CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences, also referred to as "impacts" or "effects," of implementing the alternatives described in Chapter 2 (*Proposed Action and Alternatives*) of this EA. The analysis in this EA is tiered to and incorporates by reference the analysis in the CCSM Project FEIS (BLM 2012b). The CCSM Project FEIS analyzed and disclosed environmental impacts, including significant impacts to some environmental resources. This EA screens the SPODs, including the Quarry which was not analyzed in the CCSM Project FEIS, against the analysis conducted in the CCSM Project FEIS to determine if there are any additional or new environmental impacts that were not previously analyzed and disclosed and whether or not these impacts are significant. This additional site-specific analysis and information is provided in this chapter, where appropriate, to inform decision-making on the Proposed Action. Environmental impacts are only discussed for resources identified as "PI" (present with potential for relevant impacts that need to be analyzed in detail in the EA) in Chapters 1 (*Introduction and Need for Proposed Action*) and 3 (*Affected Environment*) of this EA.

The types of impacts discussed in this EA are consistent with those in the CCSM Project FEIS (BLM 2012b) and include the following:

- Direct Impacts – The effects that are caused by the action and occur at the same time and place.
- Indirect Impacts – The effects that are indirectly caused by the action. They occur later or are farther removed in distance, but are still reasonably foreseeable and related to the action by a chain of cause and effect.
- Cumulative Impacts – The effects that result from incremental impacts when added to other past, present, and reasonably foreseeable future actions regardless of what person or agency (federal or non-federal) undertakes those actions. Cumulative impacts are described for the Proposed Action in Chapter 5 of this EA.

The significance criteria used in this EA are consistent with the significance criteria established for each resource in the CCSM Project FEIS (BLM 2012b) and are hereby incorporated by reference. The significance criteria are used to determine if the impacts on a particular resource resulting from the Proposed Action would be significant. A significance determination under NEPA requires considerations of both context and intensity of the effects of an action, as detailed in 40 CFR 1508.27. Impacts on potentially impacted resources resulting from Alternative A – No Action and Alternative B – Proposed Action are described below.

4.1 Alternative A – No Action Alternative Environmental Impacts

This section analyzes the impacts of the No Action Alternative on the potentially impacted resources described in the affected environment (Chapter 3). Under the No Action Alternative, there would be no impacts because the BLM Authorized Officer would deny approval of ROW grants for the SPODs filed by PCW for the infrastructure components. Under the No Action Alternative, currently approved land uses, such as livestock grazing, in the CCSM Project Area would continue. Table 4-1 identifies the sections of the CCSM Project FEIS (BLM 2012b) addressing impacts of the No Action Alternative that are consistent with those anticipated from the No Action Alternative of this EA, and are hereby incorporated by reference.

Table 4-1. CCSM Project FEIS No Action Alternative Impacts

Resource	CCSM Project FEIS Section	CCSM Project FEIS Page
Air and Atmospheric Values	4.1.1	4.1-1 and 4.1-2
Cultural Resources and Native American Concerns	4.2.1	4.2-3
National Scenic and Historic Trails	4.7.1	4.7-5
Paleontological Resources	4.5.1	4.5-2
Range Resource	4.6.1	4.6-3
Socioeconomics	4.8.1	4.8-5 and 4.8-6
Soils	4.9.1	4.9-3
Transportation	4.10.1	4.10-3 and 4.10-4
Vegetation	4.11.1	4.11-5
Visual Resources	4.12.1	4.12-6
Water Resources	4.13.1	4.13-4
Wildlife and Fisheries Resources	4.14.1	4.14-9
Special Status Species	4.15.1	4.15-5
Noise and Human Health	4.16.1	4.16-2

Source: CCSM Project FEIS (BLM 2012b)

CCSM Chokecherry and Sierra Madre
FEIS Final Environmental Impact Statement

4.2 Alternative B – Proposed Action Environmental Impacts

This section analyzes the environmental impacts of the Proposed Action on the PI resources described in the affected environment (Chapter 3 of this EA). The Proposed Action consists of construction of infrastructure components in support of the CCSM Project, including the Phase I Haul Road and Facilities, Rail Facility, and Quarry described in the three SPODs filed with BLM by PCW (PCW 2014a, 2014b, 2014c).

4.2.1 Air and Atmospheric Values

As described in Chapter 1 of this EA, air quality impacts resulting from the proposed Phase I Haul Road and Facilities and the Rail Facility are adequately analyzed in the CCSM Project FEIS (BLM 2012b) and will not be reanalyzed in this EA. This EA focuses on air quality impacts from the Quarry. The CCSM Project FEIS (BLM 2012b) determines that increases in all criteria pollutants regulated by the EPA under the CAA (EPA 1990) would occur as a result of implementation of the CCSM Project. The CCSM Project FEIS (BLM 2012b) concludes that, based on the estimated construction emissions levels, the large area over which the emission sources would be dispersed, the results of air quality analyses performed for other projects in the region, and a screening modeling analysis of pollutant concentrations near CCSM Project construction activities, the CCSM Project would not cause a violation of ambient air quality standards or degradation of regional air quality.

4.2.1.1 Road Rock Quarry

The Quarry is not analyzed in the CCSM Project FEIS (BLM 2012b). The Quarry is located at the site of an existing quarry that has been operated intermittently over the last 100 years. Commercial quarrying last occurred in the 1960s, and private quarrying has continued periodically since. Construction, operation, maintenance, and decommissioning of the Quarry would involve equipment such as bulldozers, loaders, scrapers, and excavators, rock crushers and conveyors, heavy duty trucks, and workers' personal vehicles. The following emission sources and pollutants would be associated with the Quarry:

- Quarry face excavation, material handling, and vehicle travel on unpaved roads: fugitive particulate matter (PM).
- Onsite equipment exhaust: criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gases (GHGs).
- Roadway vehicle exhaust: criteria pollutants, HAPs, and GHGs.

BLM performed the air quality analysis for the Road Rock Quarry Site consistent with the CCSM Project FEIS (BLM 2012b) air quality analysis to facilitate comparison of air quality impacts to those disclosed in the CCSM Project FEIS (BLM 2012b). The Quarry analysis considered fugitive PM or "fugitive dust," other criteria pollutants, and HAPS. Emission factors (mass of emissions per hour or per mile traveled for each piece of equipment) and vehicle and equipment characteristics were taken from the CCSM Project FEIS (BLM 2012b). Operational data for equipment and vehicles associated with the Quarry were estimated from the Quarry SPOD (PCW 2014c). Where Quarry-specific data were not available, BLM used assumptions consistent with the CCSM Project FEIS (BLM 2012b).

Assumptions used in this analysis include:

- Existing quarry operations produce some air pollutant emissions; however, operation of the existing Quarry has been intermittent and commercial quarrying has not occurred recently. Therefore, the emissions are relatively small and were not estimated as part of the baseline emissions in this EA.
- The Quarry would improve the efficiency of the CCSM Project by decreasing the number of train and truck trips disclosed in the CCSM Project FEIS (BLM 2012b) originating from offsite quarries to supply the CCSM Project with road base aggregate. This air quality analysis does not apply these decreases to the emissions calculations. As a result, the overall emissions estimates from the Quarry, when considered in combination with the emissions reported in the CCSM Project FEIS (BLM 2012b), overestimate the total emissions resulting from the CCSM Project.
- As explained in Chapter 3 of this EA, the CCSM Project Area, including the Road Rock Quarry Site, is located in an area that EPA has designated as attainment for all criteria pollutants. Therefore, a general conformity evaluation is not required.
- The CCSM Project FEIS (BLM 2012b, p. 4.1-1) explains that the CCSM Project is not subject to the Prevention of Significant Deterioration (PSD) program because the CCSM Project does not constitute a PSD source. The Quarry is not subject to the PSD program either; accordingly, this analysis does not address PSD increment consumption.
- The Quarry would not substantially affect the visibility assessment in the CCSM Project FEIS (BLM 2012b) based on comparison of emissions associated with the Quarry to total project emissions reported in the CCSM Project FEIS (BLM 2012b). Consequently, visibility is not addressed further in this EA.

The sections below provide further detail on the air quality analysis for each emission source from the Quarry. Appendix D of this EA provides details of the emissions calculations.

Fugitive Dust Sources

The CCSM Project FEIS (BLM 2012b) analyzes the amount of land surface disturbance and calculates fugitive dust emissions for the entire CCSM Project. The total number of acres proposed for surface disturbance under the Proposed Action, including the Quarry, is within the surface disturbance estimates provided in the CCSM Project FEIS (BLM 2012b). Therefore, no increases in fugitive dust emissions beyond those disclosed in the CCSM Project FEIS (BLM 2012b) are anticipated as a result of the Proposed Action.

The CCSM Project FEIS (BLM 2012b) concludes that fugitive dust emissions would not lead to PM concentrations that could violate the NAAQS or the WAAQS. The levels of surface disturbance in the CCSM Project FEIS (BLM 2012b) of 7,733 acres for initial and 1,545 acres for long-term disturbance can be considered as an "impact envelope" for PM. Under the impact envelope concept, if these disturbance levels would not cause an NAAQS or WAAQS violation then lesser levels of disturbance, of similar nature in the same geographic area, also would not cause an NAAQS or WAAQS violation. Consequently, initial and long-term disturbance associated with construction and decommissioning of the Quarry would not be expected to lead to a violation of the NAAQS due to fugitive PM emissions. Because surface disturbance under the Proposed Action is within the surface disturbance estimates (the impact envelope) provided in the CCSM Project FEIS (BLM 2012b), fugitive dust emissions associated with the Proposed Action also would not lead to PM concentrations that could violate the NAAQS or the WAAQS.

The amount of land surface disturbance estimated in the CCSM Project FEIS (BLM 2012b), and the lesser levels of surface disturbance estimated in the Proposed Action, include the acreage associated with the Quarry. Similarly, the emissions that would occur due to land disturbance associated with construction and decommissioning of the Quarry also were accounted for in the CCSM Project FEIS (BLM 2012b) and would be expected to be the same or less under the Proposed Action. Because the Quarry is included in the surface disturbance and emissions estimates under the Proposed Action, and surface disturbance would not lead to a violation of the NAAQS or WAAQS (based on the impact envelope), initial and long-term disturbance associated with construction and decommissioning of the Quarry also would not be expected to lead to a violation of the NAAQS due to fugitive PM emissions. Accordingly, the emissions due to land disturbance associated with construction and decommissioning of the Quarry were not estimated in the air quality analysis for the Quarry.

Although emissions due to land disturbance are included in the CCSM Project FEIS (BLM 2012b), the air quality analysis in the CCSM Project FEIS (BLM 2012b) did not include other emission sources associated with the Quarry. These other emission sources include exhaust from the equipment and vehicles involved in land disturbance, exhaust and fugitive emissions from equipment during Quarry operation, fugitive emissions from exposed soil and rock during Quarry operation, and exhaust and fugitive emissions from vehicles carrying quarried rock to Project sites. Emissions from these sources were estimated for this EA and are summarized below.

Operation of the Quarry involves the use of earthmoving and material handling equipment and truck trips. The fugitive PM emissions estimates, summarized in Table 4-2 include these operations. The CCSM Project FEIS (BLM 2012b) calculates fugitive PM from earthmoving, material handling, and vehicle travel on unpaved roads using the methodologies given in EPA's AP 42 emission factor compilation (EPA 2006a, 2006b). For the Quarry analysis, BLM calculated fugitive PM emissions from these activities using

the same methodologies. As shown in Table 4-2, total fugitive PM emissions resulting from construction, operation, maintenance, and decommissioning of the Quarry are anticipated to peak in 2015.

Onsite Equipment Exhaust

BLM estimated the exhaust emissions from equipment used for the Quarry construction and operation. The CCSM Project FEIS (BLM 2012b) calculates exhaust emissions using emission factors from AP 42 (EPA 1996) along with project-specific values for equipment horsepower and load factors. The load factor is the engine's average power output while operating, expressed as a fraction of its full power rating. The Quarry exhaust emissions analysis used the same emission factors, horsepower, and load factors to generate emissions from onsite equipment. The AP 42 emission factors are for diesel engines without emission controls and are likely to overestimate emissions from current vehicles and engines, which have emission controls in accordance with EPA emission standards. Also, the CCSM Project FEIS (BLM 2012b) uses load factors of 1.00 although actual load factors would be lower. (The load factor is the average power level during operation, expressed as a fraction of the engine's rated horsepower. A load factor of 1.00 indicates continuous full-throttle operation.) As a result the estimates of equipment exhaust emissions are likely to be conservative (high).

Roadway Vehicle Exhaust

BLM estimated the exhaust emissions from roadway vehicles used for the Quarry construction and operation. The CCSM Project FEIS (BLM 2012b) calculates exhaust emissions using emission factors from AP 42 (EPA 1996), converts to a per-vehicle-mile-traveled basis by assuming an average speed of 25 mph in accordance with the CCSM Project Dust Control Plan (Appendix G of the Quarry SPOD [PCW 2014c]).[1] The Quarry exhaust emissions analysis used the same emission factors, load factors, and vehicle characteristics as the FEIS to generate emissions from vehicles. As with the onsite equipment, the exhaust emissions estimates for vehicles are likely to be conservative.

Air Quality Impact Summary

Table 4-2 presents the estimated emissions by year from all sources associated with the Road Rock Quarry Site. The emissions associated with the Quarry may be expected to lead to slight increases in pollutant concentrations in the project area. Ozone levels depend on complex chemical reactions in the atmosphere involving precursor emissions of NOx and VOCs and their transport by the wind over large areas, as much as hundreds of miles. Emissions associated with the Quarry may be expected to participate in these reactions but any resulting change in ozone concentrations cannot be identified without extensive photochemical air quality modeling. Based on the emissions information in Table 4-2, the concentrations of criteria pollutants measured in the region (see Section 3.1 [*Air and Atmospheric Values*] of this EA), and the analysis presented in the CCSM Project FEIS (BLM 2012b), the potential increases in concentrations of criteria pollutants associated with the Quarry would be unlikely to cause any violation of the NAAQS or WAAQS. The total GHG emissions from all sources associated with the Quarry, as presented in Table 4-2, would make a negligible contribution to U.S. and global GHG emissions and climate impacts. Appendix D provides further detail on the results presented in Table 4-2.

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[1] *While the Haul Road is designed for travel at a speed of up to 40 mph, an average speed of 25 mph was used to represent vehicle travel on all classifications of roads.*

Table 4-2. Emissions from Construction, Operation, Maintenance, and Decommissioning of the Road Rock Quarry

Pollutant	Emissions (tons per year)[1]				
	2014	***2015***	***2016***	***2017***	***2018***
Criteria Pollutants					
CO	106.96	211.38	202.57	110.36	105.87
NO_X	496.37	980.97	940.08	512.16	491.31
PM_{10}					
Fugitive	0.94	228.30	215.33	66.20	11.88
Exhaust	35.23	69.62	66.72	30.64	34.87
Total	36.16	297.91	282.04	96.84	46.75
$PM_{2.5}$					
Fugitive	0.14	72.09	67.98	20.75	9.61
Exhaust	35.23	69.62	66.72	30.64	34.87
Total	35.37	141.70	134.69	51.39	41.99
SO_2	32.82	64.87	62.17	33.87	32.49
VOC	39.55	78.16	74.90	40.81	39.15
Hazardous Air Pollutants					
Benzene	0.10	0.21	0.20	0.11	0.10
Toluene	0.05	0.09	0.09	0.05	0.05
Xylenes	0.03	0.06	0.06	0.03	0.03
Acetaldehyde	0.09	0.17	0.16	0.09	0.09
Formaldehyde	0.13	0.26	0.25	0.14	0.13
Propylene	0.29	0.57	0.55	0.30	0.29
Greenhouse Gases					
CO_2e	18,483	36,515	34,993	19,064	19,370

[1]From fugitive dust sources, on-site equipment exhaust, and roadway vehicle exhaust.

CO carbon monoxide
CO_2e carbon dioxide equivalent, which includes carbon dioxide (CO_2), methane, and nitrous oxide
NO_X nitrogen oxides
PM_{10} particulate matter with diameter 10 microns or less
$PM_{2.5}$ particulate matter with diameter 2.5 microns or less
SO_2 sulfur dioxide
VOC volatile organic compounds

Avoidance, Minimization, and Mitigation Measures

The following Applicant Committed BMPs, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on air and atmospheric resources from the Proposed Action:

- Applicant Committed BMPs A-3-01 through A-3-06

4.2.2 Cultural Resources and Native American Concerns

The CCSM Project FEIS (BLM 2012b p. 4.2-4) provides a qualitative assessment of anticipated direct and indirect impacts on cultural resources and properties of traditional, cultural and religious importance to Native Americans as a result of the CCSM Project. Direct impacts included displacement of soil containing cultural materials, damage to or destruction of artifacts and features, and loss of archeological data. Indirect impacts included changes in erosion patterns due to construction, inadvertent damage, and increases in illegal artifact collection due to increased access to the CCSM Project Area (BLM 2012b, p. 4.2-4). The CCSM Project FEIS also determines that, due to the large-scale nature of the proposed CCSM Project, significant adverse effects would occur to historic properties where setting is an aspect of integrity, such as the Overland Trail. The Overland Trail is discussed in greater detail in the Section 4.2.3 (National Scenic and Historic Trails) of this EA. Adverse effects to eligible sites would be mitigated in accordance with the Cultural Resources PA, included as Appendix E of the CCSM Project ROD (BLM 2012a).

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for cultural resources and Native American concerns concludes that places of traditional, cultural, and religious importance to the tribes would be identified through consultation and cooperation with affected Native American tribes, as well as informed by Class III cultural resource inventory results. Tribal consultation remains on-going for the CCSM Project in accordance with Section VI (Ongoing Tribal Consultation and Coordination) of the Cultural Resources PA (BLM 2012a, Appendix E), which stipulates BLM tribal consultation on matters and resources of tribal concern. No traditional cultural properties (TCPs) or other sites of traditional, cultural, and religious importance to Native Americans have been identified at this time.

