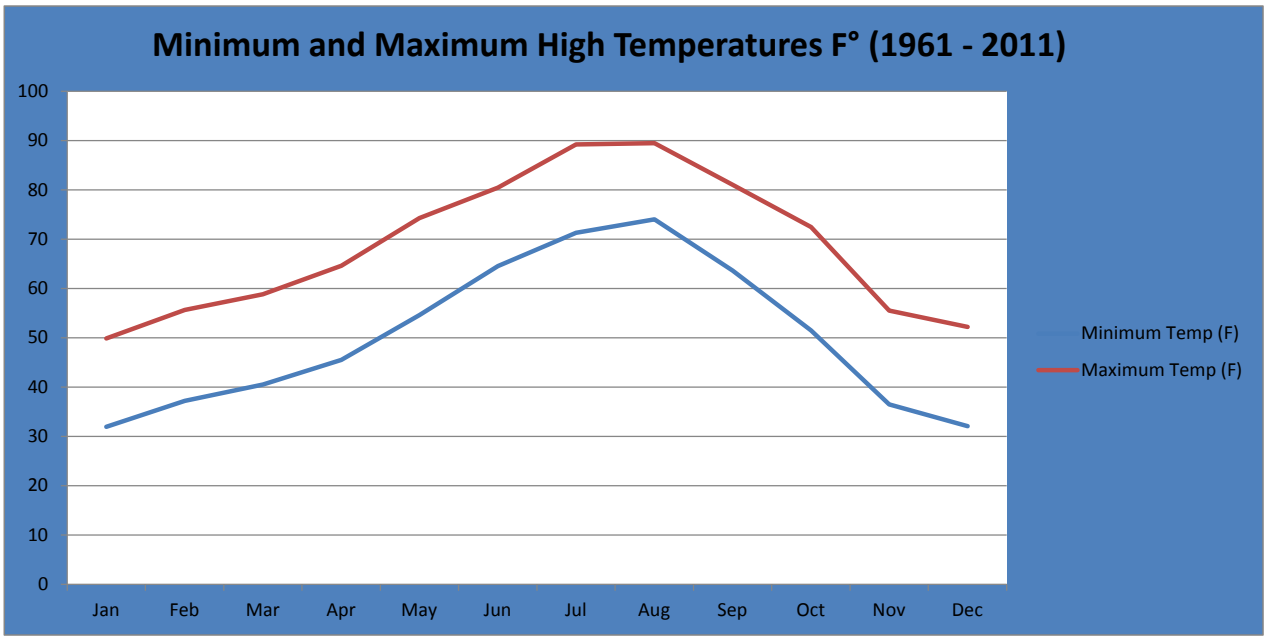

Minimum PPT 1961 - 2011 (in)
PPT (in)
0.3
0.25
0.2
0.15
0.1
0.05
0
0.11
0.03
0.25
0.07
0.25
0.08
0
0
0
0
0.17
0.01
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month


Average PPT 1961 - 2011 (in)
PPT (in)
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
1.32
0.98
1.29
1.46
1.84
1.46
0.45
0.65
0.71
1.06
1.51
1.58
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

Average High Temperatures (F°) 1961 - 2011

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1961	49.89	49.37	51.21	54.63	63.46	80.38	86.11	86.81	67.39	58.3	47.48	41.45
1962	37.99	42.91	46.51	62.69	60.08	74.25	80.91	80.51	77.81	62.2	49.44	48.4
1963	44.01	53.35	50.4	49.24	65.48	68.4	79.66	82.26	78.4	66.02	48.31	46.11
1964	42.19	45.99	47.57	55.29	63.7	68.49	83.16	80.94	72.97	67.77	45.21	41
1965	43.05	50.05	52.99	56.44	63	70.74	81.73	77.74	69.01	69.51	49.3	42.12
1966	43.09	43.38	54.7	59.05	71.24	71.2	82.09	84.31	76.42	64.08	50.05	43.03
1967	45.75	51.93	49.75	46.81	65.79	72.25	85.98	89.51	78.66	62.24	50.74	35.35
1968	44.55	51.85	58.01	55.98	65.84	77.04	87.69	76.62	74.77	61.59	44.78	40.84
1969	41.52	41.25	50.56	58.51	70.05	71.22	83.35	85.44	78.69	54.61	52.25	45.18
1970	42.96	52.84	50.13	49.1	65.82	75.13	85.5	88.16	72.86	58.82	47.26	36.99
1971	46.51	47.66	47.01	55.29	62.28	69.46	83.05	88.05	71.11	57.49	45.55	36.12
1972	41.36	45.45	57.51	53.67	67.8	75.97	83.26	85.24	69.15	60.89	44.38	35.38
1973	39.74	47.07	49.24	53.58	70.2	75.6	84.47	84.85	73.18	62.02	43.14	46.06
1974	39.74	47.39	49.87	54.86	64	80.47	81.9	83.28	81.03	64.58	50.47	40.75
1975	43.39	43.95	47.23	45.54	63.37	71.46	83.3	77.97	78.15	57.06	46.18	46.89
1976	45.77	48.47	48.65	54.61	70.03	70.02	82.53	74.03	74.43	64.4	55.53	49.14
1977	37.04	52.29	48.49	64.38	57.47	79.88	81.61	84.13	73.76	63.18	48.96	45.19
1978	45.07	46.22	57.96	52.29	61.57	71.69	82.27	79.74	69.28	67.71	42.04	38.28
1979	33.53	44.35	55.09	54.05	66.65	76.42	83.53	79.11	80.04	63.82	44.4	48.27
1980	43.18	49.68	48	59.99	63.05	69.15	83.64	80.83	76.55	63.48	49.69	49.28
1981	43.97	49.06	52.38	59.23	61.41	72.23	82.78	87.64	78.89	56.93	50.74	46.11
1982	40.69	45.25	48.33	52.63	64.63	71.13	79.72	83.46	69.98	58.44	39.76	39.07
1983	47.75	47.84	50	50.67	64.4	70.11	79	81.52	74.14	63.32	44.47	34.5
1984	36.19	43.52	51.75	49.8	63.5	66.13	82.63	83.32	71.15	51.51	43.03	37.22
1985	42.75	42.69	48.43	60.66	64.45	75.54	86.2	78.04	63.64	57.72	37.56	38.57
1986	46.87	46.56	56.79	54.72	64.17	78.78	78.08	86.38	63.64	63.18	50.47	44.92
1987	38.41	44.62	50.65	64.63	67.95	76.05	75.7	81.57	79.02	69.76	46.78	38.5
1988	39.85	53.85	56.12	58.91	65.16	74.77	86.27	84.24	73.26	72.48	45.43	41.61
1989	39.54	37.9	51.6	60.58	62.62	75.6	84.83	77.77	73.42	58.28	51.03	52.23
1990	46.15	46.76	55.67	62.92	60.78	74.68	85.08	81.28	79.41	62.01	50.63	34.02
1991	44.4	54.79	47.21	51.87	58.19	67.41	84.4	84.45	78.84	64.78	46.99	45.12
1992	46.51	51.26	58.1	61.09	74.28	75.16	79.34	84.27	76.03	64.08	45.18	36.97
1993	34.21	41	56.07	53.44	67.21	67.23	71.28	76.12	74.62	61.66	46.38	43.41
1994	48.94	43.05	58.59	58.77	66.43	74.66	86.13	85.64	77.45	59.67	36.5	39.27
1995	43.75	55.63	47.86	52.56	62.15	68	80.15	81.5	75.78	61.61	55.54	43.63
1996	44.53	43.75	53.46	56.5	60.04	72.86	85.68	83.88	72.43	60.39	49.5	39.18
1997	42.24	43.81	53.82	52.09	69.51	69.89	78.98	84.34	74.57	60.67	47.64	40.19
1998	43.32	41.13	49.24	52.43	55.18	66.16	84.34	84.31	74.59	59.04	44.22	37.54
1999	43.03	39.83	48	51.67	61.23	69.94	80.56	79.97	73.6	67.3	53.96	42.62
2000	40.71	44.4	49.55	60.62	62.29	75.15	82.45	84.87	70.88	59.94	43.16	41.11
2001	40.19	39.97	52.43	51.82	70	72.16	80.15	86.97	78.35	64.36	49.15	38.03
2002	38.98	45.19	48.76	56.53	63.68	74.62	87.04	80.78	74.25	60.22	50.34	43.16
2003	48.42	43.18	51.12	50.36	64.47	76.89	88.97	83.64	76.59	66.92	42.67	42.19
2004	39.33	41.02	58.82	61.83	62.94	74.26	84.42	81.23	70.79	59.79	44.58	43.38
2005	41.29	44.78	50.97	51.78	61.25	64.54	83.77	84.38	71.2	61.41	44.6	36.5
2006	41.97	41.22	41.7	52.18	65.08	75.09	88.34	82.62	75.7	59.16	47.14	40.78
2007	37.29	42.75	53.24	54.68	67.82	75.31	89.26	81.73	70.86	55.87	50.13	33.53
2008	31.96	40.78	43.92	49.51	62.08	71.55	84.24	82.2	74.82	60.71	51.62	37.02
2009	41.92	41.74	44.6	53.4	62.65	70.59	84.69	83.17	79.12	54.37	47.62	32.04
2010	38.21	39.45	46.56	50.54	54.79	68.86	85.15	81.05	73.74	60.01	43.11	37.63
2011	38.39	37.22	40.53	46.47	54.61	67.84	80.24	84.61	79.14	61.07	44.65	41.95
Average	42.00	45.68	50.92	54.92	64.04	72.60	83.05	82.68	74.38	61.69	47.05	41.13
Min	31.96	37.22	40.53	45.54	54.61	64.54	71.28	74.03	63.64	51.51	36.5	32.04
Max	49.89	55.63	58.82	64.63	74.28	80.47	89.26	89.51	81.03	72.48	55.54	52.23

