Environmental Assessment

Final Apex Solar Project
Beaverhead County, Montana

U.S. Department of Agriculture
Rural Utilities Service (RUS)

Prepared by:

SWCA Environmental Consultants
1892 South Sheridan Avenue
Sheridan, Wyoming 82801

Prepared for:

Apex Solar LLC
800 West Main Street, Suite 900
Boise, Idaho 83702

FINAL APEX SOLAR PROJECT ENVIRONMENTAL ASSESSMENT

Prepared for

United States Department of Agriculture
Rural Utilities Service
1400 Independence Avenue, SW
Washington, DC 20250

Applicant

Apex Solar LLC
800 West Main Street, Suite 900
Boise, Idaho 83702

Prepared by

SWCA Environmental Consultants
1892 South Sheridan Avenue
Sheridan, Wyoming 82801
(307) 673-4303

www.swca.com

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AADT	annual average daily traffic
AC	alternating current
APE	area of potential effect
Apex	Apex Solar LLC
BLM	Bureau of Land Management
county commissioners	Beaverhead County Board of Commissioners
CFR	Code of Federal Regulations
CIAA	cumulative impact analysis area
CO	carbon monoxide
dB	decibel
dBA	A-weighted decibels
DNRC	Montana Department of Natural Resources and Conservation
EA	environmental assessment
EIS	environmental impact statement
EMF	electromagnetic field
EPA	U.S. Environmental Protection Agency
EO	Executive Order
FEMA	Federal Emergency Management Agency
FONSI	finding of no significant impact
gm/m^2	grams per square meter
gpm	gallons per minute
GHGs	greenhouse gasses
GPS	global positioning system
HAPs	hazardous air pollutants
H_2S	hydrogen sulfide
HUC	hydrologic unit code
Hz	hertz
I-15	Interstate 15
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronic Engineers
KOPS	key observation points
kV	kilovolt

Ldn	outdoor day-night average sound levels
MDEQ	Montana Department of Environmental Quality
MDT	Montana Department of Transportation
met	meteorological
mgd	million gallons per day
Montana FWP	Montana Department of Fish, Wildlife and Parks
mph	miles per hour
MW	megawatt
MTNHP	Montana Natural Heritage Program
MTSOC	Montana species of concern
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen oxide
NO_x	nitrogen oxides
NEPA	National Environmental Policy Act of 1969
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act of 1966
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O_3	ozone
O&M	operation and maintenance
OHWM	ordinary high-water mark
OSHA	Occupational Safety and Health Administration
Pb	lead
$PM_{2.5}$	particulate matter smaller than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter smaller than 10 microns in aerodynamic diameter
PPA	power purchase agreement
ppm	parts per million
PV	photovoltaic
R	Range
RFP	request for proposal
ROW	right-of-way
RPS	renewable portfolio standard
RUS	Rural Utilities Service
S	South

SCADA	supervisory control and data acquisition
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
State	State of Montana
SWCA	SWCA Environmental Consultants
SWPPP	stormwater pollution prevention plan
T	Township
TDAT	Tribal Directory Assessment Tool
THPO	Tribal historic preservation officer
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
VOC	volatile organic compounds
W	West

1 PURPOSE AND NEED FOR THE PROJECT

1.1 Introduction and Project Description

Apex Solar LLC (Apex) plans to submit a loan application to the U.S. Department of Agriculture (USDA) Rural Development's Rural Utilities Service (RUS) to secure a direct loan to own and operate a solar photovoltaic project in Montana. The Apex Solar Project (project) would be an 80-megawatt (-MW) solar power generating facility located approximately 5 miles west of Dillon, Montana. The proposed facility would cover approximately 639 acres of private land in Beaverhead County, Montana. Project components would include solar arrays, a substation, a utility transformer, a small transmission line (i.e, gen-tie), and access roads. The proposed facility would tie into an existing substation currently operated by NorthWestern Energy and would provide solar energy to the electrical grid in Beaverhead County. Operation of the solar project is expected to occur for 35 years.

On behalf of Apex, SWCA Environmental Consultants (SWCA) prepared this environmental assessment (EA) to support RUS's National Environmental Policy Act of 1969 (NEPA) review of the Apex Solar Project. The purpose of this EA is to analyze and disclose the potential direct, indirect, and cumulative effects of building and operating the project. The analysis in this EA has taken place in accordance with NEPA (42 United States Code [USC] 4321 et seq.) and its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508) as well as Rural Development's NEPA guidance, particularly *RD Instruction 1970-Subpart C*. This document provides guidance to the RUS decision-maker regarding any significant project effects to consider in determining whether the project requires preparation of an environmental impact statement (EIS) or a finding of no significant impact (FONSI). If RUS determines that this project would have "significant" impacts, as defined by 40 CFR 1508.27, then an EIS would be prepared. If not, a FONSI would be prepared for the project.

Chapter 1 of this EA discusses the purpose of and need for the project (i.e., the proposed action); applicable laws, regulations, and plans; and the agency decision to be made. Chapter 2 discusses the proposed action in detail, as well as any alternatives to the proposed action and the alternatives development and evaluation process. Chapter 3 discusses the affected environment and analyzes the potential environmental effects that the proposed action and alternatives would have on the affected environment. Chapter 4 discusses the potential cumulative effects that the proposed action and alternatives would have on the affected environment, along with the effects of past, present, and reasonably foreseeable future actions. Chapter 5 summarizes all mitigation measures proposed for the proposed action and alternatives. Chapter 6 discusses the agency and Tribal consultations that took place and describes the public scoping and comment process.

1.2 Purpose and Need

The purpose of this project is to provide solar-generated energy to the existing electrical grid in Beaverhead County, Montana. In July 2021, Apex signed a power purchase agreement (PPA) with NorthWestern Energy. A PPA is an agreement under which a developer (in this case, Apex) owns and operates the photovoltaic (PV) system while a host customer (in this case, NorthWestern Energy) agrees to purchase the system's electric output from the developer for a certain period. Under the PPA between Apex and NorthWestern Energy for this project, the reliable, economical, and renewable solar energy provided would help western Montana meet the state's existing and future electricity needs.

Project objectives include providing safe and reliable power to 30,000 households annually, reducing dependence on fossil fuels, improving system stability, and providing voltage support during contingencies.

USDA, Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and Tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives. Apex is seeking federal financial assistance for the project from RUS under the Rural Energy for America Renewable Energy Systems program. The objective of this program is to help increase American energy independence by increasing the private sector supply of renewable energy and decreasing the demand for energy through energy diversity and efficiency improvements, which, over time, would help lower the cost of energy for small businesses and agricultural producers.

The proposed federal action is for RUS to decide whether to provide financial assistance to Apex for the proposed project. Pursuant to NEPA; the National Historic Preservation Act of 1966 (NHPA), as amended; and Rural Development policy and procedures (7 CFR 1970), this EA has been prepared to evaluate the environmental impacts of the construction and operation of the project for RUS review.

1.3 Applicable Environmental Laws, Statutes, and Regulations

This EA was prepared following RUS's NEPA guidance documents, including *RD Instruction 1970-Subpart C*, (USDA 1970a). The following list includes the laws, statutes, and regulations that were of particular relevance in creating this document:

- Migratory Bird Treaty Act of 1918 (16 USC 703)
- NHPA (16 USC 470)
- NEPA (42 USC 4321 et seq.)
- Archeological and Historic Preservation Act of 1974 (16 USC 469)
- Clean Air Act of 1977 (33 USC 1251 et seq.)
- Clean Water Act of 1977 (33 USC 1251 et seq.)
- Archaeological Resources Protection Act of 1979 (16 USC 470)
- Endangered Species Act of 1983 (ESA; 16 USC 1531)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001–3013)
- American Indian Religious Freedom Act of 1996 (42 USC 1996)
- Farmland Protection Policy Act (7 USC 4201 et seq).

1.4 Agency Decision to be Made

This EA does not contain the final decision regarding the proposed action and no action alternatives. The primary purpose of this EA is to analyze and disclose potential effects of the Apex Solar Project on the natural and human environment and to inform decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse effects on or enhance the quality of the natural or human environment. RUS will make the decision whether to approve funding for the operation and maintenance (O&M) of the proposed project.

2 PROJECT ALTERNATIVES

2.1 Alternatives Development and Evaluation Process

Apex began evaluating potential alternatives for the project in 2018 during the early planning and design phase of the proposed project, which includes solar development on State lands. As a part of the alternatives development and evaluation process, Apex consulted with the Beaverhead County Board of Commissioners (county commissioners), local landowners, and private citizens. During this public outreach process, Apex refined the plans for the proposed project; those changes still allowed the project to meet its purpose and need for providing needed solar-generated energy to the existing electrical grid in Beaverhead County, Montana.

Reasonable alternatives considered that would avoid or minimize adverse environmental effects included design alternatives and different locations for the alternatives. The process involved the assessment of multiple options to ensure the advancement of optimal alternatives for detailed analysis. Proper siting of a large solar generation facility requires substantial evaluation and assessment. Selection of a suitable project site was based on many factors, including

- proximity to electrical transmission lines and substations,
- topography and terrain conditions,
- local transmission capacity,
- potential impacts to the human environment (e.g., recreation, traffic, visual),
- land use plans and zoning laws,
- adjacent land use,
- suitable transportation infrastructure that can support traffic during the construction phase,
- floodplains,
- forested areas,
- available environmental data as part of a critical issues analysis, and
- solar resource or solar irradiance.

Based on the above criteria, the preferred site should

- be near an existing transmission line;
- be on a relatively level area;
- not impact local recreation opportunities or disturb the viewshed;
- be in an area with few or no nearby residences, schools, parks, or recreation areas;
- be near a highway or a well-established public road that can handle construction traffic;
- not be in a floodplain;
- not impact forested areas; and
- receive optimal solar irradiance levels.

During the public scoping process in spring 2021 (see Section 6 for more details), no members of the public, agencies, or Tribes proposed other alternatives.

2.2 Alternatives Considered but Eliminated from Detailed Analysis

In April 2018, Apex reached out to the Montana Department of Natural Resources and Conservation (DNRC) about developing an end-to-end utility-scale solar power–generating facility. In July 2018, the DNRC released a 90-day request for proposal (RFP) for a commercial lease on up to 1,308 acres covering State-owned parcels in Sections 28, 27, 33, and 34, Township (T) 5 South (S), Range (R) 9 West (W) in Beaverhead County (Figure 2.2-1). In October 2018, Apex responded to the DNRC's RFP with a proposal to construct and operate a 160-MW solar development with interconnection to a 161-kilovolt (-kV) NorthWestern Energy transmission line that trends north-south through the lease area. As a part of this process, the DNRC engaged in early public notification and met with county commissioners, the owners of lands adjacent to the lease area, and pertinent grazing lessees before issuing the RFP (in early 2018), upon RFP release (in July 2018), and upon receipt of Apex's proposal (in December 2018). The *Montana Standard* and the *Dillon Tribune* featured an associated legal notice for 3 weeks after the release of the RFP.

The DNRC sent out an interested party notification letter on March 14, 2019, to inform relevant parties of the project and invite them to an open house on April 17, 2019. During this process, Apex consulted with county commissioners, local landowners, and private citizens. The DNRC signed an option to lease with Apex, and the Montana State Land Board approved the lease at a State Board of Land Commissioners public meeting on May 20, 2019. Apex and the DNRC began the environmental review process in accordance with the Montana Environmental Policy Act. This included issuing a scoping notice on May 29, 2019, to solicit input from federal, Tribal, state and local governments and interested persons and groups.

During this public outreach, Apex learned that the county commissioners and affected landowners and grazing lessees were opposed to the proposed location of the project for a number of reasons. With the proximity of the proposed location to the Interstate 15 (I-15), locals were concerned about the aesthetics of a solar farm that would be visible from the route. Grazing was occurring on the public lands within the proposed location, and project development would preclude that activity. During scoping and public outreach, commenters and the county commissioners suggested relocating the project to a site perceived to be less out in the open to the public than the lease area. Based on public sentiment, Apex began working with the county commissioners and landowners to find a new project location that would be acceptable to those stakeholders while allowing the project to meet its purpose and need. A couple months after obtaining site control at the new proposed location in July 2019, Apex terminated its lease with the DNRC.

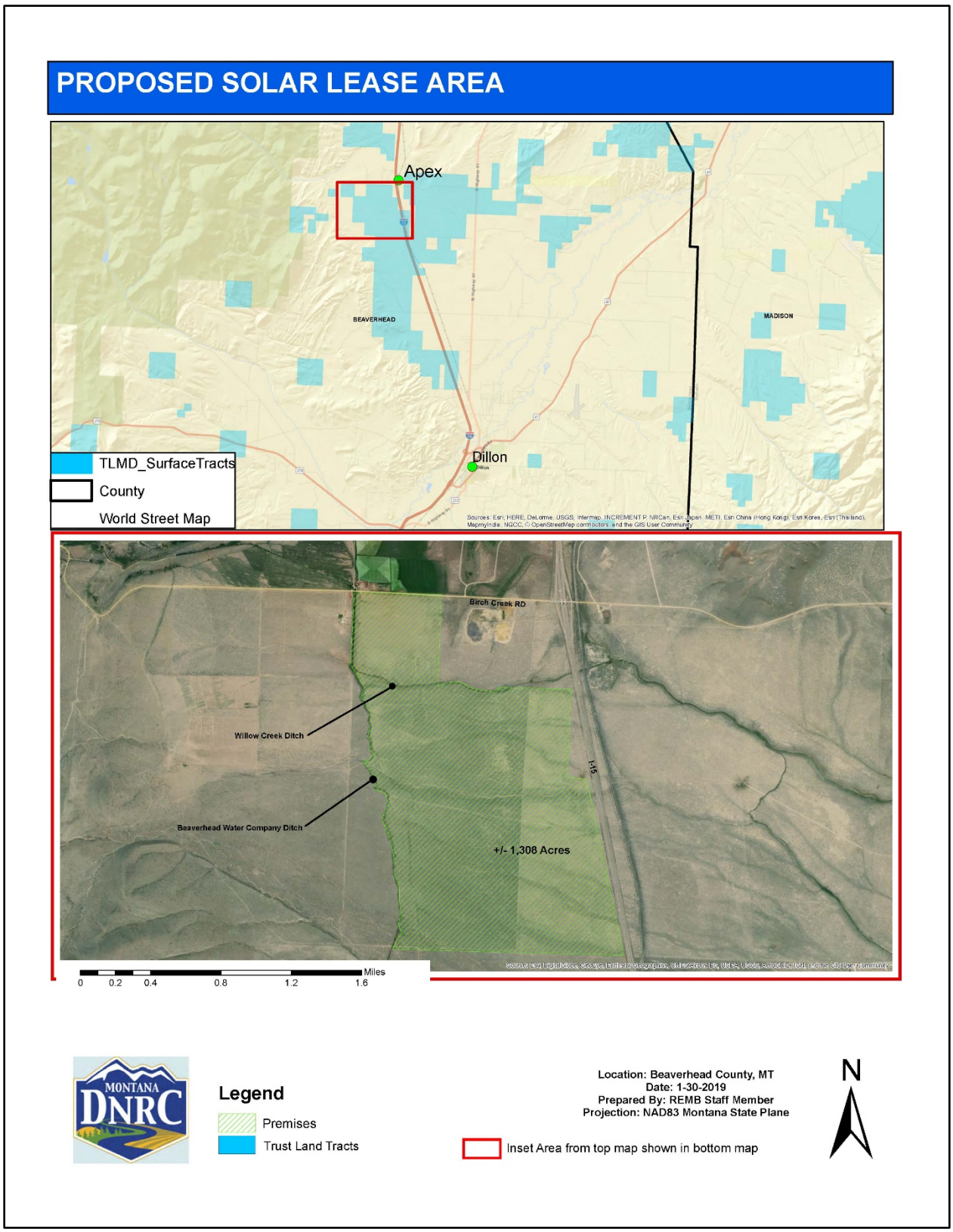


Figure 2.2-1. Alternative on State of Montana lands considered but eliminated from detailed analysis.

2.3 No Action Alternative

Under the no action alternative, RUS would not provide financial assistance to Apex and the company would not construct the proposed project. Renewable energy would not be sourced from the project area to help meet increasing demand for electricity and reduce the need for fossil fuels.

2.4 Proposed Action Alternative

Under the proposed action alternative, RUS would approve Apex's funding request and the company would construct and operate an 80-MW utility-scale solar power–generating facility on private land in Sections 7, 8, 17, and 18, T7S, R9W, Beaverhead County, approximately 5 miles west of Dillon, Montana (project area) (Figure 2.4-1). The proposed action meets all the alternatives development and evaluation process criteria (listed above in Section 2.1). The project location was selected because of the site's proximity to NorthWestern Energy's Dillon-Salmon Substation, which is south of Ten Mile Road near the center of the project location and has the capacity to receive power generated by the project, and because of the suitable topography of the area, the minimal impacts that would occur to wetlands and floodplains, and local support. The county commissioners and landowners were supportive of the proposed action project location because the site is farther from I-15 and in a less conspicuous area within the county than is the originally proposed site. In addition, the project area is not actively farmed, so resource and land use conflicts resulting from solar development would be minimal compared to those associated with the originally proposed site, which is on State land.

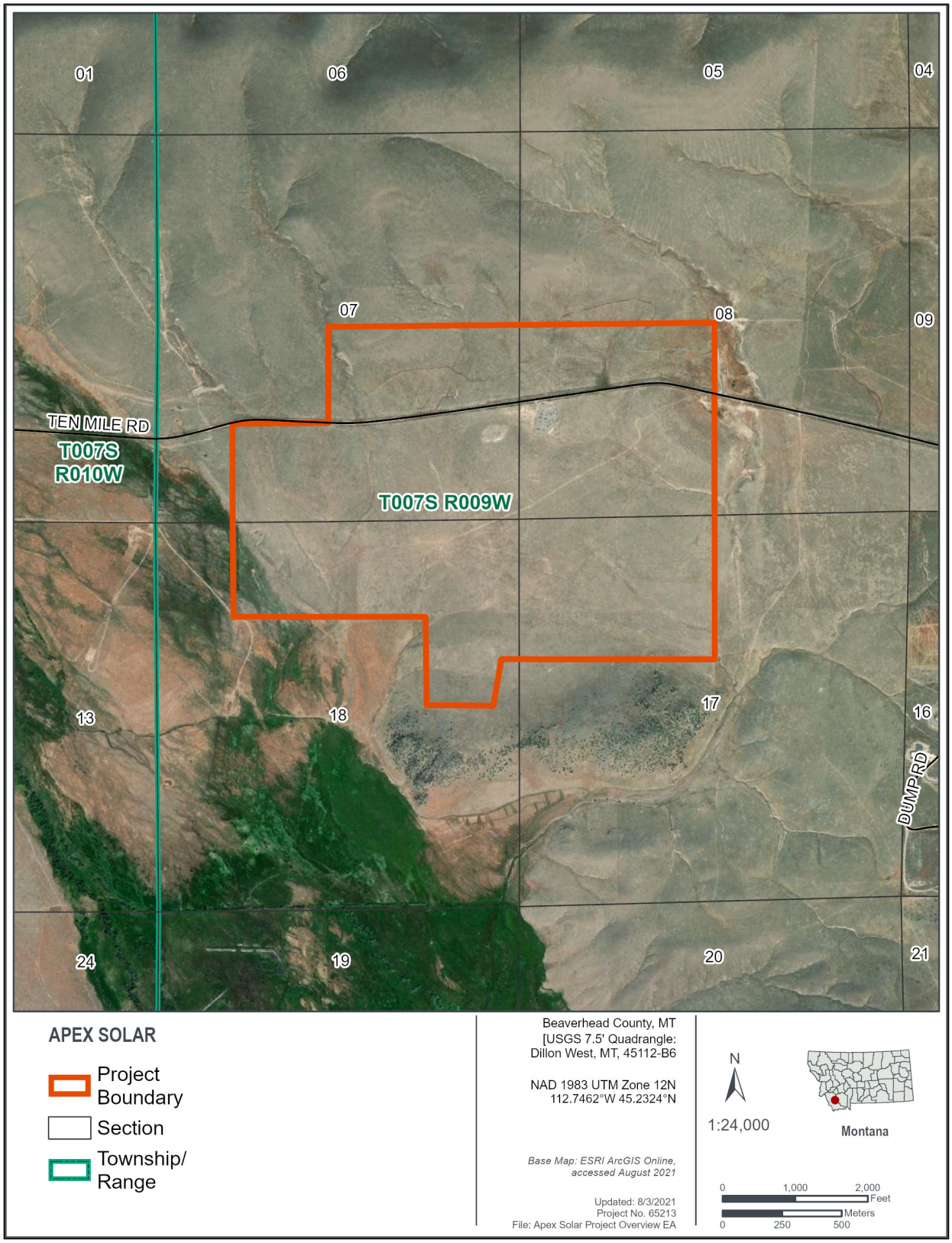


Figure 2.4-1. Proposed Apex Solar Energy Project location overview.

2.4.1 Facility

Apex executed a 20-year PPA with NorthWestern Energy. The project is expected to operate as merchant thereafter or under an additional PPA between Apex and NorthWestern Energy or other utility off-taker for 15 to 20 years. The project is expected to begin commercial operation on December 1, 2022. The necessary permits, easements, interconnection, site control, and other development agreements are in place or are being obtained. Project construction is expected to start in the first quarter of 2022.

The facility would have a maximum footprint of 639 acres on private land owned by a single landowner. Figure 2.4-2 shows the preliminary design of the facility. The size of the array is based on the capacity of the equipment selected and is intended to generate the desired overall voltage and current output. The project would utilize approximately 160,000 solar photovoltaic (PV) modules (Waaree 590W bifacial modules or something similar) to convert energy from sunlight to direct current (DC) electricity. The modules would be dark blue or black with minimal light reflection and would individually cover approximately 130 acres of land. Utilizing bigger modules with larger dimensions would result in needing to use fewer modules. Solar energy technologies continue to evolve at a rapid rate and as a result, the exact arrangement and nature of the PV systems will be determined during the final design and appropriate updates will be made prior to construction.

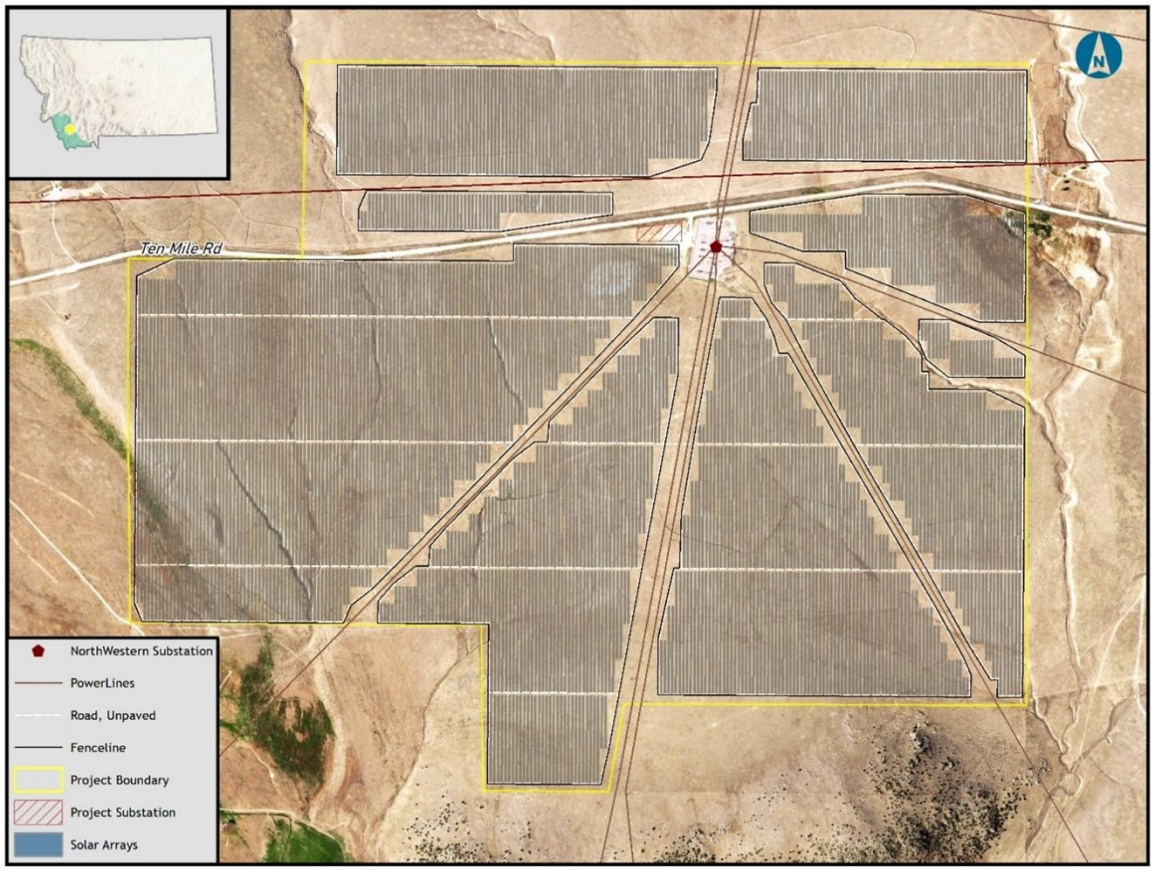


Figure 2.4-2. Preliminary design of the proposed facility.

The modules would be mounted on single-axis frames or "trackers" that rely on motors and actuators to rotate along a north-south axis with the sun's movement from the east in the morning to the west in the evening. The modules would be grouped together in solar arrays. The arrays would generally be installed

linearly in rows approximately 7 meters apart as allowed by topography and other environmental constraints. During periods of high winds or heavy snowfall, the trackers would move the arrays to a position in which those conditions would put a minimum strain on the system. The solar panels would reach a maximum height of 15 feet during rotation. Current engineering and design for the proposed project includes fencing around the solar arrays and the roads between and around the arrays. This setup would accommodate NorthWestern's existing power lines and allow employees of that company to access its lines and poles along its right-of-way (ROW) without breaching the proposed project area.

The solar modules would be connected to solar inverters that convert DC electricity to alternating current (AC) electricity. The inverters would then be joined in series and parallel and ultimately connect to the project substation. Within the project substation, a main power transformer would step up the voltage to 161 kV for interconnection to the existing NorthWestern Energy transmission system at the existing Dillon-Salmon Substation. The project substation would occupy approximately 5 acres and be located within a security fence. A large utility transformer would be required for the project. Additional equipment would include circuit breakers, metal-enclosed switchgear, a disconnect switch, a safety grounding system, and a transition structure to the overhead power line. The project substation would be adjacent to NorthWestern Energy's Dillon-Salmon Substation, and an approximately 500-foot-long 161-kV gen-tie would span the area between the two substations.

In general, construction crews would come from the city of Dillon approximately 5 miles to the east, accessing the project via I-15, Montana Highway 278, and Ten Mile Road, which is a graveled county road. Workers coming from the west may use Stone Harbor Road, which connects Ten Mile Road to Montana Highway 278. No upgrades to these roads are anticipated. An agreement with Beaverhead County would be in place for the maintenance and/or restoration of the portion of the Ten Mile Road that Apex would use during construction. Maintenance of Ten Mile Road and Stone House Road would include spraying water on the roads for dust control.

Within the project site, new temporary roads and a lay down yard would be constructed to support project construction and operation; no permanent roads would be constructed. The number and length of the roads would be minimized to the extent possible to reduce surface disturbance and cost. Apex anticipates that the new roads would cover approximately 75 acres total. The roads may include the following:

- Temporary roads for use during construction
- Roads for the PV array perimeter; access to facilities such the on-site substation, interconnection substation, and O&M structures to be used for construction; emergency vehicles; and most of the maintenance traffic
- Internal site access roads

The roads for the PV array perimeter and internal access to facilities would have a permanent width of 20 to 25 feet and a gravel road base 3 to 6 inches deep. These roads would be used for construction, emergency vehicles, and O&M.