The analysis and conclusions in the CCSM Project FEIS (BLM 2012b) are consistent with impacts anticipated from the Proposed Action considering the new information available from the Class III cultural resource surveys conducted in 2012 and 2013 and ongoing Native American consultation. Avoidance, minimization, and treatment measures for cultural resources have been incorporated into the CCSM Project through the CCSM Project PA (BLM 2012a, Appendix E). Mitigation of effects for sites recommended under Criterion D of the NRHP could include, but are not limited to, data recovery or excavation. Mitigation of effects for sites recommended under Criteria A, B, and C of the NRHP could include, but are not limited to, Historic American Building Survey, Historic American Engineering Record, and Compensatory Mitigation as provided for in the PA. If unanticipated discoveries of cultural resources occur during project construction, all work in the immediate area would halt and the discovery would be handled in accordance with the CCSM Project PA (BLM 2012a, Appendix E). Additional specificity is presented below regarding potential impacts to sites considered eligible for listing in the NRHP.

4.2.2.1 Phase I Haul Road and Facilities

Eight sites considered eligible for listing in the NRHP were identified during the Class III cultural resources inventories within the Phase I Haul Road and Facilities Site (PCW 2014a). Construction of the

Haul Road would result in adverse effects on three eligible sites (48CR2181, 48CR9097, 48CR10089), which cannot be avoided through redesign. Avoidance and minimization measures for the other five eligible sites (48CR932, 48CR1191, 48CR3933, 48CR9139, 48CR9224), have been incorporated into the Haul Road design. As described in the CCSM Project FEIS (BLM 2012b), effects on eligible sites will be assessed and adverse effects will be resolved in accordance with the PA and the ACMs identified in the CCSM Project ROD (BLM 2012a).

Additionally, five sites considered eligible for listing in the NRHP were identified during the Class III cultural resources inventories and are located outside of the Phase I Haul Road and Facilities Site (PCW 2014a). The Proposed Action has the potential to adversely affect these sites through indirect impacts as disclosed in the CCSM Project FEIS (BLM 2012b; page 4.2-4), such as vandalism and increased illegal artifact collection due to increased access and number of people in the area. As with NRHP-eligible sites within the Phase I Haul Road and Facilities Site, effects on these eligible sites outside of Phase I Haul Road and Facilities Site will be assessed and adverse effects will be resolved in accordance with the PA and the ACMs identified in the CCSM Project ROD (BLM 2012a) if the BLM determines that adverse indirect impacts would occur to these sites.

Segments of the historic Overland Trail and the Lincoln Highway, as well as three archaeological sites that are recommended as eligible for the NRHP (48CR3933, 48CR9139, 48CR9224), are located in the Phase I Haul Road and Facilities Site, but the Proposed Action would have no potential for adverse effects. Although these resources are considered eligible for listing in the NRHP, the portions of these resources in the Phase I Haul Road and Facilities Site are non-contributing elements (i.e., the portions of each resource in the Phase I Haul Road and Facilities Site do not contribute to the overall eligibility of the resource).

Where avoidance of effects from Phase I Haul Road and Facilities Site development is not possible, properties such as the historic Rawlins Wood Water Pipe (48CR2181) and archaeological sites 48CR9097 and 48CR10089 would be mitigated in accordance with the CCSM Project PA (BLM 2012a, Appendix E). If design changes should result in an adverse effect at any of the other NRHP-eligible resources in the area, mitigation measures would also be implemented for these in accordance with the CCSM Project PA. Because setting is an aspect of integrity of the Overland Trail, adverse effects on the integrity of this would be mitigated through implementation of BMPs, ACMs, and compensatory mitigation in accordance with the PA. Additional information on potential impacts to the Overland Trail is provided in Section 4.2.3 (*National Scenic and Historic Trails*) of this EA.

4.2.2.2 West Sinclair Rail Facility

Two sites (48CR10056, 48CR10105) recommended eligible for listing in the NRHP were identified during the Class III cultural resource inventory within the West Sinclair Rail Facility Site (PCW 2014b). Avoidance and minimization measures for these resources have been incorporated into the CCSM Project design. While both sites are still partially within the West Sinclair Rail Facility Site, extensive shovel testing failed to reveal subsurface cultural material within the West Sinclair Rail Facility Site. Therefore, the portions of the sites within the West Sinclair Rail Facility Site are recommended as non-contributing portions of the NRHP-eligible sites. As described in the CCSM Project FEIS (BLM 2012b), eligible sites would be evaluated and adverse effects would be resolved in accordance with the PA and the ACMs identified in the CSSM Project ROD (BLM 2012a).

Additionally, two sites considered eligible for listing in the NRHP were identified during the Class III cultural resources inventories and are located outside of the West Sinclair Facility Site (PCW 2014b). The Proposed Action has the potential to adversely affect these sites through indirect impacts as

disclosed in the CCSM Project FEIS (BLM 2012b; page 4.2-4). However, as with NRHP-eligible sites within the West Sinclair Facility Site, effects on these eligible sites will be assessed and adverse effects will be resolved in accordance with the PA and the ACMs identified in the CCSM Project ROD (BLM 2012a) if the BLM determines that adverse indirect impacts would occur to these sites.

4.2.2.3 Road Rock Quarry

Three sites within the Road Rock Quarry Site are considered eligible for NRHP nomination. The Quarry, as currently designed, would result in an unavoidable adverse effect to site 48CR9097 that is considered eligible for NRHP nomination, and would not result in adverse effects to the other two sites (48CR4009 and 48CR10118). No sites considered eligible for listing in the NRHP were identified during the Class III cultural resources inventories that are located outside of the Road Rock Quarry Site (PCW 2014c). As described in the CCSM Project FEIS (BLM 2012b), eligible sites would be evaluated and adverse effects would be resolved in accordance with the PA and the ACMs identified in the CCSM Project ROD (BLM 2012a).

4.2.3 National Scenic and Historic Trails

The CCSM Project FEIS (BLM 2012b) evaluates impacts to the CDNST, the only congressionally-designated National Trail in the CCSM Project Area, in several sections, including Lands and Realty (Section 4.4.2.8; page 4.4-11), Recreation (Section 4.7: pages 4.7-5 through 4.7-9) and Visual Resources (Section 4.12; pages 4.12-6 through 4.12-43). The CCSM Project FEIS (BLM 2012b) also evaluates historic trails in several sections where there is overlap between trail resources and other resources, including Cultural Resources (Section 4.2), Recreation (Section 4.7), and Visual Resources (Section 4.12). Following publication of the CCSM Project ROD (BLM 2012a), the BLM published Manual 6280 requiring a resource section devoted to National Scenic and Historic Trails (BLM 2012c) in NEPA analysis documents.

The CCSM Project FEIS (BLM 2012b) finds that strong visual contrasts would be evident within 5 miles of the CDNST in the western portion of the Chokecherry WDA and the southwest and northwest portions of the Sierra Madre WDA, as documented from KOPs 11, 12, and 13 along the CDNST and from four KOPs (1, 9, 14, 16) near the CDNST (BLM 2012b; pages 4.12-12 through 4.12-14 and page 4.12-20). The CCSM Project FEIS further discloses that low-profile facilities, such as roads and laydown areas, would be less discernible in relation to the surrounding landscape beyond 5 miles (BLM 2012b; page 4.12-20). Though resulting in a strong visual contrast, the CCSM Project would not substantially interfere with the nature and purposes of the CDNST (BLM 2012b; page 4.12-20).

Effects to the CDNST SRMA within the context of the National Trail System Act are also disclosed in Section 4.7 of the CCSM Project FEIS (BLM 2012b; page 4.7-8). The CCSM Project FEIS (BLM 2012b) identifies the CDNST SRMA as an exclusion area; no construction or operation activities or facilities would occur within the 0.25-mile CDNST SRMA or cross any CDNST segment. No proposed facilities would occur within 1 mile of the CDNST, and the CCSM Project FEIS (BLM 2012b) concludes that CCSM Project complies with the prescribed middle country setting for the CDNST SRMA.

The CCSM Project FEIS (BLM 2012b) also addresses visual impacts resulting from the introduction of visual elements that are out of character to historic properties, where setting is an aspect of integrity, such as the Overland Trail. The CCSM Project FEIS (BLM 2012b) concludes that "significant impacts and adverse effects would occur to those properties where setting is an aspect of integrity, including but not limited to…historic trails" (BLM 2012b; page 4.2-4). A setting assessment of the Overland Trail

completed for the CCSM Project FEIS concludes that due to the large-scale nature of the proposed CCSM Project, adverse effects to the integrity of the Overland Trail's setting would occur (BLM 2012b; pages 4.2-4). In addition, the CCSM Project FEIS discloses that the Haul Road would cross a non-contributing segment of the Overland Trail. The CCSM Project FEIS finds that the Haul Road in the Sage Creek valley would be an obvious new disturbance to viewers on the Overland Trail, with color, line, and textural contrasts from new road disturbance and associated cut-and-fill slopes visible in unobstructed views (BLM 2012b; pages 4.12-11). Mitigation of adverse effects to the integrity of historic trails includes setbacks for project components as defined in Appendix D of the CCSM Project ROD (BLM 2012a) and mitigation measures defined in the CCSM Project PA (BLM 2012a; Appendix E).

Additional specificity regarding potential impacts to the CDNST, Overland Trail, and Cherokee Trail is presented below, based on final engineering of the infrastructure components and viewshed analysis of the Phase I Haul Road and Facilities and Road Rock Quarry. As discussed in the ID Team Checklist (Appendix B of this EA), the West Sinclair Rail Facility is not within the viewshed of the CDNST, the Overland Trail or the Cherokee Trail and is not analyzed further in this EA.

Impacts of the Phase I Haul Road and Facilities to the Overland Trail were assessed utilizing guidance provided in BLM Manual 6280 including NRHP criteria and the BLM's VRM system, described in Section 4.2.11 (Visual Resources).

4.2.3.1 Phase I Haul Road and Facilities

4.2.3.1.1 Continental Divide National Scenic Trail

Map 4-1 in the Visual Resources section of this EA (Section 4.2.11), presents the viewshed analysis of CDNST segments that would have a view of the construction and operations of the Phase I Haul Road and Facilities. The computer-generated viewshed mapping was projected from a 5-foot eye level, using a 10-m USGS digital elevation model, to the ground plane out to a distance of 15 miles from the Phase 1 Haul Road and Facilities. Based on the coarseness of the digital elevation model, the actual visibility of the Phase I Haul Road and Facilities from trail resources on the rolling landscape may differ and in some cases appears overstated. As such the model is treated as a broad estimate; however, the model is sufficient to conclude that the Phase I Haul Road and Facilities will be visible, especially considering the lack of tall vegetation cover in most areas.

The location of the Phase I Haul Road and Facilities have not changed substantially from what was analyzed in the CCSM Project FEIS (BLM 2012b), and additional engineering design details allow for further site-specific analysis in this EA as anticipated in the CCSM Project FEIS (BLM 2012b; p 4.12-11). The Phase I Haul Road and Facilities are visible from KOPs 11, 12, and 13 along the CDNST and were addressed in the CCSM Project FEIS (BLM 2012b). Table 4-3 identifies the site-specific contrast ratings resulting from the three KOPs that are visible.

Table 4-3. CDNST Visual Resource Contrast Ratings and VRM Class Consistency for the Phase I Haul Road and Facilities

KOP No.[1]	Location	Visibility of and Distance from the Phase I Haul Road	SQRU Rating	SLRU Rating	VRM Class	Contrast Rating	VRM Class Achieved?
11	CDNST towards Chokecherry	The Phase I Haul Road would be seen in the Foreground (3.7 miles away). Overall, approximately 1.0 mile of the Phase 1 Haul Road would be seen from this KOP.	C [Low]	High	IV	Weak	Yes
12	CDNST Above Rim Lake	The Phase I Haul Road would be seen in the Background (6 miles away). Overall, up to 4.0 miles of the Phase 1 Haul Road would be seen from this KOP.	B [Moderate]	High	IV	Weak	Yes
13	CR 3301 - Bridger Pass Road along CDNST	The Phase I Haul Road would be seen in the Foreground (3.4 miles away). Overall, approximately 4.0 miles of the Phase 1 Haul Road would be seen from this KOP.	C [Low]	High	IV	Moderate	Yes

Sources: Otak 2011, BLM 2012b

KOP Key Observation Point
SLRU Sensitivity Level Rating Unit
SQRU Scenic Quality Rating Unit
VRM Visual Resource Management

[1]KOP numbers are as defined in the CCSM Project FEIS (2012b).

The Phase I Haul Road and Facilities are set back over 3 miles from the CDNST. The CCSM Project FEIS (BLM 2012b) discloses that (a) strong contrasts would be evident within 5 miles of the CDNST in the western portion of the Chokecherry WDA and southwest and northwest portions of the Sierra Madre WDA; (b) beyond 5 miles low-profile facilities such as roads would be less discernible in relation to the surrounding landscape; and (c) the CCSM Project would degrade the recreational experience of CDNST users.

Impacts to the nature and purposes, resources, qualities, values or associated settings, or the primary use of the CDNST do not exceed what is disclosed in the CCSM Project FEIS (BLM 2012b), from which this EA tiers.

4.2.3.1.2 Overland Trail (under feasibility study)

Two haul road crossings of the Overland Trail were considered in the CCSMP Project FEIS (BLM 2012b), both located at non-contributing segments of the trail. The alignment of the selected Phase I Haul Road was further adjusted during site-specific engineering to avoid contributing segments of the Overland Trail.

Two segments of the Overland Trail are located in the Phase I Haul Road and Facilities Site without the potential for adverse effects. While the resource is eligible for listing in the NRHP, the segments of the Overland Trail in the Phase I Haul Road and Facilities Site are non-contributing elements (these segments do not possess character-defining features that contribute to the overall eligibility of the trail). Eighteen miles of the Overland Trail fall within the viewshed of the Phase I Haul Road and Facilities

where the trail traverses east-west between the Chokecherry and Sierra Madre WDAs as shown in Map 4-1. Based on the coarseness of the digital elevation model, the actual visibility of the Phase I Haul Road and Facilities from trail resources on the rolling landscape might be imprecise and in some cases appears overstated. As such the model is treated as a broad estimate; however, the model is sufficient to conclude that the Phase I Haul Road and Facilities will be visible from the Overland Trail, especially considering the lack of tall vegetation cover in most areas, and in some places the Phase I Haul Road and Facilities will present a strong visible contrast as indicated in Table 4-4.

A Visual Impact Assessment for the Setting of Documented Historic Properties from the Chokecherry and Sierra Madre Wind Energy Project in Carbon County, Wyoming (SWCA 2012) reviewed effects of the CCSM Project from 14 KOPs along the Overland Trail. The Phase I Haul Road and Facilities would be visible from eight of those KOPs as shown in Table 4-4 and Map 3-1.

Contrast ratings from KOPs vary from none to strong, in proportion to their distance from the Phase I Haul Road and Facilities and to the total length of Haul Road that would be seen from each KOP. The CCSM Project FEIS (BLM 2012b) discloses that the Haul Road would adversely affect the integrity of the Overland Trail's setting and become an obvious new disturbance to Overland Trail viewers. The visual contrast resulting from the Phase I Haul Road and Facilities, as analyzed in this EA, would not exceed the rating of "strong" and VRM Class IV objectives disclosed in the CCSM Project FEIS (BLM 2012b); the highest contrast rating from the analysis in this EA was strong. Therefore, impacts to the values, characteristics, and setting of the Overland Trail from the Phase I Haul Road and Facilities would not exceed the impacts disclosed in the CCSM Project FEIS (BLM 2012b), from which this EA tiers. Adverse effects to the Overland Trail would be mitigated in accordance with the Cultural Resources PA, included as Appendix E of the CCSM Project ROD (BLM 2012a).

Table 4-4. Visual Resource Contrast Ratings and VRM Class Consistency for Phase I Haul Road and Facilities

KOP #	Location	Visibility of and Distance from Phase I Haul Road and Facilities	SQRU Rating	SLRU Rating	VRM Class	Contrast Rating	VRM Class Achieved?
1	Overland Trail Cemetery on east side of North Platte River (at Johnson Island crossing)	The Phase I Haul Road would be seldomly seen from this KOP [9 miles away].	C [Low]	High	IV	None	Yes
2	Overland Trail east of Bolten Ranch on Bolten Road	The Phase I Haul Road would be seen in the Background [7.5 miles away]. Between 4 and 8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	None	Yes
3	Overland Trail west of Bolten Ranch on Bolten Road	The Phase I Haul Road would be seen in the Background [5.5 miles away]. Between 2 and 4 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	None	Yes
4	Overland Trail, southeast of Kindt Reservoir on Bolten Road	The Phase I Haul Road would be seen in the Foreground [3.5 miles away]. More than 8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	Moderate	Yes
5	Overland Trail, east of Sage Creek Station near Bolten Road	The Phase I Haul Road would be seen in the Foreground [0.5 mile away]. More than 8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	Strong	Yes
6	Overland Trail, at the former Sage Creek Station site	The Phase I Haul Road would be seen in the Foreground [1.8 miles away]. More than 8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	Strong	Yes
7	Overland Trail, west of Highway 71	The Phase I Haul Road would be seen in the Foreground [1.7 miles away]. Between 4-8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	Strong	Yes
8	Overland Trail on ridge spine southeast of Pine Grove Creek cemetery site	The Phase I Haul Road would be seen in the Foreground [2.4 miles away]. Between 4-8 miles of the Haul Road would be seen from this KOP.	C [Low]	High	IV	Moderate	Yes

Source: SWCA 2012

KOP Key Observation Point
SLRU Sensitivity Level Rating Unit
SQRU Scenic Quality Rating Unit
VRM Visual Resource Management

[1]KOP numbers are as defined in *A Visual Impact Assessment for the Setting of Documented Historic Properties from the Chokecherry and Sierra Madre Wind Energy Project in Carbon County, Wyoming* (SWCA 2012).