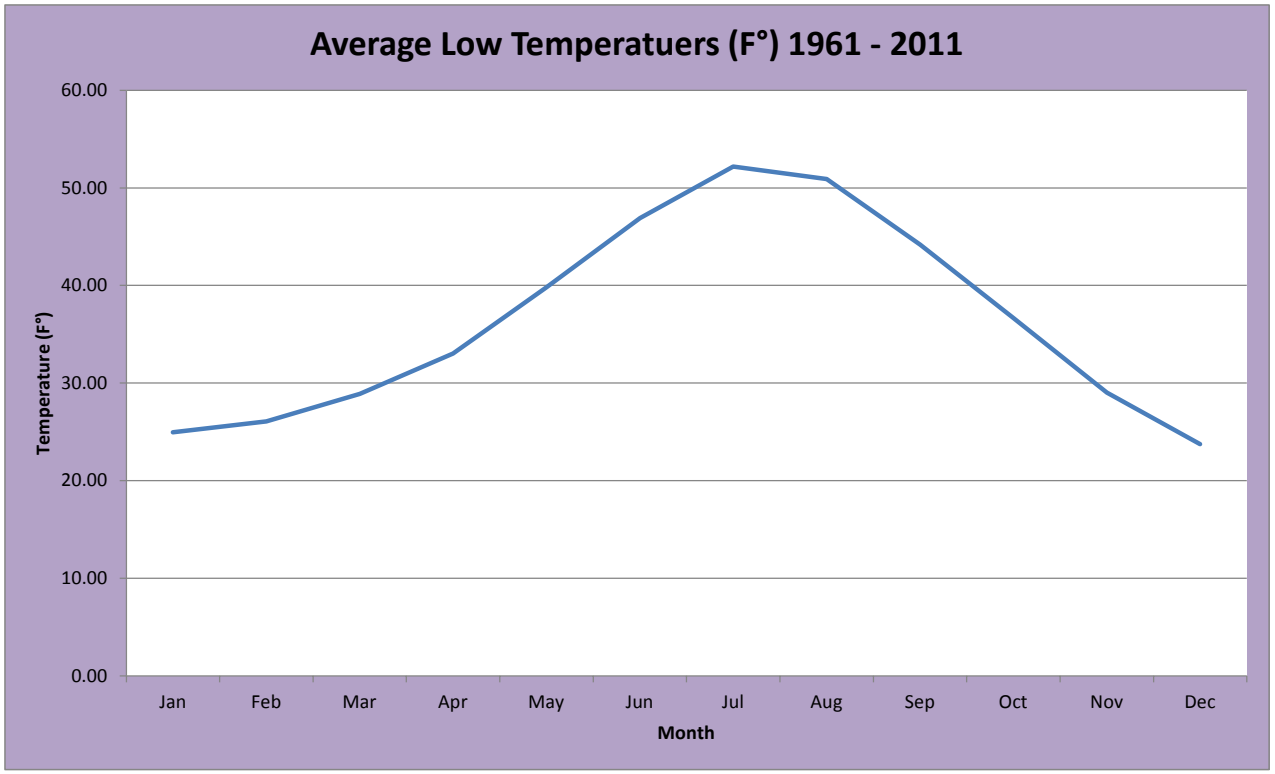

Average High Temperature F° (1961 - 2011)
Temperature F°
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month