Internal site access roads would consist of compacted native surface, have a permanent width of 16 to 20 feet, and provide access to each array and between array rows. Personnel would use these access roads during construction to facilitate delivery of components, installation, wiring, and preventative and corrective maintenance.

From the internal access roads, access aisles would provide access to other areas among the solar arrays. These aisles would not be roads but rather clear spaces between the individual rows of solar panels that consist of unimproved native material; the spaces would allow access to all areas of the site via foot or by use of 4×4 vehicles for maintenance and emergency response.

To meet facility water needs during construction and operation, Apex proposes to tap the Dillon water line that runs along Ten Mile Road and is adjacent to the project site. If the water line does not provide enough water, then Apex would haul or meter water (run a flat pipe to the project site) from the city fire hydrant at the county dump approximately 1 mile to the east on Ten Mile Road. Apex estimates that approximately 750,000 gallons of water would be required during construction for dust mitigation and soil compaction.

2.4.2 Construction

Construction is expected to take 10 months, running from approximately February 2022 through November 2022. All construction and operations activities would be restricted to the 639-acre project area. During construction, the total number of personnel on-site may range from 10 to 350 employees. Apex would use local labor to the extent possible. When local labor is unavailable, then Apex would bring in employees from other areas. Personnel would include preconstruction survey crews, utility workers for local station power, supervisors, and engineers. Site preparation and fencing would commence first, and the workforce would increase as the project "ramps up." The favorable local weather of summer and fall would make those seasons the busiest times during construction. The project workforce during this period would peak at approximately 350 personnel. After principal construction, the workforce would be reduced to fewer than 20 people and traffic disturbances would be reduced greatly. Work would then be contained within the areas fenced during project construction while inspectors and qualified personnel inspect and start up project operations. Apex would use qualified local and non-local contractors and subcontractors according to the equipment and personnel needs of the project. The company anticipates that a large percentage of the workforce would come from surrounding communities, although specialty workers from various parts of the country may be required.

Apex would establish temporary areas within the project area for parking; staging; laydown; and material, equipment, and trailer storage to facilitate construction activities. To prepare the project for construction, the areas within the fenced boundary where the solar array, roads, and other site facilities would be located would be mowed to a height of no more than 3 inches. All other vegetation would be left intact to the extent possible. Grading would occur only in the areas where the elevation would require alteration to accommodate tracker tolerances, site drainage, roads, laydown areas, and foundations. The minimal grading approach helps preserve underground root structure, topsoil nutrients, seed base, and preconstruction site hydrology. The organic matter that remains after mowing would remain within the construction area (except in trenches and under equipment foundations).

Personnel would use water would be used for dust control, specifically an estimated 0.004 to 0.005 million gallons per day (mgd) or approximately 750,000 +/- gallons for the duration of construction. Apex plans to tap the Dillon water line that runs along Ten Mile Road and is adjacent to the project site to obtain water for construction. If tapping the water line isn't feasible, Apex would meter or haul water from the city fire hydrant at the county dump. Water trucks would carry and spray this water to provide dust mitigation on-site.

Crews would assemble and erect solar arrays at each array site. The trackers would be delivered to each site. Workers would use forklifts to off-load the trackers and then assemble the arrays. Support poles for the project trackers and other structures would consist of galvanized steel H-piles driven directly into native soil. The solar arrays would require no concrete foundations. Personnel would use project array roads to access off-loading and assembly areas.

Personnel would bury electrical switchgear AC/DC distribution system cables for each circuit in trenches or string them aboveground below the solar array trackers. Such trenches are typically 24 to 44 inches wide and 36 to 48 inches deep. In locations where two or more sets of underground lines converge, workers would install underground vaults and/or pad-mounted switch panels to tie the lines together into

one or more sets of larger feeder conductors. Steel-copper ground rods would be driven into the ground at key locations and bonded to the ground grid. Concrete foundations may be used for switchgear equipment designed for the alternative soil conditions at the switchgear site; if so, the concrete would be trucked to the site from the nearest acceptable commercial concrete batching plant. After final grading and restoration, crews would reclaim the electrical connection system trenches using seed mixtures and techniques developed in consultation with local codes.

After construction, personnel would calibrate and test systems, controls, and safety equipment before putting them into service. Qualified technicians and mechanical and electrical experts and electricians would test and inspect solar components, transformers, communications systems, switchgear systems, and interconnection systems to ensure that they comply with required specifications and are working properly.

Workers may handle topsoil during project construction. For areas requiring topsoil removal, personnel would remove topsoil and stockpile it separately for use during reclamation. Because the proposed action would involve more than 1 acre of ground disturbance, the MDEQ would require coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity. Apex would maintain a stormwater pollution prevention plan (SWPPP) to meet the conditions of the permit and would use the SWPPP as an erosion and sediment control plan. The plan would provide the general contractor with the framework for reducing soil erosion and minimizing the potential impact of stormwater pollution from common activities and sources at construction sites. Specifically, the SWPPP would detail the structural and non-structural best management practices (BMPs) Apex selects to control erosion associated with surface stormwater discharges during construction, decrease the volume and rate of stormwater runoff, and increase pollution attenuation after construction. Per an U.S. Environmental Protection Agency (EPA) comment received during the public scoping period for the project, Apex has prepared a draft of the SWPPP as part of this EA (Appendix A). This draft provides a framework for managing stormwater, erosion, and sedimentation during construction but does not include site-specific BMPs because the site design has not been finalized yet. Apex may include such BMPs in the SWPPP after finalizing the site design.

2.4.3 Operations and Maintenance

The site would feature no permanent on-site O&M facilities, only an area that would support temporary office facilities and parts storage. O&M facilities typically consist of prefabricated office trailers, metal enclosures (conexes), or shed buildings. The monitoring facility would be environmentally conditioned for supervisory control and data acquisition (SCADA) and computer components. This facility may feature a workstation for technicians working on the project site, but building and fire authorities would not consider this facility an “occupied” structure. The maintenance facility would not be environmentally conditioned and would simply consist of a metal cabinet or other structure for securing spare PV modules, cleaning equipment, and other supplies. A portable toilet would be available outside these facilities.

The SCADA would collect operating and performance data and allow remote operation of the facility. The PV arrays would be linked to a central computer in the monitoring facility building and to a remote operations center by an on-site fiber-optic network and off-site cellular, telephone, microwave, or satellite communications via a lattice microwave tower or equivalent near the O&M building. The fiber-optic cables used for SCADA communication would be buried with the electrical distribution system in a trench carrying the electrical connection from the switchgear to the O&M building. The SCADA system would interface with the local utility grid to allow the utility to monitor plant operations and to disable project output in case of safety or grid-operation requirements.

Apex would install approximately six meteorological towers (mets) at various locations within the project area. Met stations are typically less than 15 feet tall. These stations would consist of light-gauge steel

tubing and support wires on a foundation. The met stations would be connected to the SCADA system to collect data for analysis and system monitoring.

Apex anticipates that the number of permanent personnel on-site postconstruction would be minimal, as the facility would include no permanently occupied O&M facilities. The facility would require very little water for operation; Apex estimates needing up to 100,000 gallons of water per year during operations. Personnel would use the water for vegetation management, specifically to support vegetation growth, and for cleaning the solar panels annually. Solar panel cleaning would not involve surfactants. Occasionally, two to three employees would travel to the site for maintenance, including repairing or replacing project components and repairing access roads. Maintenance may also include emergency repair or vegetation management, such as mowing vegetation around the bases of the solar arrays. Generally, these activities would occur from 8 a.m. to 5 p.m., Monday through Friday. Some repair activities may occur after production hours, such as during the evening and overnight. Outages or other emergency events may require O&M providers to be on-site on weekends. As such, after construction, traffic would be limited to mostly light vehicles (e.g., pick-up trucks) occasionally visiting the site for maintenance.

Apex would consult with the Beaverhead County Weed District to develop a restoration and revegetation plan and an invasive species and noxious weed management plan before construction. The plans would include approved mitigation measures and BMPs. Personnel would treat infestations of non-native and invasive species in accordance with the invasive species and noxious weed management plan and, if herbicides are needed, would use only approved herbicides specified in the noxious weed management plan.

Apex expects the facility to operate for 35 years from the date on which commercial operation begins. Once commercial operation ends, workers would decommission the site reclaim the area to its preconstruction condition.

2.4.4 Project Decommissioning and Reclamation

2.4.4.1 PROJECT DECOMMISSIONING

The State requires the owner of a solar facility to submit a decommissioning plan within 12 months of commencing commercial operations. Per Title 75, Chapter 26, Part 3 of Montana Code Annotated and in subchapter 17.86.1 of Administrative Rules of Montana, the operators of solar facilities of 2 MW or more must submit decommissioning plans and bonds to the MDEQ. The operator would update the decommissioning plan at least 12 months before the agency provides the decommissioning bond. The solar facility would begin commercial operations after January 1, 2007, which, per regulations, means that the bond must be submitted to the MDEQ before the end of the 15th year of commercial operation.

2.4.4.2 RECLAMATION

Reclamation of the project site would take place in one phase within 12 months after commercial operation ends. Workers would remove all project infrastructure, including aboveground equipment, structures, and fences; no permanent infrastructure would remain after project decommissioning. All electrical equipment would be uninstalled and removed. The equipment would either be reused or recycled, depending on its equipment, warranties, technical improvements, and market valuation. All mounting structures would be removed and recycled if possible. The PV panels would be sold, recycled, or repurposed. All other removed infrastructure and components would be salvaged and recycled to the extent possible. All project roads would be reclaimed, all foundations would be demolished and the resulting debris removed from the site, and all necessary grading would take place to return the site to its original grade. The site would be seeded with a native plant seed mix to foster revegetation. Apex would work with Beaverhead County to select the appropriate seed mix for the site.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides descriptions of the existing environmental conditions of the areas that may be impacted by construction and operation of the proposed action and no action alternatives. This chapter provides an understanding of the affected environment and potential environmental consequences of the project for the following resources: land use, floodplains, wetlands, water resources, coastal resources, biological resources, cultural and historic resources, aesthetics, air quality, socioeconomics and environmental justice, noise, transportation, human health and safety, corridors, and soils. Federal, state, and local regulations that apply to managing these resources are also discussed in the context of the existing environment.

3.1 Land Use

3.1.1 General

3.1.1.1 AFFECTED ENVIRONMENT

The analysis area for assessing potential impacts to land use is the 639-acre project area. This analysis area is used because it comprises the land that would be directly affected by the proposed solar facility and the land where any future development could be affected by the facility. All 639 acres of the project area would be disturbed during construction and all 639 acres would be affected as part of operations of the solar facility. Ten Mile Road, which is a county road, runs east-west through the northern portion of the analysis area. South of Ten Mile Road within the project site is NorthWestern Energy's Dillon-Salmon Substation. The Beaverhead County Landfill is approximately 0.7 mile southeast of the project area. The area surrounding the analysis area is rural with few residences or other buildings nearby.

Montana Cadastral, a mapping tool of property records maintained by the Montana State Library, indicates that the analysis area is in agricultural land used specifically for grazing (Montana Cadastral 2021). No parts of the analysis area have been identified for other agricultural uses (e.g., fallow land, irrigated land, continuous crop, or farmsite). The lands within the analysis area are privately owned and are not currently zoned. The analysis area is in a rural, unincorporated area of Beaverhead County. Land use goals for the analysis area and surrounding areas are covered in the *Beaverhead County Growth Policy* (Beaverhead County 2013), *Report and Recommendations for Planning the Dillon Growth Area* (Beaverhead County Community Planning Committee 2010), and the *Dillon Community Plan* (City of Dillon 2016).

3.1.1.2 ENVIRONMENTAL CONSEQUENCES

3.1.1.2.1 No Action

The no action alternative would not impact land use. The existing land use in the analysis area (grazing) would continue.

3.1.1.2.2 Proposed Action

The proposed action would convert 639 acres of agricultural land to commercial land. Surface disturbance from the project would prevent future grazing or other agricultural uses on that land until after the project is decommissioned. Because most of the adjacent properties are used for agriculture or grazing, the increased access and visitation to the analysis area during construction may affect private property

through a potential decrease in privacy, a potential increase in trespassing incidents, and a potential increase in safety issues and livestock mortality resulting from increased vehicle traffic on nearby roads. However, these potential effects would be localized and temporary in nature because construction is scheduled to last approximately 10 months.

Because the analysis area has not been zoned, there are no land use regulations that govern the area. However, the proposed action is compatible with all pertinent land use plans and development plans. The project supports multiple goals within those plans. One of the goals of the *Beaverhead County Growth Policy* is "to promote a diversified economic base through the attraction and location of new commercial and industrial activity into the County, as well as the retention and expansion of existing businesses and industries that provide decent livable wages." The *Report and Recommendations for Planning the Dillon Growth Area* includes goals for development "in areas that are safe from natural hazards and can accommodate the type of development proposed" and "in areas that will not adversely impact the infrastructure and services of the city or county." One of the plan's objectives for economic development and industry is to "support business creation, retention, and expansion." The proposed action meets all these criteria and goals.

3.1.1.3 MITIGATION

No mitigation measures are proposed for general land use.

3.1.2 Important Farmland

3.1.2.1 AFFECTED ENVIRONMENT

The analysis area for assessing potential impacts to important farmland is the 639-acre project area. Areas that have been designated as "prime and unique farmland" or "farmland of statewide or local importance" by the Natural Resources Conservation Service (NRCS) are considered important farmland. The NRCS's Web Soil Survey tool was used to determine whether important farmland exists in the analysis area, and the NRCS was also contacted directly during the public scoping process. No response was received from the NRCS regarding any project concerns. According to the Web Soil Survey, no portions of the analysis area are designated as important farmland (NRCS 2019). Approximately 637 acres of the analysis area are marked as "DA – Denied access," meaning that the NRCS was unable to classify those soils (NRCS 2019). The remaining 2 acres of the analysis area feature mapped soils, though none of the soils are classified as prime and unique farmland or farmland of statewide or local importance. The analysis area is in a rural agricultural area and has been used for cattle grazing.

3.1.2.2 ENVIRONMENTAL CONSEQUENCES

3.1.2.2.1 No Action

The no action alternative would not impact any important farmland. No development would occur on important farmland.

3.1.2.2.2 Proposed Action

The proposed action would not result in the conversion of important farmland because the analysis area does not contain any designated important farmland. Therefore, no direct or indirect impacts to important farmland would occur.

3.1.2.3 MITIGATION

No mitigation measures are proposed for important farmland.

3.1.3 Formally Classified Lands

3.1.3.1 AFFECTED ENVIRONMENT

The analysis area for assessing potential impacts to formally classified lands is the 639-acre project area. Formally classified lands are areas that have received special protection through formal legislative designations and are administered by federal, state, or local agencies; Tribes; or private parties. Formally classified lands include national parks and monuments; national forests and grasslands; national historic landmarks; national wildlife refuges; wilderness areas; wild, scenic, and recreational rivers; state parks; and Native American–owned lands. The mapping systems of various federal and state agencies indicate that the analysis area does not contain any formally classified lands. Lands managed by the Bureau of Land Management (BLM) are adjacent to the northern boundary of the analysis area.

3.1.3.2 ENVIRONMENTAL CONSEQUENCES

3.1.3.2.1 No Action

The no action alternative would not impact any formally classified lands.

3.1.3.2.2 Proposed Action

The proposed action would not directly or indirectly impact any formally classified lands because the analysis area does not contain any formally classified lands. Adjacent BLM-managed land would continue to support its current land use and would not be impacted by the proposed action.

3.1.3.3 MITIGATION

No mitigation measures are proposed for formally classified lands.

3.2 Floodplains

3.2.1 Affected Environment

A floodplain is defined as a low-lying area adjoining a river or body of water that is subject to periodic flooding. Floodplains provide risk reduction benefits such as storing flood water and slowing runoff as well as environmental value such as erosion control, groundwater recharge, and fish and wildlife habitat protection (Federal Emergency Management Agency [FEMA] 2020a). A 100-year floodplain, or Special Flood Hazard Area, is defined as an area with a 1 percent probability of flooding in a given year, and a 500-year floodplain is an area with a 0.2 percent probability of flooding in a given year (FEMA 2020b).

Compliance with Executive Order (EO) 11988 Floodplain Management requires project development evaluation to ensure that federal agencies “avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and . . . avoid direct or indirect support of floodplain development wherever there is a practicable alternative”.

The analysis area for floodplains is the Lower Rattlesnake Creek Watershed in Beaverhead County, Montana (Figure 3.2-1). The FEMA Flood Insurance Rate Map (FIRM) of Beaverhead County, which is the currently effective FIRM map, revealed that FEMA has not mapped the analysis area (FEMA 2021). However, Panel Number 30001CIND1A of the preliminary FEMA FIRM of Beaverhead County issued on January 15, 2020, shows the analysis area is in a minimal flood hazard area (see Figure 3.2-1) (FEMA 2021). Preliminary FIRM maps are not effective and can change before becoming effective for an area. The analysis area is not within any 100-year or 500-year floodplain, and consultation and coordination with Beaverhead County confirmed that the project site does not lie within a floodplain (Sawyer 2021). Appendix B contains the full preliminary FIRM of Beaverhead County.

Although no mapped floodplains are in the analysis area, areas adjacent to Rattlesnake Creek and downstream of the project area could be floodplain areas that are hydrologically connected. FEMA has not mapped these areas; however, soils along the river consist of the Beavrock and Theeriv soil series, which typically exist in floodplain areas (NRCS 2019). The proposed project area does not overlap the potential floodplain soils along Rattlesnake Creek.

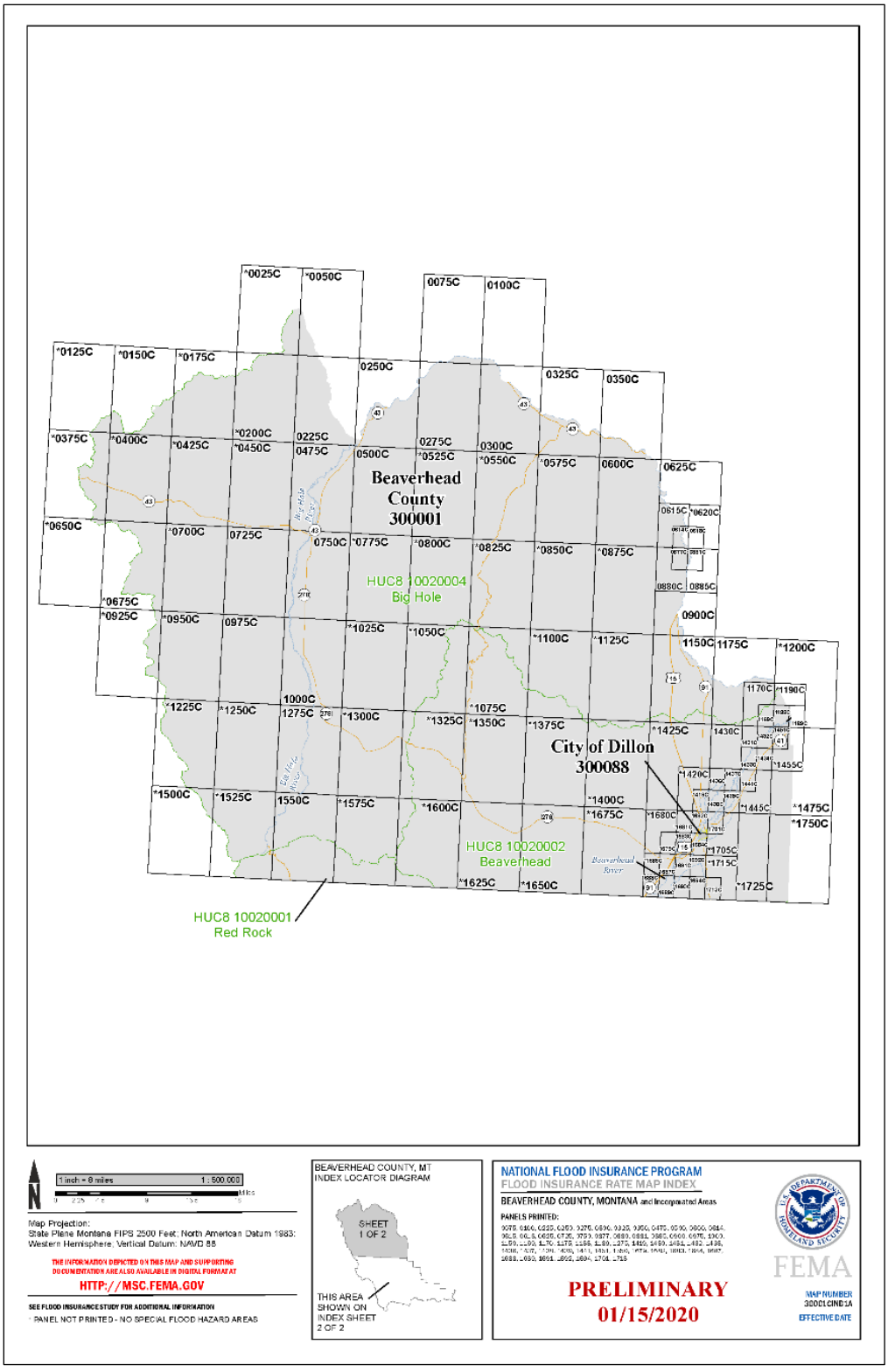


Figure 3.2-1. Preliminary FIRM map of Beaverhead County.

3.2.2 Environmental Consequences

3.2.2.1 NO ACTION

The no action alternative would not impact any floodplains or affect any flood zones. No development would occur in the project area; therefore, there would be no activities that would impact floodplains or flood zones downstream of the analysis area.

3.2.2.2 PROPOSED ACTION

The proposed action would not take place within any area designated as 100-year or 500-year floodplain. Although floodplains may exist along Rattlesnake Creek, they are unidentified and unmapped, and the proposed project area does not overlap the identified potential floodplain soils along Rattlesnake Creek. In addition, the analysis area is not directly connected to floodplains or floodway passages. Therefore, the proposed action would result in no direct or indirect impacts to any identified floodplains.

3.2.3 Mitigation

No mitigation measures are proposed for floodplains.

3.3 Wetlands

3.3.1 Affected Environment

The analysis area for wetlands is the 639-acre project area. The wetlands discussed in this EA are aquatic resources that are regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act and are also known as jurisdictional waters of the U.S. During the project's public scoping period, the USACE indicated that the project area may contain jurisdictional waters of the U.S., including wetlands, and requested that the project area undergo evaluation for the presence of wetlands. Wetland delineations took place in the project area in June 2021 according to protocols in the USACE's 1987 *Wetlands Delineation Manual* and 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 1987, 2010). No wetlands were identified in the project area during the delineations (Appendix C) (SWCA 2021). Additionally, no hydric soils were identified during the wetland delineation surveys or during the associated desktop analysis of NRCS soil survey data (SWCA 2021). The U.S. Fish and Wildlife Service's (USFWS's) National Wetlands Inventory (NWI) indicates that approximately 3.7 acres of riverine wetland habitat exists in the project area (USFWS 2021a). NWI data are generally the result of aerial imagery interpretation and are not considered as accurate as ground field surveys. The June 2021 wetland delineations revealed that the areas represented by the NWI's polygons for the project area are actually upland swales with no wetlands or waterbodies with ordinary high-water marks (OHWMs) (SWCA 2021:Section 3.4). The results of the wetland delineation surveys indicate that the project area features no waters of the U.S. or waterbodies with OHWMs.

3.3.2 Environmental Consequences

3.3.2.1 NO ACTION

The no action alternative would not impact any wetlands.

3.3.2.2 PROPOSED ACTION

The proposed action alternative would not impact any wetlands because the analysis area does not contain any wetlands or other potentially jurisdictional waters of the U.S.

3.3.3 Mitigation

No mitigation measures are proposed for wetlands.

3.4 Water Resources

3.4.1 Affected Environment

This section provides an overview of the water resources of the project area and addresses water quantity and quality issues related to discharges to or appropriations from surface or groundwater, groundwater protection programs (e.g., programs that protect sole source aquifers and recharge areas), and water quality degradation from temporary construction activities. Water quality and quantity changes can impact other environmental resources including groundwater and drinking water supplies, threatened and endangered species, other fish and wildlife species, and wetlands.

The project area is located within the Lower Rattlesnake Creek Watershed (Hydrologic Unit Code [HUC] 12-100200020204), which is a part of the larger Rattlesnake Creek Watershed (HUC 10-1002000202) and Beaverhead Watershed (HUC 8-10020002). For the assessment of environmental consequences to water resources as a result of the proposed action, the analysis area is defined as the Lower Rattlesnake Creek Watershed, as shown in Figure 3.4-1. Within the analysis area, the only perennial stream is Rattlesnake Creek. The rest of the analysis area contains only intermittent streams that drain mostly to Rattlesnake Creek.

3.4.1.1 SURFACE WATER

Aerial photography and topographic maps of the analysis area and the results of the wetland delineations SWCA conducted in June 2021 (SWCA 2021) indicate that the project boundary does not cross any major rivers or streams in the Lower Rattlesnake Creek Watershed. National Hydrography Dataset (NHD) data indicate that the analysis area contains three unnamed intermittent streams (U.S. Geological Survey 2021) (see Figure 3.4-1). SWCA identified no waterbodies with OHWMs in the analysis area during the June 2021 surveys. SWCA's surveys checked the NHD flowlines and determined that the vegetation in those areas are more indicative of a drainage swale than an intermittent stream. The project area drains east through the NHD-identified intermittent streams to Rattlesnake Creek near the creek's confluence with Beaverhead Creek (see Figure 3.4-1).

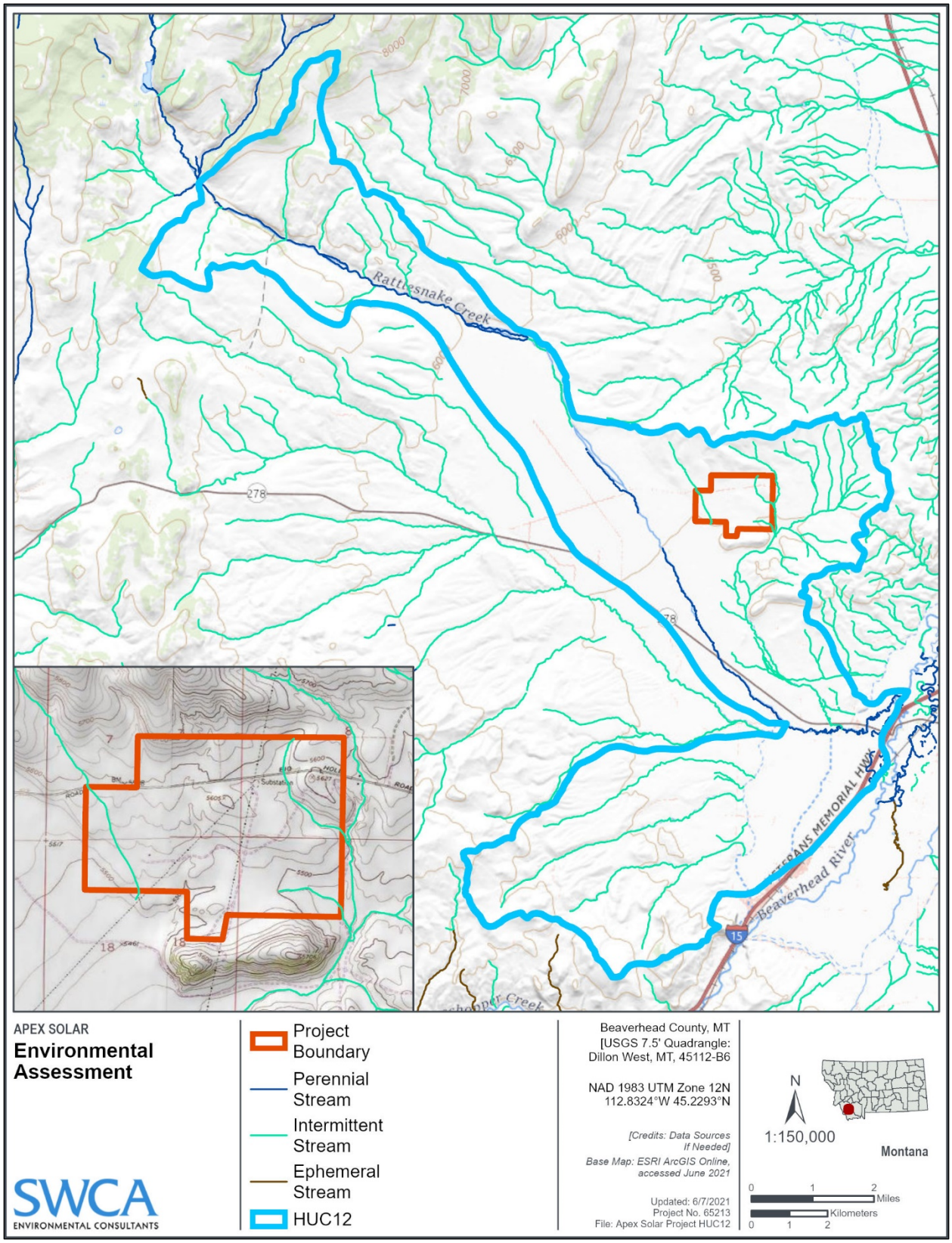


Figure 3.4-1. Lower Rattlesnake Creek Watershed and Apex project area.