4.2.3.1.3 Cherokee Trail (under feasibility study)

The Phase I Haul Road and Facilities would be set back approximately 7 miles from the Cherokee Trail at its closest point and would not be within the viewshed of the Cherokee Trail (Map 4-1). Therefore, the Phase I Haul Road and Facilities would have no effect on the values, characteristics, and settings of the Cherokee Trail.

4.2.3.2 Road Rock Quarry

The Road Rock Quarry is set back over 3 miles from the CDNST and is not within the viewshed of the CDNST (Map 4-2). Therefore, the Road Rock Quarry would have no effect on the nature and purposes, resources, qualities, values, associated settings, or the primary use or uses of the CDNST.

The Road Rock Quarry would be set back approximately 9.5 miles from the Overland Trail, and over 26 miles from the Cherokee Trail and is not within the viewshed of either trail (Map 4-2). Therefore, the Road Rock Quarry would have no effect on the values, characteristics, and settings of either trail under feasibility study for NHT designation.

4.2.4 Paleontological Resources

The CCSM Project FEIS (BLM 2012b) discusses direct impacts (destruction or loss of scientifically important fossils) and indirect impacts (loss of fossil resources due to unauthorized collection) on paleontological resources anticipated primarily as a result of construction of the CCSM Project (BLM 2012b, p. 4.5-2). These impacts were determined to be adverse, long-term, and severe. It was also disclosed that the CCSM Project may have beneficial impacts on paleontological resources if important fossil resources were discovered during construction of the CCSM Project. The CCSM Project FEIS (BLM 2012b, p. 4.5-4) determines that even if construction monitoring is implemented, some scientifically valuable fossils may be disturbed and lost during excavating and grading over the large number of miles of roads that are expected to be built. As a consequence, there would be a small incremental loss of fossil material that would be offset by the materials that are recovered and preserved for scientific study purposes.

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for paleontological resources is consistent with the overall nature and types of potential impacts anticipated from the Proposed Action. Additional specificity regarding the extent and/or location of those potential impacts is presented below, based on results of pedestrian field surveys conducted in 2013.

Geologic units within the CCSM Project Area, particularly the Mesaverde Group (PFYC 3a), the Steele Shale (PFYC 5), and the Niobrara Formation (PFYC 5), have the potential to yield scientifically significant subsurface fossils based on the analysis of existing data and survey results. During on-the-ground pedestrian surveys for paleontological resources, seven fossil localities were documented on BLM-administered land within the Phase I Haul Road and Facilities survey area. Three areas met BLM's criteria for significant fossil localities as defined in BLM IM 2009-11. Four of the localities were non-significant localities.

Avoidance, Minimization, and Mitigation Measures

As required in the CCSM Project ROD (BLM 2012a), PCW will have a paleontologist on-call and agrees to suspend construction activities within the immediate area if fossils are discovered on federal lands for up to 48 hours while BLM evaluates the fossils' significance.

The following ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on paleontological resources from the Proposed Action:

- Applicant Committed Measure A-1-20
- Applicant Committed BMP A-3-07
- Mitigation Measures PALEO-1 and PALEO-2

4.2.5 Range Resources

The CCSM Project FEIS (BLM 2012b) assesses impacts on range resources by calculating the total loss of AUMs resulting from surface disturbance on 7,680 acres of rangeland within the CCSM Project Area, as well as the loss of rangeland resulting from dust deposition along 438 miles of unpaved roads in the CCSM Project Area. The combined losses of AUMs incurred as a result of dust deposition, coupled with the direct disturbance (temporary) loss, represented approximately nine percent of the currently available AUMs on the affected allotments within the CCSM Project Area (BLM 2012b, p. 4.6-4). This did not qualify as a potentially significant impact on overall rangeland health and livestock grazing. However, significant impacts were disclosed as occurring within individual pastures (BLM 2012b, p. 4.6-4). The CCSM Project FEIS (BLM 2012b) determines that development or operational activities that cause a reduction in forage availability resulting in greater than 10 percent permanent reduction in AUMs within any given allotment would constitute significant impacts. Therefore, the following discussion is focused on long-term impacts resulting from the Proposed Action being analyzed in this EA. Impact calculations for both direct and indirect loss of forage (i.e., through dust deposition) use site-specific AUM estimates that vary according to ecological site.

Direct Loss of AUMs

As identified in Chapter 3 of this EA, the BLM updated its estimates of AUMs within the grazing allotments occurring within the Infrastructure Component Site using site-specific estimates of carrying capacity that vary depending on the ecological site. Table 4-5 shows the total AUMs affected by surface disturbance associated with the Proposed Action within the Pine Grove/Bolten allotment and the Sage Creek allotment. Approximately 1,429[2] acres of initial surface disturbance is anticipated within the Pine Grove/Bolten allotment, resulting in the temporary loss of approximately 115 AUMs of forage. Long-term surface disturbance within the Pine Grove/Bolten allotment resulting from the Proposed Action is approximately 364 acres, resulting in a long-term loss of approximately 33 AUMs of forage. Within the Sage Creek allotment, approximately 38 acres of initial surface disturbance is anticipated, resulting in the temporary loss of approximately 9 AUMs of forage until effective reclamation is achieved. Long-term surface disturbance within the Sage Creek allotment resulting from the Proposed Action is approximately 4 acres, resulting in a long-term loss of approximately 1 AUM of forage.

[2] *The Infrastructure Component Site, comprising 1,429 acres, overlaps approximately 1,467 acres of BLM-designated allotments; a small area in the northern CCSM Project Area associated with the road improvements along I-80 are not within BLM-designated allotments.*

Indirect Loss of AUMs

With construction of unpaved road in the affected allotments, dust deposition on vegetation is expected to further reduce AUMs of forage, consistent with the analysis in the CCSM Project FEIS (BLM 2012b). The affected area is assumed to be 150 feet wide on either side of the long-term disturbance areas associated with unpaved roads, also consistent with the analysis in the CCSM Project FEIS (BLM 2012b). Using these assumptions, the Proposed Action would reduce AUMs of forage on approximately 1,533 acres[3], resulting in the loss of 147 AUMs of forage, of which 145 AUMs of forage are within the Pine Grove/Bolten allotment and 2 AUMs of forage are within the Sage Creek allotment.

Although the construction phase of the CCSM Project would result in most of the dust deposition, some dust deposition would occur during operations, maintenance, and decommissioning. Applicant Committed BMPs A-3-01 through A-3-05, as described in the CCSM Project ROD (BLM 2012a; Appendix D) would reduce impacts to forage associated with dust deposition.

Impact Summary

As stated in the CCSM Project FEIS (BLM 2012b), the total AUMs in Pine Grove/Bolten allotment is 24,739 AUMs within the CCSM Application Area. Within the Sage Creek allotment, there are 5,995 AUMs within the CCSM Application Area. As summarized in Table 4-5, the combined losses incurred as a result of dust deposition, coupled with the direct loss of forage from surface disturbance, represents less than 1 percent of the currently available AUMs on the Pine Grove/Bolten allotment within the CCSM Application Area, and less than 1 percent of the currently available AUMs on the Sage Creek allotment within the CCSM Application Area. The significance criteria established in the CCSM Project FEIS for Range Resources (BLM 2012b; page 4.6-2), considered impacts potentially significant if project development and operational activities cause a reduction in forage availability that results in greater than 10 percent permanent reduction in AUMs within any given allotment. Applying this significance criterion to the updated AUMs affected by the Proposed Action, because the impacts are less than the 10 percent permanent reduction in AUMs (less than 1 percent), they would not be considered significant.

Table 4-5. Animal Unit Months Affected by the Proposed Action

Allotment	AUM Reduction from Surface Disturbance		AUM Reduction from Dust Deposition from Unpaved Roads	AUM Reduction (Long-Term Surface Disturbance + Dust Deposition)	Percent Long-Term AUM Reduction (AUM Reduction/Total AUMs in Allotment in CCSM Application Area)
	Initial Disturbance	*Long-term Disturbance*			
Pine Grove/Bolten Allotment	115	33	145	178	<1
Sage Creek Allotment	9	1	2	3	<1
Total	**364**	**36**	**147**	**181**	**<1**

[3] *To avoid double counting loss of AUMs, this figure includes only the area outside of the surface disturbance areas. Loss of AUMs associated with surface disturbance is calculated in the direct AUM loss analysis described in the paragraph above.*

Avoidance, Minimization, and Mitigation Measures

The following Applicant Committed BMPs, and mitigation measure, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on range resources within the Infrastructure Component Site:

- Applicant Committed BMPs A-3-01 through A-3-05; and A-3-16 through A-3-18
- Mitigation Measure RANGE-1

4.2.6 North Platte River Special Recreation Management Area

This section identifies the potential impacts to the North Platte River SRMA resulting from the portion of the Phase I Haul Road and Facilities that will be located within the SRMA. Total disturbance proposed within the SRMA consists of approximately 550 linear feet and approximately 1.5 acres of total surface disturbance. This consists of approximately 200 feet of road improvements associated with Smith Draw Road and approximately 350 feet of underground water main facilities proposed adjacent to CR 347. As set out in Section 3.6, the remainder of the Phase I Haul Road and Facilities are located outside of the SRMA. Moreover, as described in Appendix B of this EA, impacts to the North Platte River SRMA resulting from the West Sinclair Rail Facility and Road Rock Quarry are not anticipated because these infrastructure components will be located further than 0.25 mile from the North Platte River SRMA.

The CCSM Project FEIS (BLM 2012b) analyzed impacts to the SRMA. In Section 4.4.2.8 (BLM Special Management Areas), the CCSM Project FEIS (BLM 2012b) determines that no facilities would be sited within the North Platte River SRMA (BLM 2012b). The CCSM Project FEIS (BLM 2012b) discusses potential impacts to the North Platte River SRMA primarily within Section 4.7 (Recreation). Management goals and objectives for the SRMA as they relate to visual resources, as well as impacts to the North Platte River SRMA visual resources are discussed in Section 4.12 of the CCSM Project FEIS (BLM 2012b).

Potential impacts to the SRMA disclosed in the CCSM Project FEIS (BLM 2012b) include degradation of the recreational experience resulting from construction activities causing noise or dust within viewsheds or within hearing distance of the SRMA. The types of impacts disclosed in the CCSM Project FEIS (BLM 2012b) are consistent with the types of impacts anticipated from the Phase I Haul Road and Facilities. However, the CCSM Project FEIS (BLM 2012b; page 4.7-7) states that no construction or operation activities or facilities would occur within the North Platte River SRMA. Based on final engineering design of the Phase I Haul Road and Facilities, approximately 550 linear feet (1.5 acres) of roadway improvements along Smith Draw Road and the underground water main adjacent to the existing CR 347 are proposed within the North Platte River SRMA.

While the types of impacts to the North Platte River SRMA from these improvements are expected to be consistent with the disclosures in the CCSM Project FEIS (BLM 2012b), these impacts directly within the SRMA are in addition to those disclosed in the CCSM Project FEIS (BLM 2012b). To address these impacts, a significance determination is provided here based on a review of the significance criteria established in the CCSM Project FEIS (BLM 2012b), the 2008 Rawlins RMP and ROD goals and objectives for the North Platte River SRMA, and the RAMP. Table 4.7-1 of the CCSM Project FEIS (BLM 2012b; page 4.7-3) identifies the 2008 Rawlins RMP and ROD (Volume 1, Chapter 2, pages 2-45, 2-46) goals and objectives for the North Platte River SRMA.

As established in Section 4.7 (Recreation) of the CCSM Project FEIS (BLM 2012b), potential impacts to Recreation Resources (both short- and long-term) were considered significant if they met one of the following criteria:

- Project would compromise public health and safety at recreation sites and use areas.
- Project would limit or restrict public access to developed recreation sites and/or dispersed use areas, including those located along the North Platte River.
- Intensity of development is incompatible with the stated objectives of the CDNST and/or North Platte River SRMAs.

The impacts from the construction activities within the North Platte River SRMA described above may include noise or dust within the SRMA, and the intrusion of the sight and sound of construction activities for recreationists within that portion of the SRMA, consistent with disclosures in the CCSM Project FEIS (BLM 2012b). As discussed in the CCSM Project FEIS (BLM 2012b), these effects would degrade the experience of visitors (e.g., boaters) to the North Platte SRMA for the duration of construction activities at sites within viewsheds or within hearing distance of recreational activities (BLM 201b; page 4.7-6). There are developed recreational facilities (e.g., boat ramp, paved parking area, restrooms) at the Fort Steele/Rochelle Easement PAA south of I-80 and approximately 1.6 miles north of the North Platte River SRMA where it crosses the proposed Smith Draw Road/CR 347. In addition, there are WGFD-administered undeveloped parking areas (i.e., road widening) located approximately 0.4 mile north of and 0.6 mile south of the North Platte River SRMA where it crosses the proposed Smith Draw Road/CR 347. These areas facilitate access to the North Platte River SRMA in the general area where surface disturbance is proposed under the Proposed Action. However, there are no direct access points to the North Platte River where the portion of the Phase I Haul Road and Facilities located in the SRMA is proposed and the proposed surface-disturbing activities would not preclude access to the North Platte River. In addition, use by PCW of CR 347 and Smith Draw Road during operations is for purposes of maintaining the Water Extraction Facility only and traffic will be minimal, with estimated trips limited to twice a month.

Therefore, the activities within the North Platte River SRMA associated with the road improvements, construction of the underground water main, or operation of the Water Extraction Facility would not compromise the public health and safety at recreation sites and use areas or limit or restrict public access to developed recreation sites and/or dispersed use areas, including those located along the North Platte River. Proposed road improvements within the North Platte River SRMA are compatible with the stated objectives of the North Platte River SRMA as disclosed in the 2008 Rawlins RMP and ROD and 2013 RAMP. Because none of the significance criteria set forth in the CCSM FEIS would be exceeded, potential impacts are not considered significant.

4.2.7 Socioeconomics

The CCSM Project FEIS (BLM 2012b, pp. 4.86 through 4.8-28) discloses short- and long-term socioeconomic impacts associated with the CCSM Project. The CCSM Project FEIS (BLM 2012b) determines that the CCSM Project results in a net positive economic effect on the local economy through short- and long-term increases in personal incomes in the region, and the resulting economic infusion into the local economy. The CCSM Project FEIS (BLM 2012b, p. 4.8-43) determines that short-term social and economic effects would occur seasonally through construction and interim reclamation, and again during decommissioning and final reclamation. These impacts include temporary construction employment providing economic support for households and increases to local revenue, construction-

related housing demands, and construction-related demand for local government infrastructure and services. Long-term impacts would include effects on regional economic and fiscal conditions, including limited immigration and associated population effects, increased sales revenues for local retail and service establishments, incremental increases in sales and lodging taxes, long-term effects on property and wind energy taxes, and relatively moderate demands on public facilities and services. Long-term social effects would be associated with the change in character of the landscape in and near the project area. Development of wind resources would provide a source of renewable energy to the residential, commercial, industrial, and public sector consumers.

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for socioeconomic resources is consistent with the overall types and nature of socioeconomic impacts anticipated from the Proposed Action. However, additional specificity regarding the extent of potential housing impacts is presented below, based on updated information from the WHDP (2013) and updated workforce estimates presented in the SPODs (PCW 2014a, 2014b, 2014c).

Housing

Under the Proposed Action, construction and operations of the three infrastructure components would overlap with other CCSM Phase I (as proposed) and Phase II (as anticipated) activities in the CCSM Project Area (PCW 2014a, 2014b, 2014c). For the Proposed Action only, the peak construction workforce would be reached in year 2 of the construction schedule (2015). During that year, the construction workforce associated with the Proposed Action would reach 239 construction workers (PCW 2014a, 2014b, 2014c). The operations workforce during Phase I of the CCSM Project would add up to 64 workers at the end of 2018. Construction and operations workers for the Proposed Action would overlap from mid-2017 through the end of 2018, reaching up to 237 workers in the peak month during that period. Table 4-6 shows the demand for housing during months of peak construction and operations, the estimated available housing supply (from Section 3.7 [*Socioeconomics*]), and the resulting housing surplus estimated for those months during the 2014 to 2021 period of construction and operations.

Table 4-6. Housing Demand, Supply, and Net Housing Balance Associated with the Three Infrastructure Components during Construction and Operations in the Affected Area

	2014	2015	2016	2017	2018	2019	2020	2021
Peak Housing Demand – Construction Workforce	84	239	131	184	182	0	0	0
Peak Housing Demand – Operations Workforce[1]	0	0	0	40	64	64	64	64
Peak Housing Demand – Total Workforce[2]	84	239	131	224	246	64	64	64
Available Housing Supply[3]	406	407	409	411	413	414	416	417
Housing (Shortfall) or Surplus	322	168	278	187	167	350	352	353

Source: BLM estimates developed as explained in the text.

[1]Operations workforce for all Phase I development.

[2]Total housing demand is less than the sum of construction and operations housing demand when the peak month of housing demand from construction workers does not coincide with the peak month of housing demand from operations workers in a given year.

[3]The affected area for housing supply is the same as that assumed in the CCSM Project FEIS (BLM 2012b) and includes the communities of Rawlins and Saratoga in Carbon County and small amounts of additional available housing in Baggs and Dixon in Carbon County, and Wamsutter in Sweetwater County.

When considering construction and operations of the Proposed Action with other CCSM Phase I (as proposed) and Phase II (as anticipated) activities in the CCSM Project Area (PCW 2014a, 2014b, 2014c), there is additional housing demand in the CCSM Project Area that reduces the housing supply available for the labor associated with the three infrastructure components. Table 4-7 shows the demand for housing during months of peak construction and operations, the estimated available housing supply (from Section 3.7 [*Socioeconomics*]), and the resulting housing surplus or shortfall, after accounting for the additional housing demand from Phase I (as proposed) and Phase II (as anticipated).