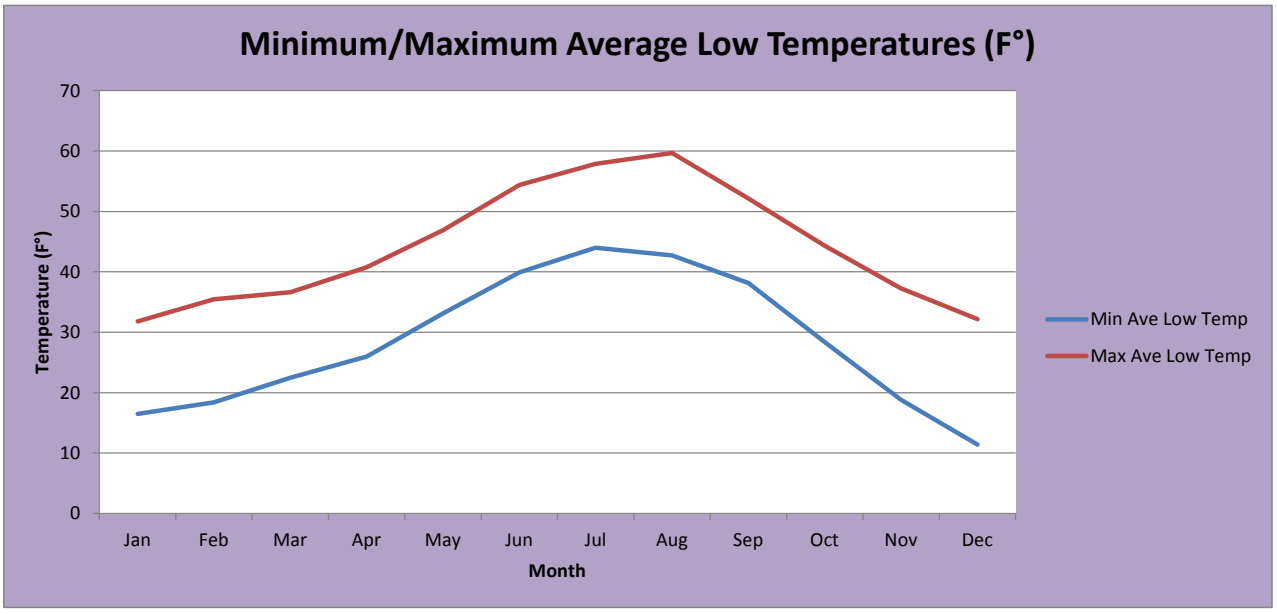

Minimum and Maximum High Temperatures F° (1961 - 2011)
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Minimum Temp (F)
Maximum Temp (F)

Appendix 1-Miller Homestead Climate Data

Average Low Temperatures (F°) 1961 - 2011

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1961	25.43	31.59	32.07	33.8	40.62	54.39	54.18	59.68	43.25	38.8	26.02	24.26
1962	18.5	28.98	27.75	39.88	40.77	47.44	52.45	52.68	49.62	39.4	30.11	30.09
1963	19.6	35.44	28.56	33.21	46.9	48.25	49.69	50.27	52.14	44.04	32.99	28.06
1964	24.82	23.2	26.02	31.37	38.93	49.41	54.18	49.46	42.24	38.64	28.72	29.1
1965	30.47	28.26	22.5	36.68	38.1	47.91	50.13	52.5	41.38	39.52	32.68	21.43
1966	26.42	20.86	28.45	33.85	42.51	47.14	50.68	51.44	48.87	35.33	35.17	29.23
1967	31.82	29.62	29.28	31.12	40.8	47.46	55.99	57.04	51.03	38.35	30.51	18.45
1968	23.36	28.33	31.71	31.08	38.57	48.29	55.85	51.94	46.22	39.6	30.78	26.58
1969	26.51	27.93	24.91	32.25	40.35	48.4	48.36	44.87	45.03	29.25	29.1	29.08
1970	31.59	28.08	29.03	29.52	40.89	52.52	52.95	52.74	41.52	35.19	34.7	23.74
1971	31.1	24.12	28.24	34	41.23	49.5	54.93	59.67	43.09	37.09	30.4	22.5
1972	22.84	28.4	33.62	32.76	42.46	50.72	54.12	53.06	44.28	37.33	31.89	20.61
1973	23.92	29.64	29.91	32.16	43.34	49.03	54.66	54.64	45.07	38.98	37.29	32.2
1974	23.86	28.24	30.92	34.93	38.93	53.19	52.83	51.08	43.02	36.05	32.68	25.12
1975	25.93	28.33	27.82	29.03	38.97	46.45	56.64	51.04	44.46	41.34	27.28	29.82
1976	27.46	27.34	26.82	29.28	42.62	46.74	55.56	50.34	46.47	35.67	29.64	18.32
1977	16.5	28.58	27.55	35.13	39.63	52.27	53.55	55.36	48.38	39.54	32.99	31.98
1978	31.57	30.94	36.61	35.64	38.41	45.59	52.79	50.99	44.73	36.16	24.89	18.54
1979	17.33	26.31	29.01	33.91	40.15	44.64	52.38	52.79	47.8	42.98	24.89	27.36
1980	24.31	32.45	27.01	37.47	42.46	45.63	54.25	48.45	47.79	37.29	32.68	29.59
1981	26.31	25.56	29.66	37.15	39.07	47.97	50.25	53.51	46.4	37.45	32.67	31.37
1982	24.08	26.71	31.14	32.16	37.56	49.8	52.52	52.02	45.23	39	26.73	26.56
1983	31.48	31.84	35.76	32	42.66	44.64	48.06	54.16	43.47	39.78	34.43	25.45
1984	20.23	23.58	31.37	31.96	40.59	41.5	53.91	52.88	41.79	35.73	27.48	20.07
1985	23.31	20.32	26.11	37.56	40.77	46.38	57.9	47.3	39.24	35.04	22.95	12.69
1986	31.62	34.09	34.74	35.51	40.77	50.65	48.76	55.85	40.35	35.8	31.82	23.56
1987	22.24	23.54	32.43	40.19	44.42	52.61	47.66	50.16	45.77	39.47	28.35	26.35
1988	25.72	28.4	29.75	38.34	41.22	48.88	53.46	54.73	45.25	44.29	33.3	20.07
1989	23.79	18.99	33.4	37.94	37.62	50.68	55.53	47.37	41.92	37.76	29.59	26.73
1990	28.8	22.46	26.67	40.77	39.31	45.21	53.29	49.77	46.15	36.88	30.33	11.41
1991	26.17	33.22	27.34	30.96	36.18	43.81	53.4	53.46	43.18	38.39	32.32	27.28
1992	27.75	31.78	34.61	38.84	45.3	51.08	50.74	54.16	45.75	39.76	25.5	21.33
1993	20.97	21.96	36.14	34.18	45.09	45.72	44.02	45.61	42.44	38.71	18.84	23.02
1994	29.57	22.37	31.05	36.86	43.52	46.78	54.9	49.19	45.36	33.82	22.24	23.88
1995	26.15	29.93	28.71	32.94	41.88	46.76	53.8	47.21	46.31	31.21	36.01	25.88
1996	28.27	25.63	29.12	36.28	39.29	48.63	54.23	50.5	45.21	34.65	29.98	24.64
1997	23.58	21.04	27.82	27.91	40.5	43.25	46.2	47.55	42.42	32.22	26.67	19.96
1998	27.64	25.05	26.11	28.85	35.62	41.86	51.48	48.49	44.8	30.56	29.71	19.06
1999	23.77	21.15	24.8	27.48	33.15	42.4	45.46	46.8	38.16	33.73	32.16	21.56
2000	23.05	28.24	24.12	32.67	36.79	42.85	47.71	47.62	39.31	32.68	21.54	22.48
2001	19.13	19.51	27.12	25.97	36.99	41.83	47.26	49.86	42.8	33.66	27.79	23.2
2002	20.91	22.53	24.6	29.34	34.11	44.96	51.3	42.73	39.92	28.35	26.64	25.36
2003	30.61	21.45	29.41	27.7	36.16	43.52	53.13	48.97	43.18	36.07	23.63	27.3
2004	22.69	23.47	28.13	29.59	36.55	44.06	49.32	48.78	38.98	34.43	25.99	25.57
2005	24.87	24.96	28.17	31.15	37.8	39.92	50.49	48.02	39.18	34.29	26.55	21.94
2006	26.28	18.39	25.18	33.89	41.27	48.34	54.82	46	41.79	34.86	28.9	21.49
2007	17.87	25.65	31.08	32.16	39.52	46.22	56.7	51.19	41.7	34.2	27.97	17.67
2008	17.62	22.69	23.86	27.25	38.73	43.97	51.51	50.65	44.15	37.98	31.32	19.4
2009	24.64	23.76	26.53	31.15	41.79	45.21	53.53	50.13	45.23	33.01	24.44	15.69
2010	26.92	24.22	22.89	30.18	35.08	45.07	53.29	49.42	44.42	39.76	25.41	24.04
2011	22.82	21.02	27.25	28.83	34.95	42.24	50.61	52.39	47.21	36.59	23.49	19.54
verage (low	24.95	26.08	28.88	33.04	39.82	46.90	52.18	50.91	44.19	36.68	29.02	23.74
Min (low)	16.5	18.39	22.5	25.97	33.15	39.92	44.02	42.73	38.16	28.35	18.84	11.41
Max (low)	31.82	35.44	36.61	40.77	46.9	54.39	57.9	59.68	52.14	44.29	37.29	32.2