3.4.1.2 WATER QUALITY

The closest perennial stream to the project area is Rattlesnake Creek, one of the major tributaries of the Beaverhead River (MDEQ 2012). Lower Rattlesnake Creek has been listed by the MDEQ since 1994 as impaired for aquatic life use because of sedimentation (MDEQ 2010); since 2006 as impaired for copper, lead, phosphorus, and nitrogen (MDEQ 2020); and since 2010 as impaired for aquatic life beneficial use because of the waterway's high concentrations of suspended solids (MDEQ 2010).

In 2012, the MDEQ published *Beaverhead Sediment Total Maximum Daily Loads and Framework Water Quality Protection Plan* (MDEQ 2012). Intended for the Beaverhead Watershed, this document presents a plan for meeting the total maximum daily loads (TMDLs) of 18 streams in the Beaverhead Watershed, including Lower Rattlesnake Creek, which is the portion of Rattlesnake Creek that lies closest to the project area. In addition, the plan identifies streamside alteration of littoral vegetative covers and low flow alterations as the causes of the sedimentation that has impaired Rattlesnake Creek as (MDEQ 2012). Primary land use in the Lower Rattlesnake Creek Watershed is agricultural land, and Rattlesnake Creek is frequently dewatered as a result of irrigation practices in the watershed (MDEQ 2012). *Beaverhead Sediment Total Maximum Daily Loads and Framework Water Quality Protection Plan* summarizes a 2010 study completed on the lower reach of Rattlesnake Creek; the study revealed the exceedance of fine sediment targets in riffles and pools in the lower portion of Rattlesnake Creek and that flows from upstream sources appear to contribute to the fine and coarse sediment deposited in the lower reach of the creek (MDEQ 2012).

In 2013, the MDEQ published *Beaverhead Watershed Restoration Plan*, which focuses on understanding how the watershed functions and presents potential restoration and monitoring strategies (MDEQ 2013). One main pollutant source of concern identified in the plan is sedimentation. Primary causes of sedimentation in the Beaverhead Watershed include unpaved roads, upland erosion, and streambank erosion (MDEQ 2013).

3.4.1.3 GROUNDWATER

Groundwater in the project area consists of shallow water contained in tertiary sediments. The project area contains no sole source aquifers or drinking water source protection areas for community, noncommunity, and residential wells. The sole source aquifer nearest to the project area is the Eastern Snake River Plain Aquifer Source Area, which is approximately 50 miles to the south (EPA 2021a). The project area is not within a wellhead protection area and is not subject to other groundwater protection requirements.

A Dillon water line runs along Ten Mile Road and adjacent to the project area. Dillon sits on a highly productive aquifer that provides water to the city via wells that produce up to 1,000 gallons per minute (gpm) (MDEQ 2021).

3.4.2 Environmental Consequences

3.4.2.1 NO ACTION

3.4.2.1.1 Surface Water

The no action alternative would not impact any surface water. No intermittent drainages or natural drainage patterns would be disturbed within the project area boundary. Under the no action alternative, there would be no project-related changes to land use that would impact surface water features. The no action alternative would not impact any surface water in the Lower Rattlesnake Creek Watershed.

3.4.2.1.2 Water Quality

The no action alternative would not impact any water quality. Water quality conditions would remain unchanged (i.e., no sediment disturbance would occur within the project area boundary). Under the no action alternative, there would be no project-related changes to land or water use that would impact water quality. The no action alternative would not impact any water quality or water quantity in the Lower Rattlesnake Creek Watershed.

3.4.2.1.3 Groundwater

The no action alternative would not impact any groundwater. Groundwater conditions would remain unchanged and there would be no use of groundwater in the project area. The no action alternative would not impact any groundwater in the Lower Rattlesnake Creek Watershed.

3.4.2.2 PROPOSED ACTION

3.4.2.2.1 Surface Water

For construction and operation of the project, Apex would extract water from the Dillon water line that runs along Ten Mile Road or from the city fire hydrant at the county dump. Under the proposed action, an estimated 750,000 gallons of water would be required for dust mitigation and soil compaction during construction. Personnel would discharge such water slowly and over a large area to minimize any potential for accumulation of surface runoff. The proposed project does not include the construction or removal of any water intake facilities.

O&M of the solar facility would require minimal on-site water usage. Normal O&M would require up to 100,000 gallons of water per year. Personnel would use the water for vegetation management and cleaning the solar panels annually. Solar panel cleaning would involve no surfactants, and no runoff related to cleaning is anticipated.

Apex would determine the placement of structures within the project area during final project engineering and design. The company intends to maintain and preserve natural drainage patterns to the extent possible. Workers would likely build panels over some of the upland swales within the project area. Trackers would be installed outside of the upland swales via pile driving, and panels would be installed 5 to 7 feet above the ground. Erosion, stormwater, and pollution control measures would be implemented in accordance with the project's SWPPP (Appendix A) prior to ground disturbing activities. These measures would minimize ground disturbance near upland swales to the extent practicable and impacts to existing drainage patterns in the Lower Rattlesnake Creek Watershed would not be anticipated. Therefore, the proposed action would not impact the existing water drainage within the Lower Rattlesnake Creek Watershed.

3.4.2.2.2 Water Quality

As a result of site preparation, including soil disturbance during grading, the proposed action may result in short-term, minor water quality impacts to surface water features within the Lower Rattlesnake Creek Watershed. These impacts could arise during precipitation events that mobilize and convey sediments exposed during project construction and/or on unpaved project roads. Rainfall and/or runoff events may convey sediments into Rattlesnake Creek via intermittent streams in or adjacent to the project area; this possibility presents the potential to further impair the lower portion of Rattlesnake Creek by contributing additional sediment pollution. Runoff may cause increased turbidity and localized sedimentation of the stream bottom. Construction methods such as grading along existing contours and leaving roots intact

would minimize soil and vegetation disturbance during construction. Additionally, besides Rattlesnake Creek, the other waterways within the project boundary are intermittent, meaning that water does not regularly flow through those channels. For any large amount of sediment to reach Rattlesnake Creek, the sediment would have to travel approximately 3 miles south of the project area through the intermittent streams that drain the area into Rattlesnake Creek. Because the proposed action would involve more than 1 acre of ground disturbance, the MDEQ would require coverage under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction Activity. This would require the preparation of a SWPPP and implementation of BMPs to reduce sediment-laden runoff from entering surface waters. The SWPPP would also serve as an erosion and sediment control plan. BMPs included in the SWPPP would minimize the potential impact of construction and operation of the project on the water quality of Rattlesnake Creek. Appendix A contains a draft of the SWPPP for the proposed project. Section 2.4.2 includes more details on the SWPPP.

Under the proposed action, impacts to surface water quality would be minimal. Construction and operation would not generate wastewater. The proposed project would add only minor areas of impervious surfaces to the project area, and Apex would maintain vegetation wherever possible throughout the operational life of the facility. Additionally, the proposed project does not include any work related to water distribution and does not include the construction or removal of any water intake facilities; therefore, impacts to water quantity are not anticipated. Dillon wells produce up to 1,000 gpm; the amount of water workers would use during construction would be comparatively minimal, and no impacts to other water uses are anticipated (MDEQ 2021).

3.4.2.2.3 Groundwater

During construction and operation, Apex would use water from the Dillon water line that runs along Ten Mile Road or from the city fire hydrant at the county dump. Water from these sources originates from groundwater under the city of Dillon; this groundwater lies in Quaternary sediments. This aquifer is highly productive with wells that produce up to 1,000 gpm (MDEQ 2021).

The project area overlies a different aquifer (Abdo et al. 2013). The groundwater there lies in Tertiary sediments, and minor infiltration of that groundwater may occur as a result of water use for dust mitigation during construction and panel cleaning during operation; however, with minimal groundwater infiltration relative to the aquifer, those activities are unlikely to result in changes to water quantity or quality. Compared to the production of the Dillon wells of up to 1,000 gpm (MDEQ 2021), the amount of water Apex would use during construction would be minimal, and no impacts to other water uses are anticipated. Little to no groundwater infiltration is anticipated from water use on-site after construction.

The proposed action would not impact groundwater resources within the project area.

3.4.3 Mitigation

The SWPPP Apex prepares to meet MDEQ requirements for this project would also serve as an erosion and sediment control plan. The plan would provide the general contractor with the framework for reducing soil erosion and minimizing the potential impact of stormwater pollution from common activities and sources at construction sites. Specifically, the SWPPP would detail the structural and non-structural BMPs Apex selects to control erosion associated with surface stormwater discharges during construction, decrease the volume and rate of stormwater runoff, and increase pollution attenuation after construction.

3.5 Coastal Resources

3.5.1 Affected Environment

The proposed action is more than 540 miles from a coast. Neither the Coastal Zone Management Act nor the Coastal Barrier Resources Act apply to this project. No coastal resources exist near the project area.

3.5.2 Environmental Consequences

3.5.2.1 NO ACTION

The no action alternative would not impact any coastal resources or affect a coastal zone.

3.5.2.2 PROPOSED ACTION

The proposed action would not impact any coastal resources or affect a coastal zone.

3.5.3 Mitigation

No mitigation measures are proposed for coastal resources.

3.6 Biological Resources

3.6.1 General Fish, Wildlife, and Vegetation Resources

3.6.1.1 AFFECTED ENVIRONMENT

The analysis area for general fish and wildlife resources is the area within 2 miles of the project area boundary, except for eagles, which were analyzed within 0.5 mile of the project area boundary. The analysis area for vegetation resources is the 639-acre project area. GAP/LANDFIRE National Terrestrial Ecosystems data was used in a preliminary assessment of the vegetation in the project area (U.S. Geological Survey 2011). The U.S. Geological Survey maintains this data, which consists of detailed vegetation and land cover data for the continental United States. This data relies on the ecological system classification system developed by NatureServe to represent natural and semi-natural vegetation. Table 3.6-1 lists the GAP/LANDFIRE landcover classes in the project area by acreage and percentage. Most of the project area (84.87%) is classified as cool semi-desert scrub & grassland.

Table 3.6-1. Landcover Classes in the Project Area

National Vegetation Classification Subclass	Acres	Percent of Project Area
Temperate & Boreal Grassland & Shrubland	56.43	8.83%
Shrub & Herb Wetland	0.22	0.03%
Cool Semi-Desert Scrub & Grassland	542.60	84.87%
Herbaceous Agricultural Vegetation	2.32	0.36%
Herbaceous & Woody Developed Vegetation	11.17	1.75%

National Vegetation Classification Subclass	Acres	Percent of Project Area
Developed-Low Intensity	2.22	0.35%
Developed-Medium Intensity	4.68	0.73%
Developed-Roads	19.71	3.08%
Total	**639.36**	**100%**

During natural resources field surveys conducted in June 2021, the observed plant community in the project area was primarily mixed-grass prairie dominated by western wheatgrass (*Pascopyrum smithii*) (Appendix C) (SWCA 2021). In the lower-elevation areas in the southwestern portion of the project area, the only dominant plant species was western wheatgrass. The rest of the project area featured Sandberg bluegrass (*Poa secunda*) and threadleaf sedge (*Carex filifoli*a) as subdominates and a low density of scattered Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*). An upland swale in the northwest corner of the project area supported a population of basin big sagebrush (*Artemisia tridentata* spp. *tridentata*). Scattered areas of smooth brome (*Bromus inermis*) and cheatgrass (*Bromus tectorum*) were also present. No special areas of concern (e.g., riparian areas, wetlands, or forested plant communities) were present in the project area.

During consultation with the USFWS in May 2021, the agency stated that it was not aware of any active eagle nests or territories within the project area (Appendix D). No bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) nests were observed with 0.5 mile of the project area during the June 2021 field surveys. Some eagle nesting habitat exists in the 0.5-mile buffer, including a few cottonwood trees (*Populus* spp.) and some exposed rock ridges, but no eagle nesting habitat was within the project area itself (SWCA 2021).

The state of Montana has no state endangered species laws. However, the Montana Natural Heritage Program (MTNHP) and the Montana Department of Fish, Wildlife and Parks (Montana FWP) do identify species of concern (MTSOC). MTSOC are native taxa that are at risk because of declining populations, threats to their habitat, restricted distribution, and other factors. Designation as a MTSOC is not a statutory or regulatory classification. MTSOC do not have state regulatory protections, but some species may be protected under other laws (e.g., Migratory Bird Treaty Act, ESA). The long-billed curlew (*Numenius americanus*) is the only MTSOC that has been documented in the project area (MTNHP 2021; SWCA 2021). Historic observations of MTSOC that have occurred within 2 miles of the project area include ferruginous hawk (*Buteo regalis*), pygmy rabbit (*Brachylagus idahoensis*), golden eagle, great blue heron (*Ardea herodias*), greater sage-grouse (*Centrocercus urophasianus*), and hoary bat (*Lasiurus cinereus*) (MTNHP 2021). No plant MTSOC are known to occur in the project area. During the June 2021 natural resources field surveys, the only animal species observed within the project area were a long-billed curlew, prairie rattlesnake (*Crotalus viridis*), and turkey vulture (*Cathartes aura*). The project area is outside state of Montana greater sage-grouse core areas and general habitat areas (Montana Sage Grouse Habitat Conservation Program 2021). No waterbodies that can support fish are in the 2-mile analysis area.

3.6.1.2 ENVIRONMENTAL CONSEQUENCES

3.6.1.2.1 No Action

The no action alternative would not impact general fish, wildlife, and vegetation resources. The habitat would not be altered, and current land use would continue.

3.6.1.2.2 Proposed Action

The proposed action would result in the removal of 639 acres of vegetation by grading and mowing during the initial site preparation phase, as described in Chapter 2. Earthmoving equipment, such as bulldozers and graders, would clear the vegetation. Vehicles would crush vegetation along temporary access roads. Some vegetation would be allowed to grow back in areas not needed for operations (such as temporary construction access roads and staging areas) but would be mowed occasionally as part of vegetation management. Short-term and long-term impacts (35 years, which is the life of the project) on vegetation would essentially be the same: removal of 639 acres of vegetation, which would not be available to wildlife species to use for foraging, breeding, nesting, roosting, or migration. Reclamation would occur during project decommissioning approximately 35 years after commercial operations begin. Native-seed mixes would be used to foster vegetation growth on the site.

Nesting habitat for eagles would not be directly impacted, but foraging areas would be reduced. No eagle nests are present nearby, and small mammals were not observed in the project area, so the foraging potential for eagles is likely low. However, loss of foraging areas could cause eagles to adjust the locations of their nesting areas. Human activity and infrastructure in the project area could result in eagles avoiding the area. No suitable habitat for any MTSOC, except for the long-billed curlew, is in the project area. The project area is a documented nesting area for long-billed curlew. Loss of habitat is one of the primary threats to this species (USFWS 2009). The loss of known nesting habitat for the long-billed curlew could have a localized effect on this species' use of the area. However, other suitable long-billed curlew habitat exists in the areas adjacent to the project area and the habitat loss in the project area would not cause any loss of habitat connectivity. The habitat loss is unlikely to cause an overall impact to the viability of the long-billed curlew population because of the relatively small size of habitat loss compared to the amount of habitat available to the species in the county and across the state.

Since riparian zones, wetlands, forested habitat, and other special areas of concern are not within the project area, the proposed action would not impact any special areas of concern.

3.6.1.3 MITIGATION

To avoid impacts to the long-billed curlew, Apex would not engage in ground-disturbing activities in undisturbed grassland areas within the project area from March 15 through July 15. Ground-disturbing activities may take place within the avoidance time frame if blading, mowing, or vegetation clearance renders the habitat unsuitable for nesting before March 15. If the habitat cannot be rendered unsuitable prior to March 15 and ground disturbing activities are scheduled to occur within the avoidance time frame, then long-billed curlew nesting surveys will be conducted no more than 1 week prior to the construction start date. If no active nests are observed during the survey, then the habitat will bladed, mowed, or cleared within 1 week of the survey and ground disturbing activities may occur during the avoidance window. If an active nest is identified during the survey, then a 200-meter buffer will be placed around the nest and no activities will occur within this buffer until a biologist confirms that the nestlings have fledged and the nest has become inactive. Outside of that 200-meter buffer around the nest, the habitat may be bladed, mowed, or cleared to allow for ground disturbing activities.

3.6.2 Endangered Species Act–listed Threatened and Endangered Species

3.6.2.1 AFFECTED ENVIRONMENT

The analysis area for ESA-listed species is the 639-acre project area. During informal consultation with the USFWS in May 2021, the agency provided a list of four threatened, endangered, candidate, or proposed species in Beaverhead County, Montana, that could be impacted by the project: three threatened species and one proposed species (see Appendix D). Table 3.6-2 lists these species and their USFWS status. No critical habitat or species listed as endangered were identified for Beaverhead County. An informal USFWS Information for Planning and Consultation (IPaC) project area review conducted in June 2021 listed only Canada lynx (*Lynx canadensis*) as potentially occurring in the county (USFWS 2021b). For this EA, the four ESA species identified in the USFWS consultation letter were analyzed. Surveys for these ESA-listed species and their habitat, except for Ute-ladies'-tresses, took place in June 2021. Ute-ladies'-tresses surveys can take place only during a certain time of the year (i.e., the flowering period). Therefore, in terms of Ute-ladies'-tresses, the June 2021 surveys focused only on habitat for the species (Appendix C).

Table 3.6-2. Endangered, Threatened, Candidate, and Proposed Species in Beaverhead County

Common Name	Scientific Name	USFWS Status
Ute ladies'-tresses	*Spiranthes diluvialis*	Listed threatened
Grizzly bear	*Ursus arctos horribilis*	Listed threatened
Canada lynx	*Lynx canadensis*	Listed threatened
Whitebark pine	*Pinus albicaulis*	Proposed

3.6.2.1.1 Ute ladies'-tresses (*Spiranthes diluvialis*)

In Montana, Ute ladies'-tresses (*Spiranthes diluvialis*) plants grow in calcareous wetlands, swales, and old meander channels outside the active stream channel. Within these habitats, the plants often grow along the wetland edges or in areas that dry by mid-summer. The plants can occupy small, fragmented parcels of habitat. In Montana, a small number of Ute ladies'-tresses occurrences have been documented in the southwest and south-central parts of the state. This species occurs in the valleys of the Missouri, Jefferson, Beaverhead, Ruby, and Madison River drainages, where it is restricted by specific hydrologic requirements. The closest township to the project area associated with a Ute ladies'-tresses observation is approximately 12 miles to the northeast in the Beaverhead River floodplain. (MTNHP 2021). Field surveys in June 2021 did not identify any suitable Ute ladies'-tresses habitat in the project area.

3.6.2.1.2 Grizzly Bears (*Ursus arctos horribilis*)

In Montana, grizzly bears (*Ursus arctos horribilis*)primarily use meadows, seeps, riparian zones, mixed shrub fields, closed timber, open timber, sidehill parks, snow chutes, and alpine slabrock habitats. The species' use of this habitat use is highly variable between areas, seasons, local populations, and individuals. Grizzly bears are opportunistic and adaptable omnivores, with half of their diet consisting of vegetation. Through evolution, the bears' claws have become longer for digging and the species' molar surface area has become larger for better exploitation of vegetative food sources. Grizzly bears feed on carrion, fish, large and small mammals, insects, fruit, grasses, bark, roots, mushrooms, and garbage. The bears often cache and guard food. In the Yellowstone region, grizzly bear scat tends to include ungulate

remains and rodents early in the year; grasses, sedges, and herbs in May and June; and whitebark pine seeds, fish, and berries later in the year, when the bears become hyperphagic (MTNHP 2021).

No true grizzly bear migration occurs, although grizzly bears often exhibit discrete elevational movements from spring to fall according to seasonal food availability (LeFranc et al. 1987). They generally live at lower elevations in spring and higher elevations in mid-summer and winter. Historically, the grizzly bear was primarily a plains species occurring in higher densities throughout most of eastern Montana. The closest township to the project area associated with a grizzly bear observation is 12 miles to the east in the Ruby Mountains. (MTNHP 2021). Field surveys in June 2021 did not identify any suitable grizzly bear habitat in the project area or any grizzly bears.

3.6.2.1.3 Canada lynx (*Lynx canadensis*)

Canada lynx (*Lynx canadensis*) east of the continental divide generally occur at higher elevations in subalpine fir forests, with secondary habitat in Engelman spruce (*Picea engelmannii*) and Douglas-fir (*Pseudotsuga menziesii*) habitat types. Throughout this species' range, shrub-steppe habitats may provide important linkage habitat between the primary habitat types. Within these habitat types, disturbances such as fire, insect infestations, and timber harvest foster early successional stages that provide forage and cover for snowshoe hares (*Lepus americanus*) and therefore forage for lynx, although older forests also provide habitats for snowshoe hares and Canada lynx for longer periods than do disturbance-created habitats. Canada lynx avoid large openings but often hunt in areas of dense cover along the edges of such openings. Canada lynx are non-migratory, but individual movements of 90 to 125 miles between Montana and Canada have been recorded. The closest township to the project area associated with a Canada lynx observation is 1 mile to the northwest (MTNHP 2021); the township covers a large portion of the Pioneer Mountains and open hill areas near the project area. Field surveys in June 2021 did not identify any suitable Canada lynx habitat in the project area or any Canada lynx.

3.6.2.1.4 Whitebark pine (*Pinus albicaulis*)

Whitebark pine (*Pinus albicaulis*) is a common component of subalpine forests and a dominant species of treeline and krummholtz habitats. The species occurs in almost all major mountain ranges of western and central Montana. The closest known whitebark habitat and observations are more than 10 miles to the northwest in the Pioneer Mountains. (MTNHP 2021). Field surveys in June 2021 did not identify any suitable whitebark pine habitat in the project area any whitebark pine.

3.6.2.2 ENVIRONMENTAL CONSEQUENCES

3.6.2.2.1 No Action

The no action alternative would not impact listed threatened, endangered, candidate, or proposed species. The habitat would not be altered, and current management would continue.

3.6.2.2.2 Proposed Action

The project area does not contain suitable habitat for Ute ladies'-tresses and is outside the known range of this species in Montana. Ute ladies'-tresses are unlikely to occur in the project area. The proposed action alternative would have no direct or indirect effects on Ute ladies'-tresses.

The project area does not contain suitable habitat or food resources for the grizzly bear. With the distance between the project area and the nearest documented locations of this species and the project area's lack of habitat, it is unlikely that grizzly bears would travel through the project area. However, if a grizzly bear did enter the project area, the bear would most likely pass through the area without stopping because of

the location's exposed nature and lack of suitable habitat. The proposed action alternative would have no direct or indirect effects on grizzly bears.

The project area does not contain suitable habitat for the Canada lynx. This species is unlikely to use the area because it consists primarily of open grassland that contains little cover. Canada lynx are unlikely to occur in the project area. The proposed action alternative would have no direct or indirect effects on Canada lynx.

The project area does not contain suitable habitat for whitebark pine. This plant species cannot occur without suitable habitat. Therefore, whitebark pine are unlikely to occur in the project area. The proposed action alternative would have no direct or indirect effects on whitebark pine.

Since the proposed action would have no direct or indirect effects on any ESA-listed species, formal Section 7 consultation with USFWS and preparation of a biological assessment were not required for this analysis. A determination of no effect does not require USFWS concurrence. Table 3.6-3 summarizes the effect determinations for ESA-listed species potentially occurring in Beaverhead County.

Table 3.6-3. Effect Determinations for Endangered Species Act-listed Species Potentially Occurring in Beaverhead County, Montana

Common Name	Potential for Occurrence in Project Area	Determination of Effect
Ute ladies'-tresses	Unlikely to occur	No effect
Grizzly bear	Unlikely to occur	No effect
Canada lynx	Unlikely to occur	No effect
Whitebark pine	Unlikely to occur	No effect

3.6.2.3 MITIGATION

No mitigation measures are proposed for ESA-listed threatened, endangered, candidate, or proposed species.

3.6.3 Migratory Bird Treaty Act

3.6.3.1 AFFECTED ENVIRONMENT

The analysis area for migratory birds is 0.5 mile around the project area. The project area is primarily grassland with some small areas of shrubs (see Section 3.6.1 for more detail on plant communities in the project area). Many migratory birds, such as mourning dove (*Zenaida macroura*), loggerhead shrike (*Lanius ludovicianus*), and horned lark (*Eremophila alpestris*), could use the grassland habitat in the project area for foraging, nesting, or migration. The USFWS identified the potential for migratory bird habitat to occur in the project but mentioned no specific species in the agency's public scoping response for the project (see Appendix D). The results of the June 2021 IPaC review of the project area identified bald eagle, golden eagle, and long-billed curlew as migratory birds that may occur in the project area (USFWS 2021b). A long-billed curlew nest containing two eggs was identified during the June 2021 natural resources surveys in the project area, specifically in the NE¼ NW¼ Section 18, T7S, R9W (Appendix C) (SWCA 2021). The long-billed curlew is a MTSOC (MTNHP 2021). A turkey vulture was also observed during the field surveys. No bald eagle or golden eagles or other migratory bird species or their nests were observed in the project area during the field surveys.

The only raptor nest identified within a 0.5-mile buffer of the project area during the surveys was an unknown raptor nest in a narrowleaf cottonwood tree (*Populus angustifolia*) along Ten Mile Road approximately 250 feet east of the project area, specifically in the NW¼ SE¼ Section 8, T7S, R9W (SWCA 2021). No raptor nesting habitat exists in the project area. However, nesting habitat consisting of trees and rock outcrops exists within 0.5 mile of the project area.

No critical areas for use by shorebirds are near the project area or anywhere in southwest Montana (Western Hemisphere Shorebird Reserve Network 2021). The closest important bird area is the Beaverhead Sage-steppe Important Bird Area, which is approximately 3.5 miles west of the project area (Audubon Society 2021; MTNHP 2021). The Beaverhead Sage-steppe Important Bird Area encompasses extensive high-elevation basins and intermountain valleys dominated by sagebrush shrub-steppe with a considerable greater sage-grouse component (Audubon Society 2021). Sagebrush shrub-steppe is not a primary component of the project area, and no greater sage-grouse are known to occur near the project area (see Section 3.6.1).

3.6.3.2 ENVIRONMENTAL CONSEQUENCES

3.6.3.2.1 No Action

The no action alternative would not impact migratory birds. The site would maintain its current habitat and management, and no additional alteration would occur.