Table 4-7. Housing Demand, Supply, and Net Housing Balance Associated with the Proposed Action during Construction and Operations in the Affected Area, after Accounting for Overlapping CCSM Activities

	2014	2015	2016	2017	2018	2019	2020	2021
Peak Housing Demand – Three Infrastructure Components	84	239	131	214	237	64	64	64
Peak Housing Demand – Other CCSM Activities	0	16	259	761	701	301	939	920
Peak Housing Demand – Total Workforce	84	255	390	975	938	365	1,003	984
Available Housing Supply[1]	406	407	409	411	413	414	416	417
Housing (Shortfall) or Surplus	322	152	19	(564)	(525)	49	(587)	(567)

Source: BLM estimates developed as explained in the text.

[1]The affected area for housing supply is the same as that assumed in the CCSM Project FEIS (BLM 2012b) and includes the communities of Rawlins and Saratoga in Carbon County and small amounts of additional available housing in Baggs and Dixon in Carbon County, and Wamsutter in Sweetwater County.

Table 4-7 shows that there would be an estimated shortfall in available housing in several years. The CCSM Project FEIS (BLM 2012b) estimates that during peak construction and operations, there would be a deficit in housing of 668 total units. Based on an updated baseline for housing availability in affected communities (Chapter 3) and the revised CCSM Project workforce estimate, the estimated deficit in housing associated with the CCSM Project Phase I (as proposed) and Phase II (as anticipated) would reach up to 587 housing units (in year 2020). This deficit is less than that estimated in the CCSM Project FEIS (BLM 2012b) for the year of peak housing demand. As indicated in the CCSM Project FEIS (BLM 2012b), PCW will address projected housing needs in its Wyoming Industrial Siting Permit Application and associated public hearing. Examples of options available to PCW are discussed in the CCSM Project FEIS (BLM 2012b) and include securing commitments from local motel and RV park proprietors to accommodate a share of the construction workforce, and/or the installation of a Temporary Housing Facility within or near the CCSM Project Site to accommodate a portion of the CCSM Project non-local construction workforce.

Nonmarket Values

The socioeconomic description of nonmarket benefits and values in the CCSM Project Area provided in Section 3.8.9 of the CCSM Project FEIS (BLM 2012b) includes a discussion of what is currently known of the potential impacts of wind farm development on nonmarket values. For example, it notes the relative lack of research on the nonmarket values impacted by wind farms, but lists common concerns such as visual effects, effects on nonmarket values attributed to adversely-affected avian species, and

potential conflicts with traditional land uses such as recreation. Additional relevant discussion is included in Section 4.8.2.6 of the CCSM Project FEIS (BLM 2012b). The impacts of the Proposed Action considered in this EA are consistent with the potential impacts discussed in Sections 3.8.9 and 4.8.2.6 of the CCSM Project FEIS (BLM 2012b), and are in conformance with the guidance provided in IM 2013-131.

4.2.8 Soils

The CCSM Project FEIS (BLM 2012b) determines that, because it is not feasible to completely avoid areas of severe and poor soil limitations, significant impacts on soil resources would be anticipated (BLM 2012b, p. 4.9-7). The CCSM Project FEIS (BLM 2012b) identifies that soil loss of less than 2 tons per acre per year is considered to be similar to background levels; therefore, surface disturbance to soil resources and loss of soil cover that would to lead to soil erosion greater than 2 tons per acres per year (greater than background levels) is considered to be significant. Further, the CCSM Project FEIS (BLM 2012b) discloses that some amount of topsoil would be lost (to erosive forces) or degraded (contaminated or diluted) and that as a result, soil productivity would be reduced in some areas to a level that prevents the disturbed area from recovering to pre-disturbance productivity levels. These impacts were also determined to be significant and that an irretrievable loss of soil productivity and quality would be lost on approximately 1,544 acres associated with turbine locations, road network, electrical network, and support facilities (BLM 2012b, p. 4.9-9). Similarly, CCSM Project roads would result in an irretrievable commitment of soil resources on approximately 866 acres (BLM 2012b).

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for soil resources is consistent with the overall types and nature of impacts anticipated from the Proposed Action. Additional specificity regarding the extent and/or location of potential impacts on soils is provided below. This analysis uses the BLM Order III soil survey, as well as the site-specific soil data conducted subsequent to the publication of the CCSM Project ROD (BLM 2012a).

Using the Order III Soil Survey and the site-specific information for each infrastructure component, Table 4-8 identifies the acres of pertinent limitations of the soils located in the Infrastructure Component Site by disturbance type (initial and long-term).

Table 4-8. Acres of BLM Order III Soil Survey Factors within the Infrastructure Component Site – Initial and Long-Term Disturbance

Soil Factor	Phase I Haul Road and Facilities		West Sinclair Rail Facility		Road Rock Quarry		Total	
	Initial	*Long-Term*	*Initial*	*Long-Term*	*Initial*	*Long-Term*	*Initial*	*Long-Term*
Water Erosion								
Slight	99	27	294	95	1	<1	394	122
Slight/ Moderate	75	18	33	12	87	16	196	46
Slight/ Severe	419	113	15	6	--	--	435	120
Moderate	43	12	13	6	--	--	56	18
Moderate/ Severe	110	29	7	3	--	--	117	32
Severe	129	26	7	<1	95	1	231	27

Table 4-8. Acres of BLM Order III Soil Survey Factors within the Infrastructure Component Site – Initial and Long-Term Disturbance

Soil Factor	Phase I Haul Road and Facilities		West Sinclair Rail Facility		Road Rock Quarry		Total	
	Initial	*Long-Term*	*Initial*	*Long-Term*	*Initial*	*Long-Term*	*Initial*	*Long-Term*
Wind Erosion								
Slight	9	1	0	--	--	--	9	1
Slight/ Moderate	130	31	0	--	--	--	130	31
Moderate	729	191	357	117	182	17	1,269	325
Moderate/ Severe	--	--	2	1	--	--	2	1
Severe	6	2	10	3	1	<1	18	5
Runoff Potential								
Low	29	8	--	--	--	--	29	8
Low to High	11	3	--	--	--	--	11	3
Low to Moderate	--	--	10	3	--	--	10	3
Moderate	211	57	48	17	1	<1	260	75
Moderate to High	199	53	10	3	87	16	296	73
High	426	104	302	97	95	1	823	202
Topsoil Rating								
Good	315	82	34	13	21	<1	370	95
Fair	239	66	28	11	90	17	356	94
Poor	308	74	308	98	73	<1	689	172
No Data	14	4	--	--	--	--	14	4
Road Rating[1]								
Slight/ Moderate	0	--	13	6	0	--	13	6
Moderate	642	170	53	19	109	17	805	206
Severe	219	52	304	96	74	1	598	149
No Data	14	4	--	--	--	--	14	4
Total	**875**	**225**	**370**	**121**	**184**	**18**	**1,429**	**364**

Source: BLM 2012b

[1]Road rating based on severity of soil limitations

Table 4.9-2 of the CCSM Project FEIS (BLM 2012b) includes surface disturbance estimates for the CCSM Project. Table 4-8 above includes surface disturbance estimates for the Infrastructure Components. A comparison of Table 4-8 and Table 4.9-2 shows that surface disturbance to soils with these five soil limitations as a result of the Proposed Action would be less than surface disturbance disclosed for the CCSM Project in the CCSM Project FEIS (BLM 2012b).

Using guidance from the BLM, PCW developed spatial data to identify probable locations of sensitive soil resources within the CCSM Project Area, as described in Chapter 3 (*Affected Environment*) of this EA. A portion of the sensitive soils mapping relies on ecological site data (SWCA2014a), and these ecological site data will be continually refined as part of ongoing surveys for the CCSM Project. Updates to the ecological site mapping, as well as the site-specific locations of sensitive soil resources, will be incorporated into the site-specific reclamation plans (PCW 2014a, 2014b, 2014c; Appendix L). Proposed surface disturbance within these potentially sensitive soil resource areas are summarized in Table 4-9.

Table 4-9. Surface Disturbance Proposed within Sensitive Soil Resource Areas

Infrastructure Component	Disturbance Type	
	Initial (acres)	***Long-Term (acres)***
Phase I Haul Road and Facilities	436	115
West Sinclair Rail Facility	261	90
Road Rock Quarry	60	1
Total	**757**	**206**

Source: SWCA 2014

Initial and long-term disturbance is proposed within 757 acres (53 percent of the total Infrastructure Component Site) and 206 acres (14 percent of the total Infrastructure Component Site), respectively, of sensitive soil resources areas. Surface disturbance within these sensitive soil areas could result in impacts, such as increased erosion and run-off potential, and loss of soil productivity and quality, consistent with impacts described in the CCSM Project FEIS (BLM 2012b, pp. 4.9-3, 4.9-5 through 4.9-7) and summarized above. These potential impacts are not expected to be significant based on the five significance criteria established in the CCSM Project FEIS (BLM 2012b; page 4.9-3) because of the avoidance, minimization, and mitigation measures for soil resources, as stipulated in the CCSM Project ROD (BLM 2012a) and summarized below.

Avoidance, Minimization, and Mitigation Measures

To minimize erosion potential and effects on soil resources from the Proposed Action, PCW would implement the measures described in the SPODs (PCW 2014a, 2014b, 2013c) and the CCSM Project ROD (BLM 2012a), including the Erosion Control Plan, the site-specific SWPPPs (PCW 2014a, 2014b, 2014c; Appendix I), and the site-specific reclamation plans (PCW 2014a, 2014b, 2014c; Appendix L). These measures control surface runoff and erosion and ensure biophysical conditions are maintained for reclamation.

The following environmental constraints, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on soil resources within the Infrastructure Component Site:

- BLM Environmental Constraints for soil resources (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed BMPs A-3-65 through A-3-74
- Mitigation Measures SOIL-1 through SOIL-6

4.2.9 Transportation

The CCSM Project FEIS (BLM 2012b) determines that the CCSM Project would result in increased volumes of traffic during the peak months and during peak traffic hours. As a result, the CCSM Project FEIS (BLM 2012b, p. 4.10-20) discloses that congestion, delay, and deteriorations in LOS on certain highways and roadways would occur. Additionally, the CCSM Project FEIS (BLM 2012b) indicates the numbers of trucks needed for the CCSM Project would potentially result in damage to certain local roads in the vicinity of the CCSM Project.

Based on the analysis in the CCSM Project FEIS (BLM 2012b) and the updated information presented in the TMP (PCW 2014a, 2014b, 2014c; Appendix D), as summarized in Chapter 3 of this EA, the transportation impacts associated with the Phase I Haul Road and Facilities and the West Sinclair Rail Facility are consistent with the analysis and disclosures in the CCSM Project FEIS (BLM 2012b). Therefore, this analysis focuses on transportation impacts from the Quarry.

4.2.9.1 Road Rock Quarry

The primary access route to the Quarry is through the CCSM Project North Entrance via Quarry Road. To gain access to the Quarry prior to completion of Quarry Road, PCW would use existing two-track roads (PCW 2014c). PCW intends to use the existing two-track roads to bring in equipment and workers to open the Quarry and facilitate construction of Quarry Road in both directions. Anticipated impacts on transportation resources in the area from the use of the existing two-track roads would be minimal because these roads are internal to the CCSM Project Area. In addition, these impacts are expected to be within the impacts disclosed in the FEIS because these roads would primarily be used outside of the peak construction period and access to these two-track roads would be from Higley Boulevard which was analyzed in the CCSM Project FEIS (BLM 2012b) and the TMP.

Once Quarry Road is constructed, PCW would use the existing two-track roads infrequently. Whether accessing the Quarry from the existing two-track roads or Quarry Road, the potential transportation impacts associated with the Quarry fall within two main categories: (1) workforce commuting trips and (2) material and equipment deliveries.

Workforce Commuting Trips

Workforce trips are necessary to construct, operate, maintain, and decommission the Road Rock Quarry. The peak construction workforce for the Quarry is 33 workers per month (PCW 2014c) anticipated in 2015 and again in 2017 (see Chapter 2) and the anticipated peak construction workforce for the CCSM Project is 945 workers, well within the 1,200 peak workforce estimate disclosed in the CCSM Project FEIS (BLM 2012b). Similarly, the peak operations workforce for the CCSM Project, inclusive of the Road Rock Quarry and other Infrastructure Components, is 114 workers, well within the 158 peak operations workforce disclosed in the CCSM Project FEIS (BLM 2012b). Therefore, the anticipated construction and operations workforce for the CCSM Project, including the Quarry, is within the number analyzed in the CCSM Project FEIS (BLM 2012b). As a result, impacts to transportation from workforce commuting to and from the Quarry are within the impacts disclosed in the CCSM Project FEIS (BLM 2012b).

Material and Equipment Deliveries

Quarry materials delivery trips primarily consist of aggregate delivery internal to the CCSM Project Area during construction of other portions of the CCSM Project, such as the Haul Road. The addition of the Quarry does not change the material delivery requirements for the CCSM Project, as described in the

CCSM Project FEIS (BLM 2012b), only the source of the material. Transportation impacts on public roads resulting from quarry materials delivery are analyzed in the TMP and are anticipated to be less than those described in the CCSM Project FEIS (BLM 2012b) because materials delivery trips would be predominantly internal to the CCSM Project as a result of the Quarry, compared to the external sources of aggregate analyzed in the CCSM Project FEIS (BLM 2012b). In addition, because most of the aggregate supply would be internal, the number of rail shipments of aggregate would be reduced.

PCW also estimated the equipment needed to construct, operate, maintain, and decommission the CCSM Project, including the Quarry (PCW 2014c). These equipment delivery trip estimates were also analyzed in the TMP.

The traffic estimates analyzed in the TMP include traffic from the construction, operations, maintenance, and decommissioning of the Quarry, both workforce commuting and material and equipment deliveries, and the analysis in the TMP is consistent with the analysis in the FEIS. Therefore with the implementation of traffic control measures during construction, transportation impacts from the CCSM Project, including the Quarry are within the impacts analyzed in the CCSM Project FEIS (BLM 2012b).

Avoidance, Minimization, and Mitigation Measures

The following Applicant Committed BMPs and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on transportation from the Proposed Action:

- Applicant Committed BMPs A-3-75 through A-3-77
- Mitigation Measures TRANS-1 through TRANS-4

4.2.10 Vegetation

4.2.10.1 Vegetation Cover Types

The CCSM Project FEIS (BLM 2012b) discloses the anticipated short- and long-term, direct and indirect impacts on vegetation resources resulting from the CCSM Project (BLM 2012b, pp. 4.11-5 through 4.11-14). Direct impacts (trampling/compaction of vegetation, direct removal of vegetation, etc.) were determined to be temporary in nature when those impacts occurred on herbaceous-dominated vegetation communities, and long-term in nature on shrub- and woody-dominated vegetation communities due to the long time frame required for successful reclamation of those community types (BLM 2012b, p. 4.11-5). The CCSM Project FEIS (BLM 2012b) also discusses how construction phasing of the CCSM Project and subsequent reclamation activities will limit the amount of time that native vegetation communities are affected by CCSM Project activities.

The qualitative discussion of impacts from the Proposed Action on primary vegetation communities, including long- and short-term direct and indirect impacts, is consistent with the impacts disclosed in the CCSM Project FEIS (BLM 2012b). Table 4-10 provides a summary of impacts to vegetation communities resulting from each of the infrastructure components using the updated vegetation community mapping (SWCA 2014b) described in Chapter 3 (*Affected Environment*) of this EA. The following sections provide additional qualitative detail regarding direct impacts on vegetation communities.

Table 4-10. Impacts on Vegetation Communities within the Phase I Haul Road and Facilities Site

Vegetation Community	Phase I Haul Road and Facilities		West Sinclair Rail Facility		Road Rock Quarry		Total	
	Initial	*Long-Term[1]*	*Initial*	*Long-Term[1]*	*Initial*	*Long-Term[1]*	*Initial*	*Long-Term[1]*
Aspen Woodland Communities	5.3	0.7	--	--	--	--	5.3	0.7
Barren Slopes	2.5	0.6	--	--	--	--	2.5	0.6
Basin Big Sagebrush Communities	2.1	0.5	--	--	8.8	0.5	10.9	1.0
Bird's Foot Sagebrush Communities	6.5	1.5	--	--	--	--	6.5	1.5
Black Sagebrush Communities	6.1	0.4	--	--	--	--	6.1	0.4
Disturbed and Developed Areas	110.3	32.3	31.1	12.8	13.4	1.5	154.8	46.6
Gardner's Saltbush Communities	169.2	46.4	99.9	56.8	0.3	0.1	269.4	103.3
Greasewood Communities	58.9	16.5	21.5	6.6	2.8	0.4	83.2	23.4
Lowland Grass Communities	0.2	0.1	--	--	--	--	0.2	0.1
Mixed Mountain Shrub Communities	0.6	0.1	--	--	0.4	0.1	1.0	0.2
Mountain Big Sagebrush Communities	140.6	30.1	--	--	0.7	<0.1	141.3	30.1
Riparian Woodland Communities	0.1	<0.1	--	--	--	--	0.1	0.0
Riparian/Lowland Communities	14.5	3.3	--	--	--	--	14.5	3.3
Shadscale Saltbush Communities	184.6	47.8	141.5	27.1	0.2	0.1	326.3	75.0
Upland Grass Communities	27.4	6.5	5.9	2.4	35.9	2.8	69.3	11.8
Wyoming Big Sagebrush Communities	145.9	38.6	70.0	15.5	121.0	12.2	336.9	66.3
Grand Total	**875.1**	**225.4**	**369.9**	**121.2**	**183.5**	**17.7**	**1,428.4**	**364.1**

Source: SWCA 2014b

[1] Direct impacts are assumed to be temporary in nature when those impacts occur on herbaceous-dominated vegetation communities, and longer-term in nature for shrub- and woody-dominated vegetation communities due to the long time frame required for successful reclamation of those community types. Shrub- and woody-dominated vegetation includes: Aspen Woodland Communities Basin Big Sagebrush Communities, Black Sagebrush Communities, Gardner's Saltbush Communities, Greasewood Communities, Mixed Mountain Shrub Communities, Mountain Big Sagebrush Communities, Riparian Woodland Communities, Riparian/Lowland Communities, Shadscale Saltbush Communities, and Wyoming Big Sagebrush Communities.