Average Low Temperatuers (F°) 1961 - 2011
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Temperature (F°)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month


Minimum/Maximum Average Low Temperatures (F°)
70
60
50
40
30
20
10
0
Temperature (F°)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
Min Ave Low Temp
Max Ave Low Temp

Appendix 2 – Miller Homestead Photos

Example of large bould
in 2003, with v

Path of large boulders from rim to Hwy. 205 in 2003, with vegetation stabilizing the site.

Appendix 2 – Miller Homestead Photos

Greater sage-grouse in habitat Miller Homestead Fire burned.

Whirlwind removing topsoil from Miller Homestead Fire burned area.

Appendix 2 – Miller Homestead Photos

Large topsoil removing whirlwind in burned area.

Appendix 2 – Miller Homestead Photos

Greater sage-grouse located on unburned island within the perimeter of the Miller Homestead Fire.

Appendix 2 – Miller Homestead Photos

Wyoming sagebrush site burned to mineral soil in the Miller Homestead Fire.

Burned Wyoming sagebrush site within the perimeter of the Miller Homestead Fire, with simultaneous whirlwinds removing topsoil in background.

Appendix 2 – Miller Homestead Photos

A large cloud of ash and topsoil is visible as winds move across the area burned in the Miller Homestead Fire.

Miller Homestead Fire ESR Estimate - Misc. Items

Estimated By: J. Toelle
Date: 7/25/2012

Road Stabilization

Estimated Length:	45 Miles
Number Culverts:	15
Method:	Contract
Work Description:	Ditch/Culvert Cleaning

Description	Quantity	Unit	Unit Price	Line Total
Contract Grader/Operator (Average 3 Miles/Day)	15	Days	$750.00	$11,250.00
Contract Water Tender/Operator (Avg 4 Culverts/Day)	4	Days	$600.00	$2,400.00
Mobilization, Road Stabilization Contract	1	LS	$3,000.00	$3,000.00
			Total, Road Stabilization	**$16,650.00**

Waterhole Sediment Control

Estimated Number:	81 Waterholes
Method:	Contract
Work Description:	Sediment Trap Construction

Description	Quantity	Unit	Unit Price	Line Total
Contract Dozer/Operator (Average 1 Site/Day)) - ES	81	Days	$950.00	$76,950.00
Mobilization, Waterhole Sediment Traps -ES	1	LS	$3,500.00	$3,500.00
Contract Dozer/Operator (Average 1 Site/Day)) - YR 3	25	Days	$950.00	$23,750.00
Mobilization, Waterhole Sediment Traps - YR 3	1	LS	$3,500.00	$3,500.00
			Total, Waterhole Sediment Control	**$107,700.00**

Bank/Drainage Stabilization

Estimated Number of Check Dams:	200
Method:	Contract
Work Description:	Strawbale / Rock Check Dam Construction

Description	Quantity	Unit	Unit Price	Line Total
Straw Bales (Average Six Bales/Dam)	1200	Ea	$12.00	$14,400.00
Stakes, Fasteners, Hardware (1 LS/Dam)	200	LS	$22.50	$4,500.00
Labor (Average 5 Dams/Day)	40	Day	$350.00	$14,000.00
Mobilization	1	LS	$3,000.00	$3,000.00
			Total, Stabilization	**$35,900.00**

Miller Homestead Fire ESR Estimate - Fence Reconstruction

Estimated By: J. Toelle
Date: 7/25/2012

Fences, Seeding Protection Fence, West Flank

Estimated Length:	20	Miles	6400	Rods
Method:	Contract			
Work Description:	New Construction			
All materials provided by Govt. except where noted.				

Description	Quantity	Unit	Unit Price	Line Total
Fence Construction, 4-Wire Antelope Spec	6400	Rod	$7.50	$48,000.00
Rock Crib Construction, Estimated 3/Mile	60	Ea	$275.00	$16,500.00
Gate, Barbed Wire, Incl. Two Rock Cribs	15	Ea	$600.00	$9,000.00
Cattleguard Installation, Temporary	2	Ea	$1,000.00	$2,000.00
Materials - Post/Wire/Stays	20	Mile	$3,255.00	$65,100.00
Materials - Temp. Cattleguard	2	Ea	$3,500.00	$7,000.00
	Total, Seeding Protection Fence			**$147,600.00**

Fences, Allotment Fence Reconstruction, Fall 2012

Estimated Length:	11.4	Miles	3648	Rods
Method:	Contract			
Work Description:	Remove and Replace			
All materials provided by Govt. except where noted.				