3.6.3.2.2 Proposed Action

The proposed action alternative would result in the long-term loss of 639 acres of grassland habitat for migratory birds, including nesting habitat for the long-billed curlew. The habitat would not be restored until after project decommissioning, approximately 35 years after commercial operations begin. The project area contains ideal nesting habitat for the long-billed curlew and other species that use open short-statured grasslands. Loss of habitat is one of the primary threats to the long-billed curlew (USFWS 2009). The loss of habitat would decrease forage availability, cover availability, and the number of breeding and nesting locations for migratory birds that use grasslands in the project area. The loss of known nesting habitat for the long-billed curlew could have a localized effect on this species' use of the area. However, the loss of habitat within the project area is small compared to the amount of habitat present in surrounding areas that would not be impacted by the proposed action. The habitat loss is unlikely to cause an overall impact to the viability of the population. The implementation of mitigation measures would reduce direct loss of individuals. See Section 3.6.1 for additional discussion on proposed action impacts on long-billed curlew.

Short-term negative impacts to migratory birds include noise, dust, and visual intrusions during construction, which may cause individuals to leave or avoid the immediate vicinity of disturbance. Temporary construction effects would mainly involve displacement of individuals from disturbed areas and adjacent habitats (i.e., wildlife avoidance). Displaced individuals could be forced into neighboring territories, where they would compete with already established individuals for limited food supplies and other resources. Potential temporary impacts from construction may also include nest or burrow abandonment or loss of eggs or young. This would result in a decrease in reproductive success for certain species. Direct mortality may result from collisions with vehicles. These impacts would be localized rather than landscape wide and would occur over a short period (the approximately 10-month-long construction period).

Raptor nesting habitat would not be directly impacted by the proposed action because raptor nesting habitat does not exist in the project area. However, raptors may avoid foraging in or traveling through the

project area, particularly during construction because of the presence of human activity and vehicles. Raptors may avoid nesting near the project for the same reasons. These long-term indirect impacts would last for the lifespan of the project but would be localized.

The proposed action alternative would not affect critical areas for use by shorebirds or important bird areas because such areas do not exist in or near the project area.

3.6.3.3 MITIGATION

To avoid impacts to the long-billed curlew, Apex would not engage in ground-disturbing activities in undisturbed grassland areas within the project area from March 15 through July 15. Ground-disturbing activities may take place within the avoidance time frame if blading, mowing, or vegetation clearance renders the habitat unsuitable for nesting before March 15. If the habitat cannot be rendered unsuitable prior to March 15 and ground disturbing activities are scheduled to occur within the avoidance time frame, then long-billed curlew nesting surveys will be conducted no more than 1 week prior to the construction start date. If no active nests are observed during the survey, then the habitat will bladed, mowed, or cleared within 1 week of the survey and ground disturbing activities may occur during the avoidance window. If an active nest is identified during the survey, then a 200-meter buffer will be placed around the nest and no activities will occur within this buffer until a biologist confirms that the nestlings have fledged and the nest has become inactive. Outside of that 200-meter buffer around the nest, the habitat may be bladed, mowed, or cleared to allow for ground disturbing activities.

3.6.4 Invasive Species

3.6.4.1 AFFECTED ENVIRONMENT

The analysis area for invasive species, which include noxious weeds, non-native species, and exotic species, is the 639-acre project area. A noxious weed is any plant designated by federal, state, or local government officials as injurious to public health, agriculture, recreation, wildlife, or property. Noxious weeds negatively impact Montana's landscape by displacing native plant species, increasing soil erosion, and decreasing wildlife habitat and recreational opportunities (MTNHP 2021). Table 3.6-4 lists State of Montana and Beaverhead County noxious weeds by their State priority status (Montana Department of Agriculture 2019). MTNHP has documented no noxious weed observations in the project area (MTNHP 2021).

Table 3.6-4. State of Montana and Beaverhead County Noxious Weeds

Common Name	Scientific Name
Priority 1A	
Common reed	*Phragmites australis* ssp. *Australis*
Dyer's woad	*Isatis tinctoria*
Medusahead	*Taeniatherum caput-medusae*
Yellow starthistle	*Centaurea solstitialis*

Common Name	Scientific Name
Priority 1B	
Blueweed	*Echium vulgare*
Knotweed complex	*Polygonum cuspidatum, P. sachalinense, P. × bohemicum, Fallopia japonica, F. sachalinensis, F. × bohemica, Reynoutria japonica, R. sachalinensis, and R.× bohemica*
Purple loosestrife	*Lythrum salicaria*
Rush skeletonweed	*Chondrilla juncea*
Scotch broom	*Cytisus scoparius*
Priority 2A	
Common buckthorn	*Rhamnus cathartica* L.
Eurasian watermilfoil	*Myriophyllum spicatum*
Flowering rush	*Butomus umbellatus*
Meadow hawkweed complex	*Hieracium caespitosum, H. praealtum, H. floribundum, and Pilosella caespitosa*
Orange hawkweed	*Hieracium aurantiacum*
Perennial pepperweed	*Lepidium latifolium*
Tall buttercup	*Ranunculus acris*
Tansy ragwort	*Senecio jacobaea*
Ventenata	*Ventenata dubia*
Yellowflag iris	*Iris pseudacorus*
Priority 2B	
Canada thistle	*Cirsium arvense*
Common tansy	*Tanacetum vulgare*
Curlyleaf pondweed	*Potamogeton crispus*
Dalmatian toadflax	*Linaria dalmatica*
Diffuse knapweed	*Centaurea diffusa*
Field bindweed	*Convolvulus arvensis*
Hoary alyssum	*Berteroa incana*
Houndstongue	*Cynoglossum officinale*
Leafy spurge	*Euphorbia esula*
Oxeye daisy	*Leucanthemum vulgare*
Russian knapweed	*Acroptilon repens*
Saltcedar	*Tamarix* spp.
Spotted knapweed	*Centaurea stoebe*
St. Johnswort	*Hypericum perforatum*
Sulfur cinquefoil	*Potentilla recta*
Whitetop	*Cardaria draba*
Yellow toadflax	*Linaria vulgaris*

Common Name	Scientific Name
County listed	
Absinth wormwood	*Artemisia absinthium*
Black henbane	*Hyoscyamus niger*
Common mullein	*Verbascum thapsus*
Common teasel	*Dipsacus fullonum*
Cyprus spurge	*Euphorbia cyparissias*
Field scabious	*Knautia arvensis*
Halogeton	*Halogeton glomeratus*
Musk thistle	*Carduus nutans*
Myrtle spurge	*Euphorbia myrsinites*
Scentless chamomile	*Tripleurospermum inodorum*

Black henbane (*Hyoscyamus niger*) was the only noxious weed identified during the natural resources field surveys in June 2021 (Appendix C) (SWCA 2021). A small population existed near a livestock working area within the eastern portion of the project area near Ten Mile Road.

The project area contains no wetlands or waterbodies with OHWMs (see Section 3.3 for more details). Therefore, no suitable habitat for invasive aquatic species is within the project area. No invasive aquatic plant or animal species are in the project area (SWCA 2021).

Non-native species are species that have been deliberately or accidentally introduced to areas outside their native geographic range and that are able to reproduce and maintain sustainable populations in those areas (MTNHP 2021). The State officially recognizes five non-native plant species as Priority 3 Regulated Plants (Table 3.6-5) (Montana Department of Agriculture 2019). However, Priority 3 Regulated Plants are not considered Montana listed noxious weeds.

Table 3.6-5. State of Montana Priority 3 Regulated Plants

Common Name	Scientific Name
Brazilian waterweed	*Egeria densa*
Cheatgrass	*Bromus tectorum*
Hydrilla	*Hydrilla verticillata*
Parrot feather watermilfoil	*Myriophyllum aquaticum*
Russian olive	*Elaeagnus angustifolia*

Cheatgrass was the only Priority 3 Regulated Plant identified during the natural resources field surveys (SWCA 2021). Cheatgrass occurs in low to mid density throughout the project area. Additionally, several other non-native plant species sporadically occur in the project area, including smooth brome, kochia (*Bassia scoparia*), field pennycress (*Thlaspi arvense*), and crested wheatgrass (*Agropyron cristatum*).

The Montana FWP has developed an extensive list of exotic animal species for the state and divided them into three categories: controlled, noncontrolled, and prohibited (Montana FWP 2021). No exotic species on this list were observed in the project area during the surveys. The project area does not contain any aquatic habitat that could be suitable habitat for aquatic invasive species.

3.6.4.2 ENVIRONMENTAL CONSEQUENCES

3.6.4.2.1 No Action

The no action alternative would not impact invasive species. The invasive species in the project area would continue to persist. Populations may increase as a result of climate change or management actions, such as livestock grazing. However, management actions such as livestock grazing and pesticide treatment may also reduce or limit the populations.

3.6.4.2.2 Proposed Action

The potential for invasive species expansion would increase because of ground disturbance during construction and the increase in equipment and number of vehicles. Noxious weeds, which often colonize along the edges of surface disturbance, could spread to non-disturbed adjacent habitats, degrading habitat quality and decreasing the amount of native forage. However, as part of the proposed action alternative, Apex would work with the Beaverhead County Weed District to develop a weed management plan and would implement weed treatment as needed. Equipment and vehicle traffic would decrease after construction is complete. There would be no potential for increase in aquatic invasive species under the proposed action alternative because the project area lacks aquatic habitat.

3.6.4.3 MITIGATION

Apex would develop a weed management plan for the project and would implement measures to manage noxious weeds.

3.7 Cultural and Historic Resources

3.7.1 Affected Environment

This section addresses the evaluation and consideration of the proposal's potential effects on cultural resources and historic properties. NEPA mandates the integration of the NHPA (54 USC 300101 et seq) and its implementing regulations (36 CFR 800, specifically 36 CFR 800.8 (a)). Section 106 of the NHPA (54 USC 306108) requires any federal agency that has direct or indirect jurisdiction over an undertaking consider the effect of the undertaking on historic properties. The objective of this section is to evaluate and document the project's potential impacts to cultural resources as required under NEPA and to consider the project's effects on historic properties under Section 106 of the NHPA. In addition, both NEPA and NHPA outline requirements for Native American consultation in relation to federal undertakings to address issues of potential effects on resources of Native American concern; accordingly, this section summarizes Tribal consultation efforts for the proposed project.

Cultural resources refer to historic, aesthetic, and cultural aspects of the human environment. SWCA used Montana State Historic Preservation Office (SHPO) guidance (Baumler and Olsen 2003) to identify cultural resources in the project area. The NHPA defines historic properties as a subset of cultural resources that includes prehistoric or historic districts, sites, buildings, structures, or objects included in or eligible for the National Register of Historic Places (NRHP), which the U.S. Secretary of the Interior maintains. Historic properties include properties of traditional religious and cultural importance to a

Native American Tribe or Native Hawaiian organization and that meet NRHP criteria. A property is significant if it meets at least one of the following four criteria (36 CFR 60):

A. It is associated with events that have made a significant contribution to the broad patterns of our history.

B. It is associated with the lives of persons significant in our past.

C. It embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

D. It has yielded or may be likely to yield, information important in prehistory or history.

To convey its significance, a property must retain aspects of integrity that contribute to its eligibility. Aspects of integrity include location, setting, design, workmanship, materials, feeling, and association (36 CFR 60).

The area of potential effects (APE) is used as the area of analysis to assess potential impacts and effects of the proposed project on cultural resources and historic properties. The APE includes all project disturbance areas associated with construction and maintenance of solar arrays, a substation, a utility transformer, transmission line, and access roads for the project. Impacts that result from the undertaking at the same time and place (i.e., during construction) with no intervening causes are considered "direct" regardless of specific type (e.g., visual, physical, auditory, etc.). "Indirect" effects to historic properties are those that are caused by the undertaking that occur later in time or farther removed from the project site but that are still reasonably foreseeable. Based on this definition, the physical APE for this project is the 639 acres encompassing the proposed project disturbance, and the visual APE is up to 0.25 mile from the proposed project disturbance.

For the analysis for this project, the following cultural resources issues were identified:

- How would proposed ground disturbance affect cultural resources and historic properties?
- How would visual intrusions from the project affect integrity for eligible or potentially eligible historic or prehistoric cultural resources?
- How would the disturbance areas and associated visual effects affect cultural resources of religious, cultural, and traditional concern to Tribes?

Based on these issues, the following cultural resources indicators were developed:

- Number of cultural resources and historic properties within the APE
- Number of properties eligible for the NRHP under Criterion A, B, or C with strong visual contrasts to their settings resulting from the project
- Number of resources of religious, cultural, and traditional concern identified by consulting Native American Tribes

SWCA conducted an official files search to identify previous cultural resources investigations and previously recorded cultural resources in the APE through from the Montana SHPO on April 13, 2021 (SHPO Project Number 2021012703). From April 21 through April 23, 2021, SWCA conducted Class III cultural resources inventory of the physical APE according to the methods and standards required under Montana SHPO guidelines for identifying historic properties and reporting cultural resources surveys in Montana (Baumler and Olsen 2003).

RUS used the tool called the Tribal Directory Assessment Tool (TDAT) to identify the Tribes pertinent to this project. RUS used the tool to identify the Tribes pertinent to this project. The TDAT results listed the Fort Belknap Indian Community of the Fort Belknap Reservation of Montana; Shoshone-Bannock Tribes of the Fort Hall Reservation; Shoshone Tribe of the Wind River Reservation, Wyoming; Apache Tribe of Oklahoma; Nez Perce Tribe; and Confederated Salish and Kootenai Tribes of the Flathead Reservation. SWCA sent consultation initiation letters to those Tribes on behalf of RUS on April 9, 2021. The tribal historic preservation officer (THPO) of the Confederated Salish and Kootenai Tribes responded on April 16, 2021, stating that the Tribe is interested in participating in the NHPA Section 106 review process for the project. The May 28, 2021, response to the THPO included a summary of the Class III cultural resources inventory results. The Class III cultural resources inventory report was sent to the THPO on June 22, 2021. Subsequent to mailing the Class III cultural resources inventory report, SWCA followed up through emails to solicit input and provide project updates to the Confederated Salish and Kootenai Tribes. Appendix E contains the record of Tribal correspondence.

Six cultural resources are known to exist within the physical APE, per the Montana SHPO and SWCA's Class III cultural resources inventory report for the project (Cook and Campbell 2021). These resources are not eligible for the NRHP. The Tribes indicated concern over one of the resources, and this concern was addressed through the consultation process. No historic properties (properties eligible for the NRHP) are within the physical APE. The Montana SHPO concurred with the eligibility recommendations for the Class III investigation on June 16, 2021.

Six cultural resources are in the visual APE. These resources are prehistoric, and two are eligible for the NRHP while four have undetermined NRHP eligibility. The Tribes indicated interest in one of the cultural resources. The State Archaeologist and Deputy State Historic Preservation Officer confirmed that the site was outside of the APE and had no concerns regarding indirect or visual effects on the site (Bush 2021). The proposed project would be partially visible from the other five sites; however, none of those sites meet the criteria typically associated with resources requiring visual or indirect effects consideration (i.e., eligible for the NRHP under Criterion A, B, or C with strong integrity of setting).

This information was provided to the Tribes and a letter finding of no historic properties affected was prepared for the Tribes by RUS. The Tribes did not respond to the letter finding of no historic properties affected.

3.7.2 Environmental Consequences

3.7.2.1 NO ACTION

The no action alternative would not change the current conditions. Ground disturbance from cattle grazing would continue and may further affect existing cultural resources within the project area. Effects on cultural resources such as those known to exist in the project's physical and visual APE are considered long term. Weather would continue to cause structural deterioration of the historic homestead, and erosion and vegetation growth would continue to alter cultural resources. Under the no action alternative, these effects on cultural resources in the APE would continue at the existing rate.

3.7.2.2 PROPOSED ACTION

Under the proposed action, the six cultural resources known to exist within the APE would be directly affected by ground disturbance during construction activities for the project. The resources would be destroyed. However, these resources are not eligible for the NRHP; therefore, their destruction would not constitute adverse effects. An adverse effect can only be found for those cultural resources that are considered historic properties (36 CFR 800.5). No historic properties are within the physical APE.

The proposed action would create a permanent alteration of the landscape. The solar power–generating facility would be visible from five cultural resources known to exist within the visual APE. These five sites contain attributes that would generally fall under NRHP Criterion D and as such, visual effects are not considered. The project area is outside the viewshed of one of the NRHP-eligible sites of Tribal interest; therefore, the proposed action would pose no visual effects on that site. There are no known historic properties that would have adverse direct or indirect effects by the proposed action.

All surface-disturbing activities could affect previously undiscovered cultural resources. Although the results of the Class III cultural resources inventory conducted for this project indicate that the risk of post review discoveries is low, an inadvertent discovery plan provides a way forward should discoveries be made. Although no ground-disturbing activities are anticipated to occur during operations, the post review discovery plan will remain in place to provide a way to resolve the situation should this occur. Impacts associated with decommissioning would be similar to construction impacts so the same post review discovery plan will be followed. Training on the post review discovery plan will occur during pre-construction onsite training for construction workers.

3.7.3 Mitigation

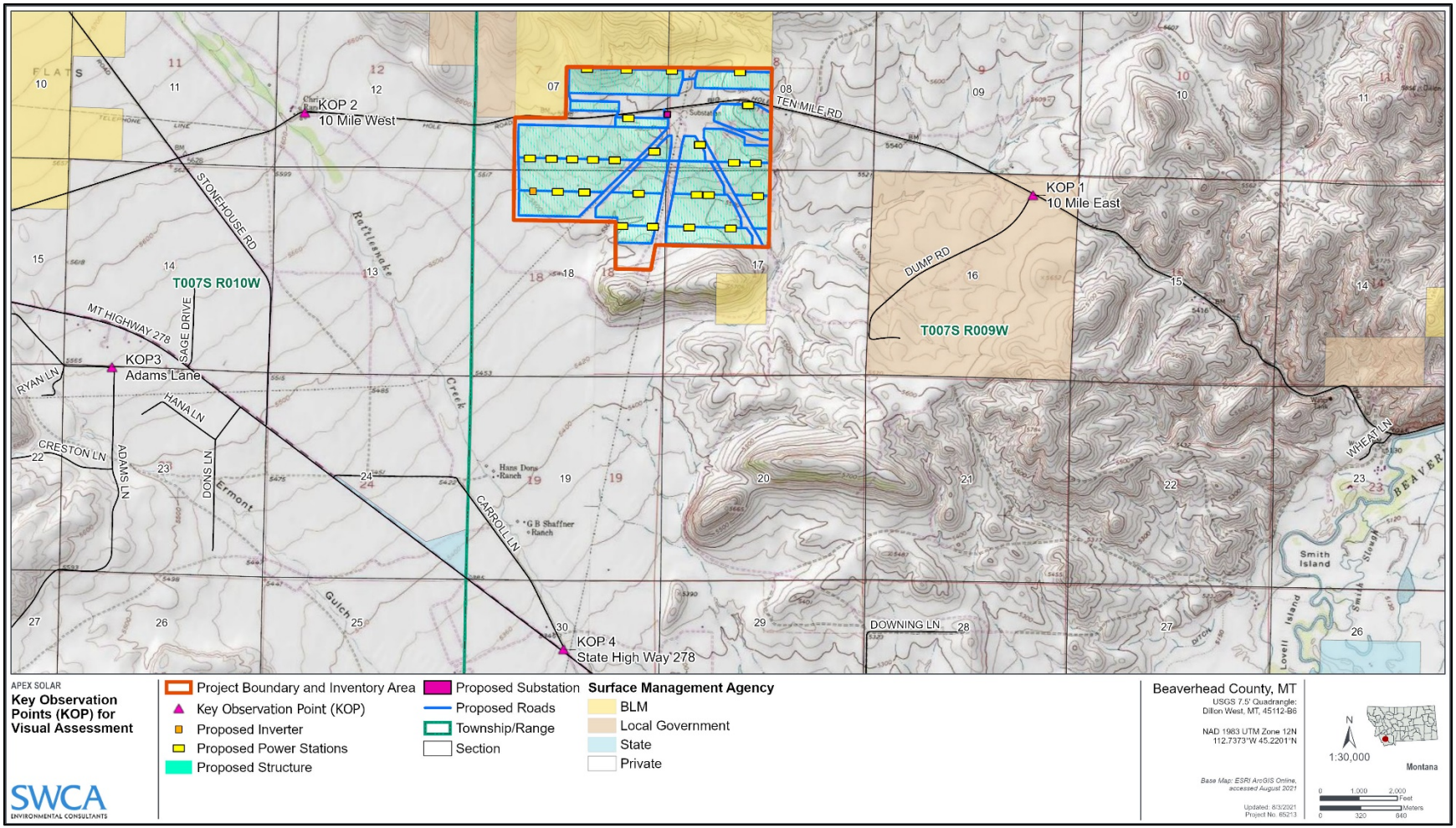
Apex would consult with the SHPO and other pertinent parties to develop an undertaking-specific inadvertent discovery plan. The plan would outline the process for addressing discoveries that may be exposed during ground-disturbing activities. Due to the interest in the project and area, continued involvement and input from the consulting parties would be needed in development and implementation of a discovery plan. Tribal concerns regarding a resource within the physical APE were addressed.

3.8 Aesthetics

3.8.1 Affected Environment

The term *aesthetic and visual resources* (i.e., *visual resources*) refers to the composite of terrain, geological and hydrological features, vegetative patterns, and built features that influence the visual appeal of a landscape. As development in rural areas increases in scope and complexity, impacts to visual resources may be a concern. Visual contrast typically results from contrast created between a proposed project and the existing landscape because of 1) landform modifications that are necessary to prepare an area or ROW for construction, 2) the removal of vegetation to construct and maintain facilities, and 3) the introduction of new aboveground facilities into the landscape. The visual quality of an area may be affected by such visual contrast. In areas where development would result in visual impacts and where avoidance of those areas is not feasible, developers and agencies should make efforts to design, construct, and operate projects in a way that would minimize visual impacts.

The primary impact-causing element of the proposed action is the construction and operation of the solar power–generating facility and associated substation. This would introduce portable and permanent structures, heavy equipment, and vehicles into the viewshed of the area. The analysis area for visual resources encompasses a 3-mile radius from the center point of the project area and consists of the combined viewsheds of four key observation points (KOPs) (Figure 3.8-1, Appendix F). SWCA selected these KOPs based on their proximity to rural residences west of Dillon and because they reflect visually sensitive views of the analysis area. The visual analysis indicator is the degree of contrast in line, form, color, and texture from the introduction of project components as viewed from the KOPs during construction, O&M, decommissioning, and reclamation.


KOP 2
10 Mile West
KOP 1
10 Mile East
KOP3
Adams Lane
KOP 4
State High Way 278
T007S R010W
T007S R009W
TEN MILE RD
STONEHOUSE RD
MT HIGHWAY 278
SAGE DRIVE
RYAN LN
HANA LN
CRESTON LN
ADAMS LN
DONS LN
CARROLL LN
DUMP RD
DOWNING LN
WHEAT LN
Rattlesnake Creek
Ermont Gulch
Hans Dons Ranch
G B Shaffner Ranch
Smith Island
Lovell Island
BEAVER
APEX SOLAR
Key Observation Points (KOP) for Visual Assessment
Project Boundary and Inventory Area
Key Observation Point (KOP)
Proposed Inverter
Proposed Power Stations
Proposed Structure
Proposed Substation
Proposed Roads
Township/Range
Section
Surface Management Agency
BLM
Local Government
State
Private
SWCA
ENVIRONMENTAL CONSULTANTS
Beaverhead County, MT
USGS 7.5' Quadrangle: Dillon West, MT, 45112-B6
NAD 1983 UTM Zone 12N
112.7373°W 45.2201°N
Base Map: ESRI ArcGIS Online, accessed August 2021
Updated: 8/3/2021
Project No. 65213
N
1:30,000
Montana
0 1,000 2,000 Feet
0 320 640 Meters

3.8.1.1 METHODOLOGY

Section 1971.707 of *RD Instruction 1970-O* outlines the methods for conducting project-associated visual analyses (USDA 1970b). Specifically, this document details the process for inventorying intrinsic visual and aesthetic characteristics and assessing impacts on those characteristics, including from the viewer's perspective. Identifying the impacts to visual resources from project construction and operation followed two primary steps: 1) describing the existing visual character and inherent scenic quality and identifying locations where people commonly view the landscape and 2) assessing the change to the landscape and the effects on views from key locations as a result of project construction and operation.

Systematic evaluation of the visual resources associated with the project involved describing existing visual resources and assessing potential impacts to those resources based on the BLM's Visual Resource Management Program, which is widely used for a variety of projects and, with some modifications, has been applied successfully to projects on lands outside the jurisdiction of the BLM. As such, RUS recommends the use of the BLM visual protocol methodology detailed in Section 1971.707 of *RD Instruction 1970-O* as an adequate visual analysis for proposed RUS-funded projects (USDA 1970b). Per that methodology, SWCA implemented protocols and methods for contrast rating analysis as provided in BLM Manual H-8431, *Visual Resource Contrast Rating* (BLM 1984).

3.8.1.1.1 Contrast Rating Analysis Methodology

The contrast rating analysis method measures potential project-related changes to the landscape. The method allows for a level of objectivity and consistency in the process and reduces subjectivity associated with assessing landscape character and scenic quality impacts. SWCA evaluated the level of contrast between the project area and the existing landscape from each KOP. This level of contrast determines the degree to which the proposed project would affect the intrinsic landscape character and, in turn, the scenic quality of the landscape. In the context of the proposed project, SWCA recorded the form, line, color, and texture associated with the landform, water, vegetation, and existing structures within and adjacent to the analysis area.

For the purposes of this analysis, an impact on visual resources could result if thresholds of visual resources impacts on sensitive viewers are exceeded as a result of the introduction of the project into the landscape. Table 3.8-1 defines the threshold of the visual resources impacts on sensitive viewers at KOPs and to the existing landscape's scenic quality and landscape character and are referenced in the following impact summaries.

Table 3.8-1. Criteria for Assessing Level of Impacts on Visual Resources

Level of Contrast and Impacts	Contrast Perceived by Viewers	Magnitude of Change to Landscape Character and Scenic Quality
None	• Project components would repeat elements and/or patterns common in the landscape. • Project components would not be visually evident.	• The landscape would appear to be intact and would not attract attention. • Project components would repeat form, line, color, texture, and/or scale common in the landscape and would not be visually evident (creating no contrast).
Weak	• Project components would introduce elements and/or patterns common in the landscape that would be visually subordinate. • Project components would create weak contrast compared with other features in the landscape.	• The landscape would be noticeably altered and begin to attract attention. • Project components would introduce form, line, color, texture, and/or scale common in the landscape and would be visually subordinate (creating weak contrast).

Level of Contrast and Impacts	Contrast Perceived by Viewers	Magnitude of Change to Landscape Character and Scenic Quality
Moderate	• Project components would introduce elements and/or patterns not common in the landscape. • Project components would be visually prominent in the landscape and would create moderate contrast compared with other features in the landscape	• The landscape would appear substantially altered. • Project components would introduce form, line, color, texture, and/or scale not common in the landscape and would be visually prominent in the landscape (creating moderate contrast). • Project components would attract attention. • Project components would begin to dominate the visual setting.
Strong	• Project components would introduce elements and/orpatterns that would be visually dominant and create strong contrast compared with other features in the landscape	• The landscape would appear to be severely altered. • Project components would introduce form, line, color, texture, and/or scale not common in the landscape and would be visually dominant in the landscape (creating strong contrast). • Project components would demand attention. • Project components would dominate the visual setting.

Environmental factors can influence the amount of visual contrast, dominance, and level of attraction introduced by project components. For this analysis, the factors considered and evaluated as part of the determination of the level of contrast from each KOP are visibility conditions, angle of view (relative viewer position and view orientation), duration of view (in time or distance), and scale and spatial relationship (degree of contrast) of the project (BLM 1986b). SWCA did not consider changes in the visual setting as a result of variable atmospheric conditions and seasonal use differences as part of this analysis.