Phase I Haul Road and Facilities

Impacts from the Phase I Haul Road and Facilities are consistent with the overall type and nature of impacts on vegetation disclosed in the CCSM Project FEIS (BLM 2012b). The majority of the initial disturbance is proposed within shadscale saltbush communities, Gardner's saltbush communities, and Wyoming and mountain big sagebrush communities. Small areas of riparian and/or wetland communities are proposed within both initial and long-term disturbance areas. Any impacts on wetland or non-wetland WUS from the Proposed Action would be permitted in accordance with USACE Section 404 regulations. These communities are discussed in more detail in Chapter 3 of this EA.

West Sinclair Rail Facility

Impacts from the Rail Facility are consistent with the overall type and nature of impacts on vegetation disclosed in the CCSM Project FEIS (BLM 2012b). Shadscale saltbush communities comprise the largest area proposed for interim disturbance, followed by Gardner's saltbush communities. Long-term disturbance would be greatest in the Gardner's saltbush communities, followed by shadscale saltbush communities.

Road Rock Quarry

Impacts from the Quarry are consistent with the overall type and nature of impacts on vegetation disclosed in the CCSM Project FEIS (BLM 2012b). The largest initial and long-term surface disturbance would occur within Wyoming big sagebrush communities, followed by upland grassland communities, and disturbed and developed areas.

4.2.10.2 Noxious Weeds and Invasive Species

The CCSM Project FEIS (BLM 2012b) discusses the connection between soil disturbance and increased opportunities for the spread and establishment of weeds, as well as how roads provide corridors in which weeds can spread and become established. The qualitative discussion of impacts on noxious weeds and invasive species resulting from the Proposed Action of this EA (e.g., increased risks of spreading invasive species) is consistent with that disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.11-10). The general abundance, species, and distribution of noxious weeds and invasive species disclosed in the CCSM Project FEIS (BLM 2012b, pp. 3.11-14 and 3.11-15) is consistent with the 2012 and 2013 survey results for noxious weeds and invasive species, as discussed in Chapter 3 (*Affected Environment*) of this EA.

Avoidance, Minimization, and Mitigation Measures

Direct impacts to general vegetation resources, as well as direct impacts associated with the introduction and spread of noxious weeds and invasive species, would be mitigated through implementation of the site-specific weed management plans, included as Appendix J of the SPODs (PCW 2014a, 2014b, 2014c) and the site-specific reclamation plans, included as Appendix L of the SPODs (PCW 2014a, 2014b, 2014c).

The following ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on general vegetation resources and reduce the spread of noxious weed and invasive species from the Proposed Action:

- Applicant Committed Measures A-1-13 and A-1-15
- Applicant Committed BMP A-3-78
- Mitigation Measures VEG-1 through VEG-3

4.2.10.3 Wetlands and Associated Riparian Zones

As disclosed in the CCSM Project FEIS (BLM 2012b, pp. 4.11-10 through 4.11-14), impacts on wetlands and associated riparian zones include direct loss of wetland habitat due to construction of the CCSM Project infrastructure, such as roads, which cross wetlands. Indirect impacts include alteration of the hydrologic process due to project infrastructure soil compaction and altered surface runoff patterns (collection, concentration, and conveyance). The CCSM Project FEIS (BLM 2012b) discloses that initial impacts are anticipated to affect 14,989 linear feet of areas that are likely to contain wetland and riparian zones, based primarily on a desk-top analysis of water features discussed in Section 3.11.3 of the CCSM Project FEIS (BLM 2012b).

Within the Phase I Haul Road and Facilities, PCW identified 6,426 linear feet (2.78 acres) of wetland WUS and within the Rail Facility, 814 linear feet (4.5 acres) of wetland WUS, for a total of 7,240 linear feet (7.28 acres) of wetland WUS. This is well below (less than half) the total length of anticipated impacts on wetlands disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.11-13). No wetlands are identified within the Road Rock Quarry Site.

Avoidance, Minimization, and Mitigation Measures

The following environmental constraints, ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on wetlands and associated riparian zones from the Proposed Action:

- BLM Environmental Constraints for water resources (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed Measures A-1-16 and A-1-17, A-1-21
- Applicant Committed BMPs A-3-87 through A-3-92
- Mitigation Measures WR-1 and WR-2

In addition, the following plans would be implemented to minimize impacts on wetlands and riparian zones potentially resulting from the Proposed Action:

- Watershed Monitoring Plan, included as Appendix H of the CCSM Project FEIS (BLM 2012b)
- Master Reclamation Plan, included as Appendix D of the CCSM Project FEIS (BLM 2012b), as well as the site-specific reclamation plans, included as Appendix L of the SPODs (PCW 2014a, 2014b, 2014c)
- CCSM Project Erosion Control Plan, included as Appendix H of the SPODs (PCW 2014a, 2014b, 2014c)
- Site-specific SWPPPs, included as Appendix I of the SPODs (PCW 2014a, 2014b, 2014c)
- Site-specific spill prevention, control, and countermeasure (SPCC) plans, included as Appendix Q of the SPODs (PCW 2014a, 2014b, 2014c)

4.2.11 Visual Resources

The CCSM Project FEIS (BLM 2012b) discusses (a) direct effects to visual resources as a result of the disturbance of the landscape by project activities and the addition to the landscape of proposed facilities; (b) short-term effects from temporary disturbance for construction of facilities; and (c) long-term effects from the addition of permanent facilities to the landscape and from operation of facilities (BLM 2012b; p. 4.12-6).

The CCSM Project FEIS (BLM 2012b) discloses that short-term effects to visual resources would result from clearing, grading, and restoration of construction disturbance areas for roads, laydown areas, and water facilities. Temporary construction disturbance from the construction of the Haul Road and laydown areas would be visible as light-tan exposed soils in geometrically shaped areas with straight, linear edges that provide some textural and color contrasts with the surrounding undisturbed vegetation. The CCSM Project FEIS found that "roads located on steep slopes may require wider construction disturbance due to the cuts-and-fills required for road construction on slopes… Large cuts-and-fills required for roads on steep slopes that face viewers would create cleared areas with strong color, line, and form contrasts that would be easily visible to viewers located at KOPs until the disturbed areas are successfully reclaimed" (BLM 2012b; pp. 4.12-7 and 4.12-11). A strong visual contrast is a visual change that demands attention, will not be overlooked, and is dominant in the landscape. Significance criteria in the CCSM Project FEIS included "development [that] has a substantial adverse effect on a designated scenic vista" (BLM 2012b; p. 4.12-5). The analysis found that "impacts to visual resources are substantial in that construction activities would be visible to some sensitive viewpoints" (BLM 2012b; p. 4.12-8).

Long-term effects disclosed in the CCSM Project FEIS (BLM 2012b) include increased vehicle traffic for worker access, dust, and the potential for strong visual contrasts from cut-and-fill areas for road construction on slopes with a grade of 7.5 percent or greater (BLM 2012b; 4.12-9). Color, line, and textual contrast of new road disturbance and associated cut-and-fill slopes would be visible in unobstructed views from KOPs. Road disturbances would be difficult to discern from the surrounding landscape in middle ground views of more than two miles from viewpoints, as the soil colors would tend to blend with the surrounding vegetation (BLM 2012b; p. 4.12-11).

The impact analysis in the CCSM Project FEIS (BLM 2012b) for visual resources is consistent with the overall nature and types of potential impacts anticipated from the Proposed Action. Additional specificity regarding the extent and/or location of those potential impacts for the Phase I Haul Road and Facilities and the Road Rock Quarry is presented below. As described in Appendix A of this EA, impacts to visual resources resulting from the proposed West Sinclair Rail Facility are adequately analyzed in the CCSM Project FEIS (BLM 2012b), from which this EA tiers, and need not be reanalyzed.

4.2.11.1 Methodology

Impacts to visual resources were assessed utilizing the BLM's VRM system contrast rating process, consistent with the VRM methods used in the CCSM Project FEIS (BLM 2012b). The contrast rating process compares changes to existing visual characteristics from the introduction of proposed facilities. The visual contrast created between a project and the existing landscape is described in terms of form, line, color, and texture. The contrast is then compared with VRM classes to determine whether the project meets management objectives. The degree of contrast is evaluated according to the criteria shown in Table 4-11. The resulting contrast rating is compared to the acceptable degree of contrast for the VRM Class, to determine if the management objectives for the VRM Class are achieved.

Table 4-11. VRM Class and Contrast Ratings Criteria

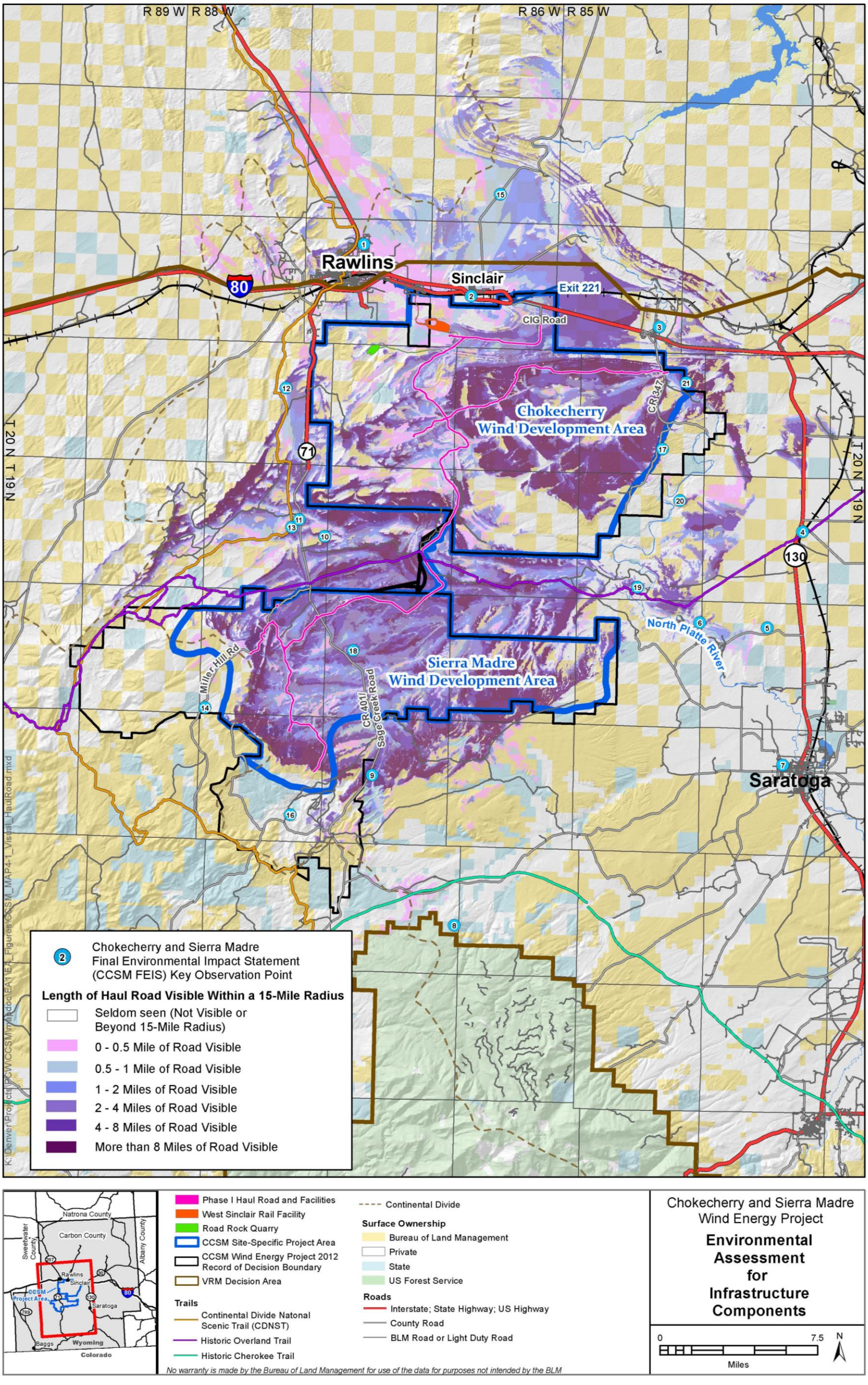
VRM Class	Acceptable Degree of Contrast	Criteria
I	None	Contrast is not visible or perceived
II	Weak	Contrast can be seen but does not attract attention
III	Moderate	Contrast begins to attract attention and begins to dominate the characteristic landscape
IV	Strong	Contrast demands attention, will not be overlooked, and is dominant in the landscape

4.2.11.2 Phase I Haul Road and Facilities

Map 4-1 presents the viewshed analysis of areas that would have a view of the construction and operations of the Phase I Haul Road and Facilities. The computer-generated viewshed mapping was projected from a 5-foot eye level, using a 10-m USGS digital elevation model, to the ground plane out to a distance of 15 miles from the Phase I Haul Road and Facilities. Due to the general absence of tall land cover that could alter the actual viewshed in this landscape, the topographically-generated viewshed mapping is considered representative.

The location of the Phase I Haul Road and Facilities has not changed substantially from what was analyzed in the CCSM Project FEIS, though additional engineering design details allow for further site-specific analysis in this EA as anticipated in the FEIS (BLM 2012b; p 4.12-11).

Map 4-1. Phase I Haul Road and Facilities Viewshed Analysis



The CCSM Project FEIS (BLM 2012b) defined 21 KOPs from which visual effects were evaluated. Visibility analysis of the Phase I Haul Road and Facilities demonstrates that it would be visible from 12 of these KOPs (KOPs 1, 2, 9, 10, 11, 12, 13, 14, 15, 17, 18, and 21) as shown on Map 4-1. Ratings were determined based primarily on distance from and length of the visible Phase I Haul Road and Facilities. The highest contrast rating from the analysis in this EA was moderate, as summarized in Table 4-12.

Table 4-12. Visual Resource Contrast Ratings and VRM Class Consistency for the Phase I Haul Road and Facilities

KOP No.[1]	Location	Visibility of and Distance from the Phase I Haul Road and Facilities	SQRU Rating[2]	SLRU Rating[2]	VRM Class[3]	Contrast Rating	VRM Class Achieved?
1	Rawlins Recreation Center	The Phase I Haul Road would be seen in the Background (7.5 miles away). Overall, up to 0.5 mile of the Phase I Haul Road would be seen from this KOP.	N/A	N/A	IV	Weak	Yes
2	Sinclair I-80 Overpass	The Phase I Haul Road would be seen in the Foreground (2.5 miles away). Overall, up to 1 mile of the Phase I Haul Road would be seen from this KOP.	N/A	N/A	IV	Weak	Yes
9	County Road 71 – Rasmussen Reservoir Overlook	The Phase I Haul Road would be seen in the Foreground (2.4 miles away). Overall, more than 8.0 miles of the Phase I Haul Road would be seen from this KOP.	B [Moderate]	High	III	Moderate	Yes
10	Teton Reservoir Campground	The Phase I Haul Road would be seen in the Foreground (3.0 miles away). Overall, less than 0.5 miles of the Phase I Haul Road would be seen from this KOP.	C [Low]	High	IV	Weak	Yes
11	CDNST towards Chokecherry	The Phase I Haul Road would be seen in the Foreground (3.7 miles away). Overall, approximately 1.0 mile of the Phase I Haul Road would be seen from this KOP.	C [Low]	High	IV	Weak	Yes
12	CDNST Above Rim Lake	The Phase I Haul Road would be seen in the Background (6 miles away). Overall, up to 4.0 miles of the Phase I Haul Road would be seen from this KOP.	B [Moderate]	High	IV	Weak	Yes
13	CR 3301 - Bridger Pass Road along CDNST	The Phase I Haul Road would be seen in the Foreground (3.4 miles away). Overall, approximately 4.0 miles of the Phase I Haul Road would be seen from this KOP.	C [Low]	High	IV	Moderate	Yes
14	County Road 505	The Phase I Haul Road would be seen in the Foreground (3.7 miles away). Overall, less than 0.5 mile of the Phase I Haul Road would be seen from this KOP.	B [Moderate]	Moderat e	IV	Weak	Yes

Table 4-12. Visual Resource Contrast Ratings and VRM Class Consistency for the Phase I Haul Road and Facilities

KOP No.[1]	Location	Visibility of and Distance from the Phase I Haul Road and Facilities	SQRU Rating[2]	SLRU Rating[2]	VRM Class[3]	Contrast Rating	VRM Class Achieved?
15	Seminoe to Alcove Scenic Byway BLM Kiosk	The Phase I Haul Road would be seen in the Foreground (5 miles away). Overall, up to 1.0 mile of the Phase I Haul Road would be seen from this KOP.	C [Low]	High	III	Weak	Yes
17	County Road 345 – Southwest Savage Hills Overlooking Severson Flats	The Phase I Haul Road would be seen in the Foreground (4.0 miles away). Overall, up to 8.0 mile of the Phase I Haul Road would be seen from this KOP.	B [Moderate]	Low	III	Moderate	Yes
18	WY 71 near La Marsh Creek	The Phase I Haul Road would be seen in the Foreground (4.0 miles away). Overall, approximately 4.0 miles of the Phase I Haul Road would be seen from this KOP.	C [Low]	High	IV	Moderate	Yes
21	Rochelle Recreation Area above N. Platte River	The Phase I Haul Road would be seen in the Foreground (1 mile away). Overall, less than 0.5 mile of the Phase I Haul Road would be seen from this KOP.	B [Moderate]	High	II	Weak	Yes

Sources: Otak 2011, BLM 2012b

KOP Key Observation Point
SQRU Scenic Quality Rating Unit
SLRU Sensitivity Level Rating Unit
VRM Visual Resource Management

[1]KOP numbers are as defined in the CCSM Project FEIS (2012b).
[2]The urbanized areas of Rawlins and Sinclair were not assessed for scenic quality or sensitivity levels due to the extensive development and lack of BLM-administered lands (Otak 2011).
[3]The Phase I Haul Road and Facilities are located in VRM Class III. The VRM Class of each KOP varies.