Description	Quantity	Unit	Unit Price	Line Total
Removal of Existing Wire	3648	Rod	$5.00	$18,240.00
Fence Construction, 4-Wire Antelope Spec	3648	Rod	$7.50	$27,360.00
Rock Crib Construction, Estimated 3/Mile	34.2	Ea	$275.00	$9,405.00
Gate, Barbed Wire, Incl. Two Rock Cribs	7	Ea	$600.00	$4,200.00
Materials - Post/Wire/Stays	11.4	Miles	$1,085.00	$12,369.00
	Total, Fall 2012 Allotment Fence Reconstruction			**$71,574.00**

Fences, Allotment Fence Reconstruction, Outyear

Estimated Length:	37.6	Miles	12032	Rods
Method:	Contract			
Work Description:	Remove and Replace			
All materials provided by Govt. except where noted.				

Description	Quantity	Unit	Unit Price	Line Total
Materials - Post/Wire/Stays	37.6	Miles	$1,085.00	$40,796.00
Removal of Existing Wire	12032	Rod	$5.00	$60,160.00
Fence Construction, 4-Wire Antelope Spec	12032	Rod	$7.50	$90,240.00
Rock Crib Construction, Estimated 3/Mile	113	Ea	$275.00	$31,075.00
Gate, Barbed Wire, Incl. Two Rock Cribs	25	Ea	$600.00	$15,000.00
	Total, Outyear Allotment Fence Reconstruction			**$237,271.00**

Total, All Fences	**$456,445.00**
Approximate Cost/Mile	*$6,615.14*

Miller Homestead Fire ESR Estimate - Drill Seeding

Estimated By: J. Toelle
Date: 7/25/2012

Seed Drilling, 3-Drill Cart, Average 45 Acre/Day

Estimated Area: 23517 Acres
Method: Contract
All Seed and Drills Provided by Govt.

Description	Quantity	Unit	Unit Price	Line Total
Contract, Drill Tractor/Operator	23517	Acres	$15.00	$352,755.00
Range Drill Usage	23517	Acres	$5.50	$129,343.50
Mobilization	10	Ea	$2,500.00	$25,000.00
			Total, 3-Drill Areas	**$507,098.50**

Seed Drilling, 2-Drill Cart, Average 30 Acre/Day

Estimated Area: 11749 Acres
Method: In-House Labor, Contract Equipment Rental
All Seed and Drills Provided by Govt.

Description	Quantity	Unit	Unit Price	Line Total
Contract Tractor Rental (8 Tractors x 2 Months)	16	Ea	$3,000.00	$48,000.00
Fuel for Tractors (20 Gal/Day x 8 Tractors x 60 Days)	9600	Gallons	$4.25	$40,800.00
Range Drill Usage	11749	Acres	$5.50	$64,619.50
Labor (8 Force Account x 75 Days, Incl. Mobilization)	600	Days	$350.00	$210,000.00
Per Diem (Est. # Days x 80%)	480	Days	$30.00	$14,400.00
			Total, 3-Drill Areas	**$377,819.50**

Seeding, Single Drill, Average 15 Acre/Day

Estimated Area: 1411 Acres
Method: Contract
All Seed and Drills Provided by Govt.

Description	Quantity	Unit	Unit Price	Line Total
Contract, Drill Tractor/Operator	1411	Acres	$15.00	$21,165.00
Range Drill Usage	1411	Acres	$5.50	$7,760.50
Mobilization	3	Ea	$2,000.00	$6,000.00
			Total, 3-Drill Areas	**$34,925.50**

Total, All Seed Drilling	**$919,843.50**
Approximate Cost/Acre	*$25.08*

Figure 1. Pace 180 trend transect layout method (Johnson and Sharp *IN PRESS*)