Visibility conditions refer to how people would view the project components (i.e., the arrays and associated infrastructure) in the landscape from KOPs, not whether the proposed project would be visible from KOPs. Assessing these conditions involves studying the relationship of the project components in the context of the landscape. The first condition is whether the project components would be predominantly skylined along the horizon line of a land form or backdropped against existing land forms.

The second condition is whether the views of project components would be predominantly unobstructed or obstructed as viewed from the KOP. The angle of observation from the KOP is another factor in determining whether viewers would see the project components along with an existing dominant feature in the landscape.

The duration of view is how long, in time or distance, viewers would see the project components from KOPs. For linear KOPs, the duration of view can be calculated in terms of time and distance by determining the total travel time (typically minutes) along the total distance (miles) of the platform from which viewers would see the project components. To calculate travel time, the posted speed was used as the average rate of speed (i.e., 45–55 miles per hour [mph] for paved roadways and 25 mph on unpaved roadways).

Considering scale and spatial relationship allows the evaluation of the degree of contrast between the proposed project components and the surrounding landscape when viewed from KOPs. Scale refers to the size of the project components relative to various landscape features. The larger the project components would appear, the less likely they would be to repeat the common elements and patterns in the surrounding landscape; that is, the project components would appear to dominate the landscape. The arrangement or spatial relationship of landscape features can affect the visual prominence of project components from KOPs. The amount of visual contrast created is directly related to the amount of attention an element draws in the landscape. For example, if the view from a platform is of a panoramic

or expansive landscape, the project components would be less prominent (lower contrast), whereas if the view is of an enclosed or encircled landscape such as a narrow valley, the project components would be more prominent and would appear to dominate the landscape (higher contrast). For this analysis, SWCA assessed contrast by comparing the project infrastructure with the major features in the existing landscape.

Visual contrast rating analysis also requires consideration of the scenery and visual sensitivity associated with a given project area and pertinent sensitive viewer groups. The following sections describes these three aspects in relation to the analysis for this project.

Scenery

The proposed location of the project is entirely on private lands; BLM lands lie immediately the north, as noted in the *Dillon Resource Management Plan* (BLM 2006). The land use within the analysis area primarily consists of sprawling grasslands with rural residences, agricultural land, and developed transmission line corridors. The topography is gently rolling hills to the north and east of the project area with ponds and riparian areas along nearby Rattlesnake Creek. No parks, recreation, or designated natural areas within the analysis area.

Existing facilities within the analysis area include NorthWestern Energy's Dillon-Salmon Substation and transmission and distribution lines. These facilities are located primarily in grasslands and are therefore unobstructed from most travel routes and residences.

Existing security and safety lighting at the substation create a visual contrast at night. Man-made features in the project analysis area include the existing facilities; scattered residences and farms; overhead transmission lines; and roads, including U.S. Highway 278. No visually sensitive or designated scenic areas are within the analysis area.

Visual Sensitivity

Visual sensitivity reflects attitudes and perceptions held by people regarding the landscape and generally reflect the public's level of sensitivity to noticeable visible change within the landscape. Multiple residences exist in the analysis area. However, no parks or recreational opportunities are within the area.

Sensitive Viewer Groups

SWCA identified sensitive viewer groups (travelers and residents) within the analysis area based on their expected sensitivity to visual change within the characteristic landscape as well as the type of their activity and the potential duration of the time they would be expected to spend within the analysis area. Personnel considered these viewer groups, along with aerial photographs, topographic maps, and field investigations of the analysis area, to determine the KOPs for the analysis. SWCA selected four KOPs that represent typical viewing conditions from two sensitive viewing location types that provide prominent views of the analysis area:

- **Vehicular travel routes (two KOPs)** – highways and roads used by origin/destination travelers, designated scenic or historic byways, and recreation destination roads (i.e., roads that provide access to designated recreation areas)
- **Residential areas (two KOPs)** – single-family detached structures, ranch houses, and permanent mobile homes or mobile home parks

The following sections include descriptions of each KOP and the rationale for their selection.

Data collected at each of the KOPs included the following: global positioning system (GPS) location, digital photographic panorama of the viewshed time of day and atmospheric conditions, and the completion of BLM From 8400-4, .

The following sections provide descriptions of each KOP and the rationale for their selection. SWCA evaluated potential project changes to the viewshed from the KOPs on June 4 and 5, 2021.

VEHICULAR TRAVEL ROUTES

Montana Highway 278 and Ten Mile Road East are two high-traffic routes within the analysis area. A two-lane gravel road with narrow, sandy shoulders, Ten Mile Road East is a rural collector road that connects Dillon to rural residences, agricultural infrastructure, and the city's waste management facility at 3801 Ten Mile Road. Montana Highway 278 is a two-lane paved road that connects to rural residences, agricultural infrastructure, public lands that provide a wide variety of year-round recreational opportunity, and historical sites.

KOP 1, Ten Mile Road East – This KOP is located at the easternmost boundary of the analysis area, approximately 1.3 miles from the project area. Views of the analysis area from Ten Mile Road East include the Pioneer Mountains, rolling grassland hills, and agricultural fields. Foreground and middle ground sections of the road would provide views of the project. The view of the project components from Ten Mile Road would be clear and prominent because of their topographical location and because of a lack of vegetative barriers impeding the viewshed.

KOP 4, Montana Highway 278 – This KOP is located at the southernmost boundary of the analysis area, approximately 2.1 miles from the project area. Views of the analysis area from the highway include the Pioneer Mountains, rural residences, and agricultural fields. Foreground and middle ground sections of the road would provide views of the project. The view of the project components from Montana Highway 278 would be obstructed by topographical features.

RESIDENTIAL AREAS

Multiple rural residences and farming infrastructure exist throughout the analysis area. These areas include permanent single-family homes, farm buildings, and mobile homes. Dillon, which is approximately 4.7 miles east of the project area, is the largest city in Beaverhead County. The analysis area is outside Dillon city limits within the unincorporated part of Beaverhead County.

KOP 2, Ten Mile Road West – This KOP is located on the west end of Ten Mile Road approximately 1.0 mile west of the proposed project. This location not only encompasses part of Ten Mile Road but also Christensen Ranch, which is representative of rural farms and residences in the area. This ranch features multiple outbuildings and feedlots and is the closest, most expansive building campus to the proposed project. The area features few vegetative or topographical features that could impede views of the proposed project from this location.

KOP 3, Adams Lane – This KOP is located on Adams Lane, which is a rural dirt road among multiple residences approximately 2.1 miles southwest of the project area. Some properties feature large single-family homes, mobile homes, and feedlots. With approximately 30 to 40 dwellings and associated outbuildings, this is the largest residential community within the analysis area. The area features few vegetative or topographical features that could impede views of the proposed project from the residences.

SWCA evaluated potential project changes to the viewshed from the KOPs on June 4 and 5, 2021.At each KOP, SWCA collected the following data: global positioning system (GPS) location, digital photographic panorama of the viewshed time of day and atmospheric conditions, and the completion of BLM Form 8400-4.

3.8.2 Environmental Consequences

3.8.2.1 NO ACTION

The no action alternative would not impact the aesthetics of the surrounding landscape and would therefore have no short- or long-term impacts on the existing visual environment. However, NorthWestern Energy's Dillon-Salmon Substation and transmission lines would continue to exist as visual elements within the landscape.

3.8.2.2 PROPOSED ACTION

The proposed arrays and electrical substation would introduce form, line, color, and textures that are inconsistent with the existing landscape character. The construction of the flat, geometric, and slightly reflective surfaces of the arrays on approximately 639 acres of grasslands would generate strong visual contrast. The angled arrays, fencing around the facility, and associated facility infrastructure would be noticeable in this flat, panoramic landscape and would begin to dominate the local setting.

3.8.2.2.1 Construction Phase

Vehicular Travel Routes

Data collected from KOP 1 (Ten Mile Road East) indicate that a strong degree of contrast between the existing landscape and construction activities, vehicles, and equipment would be visible from that point. The introduction of construction equipment and ground disturbance within the landscape would be visually dominant when viewed from KOP 1. Construction activities would introduce new line, form, color, and texture to the surrounding scenery. Vehicles and equipment would introduce form, line, color, texture, and scale not common in the landscape and would be visually dominant in the landscape. However, this phase of the project would dominate the visual setting only for the duration of construction. Topographical features and vegetation communities would serve as barriers and preclude perceivable visual impact from construction when viewed from KOP 4 (Montana Highway 278).

Residential Areas

Construction would result in weak to strong visual impacts to the residential areas at KOPs 2 and 3 (Ten Mile Road West and Adams Lane, respectively). Construction would require the removal of vegetation and grading to achieve a level grade to form access ways, roadways, and areas and the use of concrete foundations for facility equipment, anchoring, substations, and other structures. Grading would involve the excavation and compaction of soil to meet design requirements. Workers would use proper erosion prevention methods to store materials suitable for compaction in stockpiles at designated locations and would remove unsuitable materials (such as debris and large rocks) from the site. However, this phase of the project would dominate the visual setting only for the duration of construction. Fugitive dust could pose a visual contrast. Therefore, it is anticipated that short-term strong impacts would result from the introduction of project components during construction.

3.8.2.2.2 Operations and Maintenance

Vehicular Travel Routes

Data collected from KOP 1 indicate that a strong degree of contrast between the existing landscape and project components would be visible from that point (Ten Mile Road East). The introduction of project components within the landscape would be visually dominant when viewed from KOP 1. The

infrastructure would introduce new line, form, color, and texture to the surrounding scenery. Multiple transmission ROWs are adjacent to the project area, but the contrast of the proposed facility would be much stronger than the contrast of those ROWs. As result of the introduction of project components, from KOP 1, the landscape would appear to be severely altered and the proposed project would demand the viewer's attention. Topographical features and vegetation communities would serve as barriers and preclude perceivable visual impact from project components when viewed from KOP 4 (Montana Highway 278).

Residential Areas

Project components would result in weak to strong visual impacts to the residential areas at KOPs 2 and 3 (Ten Mile Road West and Adams Lane, respectively). The area around the analysis area has been developed and includes a wide variety of man-made features. As viewed from KOP 3, the project would blend into the surrounding landscape because of the distance between those components and the KOP and intervening topography, vegetation, and structures. As viewed from KOP 2, the proposed project would be striking against the exiting landscape of the analysis area.

3.8.2.2.3 Decommissioning

Vehicular Travel Routes

Data collected from KOP 1 (Ten Mile Road East) indicate that a strong degree of contrast between the existing landscape and decommissioning activities would be visible from that point. Topographical features and vegetation communities would serve as barriers and preclude perceivable visual impact from decommissioning when viewed from KOP 4 (Montana Highway 278).

Residential Areas

Decommissioning would result in weak to strong visual impacts to the residential areas at (KOPs 2 and 3) (Ten Mile Road West and Adams Lane, respectively). Workers would remove and dispose of or recycle the solar arrays and then reseed the area. Because of a difference in vegetation growth between unaffected and impacted vegetation communities, the project footprint may remain visible within the area for some time. Apex would conduct all reclamation activities in accordance with landowner specifications.

3.8.2.2.4 Summary of Effects

Table 3.8-2 summarizes the results of the visual contrast rating analysis.

Table 3.8-2. Summary of Visual Effects by Key Observation Point

KOP Number	Name	Sensitive Viewing Location Type	Overall Level of Impact	Summary of Effects
1	Ten Mile Road East	Vehicular travel route	Strong	The level of contrast would be strong. The project components would be located in a valley bottom and would dominate the viewshed, as viewed from this platform. This location is approximately 1.3 miles east of the project area and would begin to attract attention. The project components would be visually dominant within the visual setting, and the visual setting would appear to be noticeably altered because of the introduction of form, color, texture, and line from project components into the analysis area.
2	Ten Mile Road West	Residential area	Strong	The level of contrast would be strong. The project components would be located in a valley bottom and would dominate the viewshed, as viewed from this platform. This location is particularly close to the project area and would begin to attract attention and be visually dominant within the visual setting; the visual setting would appear to be noticeably altered because of the introduction of form, color, texture, and line from project into the analysis area.
3	Adams Lane	Residential area	Weak	The level of contrast would be weak. The project components would blend into the surrounding landscape, as viewed from this platform. The project components would not attract attention and would introduce elements and patterns already common to the landscape that would be visually subordinate
4	Montana Highway 278	Vehicular travel route	None	The level of contrast would be none. The project components would be predominantly backdropped against low hillsides and fully obstructed by man-made structures, vegetation, and topographical features as viewed from this platform.

3.8.3 Mitigation

To reduce the degree of visual impact of the project, Apex will implement mitigation measures where visual disturbance associated with construction, O&M, and decommissioning is inevitable. This includes limiting soil and vegetation disturbance, applying appropriate color treatments and minimizing the use of lighting at night. Workers can reduce the primary visual impacts from construction (i.e., dust caused by grading, on-site traffic, and hundreds of workers present at the site during construction) by using dust-abatement measures, such as vehicle speed restriction and watering of active areas and roadways. Soils within and around the analysis area are sensitive to erosion; therefore, Apex should limit the amount of water used to manage the dust to avoid altering the form of the landscape.

Apex should design the solar generation facility, substation, and O&M structures to blend in with the existing surrounding landscape (i.e., the Pioneer Mountains). This would require certain colors, lighting, and surface treatments.

To reduce visual impacts from the proposed project, Apex should

- minimize the extent of soil and vegetation disturbance to the extent practicable;
- minimize lighting usage during construction and O&M;
- restore the site to its original contours while minimizing disturbance to soils; and
- re-seed and plant vegetation in disturbed areas in accordance with the noxious weed management plan provided as part of the project permitting process.

After approximately 30 years, when the operation of the proposed project would cease, Apex should restore the analysis area to a landscape that once again blends into the surrounding area's forms and textures. Because of the arid climate of the project location, planting and reseeding may need to occur over several seasons to ensure the success of native species. The decommissioning of the site would create new visual impacts, including the removal of all aboveground structures, fencing, and debris.

3.9 Air Quality

3.9.1 Affected Environment

This section analyzes impacts of the proposed action alternative and no action alternative on air quality issues identified during scoping, including fugitive dust and air pollutant emissions from vehicles and equipment. Air pollutants tend to disperse into the atmosphere, becoming more spread out as they travel away from a source of pollution and therefore cannot be confined within defined boundaries, such as the boundary of the project area or county lines. Because of the nature of air pollutants, the air quality analysis area for direct and indirect effects is the area within 5 kilometers (3.1 miles) outside the project area's boundaries.

The EPA Office of Air Quality Planning and Standards set National Ambient Air Quality Standards (NAAQS). Ambient air quality standards define the allowable concentrations of criteria pollutants in ambient air. The EPA has set air quality standards for the following criteria pollutants: nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), particulate matter smaller than 10 microns in aerodynamic diameter (PM_{10}), particulate matter smaller than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), ozone (O_3), and lead (Pb). Under the provisions of the Clean Air Act, any state can maintain requirements that are more stringent than those of the national program. In Montana, ambient air quality

standards are codified in Administrative Rules of Montana, Department 17, Chapter 8, Subchapter 2. Montana has set air quality standards for CO, NO_2, O_3, SO_2, and hydrogen sulfide (H_2S).

The EPA assigns classifications to geographic areas based on monitored ambient air quality conditions. Areas that meet both the primary and secondary standards of a pollutant subject to NAAQS are classified as being in attainment for that pollutant. Areas that do not meet the NAAQS for a pollutant are designated as being in nonattainment for that pollutant. Areas that cannot be classified based on available information for a pollutant are designated as being unclassified. An area's attainment status is designated separately for each criteria pollutant; one area may have all three classifications. Previously designated nonattainment areas for one of the NAAQS that have since met the NAAQS standards are referred to as attainment areas with a maintenance plan. Ensuring that the air quality in those areas continues to meet the standards requires the development and implementation of a maintenance plan. As of May 20, 2021, the EPA designates Beaverhead County as in attainment or unclassified for all criteria pollutants, meaning that the air in Beaverhead County meets the NAAQs (EPA 2021b).

Table 3.9-1. Ambient Air Quality Standards

Pollutant	Averaging Time	National Primary Standards	National Secondary Standards	Montana Standards
CO	1 hour* 8 hour*	35 ppm 9 ppm	– –	23 ppm 9 ppm
Pb	3 months (rolling)† 90 days	0.15 µg/m^3 –	Same as primary –	– 1.5 µg/m^3†
NO_2	1 hour Annual	0.100 ppm‡ 0.053 ppm§	– Same as primary	0.30 ppm* 0.05 ppm†
O_3	1 hour* 8 hour¶	– 0.07 ppm	– Same as primary	0.10 ppm –
Settled Particulate Matter	30 days	–	–	10 gm/m^2†
PM_{10}	24 hour Annual	150 µg/m^3# –	Same as primary –	150 µg/m^3* 50 µg/m^3†
$PM_{2.5}$	24 hour** Annual††	35 µg/m^3 12 µg/m^3	Same as primary 15 µg/m^3	– –
SO_2	1 hour 3 hour* 24 hour* Annual†	0.075 ppm‡‡ – – –	– 0.5 ppm – –	0.50 ppm§§ – 0.10 ppm 0.02 ppm
H_2S	1 hour*	–	–	0.05 ppm

Sources: Administrative Rules of Montana 17.8.210–214; EPA (2021b)

Notes: gm/m^2 = grams per square meter; µg/m^3 = micrograms per cubic meter; ppm = parts per million.

* Not to be exceeded more than once per year.

† Not to be exceeded.

‡ The 3-year average of the 98th percentile of the 1-hour daily maximum concentration must not exceed this standard.

§ Annual mean.

¶ The 3-year average of the 4th highest daily maximum 8-hour average O_3 concentration measured at each monitor within an area over each year must not exceed this standard.

Not to be exceeded more than once per year on average over 3 years.

** The 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed this standard.

†† The 3-year average of the annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed this standard.

‡‡ The 3-year average of the annual 99th percentile of the 1-hour daily maximum must not exceed this standard.

§§ Not to be exceeded more than 18 times in any 12 consecutive months.

Section 176(c)(4) of the Clean Air Act (CAA) establishes the General Conformity Rule, the purpose of which is to ensure that federal actions do not inhibit states' attainment plans for areas designated as non-attainment or maintenance. The term *conformity* (as it pertains to the rule) means "conformity to a State Implementation Plan's (SIP) purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards." The rule effectively applies to all federal actions that take place in areas designated as non-attainment or maintenance, except for actions covered under the transportation conformity rule, actions with associated emissions below specified de minimis levels, and other actions that are exempt or presumed to conform (EPA 2020a). The project is within an attainment area, and the General Conformity Rule does not apply.

The National Emissions Inventory is a detailed annual estimate of criterial pollutants and hazardous air pollutants (HAPs) from air emission sources. Emission inventories provide an overview of the types of pollution sources in the area and the amount of pollution being emitted on an annual basis. Emission inventories are useful in comparing emission source categories to determine which industries or practices are contributing to the general level of pollution in an area. The emissions inventory includes estimates of emissions from many sources, including point sources (facilities such as power plants, airports, and commercial sources), nonpoint sources (such as asphalt paving, solvent use, and residential heating), on-road vehicles, non-road sources (such as construction equipment, lawn and garden equipment, trains, barges, ships, and other marine vessels), and event sources (such as wildfires). This inventory is a good estimate of how much each county and state is contributing to air pollution for a given year. Table 3.9-2 summarizes the emissions inventory data for Beaverhead County from the most recent National Emissions Inventory, which took place in 2017.

Table 3.9-2. National Emissions Inventory Data in Tons per Year for Beaverhead County

Source	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	VOC	HAPs	CO_2e
Agriculture	0	0	0	3,904	796	43	3	0
Biogenics*	3,540	1,563	0	0	0	24,527	2,573	0
Dust	0	0	0	2,446	254	0	0	0
Fires	18,561	184	118	1,826	1,547	4,360	955	184,037
Fuel combustion	171	65	21	36	27	25	4	0
Industrial processes	0	0	0	236	30	0	0	0
Miscellaneous†	5	0	0	5	4	171	15	0
Mobile	2,599	747	2	68	35	266	81	152,112
Waste Disposal	27	2	0	9	8	2	2	0
Total	**24,903**	**2,561**	**141**	**8,530**	**2,701**	**29,394**	**3,633**	**336,149**

Source: EPA (2020b)

Note: CO_2e = carbon dioxide equivalent and is listed in metric tons; No_x = nitrogen oxides; SO^X = sulfur oxides; VOC = volatile organic compound.

* Biogenic emissions are those emissions derived from natural processes (such as vegetation growth and soil development).

† Miscellaneous categories include bulk gasoline terminals, commercial cooking, gas stations, miscellaneous non-industrial (not elsewhere classified), and solvent use.

According to the 2017 National Emissions Inventory, the major pollutants emitted in Beaverhead County are volatile organic compounds (VOCs), CO, and greenhouse gases. The major sources contributing to VOC emissions are biogenics and fires. The major sources contributing to CO emissions are fires, biogenics, and mobile sources. The major sources contributing to greenhouse gases are fires and mobile sources.

The nearest off-site sensitive receptors (residences) to the project area are approximately 0.8 mile west of the project area along Ten Mile Road and 1.2 miles to the east near Dump Road and Ten Mile Road. Other residences are more than 1.2 miles to the southwest of the project near Montana Highway 278 along Stone House Road and Carroll Lane.

3.9.2 Environmental Consequences

3.9.2.1 NO ACTION

Under the no action alternative, the solar facility would not be developed. No surface disturbance would occur, and air resources would not be affected. Climate change would continue under current trends.

3.9.2.2 PROPOSED ACTION

For the purposes of this analysis, impact on air quality depends on the following from the construction, O&M, and decommissioning of the project.

- Emission estimates for regulated pollutants and greenhouse gasses (GHGs)
- Comparison of project emission estimates to county emission inventories

Impacts to air quality are discussed in terms of project emissions of criteria air pollutants and HAPs. Regulated pollutant emissions from the construction and operation of the proposed action have been estimated to characterize the potential emission increases. These emissions estimates are compared to Beaverhead County's emissions inventory as a percentage of the county's annual emissions. The level of pollutant exposure to the nearest sensitive receptor is also discussed.

The emission calculations rely on emission factors for construction and maintenance equipment that were developed by California's South Coast Air Quality Management District to calculate construction worker commute and on-road construction equipment emissions (South Coast Air Quality Management District 2007a, 2007b). For off-road equipment, SWCA used the appropriate emission factor, equipment type, quantity of equipment needed, and duration of use during construction to determine emissions from construction equipment. SWCA assumed that construction workers (see estimated maximum number in Section 2.4.2, Construction) would commute from within Beaverhead County, an average of 35 miles (one way) to the project area, and estimated that the project would require approximately 1,800 trips for delivery of all of the required material and off-road equipment, which presumably would come from Dillon with an average driving distance of 15 miles to the project site. The concrete batch plant associated with the project would be permitted separately, thus its emissions are not included in the construction emissions estimate.

The emissions of PM_{10} and $PM_{2.5}$ estimated include emissions from on-road vehicle and off-road equipment exhaust in addition to fugitive dust. SWCA used the Western Regional Air Partnership's (WRAP) Fugitive Dust Handbook (WRAP 2006) to estimate the PM_{10} and $PM_{2.5}$ emissions from fugitive dust generated by earthmoving activities. The estimated construction emissions calculations account for the project's dust-control methods, including using water during construction to control fugitive dust.

During construction, the project would create short-term air pollutant emissions from equipment exhaust, vehicle exhaust from travel to and from the project site, and fugitive dust from soil disturbance. To reduce fugitive dust emissions, Apex has committed to controlling fugitive dust at the project site by applying water or soil binders at regular intervals to the project site, limiting vehicular speed, and avoiding soil-disturbing activities during periods of high winds. Table 3.9-3 presents the estimated total emissions that would occur from construction of the project. The estimated construction emissions calculations account for the project's dust control methods, including using water during construction to control fugitive dust. For additional information on emissions calculations, see Appendix G.

Table 3.9-3. Estimated Proposed Action Construction Emissions in Tons Per Year

Source	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	VOC	HAPs	CO_2e (100-year)	CO_2e (20-year)
Construction equipment (off-road)	13.39	14.41	0.06	0.48	0.42	2.70	0.27	4,910	4,922
Worker and on-road construction equipment commuting	1.62	0.15	0.00	10.18	1.09	0.20	0.02	411	412
Equipment/material delivery	0.44	0.46	0.07	3.40	0.40	0.02	0.00	164	164
Fugitive dust from construction operations	–	–	–	28.35	2.84	–	–	–	–
Total	**15.45**	**15.01**	**0.13**	**42.40**	**4.75**	**2.91**	**0.29**	**5,485**	**5,498**
Beaverhead County emissions inventory total	24,903	2,560	141	8,530	2,702	29,395	3,632	336,149	
Proposed action's construction emissions increase as percent of Beaverhead County's emissions inventory total	0.06%	0.59%	0.09%	0.50%	0.18%	0.01%	0.01%	1.63%	1.64%

Source: EPA (2020b)

Note: CO_2e = carbon dioxide equivalent and is listed in metric tons; No_x = nitrogen oxides; SO^X = sulfur oxides; VOC = volatile organic compound.

Table 3.9-4 presents the estimated total project construction emissions that would be emitted during a 10-month construction period. The top of the table presents construction activity emission sources by pollutant. The next segment of the table presents the annual emissions at the county level and emissions from the construction of the project as a percentage of the County's total emissions.

Table 3.9-4. Estimated Proposed Action Operational Emissions in Tons per Year

Source	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	VOC	HAPs	CO_2e (100-year)	CO_2e (20-year)
Maintenance/inspection activities	0.16	0.15	< 0.01	0.07	0.01	0.03	< 0.01	49	53
Beaverhead County emissions inventory total	24,903	2,560	141	8,530	2,702	29,395	3,632	336,149	
Proposed action's operations emissions increase as percent of Beaverhead County's emissions inventory total	< 0.01%	0.01%	< 0.01%	< 0.01%	< 0.01%	< 0.01%	< 0.01%	0.01%	0.02%

Source: EPA (2020b)

Note: CO2e = carbon dioxide equivalent and is listed in metric tons; Nox = nitrogen oxides; SOX = sulfur oxides; VOC = volatile organic compound.

The highest pollutant emissions produced by construction would be carbon dioxide equivalent (CO_2e), PM_{10}, and CO. The projected emission estimate for each pollutant from the construction of the project is negligible in comparison to the county's annual emissions, representing an increase of 1.64% or less for each pollutant. The construction emissions would be temporary, lasting only for the duration of the 10-month construction period. Construction of the project would be unlikely to cause an exceedance of the NAAQS. Furthermore, the project is in a remote location, with the nearest sensitive receptor (a residence) approximately 0.8 mile away and a couple other residences approximately 1.2 miles away. As such, exposure of nearby sensitive receptors to construction emissions would be minimal and temporary, affecting only a small number of people. Thus, construction would have minor, short-term impacts to air quality.

Although project construction would generate emissions of criteria pollutants, given the temporary nature of those emissions, scope of construction activities, and remote location of the project, it is unlikely that emissions would exceed NAAQS or expose sensitive receptors to substantial pollutants. To prevent and control fugitive dust emissions, Apex would implement mitigation measures such as watering soils. As a result, PM_{10} and $PM_{2.5}$ emissions generated by construction would increase the county's annual emissions only by 0.5% and 0.18%, respectively, and those emissions would be temporary, ceasing when construction is completed. Overall, construction impacts to air quality would be less than significant.

Construction of the project may generate odors from the construction equipment exhaust. Any odors from construction would be periodic and temporary in nature, lasting only as long as the approximately 10-month construction period. Because the project is located in a remote location, odors would not affect a substantial number of people. Therefore, impacts related to odors during construction would be less than significant.

Construction of the project would also result in the emission of GHGs. Internal combustion engines associated with project construction vehicles and equipment would emit GHGs, resulting in a maximum of 5,536 metric tons of CO_2e being emitted during construction. In Beaverhead County, the project construction GHG emissions could equal up to 1.64 percent of the county's total emissions inventory for CO_2e, representing a negligible increase. Construction activities and corresponding GHG emissions would be temporary, localized, and typical of similarly sized construction projects. Therefore, any GHG emissions associated with the project would be less than significant.