The CCSM Project FEIS (BLM 2012b) discloses that short-term and long-term views of the Haul Road would result in strong contrasts; however, this is an acceptable degree of contrast under VRM Class IV and therefore is in compliance. The visual contrast resulting from the Phase I Haul Road and Facilities, as analyzed in this EA, would not exceed the rating of "strong" and VRM Class IV objectives disclosed in the CCSM Project FEIS (BLM 2012b); Therefore, no visual impacts are anticipated as a result of construction of the Phase I Haul Road and Facilities beyond what was identified in the CCSM Project FEIS (BLM 2012b). Visibility of the Phase I Haul Road and Facilities from National Trail System resources is discussed in Section 4.2.3.

4.2.11.3 Road Rock Quarry

The portions of the Road Rock Quarry that would be potentially visible consist of areas for excavation, crushing, finished product stockpiling, truck loading, soil storage, and an Operations Area for office trailers, vehicle parking, and any necessary non-material storage. The height of the aggregate stockpile would vary, but is anticipated to reach a height of up to 60 feet.

Map 4-2 presents the viewshed analysis of areas that would have a view of the Road Rock Quarry. The computer-generated viewshed mapping was projected from a 5-foot eye level, using a 10-m USGS digital elevation model, to the ground plane out to a distance of 15 miles from the Road Rock Quarry (excluding access roads). Due to the general absence of tall land cover that could alter the actual viewshed in this landscape, the topographically-generated viewshed mapping is considered representative. Quarry operations at the toe of an east-facing foothill would be visible from the I-80 corridor and from areas within and to the north of Rawlins and Sinclair. Foreground views on I-80 near Sinclair are dominated by industrial operations associated with the Sinclair Oil Refinery. Public views of the Quarry from the I-80 corridor and from Rawlins would be within the context of the Wyoming State Penitentiary, located approximately one mile south of I-80, and other quarries in the I-80 corridor such as the Wyute Pit located one mile west of Rawlins. At 3 miles or more to I-80 and other populated areas, the Road Rock Quarry would be difficult to discern in context with other developments as the distance would obscure form, line and color contrasts. With exception of the Wyoming State Penitentiary, there is no public access within two miles of the Quarry.

Visibility analysis of the Road Rock Quarry indicates that the Quarry would be visible from KOPs 1 and 2 used in the CCSM Project FEIS (BLM 2012b), as shown in Map 4-2 and Table 4-13. When viewed in context with existing development in Sinclair, Rawlins, and along I-80, contrasts from the excavation activities, stockpiles, delivery vehicles, dust, and lighting would be weak (i.e., seen but would not attract attention).

Map 4-2. Quarry Viewshed Analysis

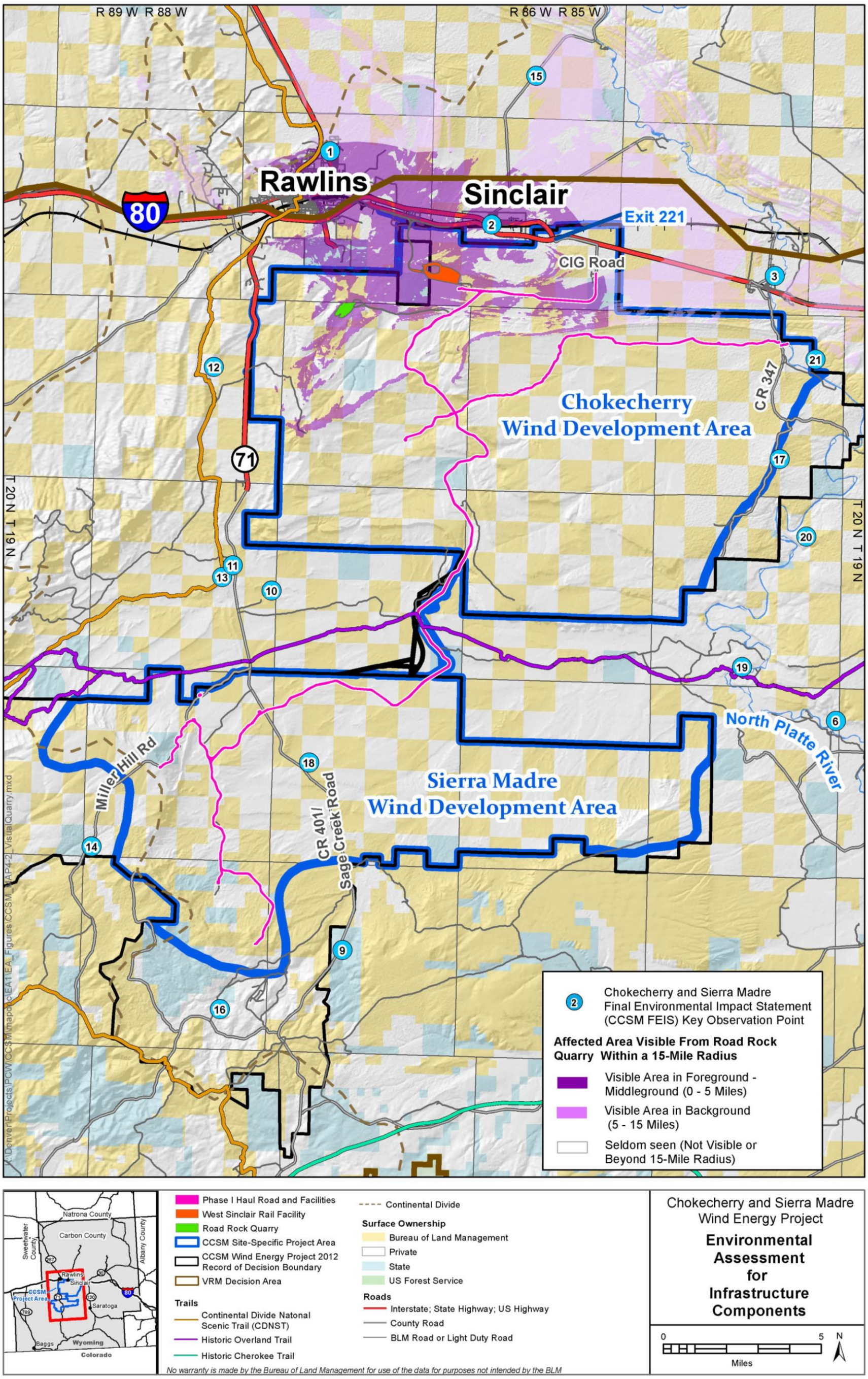


Table 4-13. Visual Resource Contrast Ratings and VRM Class Consistency for the Road Rock Quarry

KOP No.[1]	Location	Comments	SQRU Rating[2]	SLRU Rating[2]	VRM Class	Contrast Rating	VRM Class Achieved?
1	Rawlins Recreation Center	KOP 1 is located 4.5 miles northwest of the Quarry. Urban uses dominate the Foreground-Middleground. The Quarry would be seen beyond the State Penitentiary at the toe of a foothill.	N/A	N/A	IV	Weak	Yes
2	Sinclair I-80 Overpass	KOP 2 is located 4.8 miles northeast of the Quarry. Industrial activity dominates the Foreground-Middleground views from Sinclair and I-80.	N/A	N/A	IV	Weak	Yes

Sources: Otak 2011, BLM 2012b

KOP Key Observation Point
SQRU Scenic Quality Rating Unit
SLRU Sensitivity Level Rating Unit
VRM Visual Resource Management

[1]KOP numbers are as reported in the CCSM Project FEIS (2012b).
[2]The urbanized areas of Rawlins and Sinclair were not assessed for scenic quality or sensitivity levels due to the extensive development and lack of BLM-administered lands (Otak 2011).

The CCSM Project FEIS (BLM 2012b) disclosed that views of the CCSM Project from these KOPs would result in moderate to strong contrasts and comply with VRM Class IV objectives. The visual contrast resulting from the Road Rock Quarry would not exceed the contrast ratings and VRM Class IV objectives disclosed in the CCSM Project FEIS (BLM 2012b). Therefore, no visual impacts are anticipated as a result of the Road Rock Quarry that exceed the visual impacts identified in the CCSM Project FEIS (BLM 2012b).

4.2.12 Water Resources

The CCSM Project FEIS (BLM 2012b) discloses that impacts on water resources would occur as a result of construction, operation, maintenance and decommissioning of the CCSM Project. These impacts include increased runoff and erosion from disturbed lands, increased stream channel instability from construction of road crossings, and potential degradation of water quality due to potential spills from hazardous materials. Impacts on water resources from the Proposed Action are consistent with the types of potential impacts disclosed in the CCSM Project FEIS (BLM 2012b, pp. 4.13-4 to 4.13-11).

The CCSM Project FEIS (BLM 2012b, p. 4.13-4) documents the surface disturbance anticipated within each sub-watershed occurring in the CCSM Project Area, and specifically identifies sub-watersheds that would experience greater than one percent surface disturbance. The remainder of this section provides additional details on impacts to surface water resources from the Proposed Action of this EA with respect to stream crossings and surface disturbance within sub-watersheds.

According to the SPODs (PCW 2014a, 2014b, 2014c) and the WUS delineation performed in 2013, the Haul Road would account for 53 WUS crossings, the Rail Facility would account for 4 WUS crossings, and the Quarry would account for 3 WUS crossings (see Section 3.10.3 of this EA). The CCSM Project FEIS (BLM 2012b) discloses that impacts are anticipated to 348 stream crossings as a result of the CCSM Project. Therefore, no additional impacts to stream crossings beyond those disclosed in the CCSM Project FEIS (BLM 2012b) are anticipated as a result of the Proposed Action.

Table 4-14 identifies the amount of initial and long-term surface disturbance, respectively, per sub-watershed for the Proposed Action based on the SPODs (PCW 2014a, 2014b, 2014c). Table 4-14 is consistent with the information presented in Table 4.13-2 of the CCSM Project FEIS (BLM 2012b). The Proposed Action would result in surface disturbance within sub-watersheds that were identified as having surface disturbance in Table 4.13-2 of the CCSM Project FEIS (BLM 2012b). No sub-watershed would be impacted other than those disclosed in the CCSM Project FEIS (BLM 2012b).

In addition, neither the Upper Muddy Creek watershed improvement project area nor the Sage Creek watershed improvement project area would experience any greater degree of surface disturbance than disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.13-8) as a result of the Proposed Action. Specifically, fewer than 530 acres of surface disturbance within the Upper Muddy Creek watershed improvement project area and 2,783 acres within the Sage Creek watershed improvement project area are anticipated as a result of the Proposed Action of this EA.

Table 4-14. Initial Surface Disturbance of Sub-Watersheds Associated with the Proposed Action

Watershed/ Sub-Watershed	Watershed/ Sub-Watershed Total Area (acres)	Infrastructure Component						Grand Total in CCSM Project FEIS		Grand Total for Proposed Action	
		Phase I Haul Road and Facilities		West Sinclair Rail Facility		Road Rock Quarry					
		Initial Acres	*Long-Term Acres*	*Initial Acres*	*Long-Term Acres*	*Initial Acres*	*Long-Term Acres*	*Construction Acres*	*Percent*	*Initial Acres*	*Percent*
North Platte Basin											
Jack Creek Watershed	**35,771**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.0**	**--**	**--**
Little Jack Creek	35,771	--	--	--	--	--	--	--	**0.0**	--	--
North Platte River – Cow Creek Watershed	**46,942**	**--**	**--**	**--**	**--**	**--**	**--**	**326**	**0.7**	**--**	**--**
North Platte River-First Cottonwood Draw	46,942	--	--	--	--	--	--	326	0.7	--	--
North Platte River - Iron Springs Draw-Watershed	**157,599**	**408[1]**	**102**	**8**	**3**	**14**	**4**	**3,104[1]**	**2.0**	**430[1]**	**0.4**
Grenville Dome	22,059	178	42	8	3	14	4	739	3.3	201	0.9
Hugus Draw	35,341	229	60	--	--	--	--	1,508	4.3	229	0.6
Iron Springs Draw	18,853	--	--	--	--	--	--	703	3.7	--	--
North Platte River - Coal Mine Draw	34,326	--	--	--	--	--	--	153	0.4	--	--
North Platte River - Lost Springs Draw	47,020	1	0	--	--	--	--	1	<0.1	1	0.0
Pass Creek Watershed	**34,785**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.0**	**--**	**--**
Pass Creek-Stage Station Springs	34,785	--	--	--	--	--	--	--	0.0	--	--

Table 4-14. Initial Surface Disturbance of Sub-Watersheds Associated with the Proposed Action

Watershed/ Sub-Watershed	Watershed/ Sub-Watershed Total Area (acres)	Infrastructure Component						Grand Total in CCSM Project FEIS		Grand Total for Proposed Action	
		Phase I Haul Road and Facilities		West Sinclair Rail Facility		Road Rock Quarry					
		Initial Acres	*Long-Term Acres*	*Initial Acres*	*Long-Term Acres*	*Initial Acres*	*Long-Term Acres*	*Construction Acres*	*Percent*	*Initial Acres*	*Percent*
Sage Creek Watershed	**160,703**	**464**	**122**	**--**	**--**	**--**	**--**	**2,784[1]**	**1.7**	**464**	**0.4**
Lower Little Sage Creek	16,898	86	23	--	--	--	--	165	1.0	86	0.5
Lower Sage Creek – Upper North Platte River	20,079	15	4	--	--	--	--	507	2.5	15	0.1
Miller Creek	28,571	222	67	--	--	--	--	794	2.8	222	0.8
Rasmussen Creek	23,488	140	29	--	--	--	--	820	3.5	140	0.6
Upper Little Sage Creek	30,732	--	--	--	--	--	--	4	0.0		
Upper Sage Creek – North Platte River	40,935	1	0	--	--	--	--	494	1.2	1	0.0
Sugar Creek Watershed	**78,848**	**3**	**1**	**361[1]**	**118**	**169**	**14**	**952[1]**	**1.2**	**534**	**1.0**
101800021304	11,042	3	1	319	102	169	14	528	4.8	491	4.5
Lower Sugar Creek	42,909	--	--	43	16	--	--	235	0.5	43	0.10
Middle Sugar Creek	24,897	--	--	--	--	--	--	189	0.8	--	--
North Platte Basin Subtotal	**514,648**	**875**	**225**	**370**	**121**	**184[1]**	**18**	**7,164[1]**	**1.4**	**1,428**	**0.5**
White-Yampa Basin											
Savery Creek Watershed	**61,807**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Little Savery Creek	30,995	--	--	--	--	--	--	--	--	--	--
North Fork Savery Creek	30,812	--	--	--	--	--	--	--	--	--	--
Upper Muddy Creek Watershed	**62,692**	**0.4**	**<0.1**	**--**	**--**	**--**	**--**	**--**	**--**	**0.4**	**0.0**
McKinney Creek	30,433	0.4	0.0	--	--	--	--	530[1]	1.7	0.4	0.0
Muddy Creek-Littlefield Creek	32,259	--	--	--	--	--	--	--	--	--	--
White-Yampa Basin Subtotal	**124,499**	--	--	--	--	--	--	530	0.4	0.4	0.0
Grand Total	**639,147**	**875**	**225**	**370**	**121**	**184[1]**	**18**	**7,694[1]**	**1.2**	**1,429[1]**	**0.4**

[1]Numbers may not add up to this total due to rounding.

Avoidance, Minimization, and Mitigation Measures

The following environmental constraints, ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on water resources from the Proposed Action:

- BLM Environmental Constraints for water resources (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed Measures A-1-16 and A-1-17, A-1-21
- Applicant Committed BMPs A-3-87 through A-3-92
- Mitigation Measures WR-1 and WR-2

In addition, the following plans would be implemented to minimize impacts on water resources potentially resulting from the Proposed Action:

- Watershed Monitoring Plan, included as Appendix H of the CCSM Project FEIS (BLM 2012b)
- Master Reclamation Plan, included as Appendix D of the CCSM Project FEIS (BLM 2012b), as well as the site-specific reclamation plans, included as Appendix L of the SPODs (PCW 2014a, 2014b, 2014c)
- CCSM Project Erosion Control Plan, included as Appendix H of the SPODs (PCW 2014a, 2014b, 2014c)
- Site-specific SWPPPs, included as Appendix I of the SPODs (PCW 2014a, 2014b, 2014c)
- Site-specific SPCC plans, included as Appendix Q of the SPODs (PCW 2014a, 2014b, 2014c)

4.2.13 Wildlife and Fisheries Resources

The CCSM Project FEIS (BLM 2012b, pp. 4.14-9 through 4.14-31) discusses the direct and indirect impacts on terrestrial and aquatic wildlife as a result of the CCSM Project. Disclosed impacts included direct loss of habitat, indirect habitat loss due to behavioral avoidance and alterations of movement patterns, degradation of surface water habitats, and mortalities resulting from wildlife-vehicle collisions and human interactions.

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for wildlife and fisheries resources is consistent with respect to the types and nature of impacts on these species anticipated from the Proposed Action. However, additional specificity regarding the extent and/or location of those potential impacts is presented below.

4.2.13.1 Big Game

Impacts on big game species, which include mule deer, elk, and pronghorn, as described in the CCSM Project FEIS (BLM 2012b, p. 4.14-11), includes direct habitat loss of seasonal ranges; behavioral changes, such as avoidance of certain areas; indirect habitat loss of seasonal ranges; disruption of migration routes; and increased incidence of vehicle collisions and poaching. The environmental consequences section for wildlife and fisheries resources, as presented in the CCSM Project FEIS (BLM 2012b), was reviewed in accordance with the Tiering Procedures. The following section provides additional specificity regarding impacts on mule deer and pronghorn resulting from the Proposed Action, using information from the SPODs, as well as updated migration corridor mapping published subsequent to the CCSM Project FEIS (BLM 2012b).