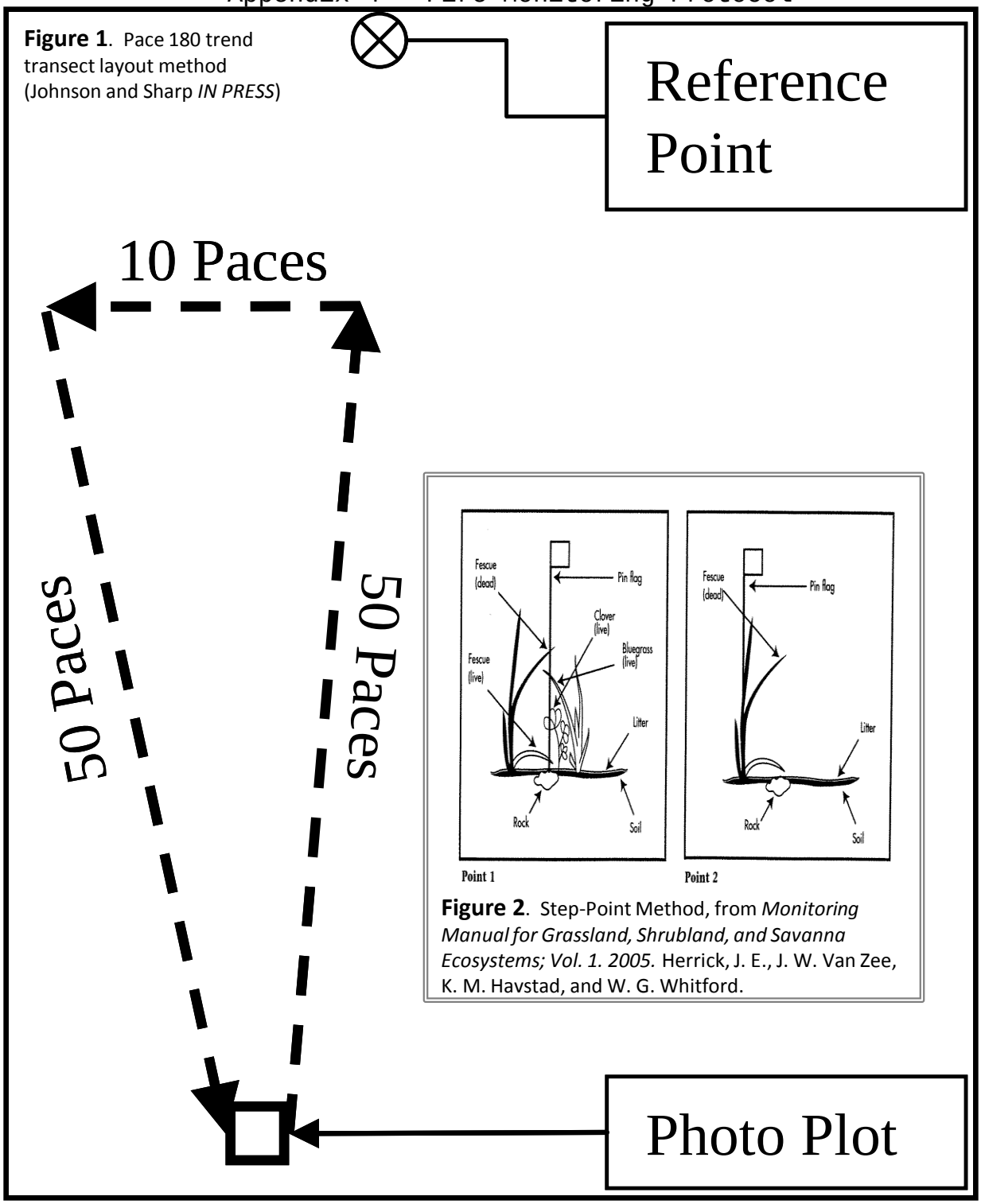


Figure 2. Step-Point Method, from *Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems; Vol. 1. 2005.* Herrick, J. E., J. W. Van Zee, K. M. Havstad, and W. G. Whitford.

Fire Rehab Monitoring Protocol: Pace 180, supplemented with Step-Point, and Density (0.25m^2 frame) Methodologies. 100 paces read = 100 point measures taken. Density frame read every 5th pace = 20 frame measurements (perennial plants by species). Photo Plot 3'x3' established at start point of transect. Landscape Photo taken at starting point towards established reference point, along with cardinal direction photos (total of 4 Landscape Photos).

LOW BRTE RISK W-ARTR

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Crested Wheatgrass, Hycrest II	*Agropyron cristatum x A. desertorum*	0.808	7.56	329,518	180,000	407,819	3416.2	1.8	7,740.0	$4.00	$30,959.81
Great Basin Wildrye, Tetra	*Leymus cinereus*	0.765	1.06	46,174	144,000	60,358	3416.2	0.3	1,431.9	$11.11	$15,908.52
Indian Ricegrass, Nezpar	*Achnatherum hymenoides (Roemer & J.A. Schultes) Ba*	0.760	0.54	23,523	235,000	30,951	3416.2	1.0	449.9	$12.76	$5,741.18
Squirreltail, Toe Jam Creek	*Elymus elymoides ssp. Californicus*	0.675	0.22	9,583	192,000	14,197	3416.2	0.1	252.6	$25.00	$6,315.08
Bluebunch Wheatgrass	*Pseudoroegneria spicata spp. Spicata*	0.765	0.89	38,769	125,680	50,678	3416.2	0.3	1,377.5	$6.75	$9,298.23
Lewis Flax	*Linum lewisii*	0.760	0.07	3,049	295,000	4,012	3416.2	0.0	46.5	$20.93	$972.41
Tailcup Lupine	*Lupinus caudatus*	0.760	0.10	4,356	18,000	5,732	3416.2	<0.1	50.0	$50.00	$2,500.00
Alfalfa, Ledak	*Medicago sativa*	0.808	0.57	24,844	226,800	30,748	3416.2	0.1	463.1	$3.42	$1,583.96
Forage Kochia	*Bassia prostrata*	0.510	0.18	7,841	395,000	15,374	3416.2	0.0	133.0	$12.00	$1,595.56
Wyoming Big Sagebrush, Wyoming	*Artemisia tridentata wyomingensis*	0.160	11.48	500,000	2,500,000	3,125,430	3416.2	0.2	4,270.8	$21.00	$89,687.59
TOTALS		6.771	22.7	987656.3	4311480.0	3745299.0	34162.0	3.8	16215.3	167.0	$164,562.33

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in the ball-park…Fixing this seed calculator in ESRS would be nice…this is just making more work for us...

LOW BRTE RISK

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Crested Wheatgrass, Hycrest II	*Agropyron cristatum x A. desertorum*	0.808	7.56	329,518	180,000	407,819	5021.8	1.8	11,377.7	$4.00	$45,510.79
Great Basin Wildrye, Tetra	*Leymus cinereus*	0.765	1.06	46,174	144,000	60,358	5021.8	0.3	2,104.9	$11.11	$23,385.45
Indian Ricegrass, Nezpar	*Achnatherum hymenoides (Roemer & J.A. Schultes) Ba*	0.760	0.54	23,523	235,000	30,951	5021.8	1.0	661.4	$12.76	$8,439.50
Squirreltail, Toe Jam Creek	*Elymus elymoides ssp. Californicus*	0.675	0.22	9,583	192,000	14,197	5021.8	0.1	371.3	$25.00	$9,283.14
Bluebunch Wheatgrass	*Pseudoroegneria spicata spp. Spicata*	0.765	0.89	38,769	125,680	50,678	5021.8	0.3	2,024.9	$6.75	$13,668.36
Lewis Flax	*Linum lewisii*	0.760	0.07	3,049	295,000	4,012	5021.8	0.0	68.3	$20.93	$1,429.45
Western Yarrow	*Achillea milefolium var. occidentalis*	0.810	0.07	3,250	3,411,818	4,012	5021.8	0.0	50.0	$26.11	$1,305.50
Tailcup Lupine	*Lupinus caudatus*	0.760	0.10	4,356	18,000	5,732	3416.2	<0.1	50.0	$50.00	$2,500.00
Alfalfa, Ledak	*Medicago sativa*	0.808	0.57	24,844	226,800	30,748	5021.8	0.1	680.8	$3.42	$2,328.41
Forage Kochia	*Bassia prostrata*	0.510	0.18	7,841	395,000	15,374	5021.8	0.0	140.3	$12.00	$1,683.60
TOTALS		7.421	11.3	490906.0	5223298.0	623881.0	48612.4	3.6	17529.7	172.1	$109,534.20

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in the ball-park…Fixing this seed calculator in ESRS would be nice…this is just making more work for us...