Operations-related emissions from the project are summarized in Table 3.9-4 and include emissions from inspection activities such as exhaust from on-road inspection vehicles, fugitive dust from travel on paved and unpaved roads, and emissions from maintenance activities such as exhaust from worker vehicles and any needed construction equipment. O&M emissions would include vehicle exhaust from weekly travel to the facility for routine inspections and maintenance activities such as panel washing, routine maintenance, and equipment and road repairs. Emissions from O&M would increase Beaverhead County's annual emissions inventory by less than 0.02% for each pollutant. The facility would not feature any sulfur hexafluoride–containing equipment, so there would be no potential for sulfur hexafluoride leaks. Impact on air quality from operation of the facility would be negligible and would not cause an exceedance of the NAAQs.

O&M activities at the facility would not cause detectable odors. Vehicles used for occasional maintenance may generate exhaust odors in the immediate vicinity, but the odors would be temporary and would not affect many people because of the project's remote location. Therefore, facility operation would cause no impact related to odors.

Decommissioning would not involve any more time or equipment than construction; therefore, impacts to air quality from decommissioning the transmission interconnect would be minor, short term, and less than significant.

3.9.3 Mitigation

Measures to minimize or eliminate impacts to air resources are described in the proposed action's project design features. Mainly, Apex has committed to control fugitive dust at the project site by applying water or soil binders at regular intervals to the project site, limiting vehicular speed, and avoiding soil-disturbing activities during periods of high winds. No additional mitigation measures are recommended.

3.10 Social Impact Assessment and Environmental Justice

3.10.1 Affected Environment

As part of RUS's mission to support sound development of rural communities and provide economic opportunities for rural residents, the agency considers the positive or negative socioeconomic status of the areas being served, often focusing on population or income changes or effects on local institutions such as schools, health care facilities, and housing. Other factors for consideration include tax revenues, community cohesion and/or growth, property values, displacement of people or land, transportation, health and public safety, and public services or facilities.

Applicants for an RUS loan are required to determine whether their proposals have or may have a disproportionately high and adverse human health or environmental effect on minority or low-income populations under EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations and Departmental Regulation 5600-2 Environmental Justice.

The analysis area for socioeconomics and environmental justice is Beaverhead County because the project area is within this county and most socioeconomic indicators are measured at the county level. Impact indicators for socioeconomic impacts include potential increase in population, potential increase in employment, potential increase in revenue, potential increase in traffic, potential impacts on infrastructure and public services, potential increase in emissions, potential increase in noise, and other impacts that may affect quality of life.

3.10.1.1 POPULATION

The population of Beaverhead County is approximately 9,415 (U.S. Census Bureau 2019a). As shown in Table 3.10-1, an approximately 3.1% increase in the county's population occurred between 2010 and 2019. The nearest city to the proposed project area is Dillon, which has a population of approximately 4,261 (U.S. Census Bureau 2019a, 2019b). As shown in Table 3.10-1, an approximately 3.4% increase in Dillon's population occurred between 2010 and 2019.

Table 3.10-1. Beaverhead County and Dillon Population Trends

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Beaverhead County	9,132	9,170	9,228	9,278	9,294	9,291	9,317	9,360	9,393	9,415
Dillon	4,109	4,121	4,149	4,180	4,181	4,194	4,214	4,224	4,244	4,261

Source: U.S. Census Bureau (2019a, 2019b)

3.10.1.2 EMPLOYMENT AND INCOME

Beaverhead County's civilian labor force consists of approximately 4,683 people, the per capita income in the county is $28,401, and the poverty rate is 17.7% (U.S. Census Bureau 2019c, 2019d). Dillon's civilian labor force consists of approximately 2,097 people, the per capita income in Dillon is $21,734, and the poverty rate is 26.8% (U.S. Census Bureau 2019b, 2019c). Table 3.10-2 lists the employment and unemployment statistics for the civilian labor force 16 years and older in Beaverhead County and Dillon. Table 3.10-3 lists the employment numbers by industry in Beaverhead County from 2010 through 2019.

Table 3.10-2. Beaverhead County and Dillon Employment/Unemployment Trends

Area	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Beaverhead County	4,579/3.0%	4,515/2.4%	4,555/3.0%	4,434/3.9%	4,560/3.9%	4,615/4.1%	4,593/4.3%	4,647/2.8%	4,706/2.3%	4,683/2.3%
Dillon	2,100/4.3%	2,023/3.1%	1,957/4.7%	1,929/5.9%	1,980/5.8%	2,026/6.2%	2,080/6.2%	2,077/3.0%	2,274/1.8%	2,097/2.6%

Source: U.S. Census Bureau (2019b)

Note: The first number equals the number of people employed; the second number equals the unemployment rate.

Table 3.10-3. Employment by Industry in Beaverhead County, 2010 through 2019

Industry	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture, forestry, fishing and hunting, and mining	721	696	755	712	755	773	735	738	681	695
Construction	256	314	339	369	345	400	350	333	379	444
Manufacturing	129	156	215	201	171	152	146	166	203	224
Wholesale trade	78	42	61	37	38	41	46	72	79	120
Retail trade	492	443	347	331	423	437	433	494	533	483
Transportation and warehousing, and utilities	128	164	160	178	141	165	155	191	178	168
Information	164	157	133	78	67	95	98	90	122	106
Finance and insurance, and real estate and rental and leasing	250	242	238	154	195	193	230	234	286	273
Professional, scientific, and management, and administrative and waste management services	299	262	256	363	309	307	316	247	180	182
Educational services, and health care and social assistance	1,011	1,097	1,136	1,172	1,175	1,174	1,050	1,098	993	965
Arts, entertainment, and recreation, and accommodation and food services	587	572	516	476	521	520	666	626	731	716
Other services, except public administration	102	103	151	121	177	218	230	188	169	136
Public administration	362	267	248	242	243	140	138	170	172	171

Source: U.S. Census Bureau (2019b)

As shown in Table 3.10-2, employment numbers have remained relatively consistent in Beaverhead County during the most recent decade, ranging between 4,434 in 2013 to 4,706 in 2018. As shown in Table 3.10-3, the industry that made up the largest portion (20.6%) of employment in Beaverhead County in 2019 was educational services, and health care and social assistance, with 965 jobs. The next two largest industries in county in terms of employment in 2019 were arts, entertainment, and recreation, and accommodation and food services (15.3% of jobs) and agriculture, forestry, fishing and hunting, and mining (14.8% of jobs).

3.10.1.3 ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. EO 12898 directs agencies to address environmental and human health conditions in minority and low-income communities to avoid the disproportionate placement of any adverse effects from federal policies and actions on those populations. The general purposes of this EO are to

- focus the attention of federal agencies on human health and environmental conditions in minority communities and low-income communities, with the goal of achieving environmental justice;
- foster nondiscrimination in federal programs that substantially affect human health or the environment; and
- Improve data collection efforts on the impacts of decisions that affect minority communities and low-income communities and encourage more public participation in federal decision-making by ensuring documents are easily accessible (e.g., available in multiple languages and readily available).

As defined by environmental justice guidance under NEPA (Council on Environmental Quality 1997), "minority populations" include persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, Black (not of Hispanic origin), or Hispanic. Race refers to census respondents' self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50% or is meaningfully greater than in the general population. Low-income populations are identified using the U.S. Census Bureau's statistical poverty threshold, which is based on income and family size. The U.S. Census Bureau defines a "poverty area" as a census tract with 20% or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40% or more below the poverty level (Bishaw 2014). A census tract is a small geographic subdivision of a county and typically contains between 1,200 and 8,000 persons.

SWCA used Beaverhead County as the general population reference area and used the census tracts in the county to identify potential environmental justice communities. The project area is in census tract 2. Table 3.10-4 lists the race/ethnicity characteristics of the residents of Montana, Beaverhead County, and the census tracts in the analysis area. Table 3.10-5 lists the economic indicators of Montana, Beaverhead County, and the census tracts in the analysis area.

Table 3.10-4. Population by Race/Ethnicity in Census Tracts in Analysis Area, Beaverhead County, and Montana

Area	Total Population	White	Black or African American	American Indian/ Alaskan Native	Asian	Hawaiian/ Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Tract 1	1,128	95.7%	0.0%	0.4%	0.0%	0.0%	1.3%	2.7%	2.3%
Tract 2	3,716	91.7%	0.1%	2.1%	1.3%	0.1%	0.7%	4.1%	5.2%
Tract 3	4,571	97.1%	0.1%	1.1%	0.3%	0.0%	0.0%	1.5%	5.4%
Beaverhead County	9,415	94.8%	0.1%	1.4%	0.6%	0.1%	0.4%	2.7%	4.9%
Montana	1,050,649	88.5%	0.5%	6.4%	0.8%	0.1%	0.7%	3.1%	3.8%

Source: U.S. Census Bureau (2019a)

The percentage of the population identified as belonging to a minority group in census tracts 1, 2, and 3 is not equal to or greater than 50 percent, nor is it more than 10 percentage points higher than that of Beaverhead County. Therefore, no minority environmental justice populations exist in the analysis area.

Table 3.10-5. Economic Indicators of Census Tracts in Analysis Area, Beaverhead County, and Montana

Census Tract	Total Population	Per Capita Income	Percent All People Below Poverty Level	Median Household Income	% Families Below Poverty Level
Tract 1	1,128	$30,524	14.8%	$44,250	12.0%
Tract 2	3,716	$34,042	10.7%	$52,713	5.9%
Tract 3	4,571	$23,292	24.8%	$34,396	6.4%
Beaverhead County	9,415	$28,401	17.7%	$43,201	7.0%
Montana	1,050,649	$31,151	13.1%	$54,970	8.0%

Source: U.S. Census Bureau (2019d)

As shown in Table 3.10-5, census tracts 1, 2, and 3 are not low income EJ populations. The percentage of the population classified as low income in census tracts 1, 2, and 3 are not equal to or greater than 50 percent, nor are they more than 10 percentage points higher than that of Beaverhead County. Therefore, no low-income environmental justice populations exist in the analysis area.

3.10.2 Environmental Consequences

3.10.2.1 NO ACTION

Under the no action alternative, RUS would not provide financial assistance to Apex for the proposed project and no related socioeconomic impacts would occur. Population, employment, and income trends in Beaverhead County would be expected to follow existing trends under the no action alternative. No environmental justice impacts would occur under the no action alternative.

3.10.2.2 PROPOSED ACTION

3.10.2.2.1 Population

Under the proposed action, depending on the number of employees who relocate from outside Beaverhead County, construction of the proposed solar facility could have a temporary impact on the population in the analysis area. The peak number of 350 employees would represent an approximately 4% increase in the population of the analysis area and as an approximately 8% increase in the population of the nearby city of Dillon. This would represent a minor temporary impact to population in the analysis area because construction activities would be temporary.

As the project area consists largely of undeveloped land and approximately 5 miles from the nearest populated area (Dillon), the construction and operation of the proposed solar facility would not change people's lives in the analysis area beyond the immediate provision of providing electricity to the area. The surrounding area is rural residential, and the proposed project would not change the nature or character of the landscape, as a vast majority of the rural landscape would remain unaltered. The proposed location of the project is on private land, and the project would displace no residents.

During construction, the project would likely result in a temporary increase in traffic on public roads in the vicinity of the project area. This traffic would include travel by the 10 to 350 employees needed for the project, which would include preconstruction survey crews, utility workers for local station power, supervisors, and engineers. The favorable local weather of summer and fall seasons would make those seasons the busiest times during construction. Work force during this period would peak at approximately 350 personnel. Because permanent personnel on-site postconstruction would be minimal (approximately two to three employees), the proposed action would likely have a negligible impact on traffic on local roads during O&M. With a relatively small temporary increase in population in the analysis area during construction activities and a negligible increase in population in the analysis area during O&M, the proposed action would result in a negligible impact on infrastructure, utilities, and public services in the analysis area.

3.10.2.2.2 Employment and Income

Construction and operation of the proposed solar facility would result in employment and income impacts in Beaverhead County. The 10 to 350 temporary employees needed for construction of the proposed solar facility would result in an approximately 2% to 79% temporary increase in construction employment in the analysis area and an approximately 0.2% to 7% temporary increase in total employment in the analysis area. This increase in construction employment and total employment would represent a minor to moderate temporary beneficial impact on total employment in the analysis area. The two to three permanent personnel needed on-site post-construction for O&M of the solar facility would represent an approximately 2% increase in utilities employment in the analysis area and an approximately 0.1% increase in total employment in the analysis area. This increase in utilities employment and total employment would represent a long-term minor beneficial impact on total employment in the analysis area.

The estimated total investment for the modules, racking, inverters, project substation, transformer, and other project components would be $90 million. Spending on goods and services in the analysis area during construction and operation of the proposed solar facility, such as building materials, fuel, labor, temporary housing and food, would provide an economic benefit to businesses and residents in the analysis area, if such goods and services are available in the analysis area. Any taxable spending on goods and services that occurs in the analysis area during construction and O&M of the proposed solar facility would result in increased tax revenue for Beaverhead County.

3.10.2.2.3 Environmental Justice

Because no environmental justice communities exist in the analysis area, no environmental justice impacts would occur as a result of the proposed action.

3.10.3 Mitigation

No mitigation measures are proposed for social resources or environmental justice.

3.11 Miscellaneous Resources

3.11.1 Noise

3.11.1.1 AFFECTED ENVIRONMENT

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity and that interferes with or disrupts normal activities. Although prolonged exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the individual.

The general human response to changes in noise levels that are similar in frequency content (such as comparing increases in continuous [Leq] traffic noise levels) are summarized as follows:

- A 3-decibel (dB) change in sound level is considered to be a barely noticeable difference.
- A 5-dB change in sound level typically is noticeable.
- A 10-dB increase is considered to be a doubling in loudness.

Community sound levels are generally presented in terms of A-weighted decibels (dBA).
The A-weighting network measures sound in a fashion similar to how a person perceives or hears sound, thus achieving a strong correlation with how people perceive acceptable and unacceptable sound levels. Table 3.11-1 presents A-weighted sound levels and the general subjective responses associated with common sources of noise in the physical environment.

Table 3.11-1. Typical Sound Levels Measured in the Environment and Industry

Noise Source at a Given Distance	Sound Level (dBA)	Qualitative Description
Carrier deck jet operation	140	-
Civil defense siren (100 feet)	130	Pain threshold
Jet takeoff (200 feet)	120	Deafening
Auto horn (3 feet) Pile driver (50 feet) Rock music concert environment	110	Maximum vocal effort
Jet takeoff (100 feet) Shout (0.5 foot) Ambulance siren (100 feet) Newspaper press (5 feet) Power lawn mower (3 feet)	100	-

Noise Source at a Given Distance	Sound Level (dBA)	Qualitative Description
Heavy truck (50 feet) Power mower Motorcycle (25 feet) Propeller plane flyover (1,000 feet)	90	Very loud/annoying; hearing damage (8-hour, continuous exposure)
Pneumatic drill (50 feet) Garbage disposal (3 feet) High urban environment	80	Very loud
Passenger car, 65 mph (25 feet) Living room stereo (15 feet) Vacuum cleaner (3 feet)	70	Loud/intrusive (telephone use difficult)
Air conditioning unit (20 feet) Human voice (3 feet) Department store environment	60	-
Light auto traffic (50 feet) Residential air conditioner (50 feet) Private business office environment	50	Moderate/Quiet
Living room/bedroom bird calls (distant)	40	-
Library soft whisper (5 feet) Quiet bedroom environment	30	Very quiet
Broadcasting/recording studio	20	Faint
-	10	Just audible
-	0	Threshold of human audibility

Source: Adapted from Table E of *Assessing and Mitigating Noise Impacts* (New York Department of Environmental Conservation 2001).

As a result of the Noise Control Act of 1972, the EPA developed standards for noise levels under various conditions that would protect public health and welfare with an adequate margin of safety. The EPA determined that outdoor day-night average sound levels (Ldn) less than or equal to 55 dBA are sufficient to protect public health and welfare in residential areas and other places where quiet is a basis for use (EPA 1974). The *MDT Traffic Noise Analysis and Abatement Policy* (MDT 2016; effective January 1, 2017) describes the MDT's implementation of the requirements of the Federal Highway Administration Noise Standard (23 CFR 772) and establishes traffic noise levels. Job-related noise is regulated by the Occupational Safety and Health Administration (OSHA). Beaverhead County has no noise ordinance regulations.

The EPA has identified an Ldn of 55 dBA as the level below which no adverse impact occurs. An Ldn of 65 dBA represents a compromise between community impact and the need for construction. As such, that level is commonly used for noise planning purposes (EPA 1974). The MDT determined that traffic noise impacts occur when the predicted 1-hour (Leq(h)) traffic noise levels are 66 dBA or higher at a residential property or when traffic noise levels exceed the measured peak-hour, 1-hour traffic noise level by 13 dBA or more (MDT 2016).

Sound propagation, or how sound travels, is affected by terrain and the elevation of the receptor relative to the noise source. From level ground, noise travels in a straight path between the source and receptor. Breaking the line of sight between the receptor and the noise source can affect noise levels; examples

include a traffic noise source at a certain elevation and a receptor at a higher elevation and vice versa. Calculating the sound level at receptor locations requires the use of the inverse square rule whereby sound is attenuated over distance. Again, each doubling of the distance from the source of a noise decreases the sound pressure level by 6 dB(A) at distances of more than 50 feet (New York Department of Environmental Conservation 2001).

The project area is in a rural unincorporated area outside Dillon in Beaverhead County. The site is undeveloped aside from NorthWestern Energy's Dillon-Salmon Substation. The proposed project area is located in a rural area with a few residences outside the analysis area. The analysis area for noise extends 500 feet in all directions from the project area, which is consistent with the recommended noise study boundaries in the *Montana Department of Transportation (MDT) Noise Analysis and Abatement Policy* (MDT 2016). A few residences lie outside the analysis area. The land use within the surrounding area is primarily agricultural grazing. The county dump is approximately 0.6 mile east of the project site. Ambient noise surrounding the project area consists predominantly of rural or natural sounds and manmade noise from the landfill and vehicle traffic on Ten Mile Road.

In rural areas, typical outdoor Ldn values typically range between 35 and 50 dB (EPA 1974), which range from very quiet to moderate quiet (see Table 3.11-1). For the purposes of this EA, the ambient noise level of the analysis area is assumed to fall within the range of 35 to 50 dB. Noise-sensitive receptors include residences, schools, churches, hotels, and libraries. The closest sensitive receptors to the project area are residences 0.8 mile to the west along Ten Mile Road and 1.2 miles to the east near Dump Road and Ten Mile Road. Other residences are more than 1.2 miles to the southwest of the project area near Montana Highway 278 along Stone House Road and Carroll Lane. No noise sensitive receptors within the analysis area.

3.11.1.2 ENVIRONMENTAL CONSEQUENCES

3.11.1.2.1 No Action

Under the no action alternative, the project would not be developed. No new noise would occur, and current noise levels would not be affected.

3.11.1.2.2 Proposed Action

The proposed action would result a direct, short-term increase in noise related to construction activities. This impact would be temporary, occurring only during daylight hours (presumably during an 8 to 10-hour workday) within the 10-month construction period. The use of construction equipment would increase ambient noise levels. Noise levels generated by construction would vary daily and hourly, depending on the construction activity and the type, age, and numbers of equipment in operation. Most construction sounds are in the 80 to 90 dBA range (American National Standards Institute 2018). Additionally, noise resulting from construction would vary with the type of work being done, the distance between the work and the receptor, and meteorological conditions. Generally, sound levels are expected to be quieter for areas where activities occur at distances greater than 50 feet from the property line.

Noise resulting from increased construction vehicle traffic would also occur. Workers would make approximately 1,800 heavy truck trips to deliver equipment and materials to the project area during the 10-month construction period. Worker and material delivery commutes would result in short-term noise that would have little effect on hourly average noise levels within the analysis area.

Although construction would result in an increase in ambient noise levels, the increase would be temporary and would be limited to daytime hours when residential land uses are typically less sensitive to noise intrusion. The closest sensitive receptor to the project area is approximately 0.8 mile (4,400 feet)

outside the analysis area, so construction noise could be audible but would not result in adverse noise levels (higher than 65 dBA) per EPA guidelines for construction noise at the closest sensitive receptor. Table 3.11-2 provides noise level estimates from common construction equipment attenuated at distances ranging from 50 to 3,000 feet. As shown in Table 3.11-2, noise attenuation for construction equipment with 84-dBA average sound level at 50 feet would be attenuated to 78 dBA at 100 feet and for each doubling of the distance from the source of a noise would decreases the sound pressure level by 6 dB(A) at distances of more than 50 feet and would attenuate to72 dBA at 200 feet, 66 dBA at 400 feet, and so forth. The noise level of shovels and portable generators at 3,000 feet would be 48 dBA (Table 3.11-1), which is in the moderately quiet range per typical sound levels in the environment and industry as shown in Table 3.11-1. Noise levels at the closest sensitive receptor (residence) would be even lower as this receptor is approximately another 1,400 feet beyond the project site. Therefore, construction noise at the closest sensitive receptor would not exceed current noise conditions (ranging from 35 to 50 dBA). There would be no adverse noise levels (higher than 65 dBA) from construction at the closest sensitive receptor.

Table 3.11-2. Noise Levels from Common Construction Equipment

Construction Equipment	Typical Sound Pressure Level (dBA)				
	50 feet	100 feet	500 feet	1,500 feet	3,000 feet
Dozer (250–700 horsepower)	88	82	68	58	52
Trucks (200–400 horsepower)	86	80	66	56	50
Grader (13 to 16 feet blade)	85	79	65	55	49
Shovels (2–5 cubic yards)	84	78	64	54	48
Portable generators (50–200 kilowatts)	84	78	64	54	48
Derrick crane (11–20 tons)	83	77	63	53	47
Mobile crane (11–20 tons)	83	77	63	53	47
Concrete pumps (30–150 cubic yards)	81	75	61	51	25

Source: Adapted from Table 4.53. Noise Levels from Common Construction Equipment (EPA 1971 and Barnes et al. 1976, as cited in BLM 2011).

Notes: These typical noise levels at distances away from the pieces of equipment (beyond 50 feet) are conservative because the only attenuating mechanism considered was divergence of the sound waves in open air. In general, this mechanism results in a 6-dBA decrease in the sound level with every doubling of distance from the source. For example, the 84-dBA average sound level associated with generators would be attenuated to 78 dBA at 100 feet, 72 dBA at 200 feet, 66 dBA at 400 feet, and so forth. Attenuation from air absorption, ground effects, and shielding from intervening topography or structures are not included in determining these nominal values. Further, use of these data is considered to be conservative because construction equipment producers have striven to produce quieter models to protect operators from exposure to high noise levels and the community from undue noise intrusion.

Postconstruction, the ambient sound environment would be expected to return to existing levels. Noise associated with operation of a solar farm comes from the use of inverters. Such noise would be audible only during the daylight hours, when the panels are producing power, and would likely be heard only by individuals within the perimeter fence at distances of less than 150 feet. Inverters generate a low-decibel humming noise at around 60 dBA. All low-frequency sound from inverters below 40 hertz (Hz) is inaudible at all distances. Given the distance from the project site to the closest sensitive receptor, the sound of the inverters during operations would be inaudible and would not result in any noise impacts.

Site inspections and monitoring and maintenance activities (e.g., vegetation management and annual cleaning of the solar panels) would occur throughout the operational life of the proposed action. Consequently, the proposed action would cause only temporary noise impacts and would not result in a long-term increase in the ambient noise levels of the area. No permanent noise-related impacts to sensitive noise receptors outside the analysis area are anticipated.

The level of noise produced by the operation of the solar farm after construction is not expected to exceed 60 dBA and would result in no noise impacts when the sun is down or at distances of more than 150 feet from receptors. Therefore, impacts from solar farm operation would be negligible beyond the fenced project area, and no permanent noise impacts would be associated with operation. Apex would use no specialized equipment that would generate loud noises. No long-term noise pollution is expected as a result of the proposed project.

3.11.1.3 MITIGATION

No mitigation measures are proposed for noise.

3.11.2 Transportation

3.11.2.1 AFFECTED ENVIRONMENT

The project area is located in the unincorporated area of Beaverhead County approximately 5 miles west of Dillon. Land uses outside the project are rural residential and agricultural. The analysis area consists of the immediate roadways surrounding the project area that workers would use to access the project area and the county landfill, which is approximately 0.7 mile from the project area; these roads are described below.

The project area is located along Ten Mile Road, a graveled east-west county road with a speed limit of 35 mph. Ten Mile Road turns into Big Hole Road and intersects Montana Highway 278 to the west and I-15 via West Park Street to the east. Montana Highway 278 is classified as a secondary state highway and minor arterial highway which had annual average daily traffic (AADT) of 1,078 near its intersection with Carroll Lane (Location ID A-014) in 2019 (MDT 2020). Montana Highway 278 intersects I-15 south of the project area and runs northwest from there. I-15 is classified as a principal arterial interstate and had an AADT of 4,859 at the short-term traffic counter (Location ID 01-4A-020) south of West Park Street within Dillon city limits in 2019 (MDT 2020) (West Park Street eventually turns into Ten Mile Road). No traffic data for Ten Mile Road are available. The closest traffic counter to the project area is a short-term counter (Location ID 01-4-012) on Thief Creek Road south of Ten Mile Road, which had an AADT of 86 in 2019 (MDT 2020). Given the rural location of the project area, it is likely that the AADT of Ten Mile Road would be closer to that of Thief Creek Road than I-15 and Montana Highway 278, which have higher roadway classifications than Ten Mile Road. The county landfill, which is accessible by Ten Mile Road and assumed to be accessed from the east via I-15, likely generates some heavy truck trips. However, no associated trip generation data are available.

3.11.2.2 ENVIRONMENTAL CONSEQUENCES

3.11.2.2.1 No Action

The no action alternative would not impact transportation or associated facilities, as there would not be additional development or activities to generate additional traffic beyond current levels along Ten Mile Road.

3.11.2.2.2 Proposed Action

Construction and O&M workers would access the project area from Ten Mile Road via Montana Highway 287 and I-15. Because of project area's proximity to Dillon, which is 5 miles to the east, it is anticipated that construction workers accessing the project area from Ten Mile Road would primarily come from the east.

Impact to roads in the immediate vicinity, which are currently used by local workers, ranchers, residents, visitors, and county landfill workers and customers, would result from project construction. As discussed in Section 3.11.2.1, there is no data associated with heavy trucks using Ten Mile Road to access the county landfill. It is reasonable to assume that some of the 2019 AADT of 86 on Ten Mile Road (MDT 2020) was associated with heavy truck traffic related to the landfill. A typical day would include the transportation of workers, movement of heavy equipment, and transportation of materials during peak construction. An increase of road traffic would result from construction-related movement of people, materials, and equipment; this increase would vary depending on the phase of construction.

Project construction is planned to last no more than 10 months. Over the construction period, workers would make approximately 1,800 heavy truck trips to deliver equipment and materials to the project area. The increase of 1,800 heavy truck trips would be distributed over the 10-month construction period, averaging approximately 180 heavy truck trips a month. It is likely that most of the heavy truck trips would occur during peak construction period, which is estimated to last 28 weeks or 4 months during the spring and summer for the solar module installation and substation and gen-tie construction. Although these increases in heavy truck trips would represent substantial increases to existing AADT levels and would represent a major temporary increase in traffic, these impacts would not be significant, as they would be temporary in duration, lasting only throughout the 4-month-long peak of the construction period.