Mule Deer

The CCSM Project FEIS (BLM 2012b) determines that the direct loss of crucial winter range (CWR), combined with expansive areas of potential indirect impacts during construction and operation of the CCSM Project, would likely result in habitat loss and disturbance levels exceeding significance criteria #3. This significance criteria states that a significant impact on a particular wildlife species would occur if management actions were implemented that result in substantial disruption or irreplaceable loss of vital and high value habitats, as defined in the WGFD Mitigation Policy (BLM 2012b, p. 4.14-6).

Crucial Winter Range

Consistent with the analysis in the CCSM Project FEIS (BLM 2012b), initial disturbance areas that are dominated by shrub communities are assumed to result in long-term disturbance to mule deer CWR because of the long time frame for full shrub recovery. This assumption is applied for both direct and indirect impact calculations, described below. The CCSM Project Area contains a portion of the 130,989-acre mule deer CWR area that generally follows the North Platte River from three miles north of Saratoga to the inflow of Seminoe Reservoir approximately nine miles northwest of Fort Steele. Of this CWR area, 24,693 acres (approximately 19 percent) overlap with the CCSM Project Area.

The CCSM Project FEIS (BLM 2012b) estimates 232 acres of direct impacts on CWR, which is approximately 0.2 percent of the 130,989-acre CWR area and less than one percent of the 24,693 acres of CWR mapped within the CCSM Project Area (see Map 3-5 of this EA). The Proposed Action would result in 739 acres of direct impacts to CWR, approximately 0.6 percent of the 130,989-acre CWR area and three percent of the 24,693 acres of CWR mapped within the CCSM Project Area. Direct impacts can be further analyzed by long-term direct and short-term direct impacts. Assuming a long-term impact would result from long-term surface disturbance, as well as initial surface disturbance within shrub communities (consistent with assumptions in the CCSM Project FEIS (BLM 2012b)) as described above, a total of 645 acres of CWR would experience long-term direct impacts, and a total of 94 acres of CWR (within herbaceous vegetation communities) would experience short-term direct impacts. While the initial acres of shrub dominated habitats disturbed are greater than those identified in the CCSM Project FEIS, the Proposed Action would have no new significant impacts to mule deer CWR because the types and extents of impacts are consistent with the significance determinations made in the CCSM Project FEIS.

Indirect impacts on mule deer within the mule deer CWR are considered in the CCSM Project FEIS (BLM 2012b) to extend no further than 0.62 mile from disturbance areas. The Proposed Action would result in indirect impacts on 17,202 acres of mule deer CWR within 0.62 mile of surface disturbance areas. This figure is less than the estimated indirect habitat loss of 20,158 acres of mule deer CWR disclosed in the CCSM Project FEIS (BLM 2012b), and represents approximately 13 percent of the 130,989-acre CWR area and 70 percent of the 24,693 acres of CWR mapped within the CCSM Project Area (see Map 3-5 of this EA).

The PVMDP (WGFD 2012b) states that the Platte Valley mule deer herd, which uses the mule deer CWR within the CCSM Project Area, has been in decline since approximately 2006. As described in the CCSM Project FEIS (BLM 2012b) and further confirmed by the PVMDP, winter habitat condition is considered the limiting factor in mule deer population growth in the Platte Valley herd (WGFD 2012b). As a result, implementation of the Proposed Action of this EA and the resulting impacts on CWR could result in declines in the overall carrying capacity of the CWR, an impact that is disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.14-11).

Per the 2008 Rawlins RMP and ROD (BLM 2008b), no surface disturbance is allowed on federal lands from November 15 to April 30 within mule deer CWR. PCW will also implement this timing stipulation for new construction activities on private and state lands within mule deer CWR between November 15 and April 30. These timing stipulations would reduce impacts on mule deer CWR by minimizing the amount of human activity associated with new construction activities and potential disruption of wintering mule deer in CWR during winter months. In addition, the Rail Facility would operate seasonally, with most activity occurring during non-winter months, thereby reducing impacts on mule deer CWR.

Migration Corridors

A probable mule deer migration corridor (WGFD 2012a) crosses over an existing dirt road where the Haul Road is proposed at the very southern end of the Chokecherry WDA (refer to Map 3-5). This migration corridor was not identified on the statewide migration corridor mapping at the time the CCSM Project FEIS (BLM 2012b) was prepared. The CCSM Project FEIS (BLM 2012b) states that mule deer are known to migrate through the CCSM Project Area, but the specific locations of migration routes are largely unknown. Therefore, potential impacts on mule deer migration corridors resulting from the Proposed Action are consistent with those disclosed on page 4.14-12 of the CCM Project FEIS (BLM 2012b) and do not constitute a substantial change from those disclosures.

Pronghorn

The Proposed Action would not impact CWR for pronghorn. Impacts on pronghorn resulting from the Proposed Action would primarily be indirect impacts on probable migration corridors mapped by the WGFD (2012a). The CCSM Project FEIS (BLM 2012b, p. 4.14-14) discloses that fences constructed such that pronghorn cannot travel underneath them can create movement barriers and can block migration routes. These impacts were determined to result in no significant impacts on pronghorn. Although there was the addition of one migration corridor within the Infrastructure Component Site, indirect impacts on pronghorn migration are consistent with those disclosed in the CCSM Project FEIS (BLM 2012b) and do not constitute a substantial change from those disclosures, nor a significant impact on pronghorn.

Avoidance, Minimization, and Mitigation Measures

Impacts on mule deer and pronghorn migration routes would be reduced through Applicant Committed BMPs A-3-05, A-3-94, and A-3-97, as provided in the CCSM Project ROD (BLM 2012a). Mitigation Measure WFM-2 would limit the length of snow fences, if used during construction of the CCSM Project, which would reduce impacts on migrating big game species, by facilitating movement.

4.2.14 Special-Status Species

The CCSM Project FEIS (BLM 2012b) analyzes direct and indirect impacts, including short- and long-term impacts, on federally listed and BLM sensitive species (BLM 2012b, pp. 4.15-5 through 4.15-19). Specific types of impacts disclosed in the CCSM Project FEIS (BLM 2012b) are summarized below for individual species or species groups.

As discussed in more detail below, the analysis and conclusions in the CCSM Project FEIS (BLM 2012b) are consistent with the impacts anticipated for the Proposed Action of this EA. As described in Chapter 1 (*Introduction and Need for Proposed Action*), additional site-specific information on pygmy rabbit, white-tailed prairie dog, Wyoming pocket gopher, burrowing owl, Greater Sage-Grouse, mountain

plover, and raptor species, including golden and bald eagle, is available from surveys conducted in 2012 and 2013. This section updates the analysis of potential impacts on special-status species based on that information. No analysis of federally listed species is included in this chapter as these species were identified as NI by the Proposed Action in the ID Team Checklist (see Appendix B of this EA).

4.2.14.1 BLM Sensitive Mammals

The CCSM Project FEIS (BLM 2012b) evaluates impacts on BLM sensitive mammal species, including pygmy rabbit (page 4.15-8), white-tailed prairie dog (page 4.15-9), and Wyoming pocket gopher (page 4.15-9). Impacts anticipated to result from the CCSM Project included direct and indirect loss of habitat, such as displacement due to increased traffic on roads and human activity, and inadvertent mortalities due to increased traffic on roads and human activity. The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for these species is consistent with the types and nature of impacts anticipated from the Proposed Action. As described in Chapter 3 (*Affected Environment*) of this EA, additional surveys for three BLM sensitive mammals have occurred since publication of the CCSM Project FEIS (BLM 2012b). Additional specificity regarding the extent and/or location of those potential impacts is presented below.

4.2.14.1.1 Pygmy Rabbit

The types of direct and indirect impacts on pygmy rabbit, as disclosed in the CCSM Project FEIS (BLM 2012b) are described above under BLM sensitive mammals. No significant impacts on pygmy rabbit are identified in the CCSM Project FEIS (BLM 2012b) as a result of the CCSM Project. Direct impacts on pygmy rabbits from increased collisions with vehicles are assessed in the CCSM Project FEIS (BLM 2012b), and total road mileage (438 miles) is used for that analysis. The Proposed Action is not anticipated to result in more than 438 miles of roads. Therefore, the direct impacts resulting from inadvertent mortalities on roads are not expected to exceed those disclosed in the CCSM Project FEIS (BLM 2012b).

Pygmy Rabbit Occurrence Data Impacts

All impacts on documented pygmy rabbit occurrences would occur within the Phase I Haul Road and Facilities Site. No pygmy rabbits were documented within the Rail Facility Site or Quarry Site. PCW redesigned portions of the Haul Road to avoid or minimize direct and indirect impacts on pygmy rabbit to the extent possible considering engineering and other resource constraints.

Direct and indirect impacts on the five occurrences of pygmy rabbits documented within or adjacent to the Infrastructure Component Site vary depending on the proximity of the occurrence to the proposed disturbance area. One occurrence, located approximately 13 feet from the initial disturbance area associated with the Haul Road is assumed to be directly impacted as a result of the Proposed Action (PCW 2014a). The other four occurrences were documented from 200 to 1,000 feet away from the initial disturbance boundary of the Haul Road. Indirect impacts on these individuals could occur, with impacts decreasing with greater distance from the disturbance area.

Avoidance, Minimization, and Mitigation Measures

The following ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), have been implemented (such as A-1-08) or would continue to be implemented to reduce impacts on pygmy rabbits from the Proposed Action:

- Applicant Committed Measures A-1-01, A-1-08 through A-1-10, A-1-12, and A-1-26
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measures WFM-1, WFM-2, and SSS-1

In addition, PCW would comply with the stipulations pertaining to pygmy rabbit in the Wildlife Monitoring and Protection Plan (BLM 2012b, Appendix G). As identified above, PCW has avoided pygmy rabbit occurrences to the extent practical during planning and design of the Infrastructure Components, while still meeting CCSM Project needs.

4.2.14.1.2 White-tailed Prairie Dog

The types of direct and indirect impacts on white-tailed prairie dog, as disclosed in the CCSM Project FEIS (BLM 2012b) are described above under BLM sensitive mammals. No significant impacts on white-tailed prairie dog are identified in the CCSM Project FEIS (BLM 2012b) as a result of the CCSM Project. A total of 20 white-tailed prairie dog colonies (14 of which were active) were documented within the Phase I Haul Road and Facilities Site, and three white-tailed prairie dog colonies (one of which was active) were documented within the West Sinclair Rail Facility Site. A total of 62 acres of active white-tailed prairie dog colonies are within the initial disturbance limits, and 15 acres are within the long-term disturbance limits of the Proposed Action, as detailed below and shown in Table 4-15.

The CCSM Project FEIS (BLM 2012b) identifies the potential for initial and long-term impacts on white-tailed prairie dog habitat at approximately 92 acres and 22 acres, respectively (BLM 2012b), and, as mentioned above, impacts were not considered significant. Impacts from the Proposed Action would not exceed the anticipated impacts disclosed in the CCSM Project FEIS (BLM 2012b) and would not be considered significant.

Table 4-15. Impacts on Active White-Tailed Prairie Dog Colonies

Infrastructure Component	Active White-Tailed Prairie Dog Colony (number)	Area of Active White-Tailed Prairie Dog Colony	
		Initial Disturbance Area	*Long-Term Disturbance Area*
Phase I Haul Road and Facilities	14	36	11
West Sinclair Rail Facility	1	26	4
Road Rock Quarry	0	0	0
Total	**15**	**62**	**15**

Sources: PCW 2014a, 2014b, 2014c

As identified in Chapter 3 of this EA, white-tailed prairie dogs disperse readily to other areas. PCW mapped a total of 3,483 acres (of which 2,882 acres were active) of white-tailed prairie dog colonies during 2013 surveys within the Phase I portions of the CCSM Project (see Map 3-8 of this EA). Initial disturbance to white-tailed prairie dog colonies as a result of the Proposed Action (62 acres) reflects approximately 1.8 percent of the total area mapped as white-tailed prairie dog colonies within the Phase I portions of the CCSM Project.

Avoidance, Minimization, and Mitigation Measures

No mitigation measures specific to white-tailed prairie dog are recommended in the CCSM Project ROD (BLM 2012a) because impacts on the species are not anticipated to be significant. The following ACMs, Applicant Committed BMPs, and mitigation measures applicable to general wildlife species, as summarized in Appendix D of the CCSM Project ROD (BLM 2012a), have been implemented (such as A-1-08) or would be implemented to reduce impacts on white-tailed prairie dogs from the Proposed Action:

- Applicant Committed Measures A-1-01, A-1-08 through A-1-10, A-1-12, and A-1-26
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measures WFM-1 and WFM-2

4.2.14.1.3 Wyoming Pocket Gopher

The types of direct and indirect impacts on Wyoming pocket gopher are consistent with those disclosed in the CCSM Project FEIS (BLM 2012b) and are described above under BLM sensitive mammals. No significant impacts on Wyoming pocket gopher are identified in the CCSM Project FEIS (BLM 2012b) as a result of the CCSM Project. The Proposed Action would result in direct and indirect impacts on Wyoming pocket gopher consistent with the general types and nature of impacts disclosed in the CCSM Project FEIS (BLM 2012a).

Wyoming Pocket Gopher Mound/Mound Complexes Occurrence Data

Per Mitigation Measure SSS-2, and as documented in Chapter 3 of this EA, PCW conducted surveys for Wyoming pocket gopher mounds/mound complexes within the Infrastructure Component Site in 2012 and 2013. Using the Griscom and Keinath (2010) diagnostic tool, PCW predicted which mound/mound complexes would be Wyoming pocket gopher as opposed to northern pocket gopher.

Within the Infrastructure Component Site, PCW documented 8 Wyoming pocket gopher mounds or mound complexes. All of these occurrences were within the Phase I Haul Road and Facilities Site, primarily in the Sage Creek Basin and in the southern portion of the Haul Road (see Map 3-9). No Wyoming pocket gopher occurrences were documented within the Road Rock Quarry Site or the West Sinclair Rail Facility Site.

Seventeen additional mounds or mound complexes predicted to be Wyoming pocket gopher were located outside of the Infrastructure Component Site but within 75 meters (246 feet) of the initial disturbance areas, including one mound west of the Lead Track of the Rail Facility and nine mounds adjacent to the Phase I Haul Road and Facilities Site.

Avoidance, Minimization, and Mitigation Measures

The following ACMs, Applicant Committed BMPs, and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), have been implemented (such as A-1-08) or would be implemented to reduce impacts on Wyoming pocket gophers from the Proposed Action:

- Applicant Committed Measures A-1-01, A-1-08 through A-1-10, A-1-12, and A-1-26
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measures WFM-1, WFM-2, and SSS-2

In addition, PCW will comply with the stipulations pertaining to Wyoming pocket gopher in the Wildlife Monitoring and Protection Plan (BLM 2012b, Appendix G). PCW has avoided pocket gopher mounds or mound complexes to the extent practical during planning and design of the infrastructure components, while still meeting CCSM Project needs. Pocket gopher mounds are ubiquitous throughout the Sage Creek Basin, and efforts to move infrastructure to avoid one mound or mound complex would result in probable impacts on another mound or mound complex.

4.2.14.2 BLM Sensitive Birds

As described in Chapter 3 (*Affected Environment*) of this EA, additional surveys for BLM sensitive birds, including burrowing owl, Greater Sage-Grouse, and mountain plover, and BLM sensitive raptors have occurred since publication of the CCSM Project FEIS (BLM 2012b). The impact analyses presented in the CCSM Project FEIS (BLM 2012b) for these species are summarized for each avian species below and are generally consistent with impacts anticipated from the Proposed Action. Additional specificity regarding the extent and/or location of those potential impacts is presented below.

PCW has applied to the USFWS for a programmatic eagle take permit for Phase I Wind Turbine Development, and the USFWS has already begun preparation of an EIS considering PCW's permit application. An eagle take permit is not necessary for the infrastructure components. An ECP is currently being prepared for the CCSM Project, which is designed to avoid and minimize impacts on golden and bald eagles, but these measures would also have the benefit of reducing impacts on other raptors species present in the CCSM Project Area. In addition, PCW is preparing an APP/BBCS for the CCSM Project in accordance with USFWS guidance. Additional measures to reduce impacts on BLM sensitive birds are described below for individual species or species groups.

4.2.14.2.1 Burrowing Owl

Consistent with the CCSM Project FEIS (BLM 2012b), potential impacts on burrowing owl include (1) direct loss of habitat, (2) indirect loss of habitat through avoidance of or displacement from construction areas or areas with high levels of human activity, and (3) direct mortality of burrowing owl individuals as a result of increased vehicle presence on the Haul Road. Although no burrowing owl breeding activity has been observed within the CCSM Project Area, inclusive of the Infrastructure Component Site, there is some potential for burrowing owl to breed within the Infrastructure Component Site due to the presence of white-tailed prairie dog colonies.