HIGH BRTE RISK

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Crested Wheatgrass, Hycrest II	*Agropyron cristatum x A. desertorum*	0.808	11.37	495,147	180,000	612,806	25716.8	1.8	87,552.3	$4.00	$350,209.10
Great Basin Wildrye, Tetra	*Leymus cinereus*	0.765	0.60	26,136	144,000	34,165	25716.8	0.3	6,101.4	$11.11	$67,786.95
Indian Ricegrass, Nezpar	*Achnatherum hymenoides (Roemer & J.A. Schultes) Ba*	0.760	0.27	11,761	235,000	15,475	25716.8	1.0	1,693.5	$12.76	$21,608.79
Squirreltail, Toe Jam Creek	*Elymus elymoides ssp. Californicus*	0.675	0.09	3,920	192,000	5,808	25716.8	0.1	777.9	$25.00	$19,448.33
Bluebunch Wheatgrass	*Pseudoroegneria spicata spp. Spicata*	0.765	0.52	22,651	125,680	29,609	25716.8	0.3	6,058.7	$6.75	$40,896.31
Tailcup Lupine	*Lupinus caudatus*	0.760	0.10	4,356	18,000	5,732	25716.8	<0.1	100.0	$50.00	$5,000.00
Lewis Flax	*Linum lewisii*	0.760	0.07	3,049	295,000	4,012	25716.8	0.0	349.8	$20.93	$7,320.44
Alfalfa, Ledak	*Medicago sativa*	0.808	0.68	29,639	226,800	36,682	25716.8	0.1	4,159.4	$3.42	$14,225.02
Forage Kochia	*Bassia prostrata*	0.510	0.27	11,761	395,000	23,061	25716.8	0.0	1,501.4	$12.00	$18,016.86
TOTALS		6.611	14.0	608421.2	1811480.0	767350.2	231451.2	3.6	108294.4	146.0	$544,511.80

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in

HIGH BRTE RISK w/ARTR

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Crested Wheatgrass, Hycrest II	*Agropyron cristatum x A. desertorum*	0.808	11.37	495,147	180,000	612,806	1565.2	1.8	5,328.7	$4.00	$21,314.75
Great Basin Wildrye, Tetra	*Leymus cinereus*	0.765	0.60	26,136	144,000	34,165	1565.2	0.3	371.4	$11.11	$4,125.71
Indian Ricegrass, Nezpar	*Achnatherum hymenoides (Roemer & J.A. Schultes) Ba*	0.760	0.27	11,761	235,000	15,475	1565.2	1.0	103.1	$12.76	$1,315.17
Squirreltail, Toe Jam Creek	*Elymus elymoides ssp. Californicus*	0.675	0.09	3,920	192,000	5,808	1565.2	0.1	47.3	$25.00	$1,183.68
Bluebunch Wheatgrass	*Pseudoroegneria spicata spp. Spicata*	0.765	0.52	22,651	125,680	29,609	1565.2	0.3	368.8	$6.75	$2,489.07
Tailcup Lupine	*Lupinus caudatus*	0.760	0.10	4,356	18,000	5,732	3416.2	<0.1	50.0	$50.00	$2,500.00
Forage Kochia	*Bassia prostrata*	0.510	0.27	11,761	395,000	23,061	1565.2	0.0	72.9	$12.00	$875.04
Wyoming Big Sagebrush, Wyoming	*Artemisia tridentata wyomingensis*	0.160	11.48	500,000	2,500,000	3,125,430	1565.2	0.2	1,956.8	$21.00	$41,092.15
TOTALS		5.043	13.2	575732.9	1289680.0	726656.1	12807.4	3.5	6342.1	121.6	$33,803.43

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in the ball-park…Fixing this seed calculator in ESRS would be nice…this is just making more work for us...

ARTR ONLY

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Wyoming Big Sagebrush, Wyoming	*Artemisia tridentata wyomingensis*	0.160	11.48	500,000	2,500,000	3,125,430	915.6	0.2	1,144.7	$21.00	$24,037.81
TOTALS											

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in the ball-park…Fixing this seed calculator in ESRS would be nice…this is just making more work for us...

AERIAL MIX

Species	Scientific Name	% PLS	PLS Seeds/sq.ft	PLS Seeds/ac.	Seeds/lb (bulk)	Total Seeds/Acre (Bulk)	DRILL Seeding [Acres]	PLS Lbs / Acre	Total Lbs.	Cost / Lb.	Total Cost
Crested Wheatgrass, Hycrest II	*Agropyron cristatum x A. desertorum*	0.808	35.91	1,565,208	180,000	1,937,138	4705	8.7	50,604.9	$4.00	$202,419.52
Great Basin Wildrye, Tetra	*Leymus cinereus*	0.765	0.79	34,412	144,000	44,984	4705	0.2	1,478.7	$11.11	$16,428.51
Bluebunch Wheatgrass	*Pseudoroegneria spicata spp. Spicata*	0.765	0.84	36,590	125,680	47,831	4705	0.3	1,800.0	$6.75	$12,150.00
Western Wheatgrass	*Pascopyrum smithii*	0.808	5.28	229,997	115,000	284,826	4705	2.0	11,690.5	$3.25	$37,994.00
Forage Kochia	*Bassia prostrata*	0.510	0.91	39,640	395,000	77,725	4705	0.1	913.3	$12.00	$10,959.89
TOTALS		3.656	43.7	1905846.7	959680.0	2392502.5	23525.0	11.3	66487.4	37.1	$279,951.92

Note: Trying to match up with formulas in ESRS system isn't very clear (not sure if all ESRS's calcs are done correct…)…Due to calculating discrepencies, costs don't match up exactly, but are in the ball-park…Fixing this seed calculator in ESRS would be nice…this is just making more work for us...

Appendix 6 - Burned Allotment Acres, AUMs, and Permittee Numbers

Miller Homestead Fire (G1G1)				
Number of Affected Permitties = 6				
Allotment name	Acres	AUMS	acres burned	% burned
Keg Springs	41,169	1,791	38,630	94%
East Warm Springs	192,683	7,373	58,178	30%
Lavoy Tables	40,288	1,653	33,382	83%
North Catlow	199,240	4,424	20,831	10%
Reicken's Corner	9,870	699	1,975	20%
Dunbar FFR	2,546	68	2,546	100%
Kaser FFR	1,297	5	1,289	99%
Konek FFR	364	10	2	1%
Neuschwander FFR	2,007	43	493	25%
Rock Creek FFR	8,400	148	2,675	32%
Total	**497,864**	**16,214**	**160,001**	

Appendix 7 - References

Andrews/Steens Decision and Resource Management Plan (ROD/RMP), August 2005.

Asay, K.H., Horton, W.H., Jensen, K.B., Palazzo, A.J., 2001. Merits of native and introduced Triticeae grasses on semiarid rangelands. Can. J. Plant Sci. 81, 45–52.

Baker, W.L. 2011. Pre-Euro-American and recent fire in sagebrush ecosystems. Pp 185-201 *in* S.T. Knick and J.W. Connelly (editors). Greater Sage-grouse: ecology and conservation of a landscape species and its habitats eds. 2011. Studies in Avian Biology (Vol. 38), University of California Press, Berkely, CA.

BLM. 2004. Establishment of aerially seeded big sagebrush following southern Idaho wildfires. Technical Bulletin No. 2004-01.

Davies, K.W., A.M. Nafus, and R.L. Sheley. 2010. Non-native competitive perennial grass impedes the spread of an invasive annual grass. Biol Invasions 12:3187–3194.

Davies, K.W. 2010. Revegetation of Medusahead-Invaded Sagebrush Steppe. Rangeland Ecology & Management 63(5):564-571.