Construction would require the employment of up to 350 workers per day during the peak construction period. It is assumed workers would carpool to the project area, with 2 to 4 workers per vehicle for an estimated 88 to 175 trips during peak construction. As stated above, the peak construction period would last approximately 28 weeks or four months occurring during the spring and summer. The frequency of the daily workforce automobile traffic would follow the project workforce numbers on-site at a given time. Most of these workers would likely commute from the local area or region. These estimates would represent a substantial increase in heavy truck trips and worker vehicle trips over the 2019 AADT of 86. These increases would exceed and double existing AADT levels, but this major impact would be only temporary. Furthermore, current heavy truck trips utilize Ten Mile Road to access the county landfill. Because of the relatively short duration of these impacts to transportation, the impacts would not be considered significant. Traffic levels would return to existing AADT levels postconstruction. Apex would repair any damage to roadways resulting from the increased heavy truck traffic as part of a mitigation plan the company has developed with Beaverhead County.

Traffic within the immediate vicinity would be temporarily impacted. Travel by construction workers and transport of equipment and materials would add to the current traffic volumes on surrounding roads. Local traffic would likely be impacted the most around the beginning and end of the workday. This temporary increase in traffic is expected to have a minor impact on the surrounding roadway network in the form of increased traffic and slight delays.

As part of the proposed action, Apex would construct temporary roads and permanent access roads within the project area to support construction and O&M as well as internal site access roads. These roads would be private, located within the project area, and only accessible by Apex. The internal site access roads would consist of unpaved access roads with a width of 16 to 20 feet and graveled/compacted roads with a width of 20 to 25 feet and a depth of 3 to 6 inches. These roads would provide access between array rows and to each array during construction and O&M. From the internal access roads, access aisles would provide access to other areas among the solar arrays. These aisles would not be roads but rather clear spaces between the individual rows of solar panels that consist of unimproved native material; the spaces would allow access to all areas of the site via foot or by use of 4×4 vehicles for maintenance and emergency response.

No conflicts with traffic are anticipated to occur during project construction. With a speed limit of 35 mph on Ten Mile Road, it is unlikely that traffic slowdowns would occur as materials and heavy equipment are transported to the project site. During scoping consultation with the MDT, the agency stated that the project does not appear to impact MDT system routes. As stated in Section 2.4.1, no upgrades to roads within the analysis area are anticipated. No permanent changes to existing roads are anticipated as part of the proposed action. As stated above, peak construction would occur during the spring and summer. Apex would coordinate with Beaverhead County regarding road usage and to ensure that the increase in traffic on Ten Mile Road does not conflict with any seasonal road maintenance activities conducted by the county. To mitigate any long-term impacts to roadways from the increased heavy truck usage on Ten Mile Road, Apex and Beaverhead County would enter into an agreement for the maintenance and/or restoration of Ten Mile Road during the construction period.

Operation of the solar facility is not expected to cause or create any changes in traffic patterns; no new external roadways, intersections, upgrades, or traffic signals would be required. Traffic is likely to return to levels similar to existing conditions after project construction, as construction workers would not travel to the site during project operation. During O&M, two to three employees may be on-site, which could result in a negligible increase (up to three vehicles) in vehicular traffic on Ten Mile Road and other project access roads. No long-term impacts to vehicle traffic are anticipated.

Impacts to transportation associated with decommissioning activities would be similar to those associated with construction. Workers would use the same routes to the access the project area, resulting in temporary increases. As a part of decommissioning, Apex would reclaim internal access roads within the project area.

3.11.2.3 MITIGATION

To mitigate any long-term impacts to roadways from the increased heavy truck usage on Ten Mile Road, Apex and Beaverhead County would enter into an agreement for the maintenance and/or restoration of Ten Mile Road during the construction period.

3.12 Human Health and Safety

The analysis area for human health and safety is the proposed project footprint and the lands immediately adjacent. The analysis area consists of the area of potential impacts to human health and safety as a result of the proposed action. The impact indicators for human health safety include a potential increase in electromagnetic field radiation in comparison to recommended exposure limits and a potential increase in production, storage, and disposal of hazardous materials.

3.12.1 Electromagnetic Fields and Interference

3.12.1.1 AFFECTED ENVIRONMENT

Electromagnetic fields (EMFs) are invisible areas of energy associated with the use of electrical power and various forms of natural and man-made lighting (often referred to as radiation). EMFs are typically grouped into one of two categories by their frequency:

- Non-ionizing: low-level radiation that is generally perceived as harmless to humans. Sources of non-ionizing radiation include microwave ovens, computers, cell phones, power lines, and magnetic resonance imaging (National Institute of Environmental Health Sciences [NIEHS] 2020).
- Ionizing: high-level radiation that has the potential to cause cellular and DNA damage. Sources of ionizing radiation include sunlight, x-rays, and some gamma rays (NIEHS 2020).

In the United States, electricity is usually delivered as alternating current that oscillates at 60 cycles per second (Hz), putting fields generated by this electrical energy in the extremely low frequency range (NIEHS 1999). The NIEHS has concluded that the scientific evidence suggesting that extremely low frequency EMF exposures pose any health risk is weak and does not warrant aggressive regulatory concern (NIEHS 1999).

A 2015 study characterized magnetic and electric fields between the frequencies of 0 Hz and 3 gigahertz at two solar facilities operated by the Southern California Edison Company, one in Porterville, California, the other in San Bernardino, California (Tell et al. 2015). Static magnetic fields at the facilities were very small compared to exposure limits established by the Institute of Electrical and Electronics Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) (ICNIRP 2020). The highest-frequency magnetic fields were measured adjacent to transformers and inverters, and radiofrequency fields from 5 to 100 kilohertz were associated with the inverters. Every field measured complied with IEEE controlled limits and ICNIRP occupational exposure limits. The frequencies of the electric fields were negligible compared to IEEE and ICNIRP limits across the spectrum and when compared to Federal Communications Commission limits (≥0.3 megahertz) (Tell et al. 2015).

The project area and surrounding area contain NorthWestern Energy's Dillon-Salmon Substation and transmission lines. As described above, the substation and transmission lines emit non-ionizing, low-level radiation.

3.12.1.2 ENVIRONMENTAL CONSEQUENCES

3.12.1.2.1 No Action

The no action alternative would not impact human health and safety. Northwestern's existing Dillon-Salmon Substation and transmission lines would continue to emit low levels of EMF radiation in the project area and surrounding area.

3.12.1.2.2 Proposed Action

Under the proposed action, EMF radiation would increase in the project area as a result of the operation of the proposed solar facility and associated substation and transmission line. However, as discussed in Section 3.12.1.1, the EMF radiation levels would be far below all recommended exposure limits. The EMF radiation produced by electricity is non-ionizing radiation, meaning the radiation has enough energy to move atoms in a molecule around (experienced as heat) but not enough energy to remove electrons from an atom or molecule (ionize) or to damage DNA. Modern humans are all exposed to EMF radiation daily without negative health impact. An individual outside the fenced perimeter of a solar facility is not exposed to significant EMF radiation; therefore, the EMF radiation produced by a solar facility causes no negative health impacts. Because substation and transmission lines in the project area already produce EMF radiation, the EMF radiation levels from the proposed solar facility would be far below all recommended exposure limits, and the proposed solar facility would be approximately 5 miles from the nearest population center and 0.8 mile from the closest residence, no EMF-related impact to human health and safety would occur under the proposed action.

3.12.1.3 MITIGATION

No mitigation measures are proposed for electromagnetic fields and interference.

3.12.2 Environmental Risk Management

3.12.2.1 AFFECTED ENVIRONMENT

The analysis area is largely undeveloped land that is approximately 5 miles from the nearest populated area (Dillon). Because the analysis area is largely undeveloped, there is no indication of the presence of hazardous wastes or other harmful materials in the area. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) established the federal Superfund program, which the EPA administers. The Superfund program supports the investigation and cleanup of sites contaminated with hazardous substances. No Superfund sites are in or near the analysis area (EPA 2020c).

3.12.2.2 ENVIRONMENTAL CONSEQUENCES

3.12.2.2.1 No Action

The no action alternative would not result in impacts from hazardous waste or other related environmental conditions.

3.12.2.2.2 Proposed Action

While the photovoltaic panels used in solar facilities are not classified as hazardous waste, photovoltaic panels waste can include heavy metals such as silver, lead, arsenic, and cadmium, which may be classified as hazardous waste. Under the proposed action, the photovoltaic panels used would not include any hazardous materials. The specific type of panels used would be determined during final engineering and design. The panels would likely be recycled or repurposed after 35 years. The panels used typically have 70-to 75% efficiency after 35 years and would likely be able to be used by a secondary market at that point. If there is no secondary market for the panels at that point, the panels would be donated or recycled. Any broken and unrepairable photovoltaic panels or photovoltaic panels at the end of their life cycle would be recycled or disposed of in accordance with the applicable laws that address the handling, storage, transport, and disposal of solid waste or hazardous waste, such as Montana Code Annotated Title 75, Part 4 and 40 CFR Part 260-265. The project would be decommissioned in accordance with a decommissioning plan that would be submitted to the MDEQ, as described in Section 2.4.4. As such, no impacts are expected under the proposed action. The National Renewable Energy Laboratory has recommended best practices that can be used for photovoltaic systems at the end of their life cycle. These practices include extending the performance period of a photovoltaic system if it has not suffered extensive damage, refurbishing a system that has been inspected and repaired, rebuilding or replacing the power source of a power plant, and decommissioning and removing a plant from active service and rendering it to a safe and final state (Curtis et al. 2021).

3.12.2.3 MITIGATION

No mitigation measures are proposed for environmental risk management.

3.13 Corridor Analysis

3.13.1 Affected Environment

The analysis area for the corridor analysis is the 639-acre project area, which includes the existing NorthWestern Energy Dillon-Salmon Substation. NorthWestern Energy is a public utility provider of electricity and natural gas in Montana, South Dakota, and Nebraska. In Montana, the Montana Public

Service Commission regulates NorthWestern Energy. In 2016, NorthWestern Energy performed capacity and reliability upgrades to the Dillon-Salmon Substation 161/69-kV auto bank (NorthWestern Energy 2016). Vigilante Electric Cooperative provides electric power to one Idaho county and nine Montana counties, including Beaverhead County. During agency consultation and scoping, SWCA sent letters about the proposed action to NorthWestern Energy and Vigilante Electric Cooperative (see Appendix D). SWCA received no response from either company.

3.13.2 Environmental Consequences

3.13.2.1 NO ACTION

The no action alternative would not impact any utility corridors or warrant a corridor analysis.

3.13.2.2 PROPOSED ACTION

Section 2.1 of the EA describes the process for siting and identifying alternatives. As a part of the proposed action, Apex would construct a 50-foot-long 161 kV gen-tie to connect the proposed project with the electrical grid via the NorthWestern Energy Dillon-Salmon Substation. This EA analyzes the construction and O&M impacts of the interconnection and gen-tie. No additional work or upgrades are anticipated, as NorthWestern performed upgrades to this substation in 2016. There are two planned transmission line reroutes to the substation and Apex is working with these Utilities to optimize transmission line routes. These projects are analyzed under Chapter 4, Cumulative Effects. No additional corridor analysis is warranted beyond the siting process described in EA Chapter 2.

3.13.3 Mitigation

No mitigation measures are proposed for corridors.

3.14 Soils

3.14.1 Affected Environment

The analysis area for soils is the 639-acre project area and the adjacent lands (i.e., within approximately 1,000 feet of the project boundary). According to the NRCS Web Soil Survey, the agency was “denied access” to conduct a soil survey on most of the land within the project area as well as the land immediately east of the area. As a result, the NRCS’s Soil Survey Geographic Database contains no information about the soils in approximately 98% of the project area. Therefore, SWCA used aerial imagery, physiography information, field-collected vegetation and wetlands survey data, and data associated with the NRCS soil map units within the land surrounding the project area to complete the soils analysis for this EA. Specifically, SWCA used the data associated with the NRCS soil map units directly adjacent to the project area to interpolate the soils that might exist within the 639-acre project area. Areas adjacent to the east end of the project area, which lacked NRCS soil data, were compared to adjacent soil map units in similar topographies to interpolate the given NRCS map units in those areas. Figure 3.14-1 shows the analysis area for soils, the available NRCS mapping units, and the interpolated soil data for those areas without NRCS data.

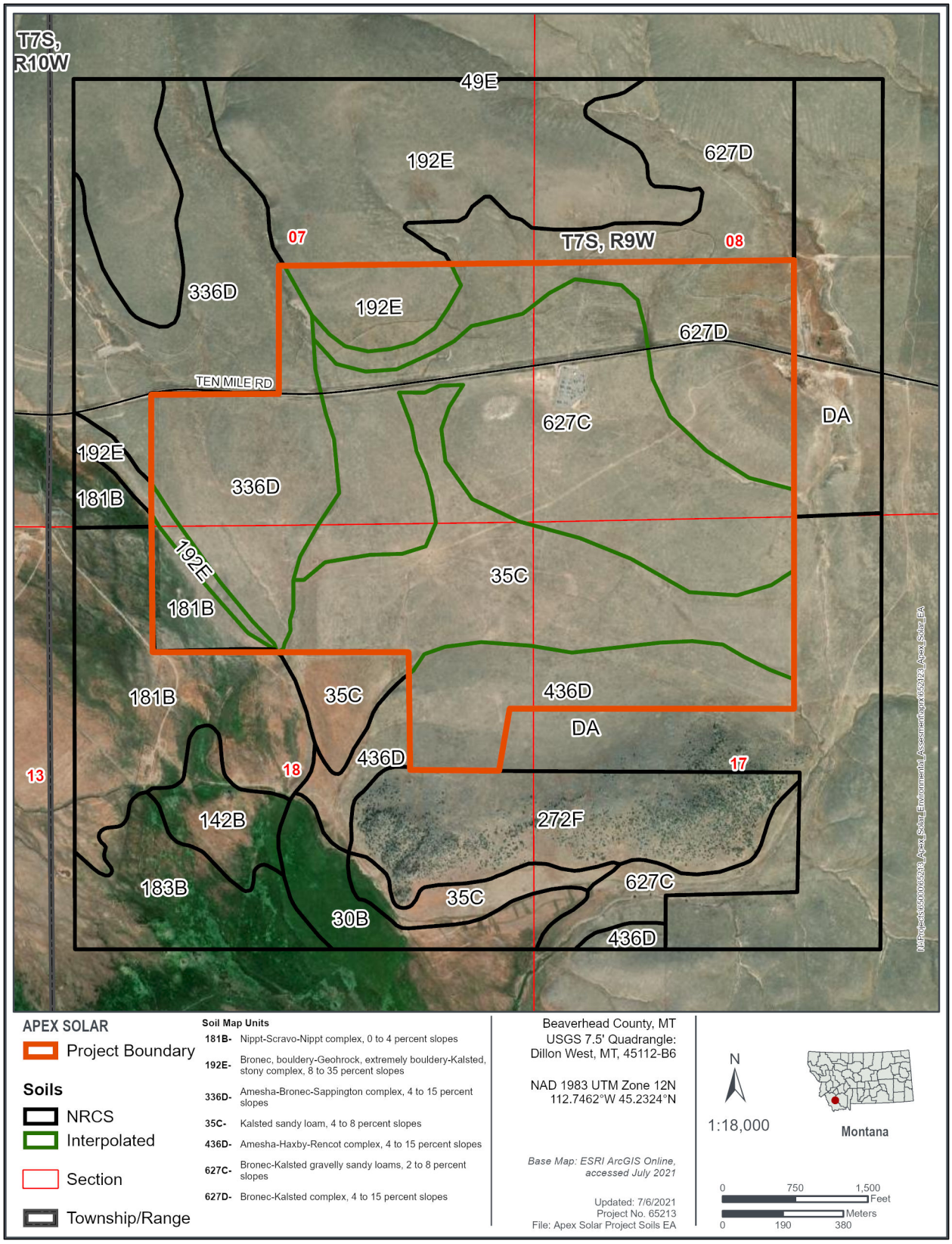


Figure 3.14-1. Soil maps units in the analysis area.

Soils within the project area are slightly variable, consisting mostly of sandy loams and complexes that range from gravelly to extremely bouldery. The climate is characterized by cold winters and warm summers, with precipitation coming primarily from spring snowfall and snowmelt and high-intensity, short-duration summer thunderstorms. SWCA's interpolation indicates that seven NRCS soil map units lie within the project area (Table 3.14-1). Appendix H contains additional information regarding the soils in the project area.

Table 3.14-1. Natural Resources Conservation Service Soil Map Units Interpolated to Exist within the Apex Solar Project Area

NRCS Soil Map Unit Number	NRCS Soil Map Unit Name	Acres
35C	Kalsted sandy loam, 4 to 8 percent slopes	129.31
181B	Nippt-Scravo-Nippt complex, 0 to 4 percent slopes	18.40
192E	Bronec, bouldery-Geohrock, extremely bouldery-Kalsted, stony complex, 8 to 35 percent slopes	33.65
336D	Amesha-Bronec-Sappington complex, 4 to 15 percent slopes	86.90
436D	Amesha-Haxby-Rencot complex, 4 to 15 percent slopes	69.95
627C	Bronec-Kalsted gravelly sandy loams, 2 to 8 percent slopes	206.11
627D	Bronec-Kalsted complex, 4 to 15 percent slopes	95.04
	Total	639.36

Source: NRCS (2019)

Note: Acreage calculations are based on interpolated soil map unit boundaries and therefore may differ from the acreage of the units that actually lie within the project area.

The suitability of soils for reclamation and plant growth depends on the chemical and physical characteristics of the soils. Physical characteristics that influence soil suitability include texture and saturation percentage. Chemical characteristics that limit the suitability of a soil for reclamation include pH, calcium carbonate content, sodium content, and elevated salinity. All of the soils interpolated to exist within the project area are slightly or moderately alkaline, with alkalinity generally increasing with soil depth. Calcium carbonate content generally increases with soil depth and is relatively high in deeper horizons for most of the soil map units interpolated to exist within the project area. Sodium content affects the structure of the soil, resulting in a decreased infiltration rate at the surface and decreased permeability at lower depths in the soil profile. Elevated salinity levels affect plants' ability to uptake water and therefore could impede revegetation. Table 3.14-2 lists the water erosion hazard ratings, wind erosion hazard ratings, surface runoff potential, and reclamation potential for the soil map units interpolated to exist within the project area.

Table 3.14-2. Wind and Water Erosion Hazard Ratings and Surface Runoff and Reclamation Potential of the Soil Map Units Interpolated to Exist within the Project Area

NRCS Soil Map Unit	Water Erosion Hazard Rating	Wind Erosion Hazard Rating	Surface Runoff Potential	Reclamation Potential
35C	Moderate	Moderate	Low	Moderate
181B	Slight	Moderate	Low-Medium	Moderate
192E	Severe (slope)	Slight	Low-Medium	Moderate
336D	Moderate	Moderate	Medium	Good

NRCS Soil Map Unit	Water Erosion Hazard Rating	Wind Erosion Hazard Rating	Surface Runoff Potential	Reclamation Potential
436D	Severe (slope)	Moderate	Medium	Moderate
627C	Moderate	Moderate	Low-Medium	Good
627D	Moderate	Moderate	Low-Medium	Good

Source: NRCS 2019

3.14.2 Environmental Consequences

3.14.2.1 NO ACTION

The no action alternative would not impact soils within or near the project area.

3.14.2.2 PROPOSED ACTION

Under the proposed action, potential impacts to soil resources would include wind and water soil erosion, loss of soil productivity, and the increased likelihood of the establishment of noxious weeds on the soil surface.

3.14.2.2.1 Construction and Operational Impacts on Soils

Soils in the project area are generally characterized as having a moderate to severe water and wind erosion hazard (see Table 3.14-2). Construction activities such as vegetation clearing, grading, road construction, and trenching may increase erosion potential by destabilizing the soil surface; additionally, soil compaction can result from the movement of heavy equipment and construction of access roads. The degree of compaction would depend on equipment weight, tire or track width, moisture content, soil composition, and soil compaction rating. Compaction reduces the ability of water to infiltrate into and percolate through soils and reduces, reducing the ability of plant roots to access nutrients and water for growth. As a result, crops and vegetation in impacted areas could be impaired, resulting in reduced agricultural productivity. Erosion resulting from compaction and soil disturbance could extend beyond the area in which soil compaction occurs.

Direct impacts to soil resources resulting from construction of the project include loss of soil productivity resulting from the disturbance and compaction of soils during construction of access roads, installation of solar modules, and construction of the substation. Vegetation clearing and grading would disturb topsoil, which would result in the exposure of underlying soils that could be subject to accelerated soil erosion by wind and water. Apex would conduct dust suppression activities such as wetting of soils during construction to minimize soil loss as a result of wind dispersal.

Indirect construction impacts to soils would include loss of soil structure and stability, loss of plant productivity or health resulting from a reduction in nutrient availability; a reduction in oxygen in the soil, reducing plant function; and increased stormwater runoff emanating from compacted soils, resulting in the formation of rills and gullies across broad areas of land. Apex would minimize these impacts by implementing BMPs for erosion and sediment runoff control. Workers would construct and operate the proposed project in accordance with the approved erosion and sedimentation control plan and National Pollutant Discharge Elimination System permit for the project (see draft SWPPP in Appendix A).

The ongoing O&M of the facilities would involve no activities with the potential to significantly affect soil resources, as no-ground disturbing activities would occur then. Apex would salvage, stockpile, and stabilize soils for reclamation from the proposed locations of the infrastructure (i.e., the substation, O&M

buildings and other outbuildings, graded areas for the arrays, and permanent roads). Workers would use water for vegetation management and cleaning the solar panels. This water could potentially cause soil erosion if more water is used than the soil can absorb. Erosion BMPs would prevent soil from leaving the project area during panel washing. The construction of access roads within the project area for continued facility operations would require the implementation of soil erosion control measures, including dust control. Soil erosion control measures (see draft SWPPP in Appendix A) would be used around areas where soil disturbance occurs (including roads) to prevent soil being lost via wind and water erosion.

The maintenance of optimal ground cover and the use of appropriate vegetation management procedures would be essential to preventing substantial soil loss over the long term in disturbed areas where soil salvage would not occur (i.e., where solar panels would be located). That, in turn, would help maintain the health and productiveness of the soils so that they can be returned to agricultural use after Apex decommissions the project area, if necessary. The company would carefully monitor conditions on-site after construction and would take corrective action, if necessary.

3.14.2.2.2 Reclamation and Decommissioning Impacts on Soils

Apex would reclaim the project area within 12 months after decommissioning the project. Reclamation can take place without any substantial effect on topography or soils, and Apex would return the area to its original land use. Manually dismantling the panels and trackers and using a backhoe and choker chain to remove the vertical supports would cause minimal soil disturbance. Removing the buried conduits would result in slightly more disturbance (including the potential mixing of topsoil and subsoil), compaction, and rutting, but immediate backfilling and revegetation would prevent unnecessary erosion and soil loss.

3.14.3 Mitigation

Apex would use BMP erosion control techniques to mitigate soil impacts. In those areas requiring topsoil salvage before construction, workers would segregate the topsoil from subsoils and would stockpile those soils separately. Apex would use some of the topsoil after construction to resurface areas disturbed by construction and would disk compacted soils before final stabilization. It is not anticipated that any subsoil removed would be spread in upland cropland or pastures.

Apex will submit a SWPPP to the MDEQ as part of project permitting activities (Appendix A) and would implement, monitor, and maintain the BMPs described in the SWPPP to minimize erosion and sedimentation. The company would comply with the construction site stormwater discharge permit and adhere to the noxious weed plan.

4 CUMULATIVE EFFECTS

The cumulative effects analysis evaluates the effects of the proposed project and considers the effects of past, present, and reasonably foreseeable future actions occurring in the area that the proposed project would affect (i.e., the cumulative impact analysis area [CIAA]). The CIAA for each resource is the same as the analysis area for its direct and indirect environmental effects, unless noted otherwise. The Affected Environment sections of Chapter 3 provide information about past and present environmental conditions associated with each resource. Section 4.1 describes reasonably foreseeable projects in the CIAA that may contribute to cumulative effects, and Section 4.2 assesses the cumulative impacts of the proposed action and reasonably foreseeable actions on the human environment.

Construction of the project is anticipated to last 10 months. After construction, the project is expected to operate for 35 years. After decommissioning the project, Apex would reclaim the project area. The temporal scale for cumulative impacts is 36 years to account for the construction and operation periods.

4.1 Projects Contributing to Cumulative Effects

SWCA conducted a desktop review of potential past, present, and future actions in the CIAA. Resources examined include local news sources, BLM data, U.S. Forest Service data, and Beaverhead County information. The desktop review yielded the following reasonably foreseeable future actions within the CIAA. On April 7, 2021, the MDEQ issued a FONSI for 2021 Water System Improvements Project for the city of Dillon. The proposed improvements include replacing two aging 10-inch transmission mains with new 18-inch high-density polyethylene transmission mains and replacing aging water distribution mains within the city. The transmission main work would involve the installation of approximately 7,700 linear feet of new 18-inch high-density polyethylene pipe between the Beaverhead County Fairgrounds and the city's existing water supply wells and storage tank off Ten Mile Road (west of the Beaverhead River) (MDEQ 2021).

In addition, Apex is coordinating with local utilities (Vigilante Electric and Northwestern Energy) to minimize conflicts with existing and planned transmission infrastructure in the project area. Vigilante Electric is planning a single-phase route realignment to one of its existing lines that runs north of Ten Mile Road and connects to the NorthWestern Energy Dillon-Salmon Substation. The realignment would shift the planned transmission line south to follow Ten Mile Road to the existing NorthWestern Energy Dillon-Salmon Substation. The construction of the Vigilante transmission line is expected to be completed by the end of 2021. Northwestern Energy is proposing to realign an existing transmission line that connects to the Dillon-Salmon Substation. The realignment would shift the existing line to the east, following the eastern boundary of the solar project area. This realignment would reduce the distance the transmission line crosses of the project area to reach the existing substation; thereby maximizing the solar development potential of Apex's project area. Once the existing transmission line exits the proposed solar project area, it would connect to an existing 69-kV line outside the project area. The Northwestern 69-kV reroute is expected to be completed by April 2022.

Two other solar developments are proposed for location in Beaverhead County. Since the final locations of these projects remain undetermined, it is unknown whether those projects would ultimately lie within the CIAAs for this EA. As a result, SWCA included the projects in this cumulative effects analysis. The proposed location of Antelope Hills Bright Night, a battery-backed 200-MW solar peak facility, is on approximately 1,200 acres of private land in T9S, R12W, approximately 20 miles southwest of the proposed location of the Apex Solar Project (Sawyer 2021). Apex is planning an 80-MW solar facility to interconnect with NorthWestern Energy infrastructure; the location of this project remains unfinalized.

This project is referred to as the Upper Dillon Argenta Solar project (Elliot 2020). According to The Dillon Tribune, construction of the facility would not begin until 2024 or 2025 (Elliot 2021).

4.2 Cumulative Effects Analysis

The cumulative effects analysis includes actions that meet the following criteria:

- The action impacts a resource potentially affected by the proposed action.
- The action causes impacts within all or parts of the same geographic scope of the proposed action.
- The action causes impacts within all or part of the temporal scope for the potential impacts from the proposed action.

The proposed action is not expected to have significant impacts to land use, floodplains, wetlands, water resources, biological resources, cultural and historic properties and cultural resources, aesthetics, air quality, socioeconomics/environmental justice, noise, transportation, health and safety, corridors, or soils. Impacts to the resources analyzed in Chapter 3 would mostly be localized to the project area, with most of the impacts occurring during the 10-month-long project construction period. Apart from transmission line reroutes, the projects identified in Section 4.1 do not directly overlap the project area, but they may also contribute to indirect cumulative impacts that extend beyond the project boundary. The impacts of projects that comprise the cumulative scenario combined with the proposed action could contribute to cumulative effects on certain resources, as discussed below.