Avoidance, Minimization, and Mitigation Measures

Preconstruction nest surveys for burrowing owl will be conducted in accordance with the Wildlife Monitoring and Protection Plan (BLM 2012b, Appendix G). If nests are found, the BLM Environmental Constraint for burrowing owls (BLM 2012b, p. D-1) would apply. In addition, the following ACMs, Applicant Committed BMPs, and mitigation measure, summarized in Appendix D of the CCSM Project ROD (BLM 2012a) and applicable to general wildlife species, would be implemented to reduce impacts on burrowing owls from the Proposed Action:

- Applicant Committed Measures A-1-01, A-1-02, A-1-08 through A-1-12, A-1-25, and A-1-26
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measure WFM-1

4.2.14.2.2 Greater Sage-Grouse

The CCSM Project FEIS (BLM 2012b, p. 4.15-10) includes discussion of impacts on Greater Sage-Grouse, which include (1) mortality due to collision with turbines, power lines, or meteorological towers or their supporting infrastructure, (2) vehicle collisions, (3) increased levels of poaching, (4) indirect habitat loss due to increased human activity and tall structures, (5) habitat fragmentation, (6) increased predation due to power lines providing additional perch locations for raptors and corvids, (7) ground disturbance and other construction activities potentially leading to the establishment of noxious weeks or enhanced rates of predation, and (8) increased chance for fires due to increased human use and disturbance in areas previously inaccessible by vehicles. The Greater Sage-Grouse impact analysis in the CCSM Project FEIS (BLM 2012b) relied on an extensive literature review to help determine appropriate buffer distances at which varying levels of impacts may occur to this species. The CCSM Project FEIS (BLM 2012b, p. 4.15-14) concludes that the long-term loss of sagebrush habitat in non-core areas, combined with expansive areas of potential indirect impacts on both core and non-core habitat during construction and operation, could result in habitat loss and disturbance levels exceeding all five significance criteria.

The qualitative and quantitative description of direct and indirect impacts in the CCSM Project FEIS (BLM 2012b, pp. 4.15-10 through 4.15-16) is generally consistent with the direct and indirect impacts anticipated as a result of the Proposed Action. Quantitative impacts on Greater Sage-Grouse core areas, non-core habitat, and leks were reviewed using updated disturbance footprint data and updated Greater Sage-Grouse occurrence data. Consistent with the evaluation conducted for the CCSM Project FEIS (BLM 2012b), this analysis assumes indirect impacts on Greater Sage-Grouse are highest within one mile of the proposed infrastructure components and generally do not extend beyond four miles from the proposed infrastructure components.

Core Areas. No Greater Sage-Grouse core areas would be directly impacted by the Proposed Action. There are 41,808 acres of Greater Sage-Grouse core areas within four miles of the Infrastructure Component Site (see Table 4-16) that could experience indirect impacts. Indirect impacts on these core areas would be consistent with the types of impacts disclosed on pages 4.15-10 through 4.15-12 of the CCSM Project FEIS (BLM 2012b). The vast majority of this area is within the South Rawlins Core Area, although a small amount (90 acres) of the Greater South Pass Core Area occurs between three and four miles from the Proposed Action, north of the CCSM Project Area.

Table 4-16. Acres of Greater Sage-Grouse Core Areas within Varying Distances (miles) of the Proposed Action

Core Area Name	Core Area within Specified Distance of Proposed Action (acres)					Total (0-4 miles)
	0-0.5 mile	*0.5-1 mile*	*1-2 miles*	*2-3 miles*	*3-4 miles*	
Greater South Pass	--	--	--	--	90	90
South Rawlins	160	773	5,758	13,648	21,380	41,718
Grand Total	**160**	**773**	**5,758**	**13,648**	**21,470[1]**	**41,808**

Source: Sage-grouse Core Areas (Version 3) (WGFD 2010b)

[1]Numbers may not add up to this total due to rounding.

The CCSM Project FEIS (BLM 2012b) estimates that there would be indirect impacts on 127,465 acres of Greater Sage-Grouse core areas within four miles of proposed infrastructure associated with the CCSM Project. Indirect impacts on 41,808 acres of Greater Sage-Grouse core areas within four miles of the Proposed Action in this EA would not exceed this amount.

Non-Core Habitat Areas. Non-core habitat is defined as sagebrush-dominated vegetation communities outside of the core areas described above. Using updated vegetation community mapping, it is estimated that the Proposed Action would result in the loss of 694 acres of non-core sagebrush-dominated habitat for Greater Sage-Grouse through initial disturbance activities (Table 4-17). Consistent with the analysis in the CCSM Project FEIS (BLM 2012b), these initial disturbance activities would constitute a long-term impact on Greater Sage-Grouse due to the long time frame associated with establishing sagebrush to pre-disturbance levels. Table 4-17 summarizes impacts on non-core sagebrush habitats by infrastructure component resulting from the Proposed Action.

Table 4-17. Impacts to Non-Core Habitat Areas[1] as a Result of the Proposed Action

Infrastructure Component	Disturbance Type (acres)	
	Initial	*Long-Term*
Phase I Haul Road and Facilities	457	113
West Sinclair Rail Facility	116	34
Road Rock Quarry	121	11
Grand Total	**694**	**158**

Source: SWCA 2014b

[1]Defined as sagebrush-dominated vegetation communities.

Total impacts on non-core Greater Sage-Grouse habitat resulting from the CCSM Project were estimated at 8,431 acres in the CCSM Project FEIS (BLM 2012b). As shown in Table 4-17, total losses of non-core habitat for Greater Sage-Grouse resulting from the Proposed Action would not exceed the 8,431 acres disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.15-12).

Leks. Using updated lek data from the 2012 and 2013 surveys, it is estimated that there are 19 leks within four miles and five leks within one mile of the Infrastructure Component Site. The five leks within one mile of the Infrastructure Component Site are the Chokecherry Bench, Deadman Creek, Hugus Draw, Miller Creek, and Smith Draw leks (refer to Map 3-10). The Miller Creek and Smith Draw leks are currently inactive. Consistent with requirements of BLM IM WY-2012-019, the Proposed Action would not result in surface disturbance activities within 0.25-mile of a Greater Sage-Grouse lek.

Considering indirect impacts on Greater Sage-Grouse core areas, non-core habitat, and leks, the Proposed Action would not result in significant impacts on Greater Sage-Grouse beyond those already disclosed on page 4.15-14 of the CCSM Project FEIS (BLM 2012b).

Avoidance, Minimization, and Mitigation Measures

PCW has committed to implementing the stipulations in Wyoming Governor's Order EO 2011-5 pertaining to development in non-core habitat areas. In addition, PCW will comply with the stipulations pertaining to Greater Sage-Grouse in the Wildlife Monitoring and Protection Plan included in the CCSM Project FEIS (BLM 2012b, Appendix G). The following environmental constraints, ACMs, Applicant Committed BMPs, and mitigation measure, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on Greater Sage-Grouse from the Proposed Action:

- BLM Environmental Constraints for Greater Sage-Grouse (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed Measures A-1-01, A-1-08 through A-1-12, and A-1-22 through A-1-33
- Applicant Committed BMPs A-2-11 and A-3-94 through A-3-97
- Mitigation Measure WFM-1

4.2.14.2.3 Mountain Plover

The CCSM Project FEIS (BLM 2012b, p. 4.15-16) discusses the impacts on mountain plover resulting from the CCSM Project. Potential impacts include disturbance during breeding periods, loss of nesting and brood-rearing habitat, and mortality from turbines and vehicle collisions. The CCSM Project FEIS (BLM 2012b) concludes that direct habitat loss, habitat alteration, and inadvertent mortalities from vehicle collisions are anticipated as a result of the CCSM Project (BLM 2012b, p. 4.15-17). The qualitative description of direct and indirect impacts on mountain plover, as described in the CCSM Project FEIS (BLM 2012b, pp. 4.15-16 and 4.15-17) are consistent with the direct and indirect impacts anticipated as a result of the Proposed Action of this EA.

Quantified impacts to mountain plover suitable habitat in the CCSM Project FEIS were based on a suitable habitat model developed in 2008 that relied on the vegetation mapping included in the CCSM Project FEIS (BLM 2012b). As described in Chapter 3 of this EA, PCW has since updated the suitable habitat map for mountain plover within the Infrastructure Component Site. This model utilizes updated vegetation mapping from 2013, and also takes into account vegetative structure and height, important considerations based on the known preference of this species open habitats with high total cover of bare ground. The resulting suitable habitat layer shows less suitable habitat for mountain plover than the suitable habitat layer used in the CCSM Project FEIS (BLM 2012b).

Using updated mapping for suitable habitat for mountain plover (see Section 3.14.2.2), the Proposed Action would result in approximately 261 acres of initial surface disturbance and 59 acres of long-term surface disturbance within suitable mountain plover habitat. The CCSM Project FEIS (BLM 2012b)

discloses impacts to 1,386 acres of initial surface disturbance and 281 acres of long-term surface disturbance within suitable habitat for mountain plover using the original (more extensive) suitable habitat layer for the entire CCSM Project Area. Table 4-18 summarizes surface disturbance impacts on suitable mountain plover habitat within the Infrastructure Component Site, as well as the corresponding impacts disclosed for the CCSM Project.

Table 4-18. Surface Disturbance Proposed within Potentially Suitable Mountain Plover Habitat

Infrastructure Component	Refined Suitable Habitat Layer Developed for Infrastructure Component EA		CCSM Project FEIS Suitable Habitat Layer	
	Initial Disturbance (acres)	*Long-Term Disturbance (acres)*	*Initial Disturbance (acres)*	*Long-Term Disturbance (acres)*
Phase I Haul Road and Facilities	150	39	1,386	281
West Sinclair Rail Facility	111	20		
Road Rock Quarry	0	0		
Grand Total	**261**	**59**		

Sources: BLM 2012b

Avoidance, Minimization, and Mitigation Measures

The following environmental constraints, ACMs, Applicant Committed BMPs, and mitigation measures, described in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on mountain plovers from the Proposed Action:

- BLM Environmental Constraint for mountain plovers (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed Measures A-1-01, A-1-02, A-1-08 through A-1-12, A-1-25, and A-1-26
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measures WFM-1 and SSS-3

In addition, PCW will comply with the stipulations pertaining to mountain plover in the Wildlife Monitoring and Protection Plan (BLM 2012b, Appendix G).

4.2.14.2.4 Raptors

Potential impacts on raptors, as disclosed in the CCSM Project FEIS (BLM 2012b, pp. 4.14-18 through 4.14-26) include direct impacts such as fatalities, as well as indirect impacts associated with habitat loss and modification and displacement. The raptor mortality analysis as presented in the CCSM Project FEIS (BLM 2012b) is based largely on assumed collisions with turbines and guy wires, while the impacts associated with the Proposed Action of this EA would be largely indirect, resulting from loss of habitat and displacement from/avoidance of construction and operations areas. These indirect impacts are also disclosed in the CCSM Project FEIS (BLM 2012b; pages 4.14-25 and 4.12-26) and are hereby incorporated by reference.

Based on raptor nest surveys in 2011, 2012, and 2013, additional specificity regarding the extent and/or location of those potential impacts is presented for the two infrastructure components where raptor nests have been documented: the Phase I Haul Road and Facilities and the Quarry. No breeding or nesting habitat for raptors was identified for the Rail Facility.

Phase I Haul Road and Facilities

The Phase I Haul Road and Facilities were designed to avoid known raptor nests. As described in Chapter 3 (*Affected Environment*) of this EA, there are eight raptor nests within 825 feet (1,200 feet for ferruginous hawk) of the initial disturbance boundary of the Phase I Haul Road and Facilities Site, including two golden eagle nests, one bald eagle nest, one prairie falcon nest, two ferruginous hawk nests, and two unknown stick nests. The bald eagle nest was confirmed active in 2013, and the prairie falcon nest was confirmed active in 2011 and 2012. No other raptor nests were confirmed active during the most recent year for which activity status was recorded.

Road Rock Quarry

As described in Chapter 3 of this EA, there are three unknown raptor nests, one golden eagle nest, and one red-tailed hawk nest within 825 feet of the Road Rock Quarry Site. All of these nests were inactive during 2011, 2012, and 2013.

Avoidance, Minimization, and Mitigation Measures

The following environmental constraints, ACMs, Applicant Committed BMPs, and mitigation measure, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts on raptors from the Proposed Action:

- BLM Environmental Constraint for raptors (CCSM Project ROD [BLM 2012a, p. D-1])
- Applicant Committed Measures A-1-01, A-1-02, A-1-08 through A-1-12, and A-1-25 through A-1-31
- Applicant Committed BMPs A-3-94 through A-3-97
- Mitigation Measure WFM-1

In addition, PCW has and will continue to conduct annual preconstruction surveys for raptors in accordance with the Wildlife Monitoring and Protection Plan included as Appendix J of the CCSM Project FEIS (BLM 2012b). Per the 2008 Rawlins RMP and ROD (BLM 2008b), no well locations, roads, ancillary facilities or other surface structures requiring a repeated human presence would be allowed within 825 feet of active raptor nests (1,200 feet of a ferruginous hawk nest). Where appropriate, PCW intends to request an exception of these occupancy restrictions for active nests within the applicable buffer distances (825 feet/1,200 feet).

Exception, waiver, or modification of required mitigation must be based upon environmental analysis of proposals (e.g., activity plans, plans of development, plans of operation, Applications for Permit to Drill) and, if necessary, must allow for other mitigation to be applied on a site-specific basis. A stipulation shall be subject to modification or waiver only if the authorized officer determines that the factors leading to its inclusion have changed sufficiently to make the protection provided by the stipulation no longer justified or if proposed operations would not cause unacceptable impacts. If the authorized officer has determined that a stipulation involves an issue of major concern to the public, modification or waiver of the stipulation shall be subject to public review for at least a 30 day period. In such cases, the stipulation shall indicate that public review is required before modification or waiver.

4.2.15 Noise and Human Health

The CCSM Project FEIS (BLM 2012b, p. 4.16-2) determines that impacts from noise and on human health would occur under the construction phase of the CCSM Project, and would include temporary short-term noise from heavy construction machinery and construction activities, as well as light vehicle construction traffic. Impacts under the operations phase were determined to include wind turbine noise, noise from project maintenance vehicles, power line, and substation noise. Noise impacts from decommissioning activities would be similar to, but less than, those associated with construction activities because the activity type and level would be similar but shorter in duration. The CCSM Project FEIS (BLM 2012b) concludes that there would be significant noise impacts on two residences located within 1,600 feet of CCSM Project construction activities and proposed mitigation measures for these impacts.

The impact analysis presented in the CCSM Project FEIS (BLM 2012b) for noise and human health is consistent with the overall types and nature of impacts anticipated from the Proposed Action. Additional specificity regarding the extent and/or location of the potential noise impacts is presented below, based on results of final engineering of the infrastructure components and using updated data for the location of potential noise receptors both inside and outside of the CCSM Project Area. As described in the CCSM Project FEIS (BLM 2012b) and based on EPA guidance (EPA 1974), construction-related noise would attenuate to less than 55 dB(A) within approximately 1,600 feet of potential noise receptors.

4.2.15.1 Phase I Haul Road and Facilities

Noise and human health impacts resulting from the Phase I Haul Road and Facilities are analyzed in the CCSM Project FEIS (BLM 2012b), and no significant impacts from noise or to human health were identified as a result of the CCSM Project. The Phase I Haul Road and Facilities, as proposed in this EA, are not within 1,600 feet of any residences. Therefore, no noise impacts are anticipated on residences as a result of the Phase I Haul Road and Facilities beyond what is identified in the CCSM Project FEIS (BLM 2012b).

4.2.15.2 West Sinclair Rail Facility

Approximately seven residences are located within 1,600 feet of the West Sinclair Rail Facility Site, which would be built parallel to the existing UPRR main line. The noise impacts to these residences would be considered a significant impact per EPA guidance (EPA 1974). However, the impacts from construction would be short-term and similar in nature to the significant impacts already disclosed in the CCSM Project FEIS (BLM 2012b). In addition to construction noise, the Rail Facility is expected to contribute additional noise during operations, impacts that are also disclosed in the CCSM Project FEIS (BLM 2012b).

Impacts on the seven residences identified within 1,600 feet of the West Sinclair Rail Facility Site would be in addition to the impacts identified in the CCSM Project FEIS (BLM 2012b). However, impacts from noise at these locations would occur within an area of relatively high ambient noise emanating primarily from I-80 traffic and UPRR operations. The seven residences are all within 1,600 feet of the exiting UPRR main line and are in close proximity to I-80. The UPRR operates approximately 100 trains per day (PCW 2014b) on the UPRR main line in this area. During operations, the CCSM Project would generate the need for approximately two trains per day, or roughly two percent of the total rail traffic along the UPRR in this area. The location of the Rail Facility on the south side of a ridge would help attenuate

sound from operations of the southern portion of the Rail Facility, where the loop track, laydown yards, locomotive storage area, and the rail access road, among other components, would be located.

4.2.15.3 Road Rock Quarry

No impacts from noise and on human health from the proposed Quarry are anticipated because no potential noise receptors are within 1,600 feet of the proposed Road Rock Quarry Site, including the Quarry Road. The nearest potential noise receptor is the State Penitentiary, approximately 1.5 miles north of the proposed Road Rock Quarry Site. Based on EPA guidance (EPA 1974), construction-related noise would attenuate to less than 55 dB(A), and therefore not constitute an adverse effect, within approximately 1,600 feet of potential noise receptors.

As disclosed in the CCSM Project FEIS (BLM 2012b, p. 4.16-3), blasting is a construction-related activity that would result in noise impacts that are short-term and temporary. Blasting impacts associated with the Quarry are consistent with the description in the CCSM Project FEIS (BLM 2012b). The Quarry SPOD (PCW 2014c) documents blasting and explosive safety measures that PCW would implement during construction and operation of the Quarry, including details on a blasting plan that would be developed whenever blasting is to occur. Given the proximity of the Quarry to the Wyoming State Penitentiary and the unique needs of that facility, PCW would provide advance notification of blasting activity and would review each blasting plan and schedule with the penitentiary staff to ensure that their concerns are addressed (PCW 2014c). As discussed in the CCSM Project FEIS (BLM 2012b, p. 4.16-3), any blasting activity would require at least two business days' notice to landowners. All blasting activities also would take place during daylight hours unless previously arranged with and approved by appropriate government agencies.

Avoidance, Minimization, and Mitigation Measures

The following Applicant Committed BMPs and mitigation measures, summarized in Appendix D of the CCSM Project ROD (BLM 2012a), would be implemented to reduce impacts from noise and on human health from the Proposed Action, particularly the Rail Facility:

- Applicant Committed BMPs A-3-30 through A-3-33
- Mitigation Measures N-1 and N-2

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