Davies, K.W., and R.L. Sheley. 2011. Promoting Native Vegetation and Diversity in Exotic Annual Grass Infestations. Restoration Ecology 19(2):159-165.

Green, J. S., and J. T. Flinders. 1980. Brachylagus idahoensis. Mammal. Species No, 125:1-4.

Hagen, C.A. 2011. Greater sage-grouse conservation assessment and strategy for Oregon: a plan to maintain and enhance populations and habitat. Oregon Department of Fish and Wildlife, Salem, USA.

Johnson, D.D., and K.W. Davies. 2011. Revegetating Sagebrush Rangelands Invaded by Medusahead. Oregon Beef Council Report BEEF073.

Miller, R. F., S. T. Knick, D. A. Pyke, C. W. Meinke, S. E. Hanser, M. J. Wisdom, and A. L. Hild. 2011. Characteristics of sage brush habitat and limitations to long term conservation. Pp. 145-184 in S.T. Knick and J.W. Connelly. Greater Sage-Grouse: ecology and conservation of a landscape species and its habitat. Studies in Avian Biology 38. University of California Press, Berkeley, CA.

Patterson, R. L. 1952. The sage grouse in Wyoming. Wyoming Game and Fish commission and Sage Books, Inc., Denver, Colorado, USA.

Pellant, M., 1990. The cheatgrass–wildfire cycle-are there any solutions? In: McArthur, E.D., Romney, E.M., Smith, S.D., Tueller, P.T. (Comps.), Proceedings-Symposium on Cheatgrass Invasion, Shrub Die-off, and Other Aspects of Shrub Biology and Management, 5–7 April 1989, Las Vegas, NV. Gen. Tech. Rep. INT- 276. USDA Forest Service, Intermountain Research Station, Ogden, UT, pp. 11–18.

Appendix 7 - References

PRISM Group. 2012. Data Explorer (Miller Homestead Fire, Oregon). Available online at http://prismmap.nacse.org/nn/. Accessed 8 August 2012.

Smith, T. 2006. Pretty Good Feed for a Weed. Angus Journal. July 2006.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed 30 July 2012.

Three Rivers Decision and Resource Management Plan (ROD/RMP), September 1992.

USDA Plants. 2012. Fact Sheets & Plant Guides. Available online at http://plants.usda.gov/java/factsheet/. Accessed 7 August 2012.

Waldron, B.L. 2002. Forage Kochia for Fall/Winter Grazing. USDA-ARS Forage and Range Research Lab, Logan, Utah. Prepared for the USU Blue Creek Field Day, July 2, 2002.

Weiss, N.T. and B.J. Verts. 1984. Habitat and distribution of the pygmy rabbit (Sylvilagus idahoensis) in Oregon. Great Basin Naturalist 44:563-571.

Appendix 8 – Potential Herbicides and Application Rates

Weed Species	Herbicide & Rate	Season of Application
Mediterranean sage Biennial thistles	*Chlorsulphuron:* Telar XP (1 oz./ acre) + *2,4-D* (1 qt./acre)	Typical application window is during rosette to early flower stage. Sometimes apply in fall on fall rosettes.
White top	*Chlorsulphuron:* Telar XP (1 oz./ acre) + *2,4-D* (1 qt./acre)	Typical application window is full flower stage.
Perennial pepperweed	*Chlorsulphuron:* Telar XP (1 oz./ acre) + *2,4-D* (1 qt./acre)	Typical application window is full flower stage.
Canada thistle	*Chlorsulphuron:* Telar XP (1 oz./ acre) + *2,4-D* (1 qt./acre)	Typical application window is during rosette to early flower stage. Sometimes apply in fall on fall rosettes.
	Clopyralid: Transline (1 pt./acre); may add *2,4-D* (1 qt./acre); may add *Chlorsulphuron:* Telar XP (1 oz./ acre)	Typical application window for this type of treatment would be fall (late season) when desirable vegetation is least susceptible to damage
Annual invasive species (including cheatgrass/ medusahead)	*Imazapic:* Plateau (6 oz./acre)	Typical application window is early fall.

*Other weeds we might encounter could be knapweeds (diffuse, spotted, Russian), yellow starthistle, puncturevine, or black henbane. These would all be treated similar to the biennial or Canada thistles, depending on the specific weed.

PART 10 - REVIEW, APPROVALS, and PREPARERS

TEAM MEMBERS

Position	Team Member (Agency/Office)	Initial	Date
Team Leader	Autumn Toelle (BLM Burns District/Andrews RA)	Initialed	08/13/2012
Resource Advisor(s) on Fire	Rick Knox (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Wildlife Biologist	Jason Brewer (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Resource Advisor(s) on Fire	Cam Swisher (BLM Burns District/Andrews RA)	Initialed	08/14/2012
Wildlife Biologist	Matt Obradovich (BLM Burns District)	Initialed	08/14/2012
Wildlife Biologist	Andy Daniels (BLM Burns District/Andrews RA)	Initialed	08/14/2012
Fire Management Specialist	Casey O'Conner (BLM Burns District/BIFZ)	Initialed	08/14/2012
Civil Engineer	Joe Toelle (BLM Burns District)	Initialed	08/14/2012
Botanist	Caryn Meinicke (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Noxious & Invasive Species Specialist	Lesley Richman (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Wild Horse & Burro Specialist	Rob Sharp (BLM Burns District)	Initialed	08/14/2012
Cultural Resources/Archeologist	Scott Thomas (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012

Cultural Resources/Archeologist	Carolyn Temple (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
GIS Specialist	Stacy Fenton (BLM Burns District)	Initialed	08/14/2012
NEPA Compliance & Planning/Acting Andrews RA Field Manager	Rhonda Karges (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Supervisory Natural Resource Specialist	Bill Dragt (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Three Rivers RA Field Manager	Rick Roy (BLM Burns District/Three Rivers RA)	Initialed	08/14/2012
Associate District Manager	Jeff Rose (BLM Burns District)	Initialed	08/14/2012

PLAN APPROVAL

The Agency Administrator is responsible for developing, implementing, and evaluating emergency stabilizations and rehabilitation plans, treatments and activities. 620 DM 3.5C

FIELD OFFICE MANAGER — DATE 08/21/2012

FUNDING APPROVAL

The funding of ES treatments is approved through the appropriate administrative approval level in coordination with the National Office Budget Shop. As funding is available, ES funding requested within a plan that totals below $100,000 may be approved by the State Director, while ES funding of $100,000 and above must be approved by the WO. If the ES funding cap is reached, all ES funding will be approved through the National Office in coordination with State ES&R Coordinators to determine highest priority projects. Funding of all BAR treatments is accomplished through a scoring process and is dependent on accurate entries into NFPORS. All funding is approved and allocated on a year-by-year basis.