4.2.1 Land Use

Cumulative effects on land use could occur where lands are converted from one use to another (i.e., where undeveloped land is converted to utility infrastructure). Land in the analysis area is predominantly agricultural and undeveloped. The proposed action would result in minor temporary impacts to land use, as described in Section 3.1. The transmission line reroutes would overlap with the project and could result in minor temporary impacts to land use from the changing the location of utility infrastructure, similar to those associated with the proposed action. None of the other projects identified in Section 4.1 would overlap the project area; therefore, it is unlikely that any minimal, localized, incremental effects of the proposed action on land use would interact with the effects of other the other projects in the area to produce cumulatively significant effects on land use. The cumulative effect of the transmission line reroutes and the proposed action would result in minor temporary cumulative impacts to land use.

4.2.2 Floodplains

Cumulative effects on floodplains could occur from development in floodplains. The proposed action would result in no impact to floodplains; therefore, no cumulative impacts to floodplains are anticipated. Transmission line reroutes and construction of future solar farms in the area could impact floodplains; however, it is unlikely that the transmission line reroutes or construction of future solar farms would impact floodplain resources within the analysis area for this project. At this time, no other reasonably foreseeable development is planned within the floodplains analysis area. No adverse cumulative effects on floodplains from the proposed action are anticipated.

4.2.3 Wetlands

Cumulative effects on wetlands could occur from development in wetland areas. The proposed action would result in no impact to wetlands; therefore, no cumulative impacts to wetlands are anticipated. Transmission line reroutes and construction of future solar farms in the area could impact wetlands; however, it is unlikely that the transmission line reroutes or construction of future solar farms would contribute cumulatively to wetland resource within the analysis area for this project. At this time, no reasonably foreseeable development is planned within the wetlands analysis area. No adverse cumulative effects on wetlands from the proposed action are anticipated.

4.2.4 Water Resources

Cumulative effects on water resources and water quality from the projects listed in Section 4.1 could result from construction activities. Impacts to water resources from the proposed action would be minimal, as discussed in Section 3.4. Cumulative impacts to groundwater and surface water from potential sediment discharges from disturbed areas would be minor and short term. Apex would implement industry-standard BMPs and follow federal and state regulations; this approach is typically effective in minimizing such impacts to groundwater and surface waters.

4.2.5 Coastal Resources

The proposed location of the project is more than 540 miles from a coast. As a result, no cumulative impacts to coastal resources would occur.

4.2.6 Biological Resources

Cumulative effects on vegetation could occur where the proposed action results in vegetation removal and/or disturbance, impacts to special status species, and/or the introduction of invasive species, as discussed in Section 3.6. Any project that involves surface-disturbing activities, such as a water system improvement project, transmission line realignment, or new energy development, could contribute to the cumulative adverse impacts that may occur as a result of vegetation removal and/or disturbance, conversion of vegetation and plant communities, and the potential introduction of invasive species. Project proponents often implement BMPs to avoid and minimize direct impacts to special status species and prevent the introduction and spread of invasive species. At this time, the transmission line reroutes are the only reasonably foreseeable development planned within the vegetation and invasive species analysis areas. The cumulative effect of the transmission line reroute and the proposed action would result in minor temporary cumulative impacts to vegetation and invasive species.

Cumulative effects on wildlife, ESA-listed threatened and endangered species, and migratory birds occur when an action results in modification, degradation, or fragmentation of their habitat or affects the natural processes that sustain those animals and their ability to feed, breed, and shelter. Section 3.6 discloses impacts to wildlife, ESA-listed threatened and endangered species, and migratory birds from the proposed action. Localized impacts to wildlife and migratory bird species, including the long-billed curlew, would result from loss of habitat; however, the habitat loss is unlikely to affect the viability of any wildlife populations. Any projects that remove, degrade, or fragment habitat, such as new energy development, could contribute to the cumulative adverse impacts that may occur by converting undeveloped areas to developed areas, by changing land cover types, and through loss of area to energy infrastructure and ancillary facilities. At this time, the only reasonably foreseeable project within the 2-mile analysis area is the 2021 Water System Improvements Project for the city of Dillon and transmission line reroutes. No large-scale wildlife habitat disturbances are reasonably foreseeable, and the proposed project is not

expected to negatively affect any wildlife population trends in the area. No other cumulative actions that could measurably impact fish and wildlife resources within the analysis area have been identified, and the water system improvements project and transmission line reroutes, when added to the actions of the proposed project, would not measurably impact fish and wildlife resources. Therefore, cumulative impacts to wildlife within the 2-mile analysis area are expected to be minimal.

The project area does not contain suitable habitat for ESA-listed threatened and endangered species, so the proposed action would result in no direct or indirect impacts to those species. No other past or future actions identified through this assessment have measurably impacted or would measurably impact ESA-listed threatened and endangered species within the project area, and those actions, when added to the actions of the proposed project, would not measurably impact ESA-listed threatened and endangered species. Therefore, no cumulative impacts to ESA-listed threatened and endangered species are anticipated.

4.2.7 Cultural and Historic Resources

The CIAA for cultural and historic resources is the visual APE for cultural resources of 0.25 mile from the proposed project disturbance. Impacts to cultural and historic resources from the proposed action would result from ground disturbance and permanent alteration; however, those effects would not constitute adverse effects, as discussed in Section 3.7. The transmission line reroutes would likely result in similar effects from ground disturbance as the proposed action. The cumulative effects analysis identified no other past or future actions that have measurably impacted or could measurably impact cultural resources and historic properties within the project area, and the actions described in Section 4.1, when added to the actions of the proposed action, would not measurably impact cultural resources and historic properties. The cumulative effect of the transmission line reroute and the proposed action could result in cumulative impacts to cultural and historic resources, but would not constitute adverse cumulative effects.

While future projects would vary in scope and impacts, the principal types of impacts that may have an effect on cultural resources would be the physical impact to historic properties or other cultural resources themselves, through demolition, fill, grading, blasting, subsurface excavation, and vibration; such activities may impact the integrity of one or more of the elements needed to convey the significance of historic properties. Other impacts include the diminution of the integrity of setting and feeling through imposition of undesirable elements in the viewshed or environment of the historic property. All of the present and reasonably foreseeable projects would have the potential to cause both general types of impacts to historic properties. Potentially significant cultural resources could be identified in association with any of those projects.

4.2.8 Aesthetics

The spatial CIAA for aesthetics is the 10-mile area surrounding the project area. Impacts to aesthetics from the proposed action would range from no perceivable visual impact to strong contrast, as discussed in Section 3.8. Any projects that would result in modification of the landscape, such as new energy development, could contribute to the cumulative adverse impacts to visual quality and aesthetics. These developments, when added to the direct effects of the proposed project, could incrementally convert the scenic quality of the natural landscapes into a more developed and industrialized landscape that would adversely affect scenery and sensitive viewers over time. The transmission line reroutes would result in minor modifications to the visual landscape, but would not result in strong contrast and would not dominate the landscape. Construction of future solar farms identified in Section 4.1 could impact aesthetics; however, it is unlikely that construction of these projects could contribute cumulatively to impacts on aesthetics, as they are outside the CIAA. At this time, no other reasonably foreseeable

development is planned within the aesthetics analysis area, as the final location of the 80-MW facility is unknown. The cumulative effect of the transmission line reroutes and the proposed action would result in minor cumulative impacts to aesthetics.

4.2.9 Air Quality

The spatial CIAA for air quality is the 5-mile area surrounding the project area. Impacts to air quality from the proposed action would be temporary, localized, and minor, as discussed in Section 3.9. Impacts to air quality resulting from construction activities are generally localized where they occur. Any projects that disturb soils, such as a water improvement project or new energy development, could contribute to adverse impacts in the form of fugitive dust, especially during windy weather. In addition, construction equipment and vehicles would contribute air pollutant emissions. Cumulative effects on air quality from the proposed action and projects listed in Section 4.1 would be short term, localized, and minor.

4.2.10 Social Impact Analysis/Environmental Justice

The proposed action would result in minor temporary and beneficial impacts to socioeconomics, as discussed in Section 3.10. Because the socioeconomic effects of the project would be minimal and no other reasonably foreseeable large land use changes are anticipated, the cumulative effects would be minimal. Potential beneficial cumulative impacts to socioeconomics would include an increase in electrical power generation and other solar projects, which would benefit electrical power customers in Beaverhead County. Additional minor beneficial cumulative impacts from transmission line reroutes and proposed solar development may include increases in utility employment and other employment in addition to increases in taxable spending on goods and services during construction and O&M of solar development and infrastructure projects. Negligible to minor cumulative impacts from these developments may also result in temporary increases in population; traffic; and demand on infrastructure, utilities, and public services during construction.

No environmental justice impacts would result from the proposed action, as no environmental justice communities were identified in the analysis area, as stated in Section 3.10. Therefore, no cumulative impacts to environmental justice communities would occur.

4.2.11 Miscellaneous Resources

The spatial CIAA for noise is the 1-mile area surrounding the project area. Impacts to noise would be temporary and minor, lasting only during construction, as discussed in Section 3.11.1. Noise impacts from construction activities are generally localized where they occur. Any projects that require construction equipment and personnel could generate noise during working hours. Adverse noise impacts may result from the construction of infrastructure improvement projects and new energy development, including transmission line reroutes. Construction noise is temporary and would end upon completion of project construction. O&M of the transmission lines and renewable energy projects could generate periodic levels of noise; however, that the magnitude of that noise is not considered significant, and the noise would dissipate with increasing distance from the project boundary. Therefore, those adverse impacts likely would be infrequent, of short duration, and minor. The cumulative effects on noise from the proposed action and projects listed in Section 4.1 would be short term, minor to moderate, and localized. Based on the periodic nature of operational noise, ongoing cumulative effects would occur only for a short time during construction and routine maintenance; therefore, no long-term cumulative noise impacts from the proposed action are anticipated.

The spatial CIAA for transportation is the 5-mile area surrounding the project area. Impacts to transportation would be temporary, lasting during construction, as discussed in Section 3.11.2. Impacts to

the transportation network from construction of the projects identified in Section 4.1 would primarily include increased traffic associated with construction workers and delivery of construction equipment and materials to the worksites. The cumulative effects on transportation from the proposed action and the projects listed in Section 4.1 could be short term, minor to moderate, and localized. The projects listed in Section 4.1 would be required to comply with all applicable roadway management standards and policies during construction; therefore, the potential cumulative effects would not significantly change the transportation trends in the CIAA.

4.2.12 Human Health and Safety

Impacts to human health and safety from the proposed action would be minor, as discussed in Section 3.12. Potential cumulative impacts to public health and safety could result from construction activities that would increase the potential for accidents in construction areas, affecting worker safety. The transmission line reroutes would result in similar impacts as the proposed action. Present and reasonably foreseeable future solar energy projects could also have an adverse impact on public health and safety by increasing potential exposure to EMF radiation and increasing the generation of solid, hazardous, and toxic materials and waste in the analysis area. The impacts that present and reasonably foreseeable future transmission infrastructure and solar projects in Beaverhead County would have regarding EMF radiation would be similar in nature as those described in Section 3.12; however, at least one of the reasonably foreseeable projects would extend beyond the proposed action's analysis area. Additional sources of EMF radiation in the analysis area would not combine to create higher levels of EMF radiation but would create discrete locations of EMF radiation. In other words, each additional source would create a certain level of EMF radiation, but that EMF radiation and other EMF radiation nearby would not contribute to a cumulative increase in EMF radiation. Because the levels of EMF created by the proposed project would be relatively low when compared to the recommended public and occupational exposure guidelines, the cumulative impact from EMF radiation would be minor and long term.

4.2.13 Corridor Analysis

No impacts to corridors would result from the proposed action. The transmission line reroutes would result in improved utility corridors in the project area because the transmission lines would be moved to allow for maximum development of the solar project area, while also balancing the need for transmission infrastructure. This would result in a beneficial impact to corridors. At this time, no other reasonably foreseeable projects identified in Section 4.1 would overlap corridors used as part of this proposed action. The cumulative impact of the transmission line reroute and the proposed action would result in a beneficial cumulative impact to corridors.

4.2.14 Soils

Impacts to soils from the proposed action would result in increased erosion potential, loss of soil productivity, and increased likelihood of establishment of noxious weeds, as discussed in Section 3.14. Environmental impacts to soils would generally be localized where they occur. Any projects that disturb soil resources, such as infrastructure improvement projects, transmission line reroutes, or new energy development, would contribute to the cumulative adverse impacts that may occur as a result of added erosion, compaction, or disturbance of shallow and sensitive soils. This assessment identified no other actions that have measurably impacted soils within the project area. The cumulative effect of the transmission line reroutes, when added to the actions of the proposed action, would result in minor cumulative impacts to soils.

4.3 Summary of Impacts

Table 4-1. Summary of Cumulative Impacts Assessment

Resource	Cumulative Impacts	Contribution of Proposed Project to Cumulative Effects
Land use	Change in location of utility infrastructure	Minimal, localized impacts from conversion of undeveloped land to utility infrastructure
Floodplains	Potential development in floodplains	None anticipated
Wetlands	Potential development in wetlands	None anticipated
Water resources	Potential sediment discharges from disturbed areas that would be minor and short term	Minimal with the implementation of BMPs and mitigation
Coastal resources	None	None
Biological resources: vegetation/invasive species	Potential impacts from the removal, disturbance, and conversion of vegetation and plant communities and the potential introduction of invasive species	None anticipated with the implementation of BMPs and mitigation
Biological resources: fish and wildlife, migratory birds	Potential loss of habitat and localized impacts	Minimal impacts resulting from the small amount of habitat loss relative to the available habitat, which is unlikely to cause impacts to the viability of any wildlife populations
Biological resources: ESA-listed threatened and endangered species	None	None anticipated
Cultural and historic resources	Potential impacts from construction activities and diminution of the integrity of setting and feeling of any cultural and historic resources in CIAA through the imposition of undesirable elements in the viewshed	No adverse effects
Aesthetics	Potential short-and long-term impacts from modification of the landscape	Minor
Air quality	Potential localized emissions from construction and fugitive dust	Short-term, localized, and minor
Social impact analysis	Minimal impacts from a temporary increase in population; traffic; and demand on infrastructure, utilities, and public services during construction; potential beneficial impacts from increased electrical power generation and employment and increases in taxable spending on goods and services	Negligible to minor increases in population; traffic; and demand on infrastructure, utilities, and public services during construction. Minor beneficial impacts from increased electrical power generation and employment and increases in taxable spending on goods and services
Environmental justice	None	None
Noise	Potential temporary increases in noise levels during construction	Short-term, minor to moderate, and localized
Transportation	Potential temporary increases in traffic associated with construction workers and movement of construction equipment	Short term, minor to moderate, and localized
Human health and safety	Potential increase public health and safety impacts from construction activities and increased EMF radiation levels from solar development	Minor and long term
Corridor Analysis	Improved utility corridor	Beneficial
Soils	Potential localized impacts from soil disturbance during construction	Minimal localized impacts from increased erosion potential, loss of soil productivity, and increased likelihood of the establishment of noxious weeds

5 SUMMARY OF MITIGATION

Table 5-1 summarizes the mitigation measures identified in the various resource sections of this EA. Apex would be the responsible party for carrying out these measures, unless otherwise noted. SWCA determined potential mitigation measures based on the following:

- An adverse impact on a resource must have a reasonable chance of occurring in the foreseeable future.
- The mitigation must be reasonable and enforceable.
- The mitigation must balance the potential for impacting a resource with the resource's relative environmental value. For example, potential impacts on unique or scarce resources could require a strong mitigation measure.
- The mitigation must be tailored to the project and Apex's capabilities.

Table 5-1. Mitigation for the Proposed Action

Resource	Mitigation Measure
Land use	None
Floodplains	None
Wetlands	None
Water resources	The SWPPP Apex prepares to meet MDEQ requirements for this project would also serve as an erosion and sediment control plan. The plan would provide the general contractor with the framework for reducing soil erosion and minimizing the potential impact of stormwater pollution from common activities and sources at construction sites. Specifically, the SWPPP would detail the structural and non-structural BMPs Apex selects to control erosion associated with surface stormwater discharges during construction, decrease the volume and rate of stormwater runoff, and increase pollution attenuation after construction.
Coastal resources	None
Biological resources	To avoid impacts to the long-billed curlew, Apex would not engage in ground-disturbing activities in undisturbed grassland areas within the project area from March 15 through July 15. Ground-disturbing activities may take place within the avoidance time frame if blading, mowing, or vegetation clearance renders the habitat unsuitable for nesting before March 15. If the habitat cannot be rendered unsuitable prior to March 15 and ground disturbing activities are scheduled to occur within the avoidance time frame, then long-billed curlew nesting surveys will be conducted no more than 1 week prior to the construction start date. If no active nests are observed during the survey, then the habitat will bladed, mowed, or cleared within 1 week of the survey and ground disturbing activities may occur during the avoidance window. If an active nest is identified during the survey, then a 200-meter buffer will be placed around the nest and no activities will occur within this buffer until a biologist confirms that the nestlings have fledged and the nest has become inactive. Outside of that 200-meter buffer around the nest, the habitat may be bladed, mowed, or cleared to allow for ground disturbing activities. Apex would develop a weed management plan for the project and would implement measures to manage noxious weeds.
Cultural and historic resources	Apex would consult with the SHPO and other pertinent parties to develop an undertaking-specific inadvertent discovery plan. The plan would outline the process for addressing discoveries that may be exposed during ground-disturbing activities. Due to the interest in the project and area, continued involvement and input from the consulting parties would be needed in development and implementation of a discovery plan.

Resource	Mitigation Measure
Aesthetics	To reduce the degree of visual impact of the project, Apex will implement mitigation measures where visual disturbance associated with construction, O&M, and decommissioning is inevitable. This includes limiting soil and vegetation disturbance, applying appropriate color treatments and minimizing the use of lighting at night. Workers can reduce the primary visual impacts from construction (i.e., dust caused by grading, on-site traffic, and hundreds of workers present at the site during construction) by using dust-abatement measures, such as vehicle speed restriction and watering of active areas and roadways. Soils within and around the analysis area are sensitive to erosion; therefore, Apex should limit the amount of water used to manage the dust to avoid altering the form of the landscape. Apex should design the solar generation facility, substation, and O&M structures to blend in with the existing surrounding landscape (i.e., the Pioneer Mountains). This would require certain colors, lighting, and surface treatments. To reduce visual impacts from the proposed project, Apex should • minimize the extent of soil and vegetation disturbance to the extent practicable; • minimize lighting usage during construction and O&M; • restore the site to its original contours while minimizing disturbance to soils; and • re-seed and plant vegetation in disturbed areas in accordance with noxious weed management plan provided as part of project permitting process. After approximately 30 years, when the operation of the proposed project would cease, Apex should restore the analysis area to a landscape that once again blends into the surrounding area's forms and textures. Because of the arid climate of the project location, planting and reseeding may need to occur over several seasons to ensure the success of native species. The decommissioning of the site would create new visual impacts, including the removal of all aboveground structures, fencing, and debris.
Air quality	Measures to minimize or eliminate impacts to air resources are described in the proposed action's project design features. Mainly, Apex has committed to control fugitive dust at the project site by applying water or soil binders at regular intervals to the project site, limiting vehicular speed, and avoiding soil-disturbing activities during periods of high winds. No additional mitigation measures are recommended.
Social impact/environmental justice	None
Noise	None
Transportation	Apex and Beaverhead County would enter into an agreement for the maintenance and/or restoration of Ten Mile Road from the increased heavy truck usage during the construction period.
Human health and safety	None
Corridor analysis	None
Soils	Apex would use BMP erosion control techniques to mitigate soil impacts. In those areas requiring topsoil salvage before construction, workers would segregate the topsoil from subsoils and would stockpile those soils separately. Apex would use some of the topsoil after construction to resurface areas disturbed by construction and would disk compacted soils before final stabilization. It is not anticipated that any subsoil removed would be spread in upland cropland or pastures. Apex will submit a SWPPP to the MDEQ as part of project permitting activities (Appendix A) and would implement, monitor, and maintain the BMPs described in the SWPPP to minimize erosion and sedimentation. The company would comply with the construction site stormwater discharge permit and adhere to the noxious weed plan.

6 COORDINATION, CONSULTATION AND CORRESPONDENCE

6.1 Public Scoping Process

The goal of public involvement is to gain public understanding and participation in the analysis and decision-making process for the proposed action. SWCA compiled a mailing list of potentially interested parties, including government agencies, stakeholders, and Tribes, in April 2021. Using RUS scoping letter templates, SWCA drafted a public scoping letter to inform agency contacts and other stakeholders of the proposed action and provide instructions on submitting feedback and comments on the project. SWCA sent this letter to the 32 organizations on the mailing list on April 9, 2021, in most cases via email; however, some organizations, including the pertinent Tribes and the SHPO, received copies in addition to the email. Based on comments received after the mailing, SWCA sent the scoping letter to the EPA, which was not included in the initial mailing list, on May 4, 2021. The scoping letter asked the organizations to respond with their comments, concerns, and questions within 30 days of receipt of the letter. Additionally, SWCA requested wildlife and plant data from the MTNHP on April 14, 2021, via agency's online application. The MTNHP provided information about the project area via email on April 19, 2021. Table 6-1 lists the 32 organizations SWCA contacted during the public scoping process and identifies the ones that responded with comments (a total of nine organizations). SWCA has evaluated comments submitted by November 4, 2021, and has incorporated them into this document as appropriate. The process did not involve the preparation of a separate scoping report.

Appendix D contains the public scoping letters SWCA sent out to the groups (except for the SHPO and the Tribes) and the responses received. Appendix E contains the NHPA Section 106 consultation initiation letters and all correspondence on Section 106 and the record of Tribal consultation for the project.

Table 6.1-1. Agencies, Tribes, and Other Public Stakeholders Contacted during the Public Scoping Process

Organization Name	Type	Responded to Scoping Letter
Beaverhead County Airport	Local	No
Beaverhead County Commissioners	Local	No
Beaverhead County Extension Agent	Local	No
Beaverhead County Land Services Department	Local	No
Beaverhead County Road Department	Local	No
Beaverhead County Solid Waste Management Department	Local	No
Beaverhead County Weed District	Local	No
City of Dillon	Local	No
Montana Electric Cooperatives' Association	Stakeholder	No
Vigilante Electric Cooperative	Stakeholder	No
NorthWestern Energy	Stakeholder	No
Montana Department of Environmental Quality	State	Yes
Montana FWP	State	No
Montana Natural Heritage Program	State	Yes
Montana DNRC	State	Yes

Organization Name	Type	Responded to Scoping Letter
Montana Department of Transportation	State	Yes
Montana State Historic Preservation Office	State	Yes
BLM	Federal	No
Bureau of Reclamation	Federal	No
Federal Aviation Administration	Federal	No
Natural Resources Conservation Service	Federal	No
U.S. Army Corps of Engineers	Federal	Yes
U.S. Environmental Protection Agency	Federal	Yes
U.S. Fish and Wildlife Service	Federal	Yes
U.S. Forest Service	Federal	No
Apache Tribe of Oklahoma	Tribe	No
Confederated Salish and Kootenai Tribes of the Flathead Reservation	Tribe	Yes
Fort Belknap Indian Community of the Fort Belknap Reservation of Montana	Tribe	No
Nez Perce Tribe	Tribe	No
Shoshone Tribe of the Wind River Reservation, Wyoming	Tribe	No
Shoshone-Bannock Tribes	Tribe	No
Shoshone-Bannock Tribes of the Fort Hall Reservation	Tribe	No

6.2 Tribal Consultation

RUS used the TDAT to help cultural resources specialists and others identify Tribal contact information for initiating NHPA Section 106 consultation. The results listed six Tribes for Beaverhead County, Montana. Table 6.1-1 includes those Tribes. SWCA sent a consultation initiation letters to those Tribes via email and regular mail on April 9, 2021. The letter provided information about the project, recommended an APE for the project, and asked whether the recipient wished to participate in Section 106 review of the project.

On April 16, 2021, the THPO of the Confederated Salish and Kootenai Tribes of the Flathead Reservation sent a letter stating that the Tribe is interested in participating in the NHPA Section 106 review process for the project. SWCA provided the Class III cultural resources inventory report to the Confederated Salish and Kootenai THPO on June 22, 2021. On behalf of RUS and consistent with applicable regulations and guidance of the NHPA, SWCA followed up through emails to solicit input and provide project updates to the Confederated Salish and Kootenai Tribes throughout the NEPA process.

A comment letter regarding the Class III cultural resources inventory report was received from the THPO of the Confederated Salish and Kootenai Tribes on August 31st, 2021. The THPO asked for confirmation on resources located within the APE. Through consultation, additional information was provided to the Tribes. RUS submitted a letter finding of no historic properties affected on October 5, 2021, in accordance with 36 CFR § 800.4(d)(1) to the six Tribes consulted for the project. The letter included the Class III cultural resources inventory report and requested concurrence or objection from the Tribes within 30-days of the letter. The comment period ended on November 4, 2021. No other responses from the Tribes have been received. Due to the interest in the project and area, consulting parties will be solicited in development and implementation of an inadvertent discovery plan. An additional Class III

report addendum was submitted to the SHPO on November 18, 2021. SHPO issued concurrence with the finding of no historic properties affected on December 7, 2021.

6.3 Additional Public Involvement

This EA was made available to the public for a 14-day public review and comment period from November 24, 2021 through December 7, 2021. The availability of this document for review and comment was published in the Dillon Tribune on November 24, 2021 and December 1, 2021. A copy of the EA was available at the Dillon Public Library at 121 S. Idaho Street, Dillon Montana 59725, and was posted on the RUS project website, https://www.rd.usda.gov/resources/environmental-studies/assessments..

RUS received no comments on the EA during the public review and comment period. Once RUS has reviewed and evaluated public comments on the project, the agency will issue its environmental decision related to the project. Should RUS choose to issue a FONSI for the EA, a notice will be published in the Dillon Tribune informing the public of RUS's finding and the availability of the final EA and final FONSI. The notice shall be prepared in accordance with RUS guidance.

RUS is using its NEPA procedures to meet its responsibilities to solicit and consider the views of the public during review under Section 106 of the NHPA and its implementing regulation. Accordingly, public comments submitted during NEPA scoping have informed RUS decision-making in Section 106 review. RUS has determined that the project would have no effects on historic properties (Appendix E). Based on their review of the Class III cultural resources inventory report, the Montana SHPO concurred with the eligibility recommendations for cultural resources discovered during the Class III investigation on June 16, 2021. The Montana SHPO requested further information on the indirect APE and proposed project visual impacts. This requested information was provided, and Montana SHPO issued concurrence on the finding of no historic properties affected on July 21, 2021. SHPO and other pertinent parties shall be consulted to develop an undertaking specific inadvertent discovery plan for the project.

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8 LIST OF PREPARERS

Table 8-1 identifies the RUS and consultant staff involved in the preparation of this EA.

Table 8-1. RUS Staff and Consultants Involved in the Preparation of the EA

Name	Agency/Company	Role/Resource Specialty
Omololu Dawoda	RUS	Environmental Protection Specialist/Project Manager
Suzanne Kopich	RUS	Environmental Protection Specialist/Project Manager
Alexandria Anderson	RUS	Anthropologist
Kimberly Ip	SWCA Environmental Consultants	Project manager, NEPA planner
Jennifer Wynn	SWCA Environmental Consultants	Assistant project manager, NEPA planner
Jake Powell	SWCA Environmental Consultants	Wetlands, biological resources
Naomi Ollie	SWCA Environmental Consultants	Cultural resources
Arianna Disser	SWCA Environmental Consultants	Floodplains, water resources
Dave Epstein	SWCA Environmental Consultants	Floodplains, water resources
Chris Bockey	SWCA Environmental Consultants	Aesthetics/visual
Paul Makarewicz	SWCA Environmental Consultants	Aesthetics/visual
Jo Guest	SWCA Environmental Consultants	Air quality
Jeremy Eyre	SWCA Environmental Consultants	Socioeconomics, environmental justice, health and human safety
Chris Johnston	SWCA Environmental Consultants	Soils
Vanessa Hastings	SWCA Environmental Consultants	Technical editor
Bryan Swindell	SWCA Environmental Consultants	Geographic information system lead
Brian Brokling	SWCA Environmental Consultants	Geographic information system specialist

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