

ENVIRONMENTAL ASSESSMENT

Telecommunications Fiber Optic Lines: Tuscarora to Lone Mountain Station & Dinner Station to Adobe Ranchos

Rural Telephone Company
Rights of way along Nevada SRR 18, SR 225, & SR 226
Elko County, Nevada



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ACRONYMS

ACEC	Area of Critical Environmental Concern
AMSL	Above Mean Sea Level
BAPC	Bureau of Air Pollution Control
BGS	Below Ground Surface
BLM	Bureau of Land Management
BMP	Best Management Practices
CESA	Cumulative Effects Study Area
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COE	Corps of Engineers
EA	Environmental Assessment
EPA	Environmental Protection Agency
FLPMA	Federal Land Policy and Management Act
NAC	Nevada Administrative Code
NDEP	Nevada Department of Environmental Protection
NDOT	Nevada Department of Transportation
NEPA	National Environmental Policy Act
NNHP	Nevada Natural Heritage Program
NRHP	National Register of Historic Places
PLS	Pure Live Seed
POD	Plan of Development
ROW	Right of way
RTC	Rural Telephone Company, Inc.
SAD	Surface Area Disturbance
SHPO	State Historic Preservation Officer
SR	State Route
SSR	Secondary State Route
SWPPP	Storm Water Pollution Prevention Plan

TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
USC	United States Code
USFWS	United States Fish and Wildlife Service
VRM	Visual Resource Management

**ENVIRONMENTAL ASSESSMENT
TELECOMMUNICATIONS FIBER OPTIC LINES:
LONE MOUNTAIN STATION TO TUSCARORA &
DINNER STATION TO ADOBE RANCHOS**

1.0 INTRODUCTION/PURPOSE AND NEED

1.1 INTRODUCTION

Rural Telephone Company (RTC) has submitted a right of way (ROW) application to the Bureau of Land Management (BLM), Elko District Office, for the construction, operation, and maintenance of 37 miles of underground fiber optic telecommunications lines, in two segments, generally between Lone Mountain Station and Tuscarora, and Dinner Station to Adobe Ranchos, both in Elko County, Nevada. RTC proposes to install telecommunications facilities within the Nevada State Route (SR, or secondary State Route [SSR]) 18, 225, and 226 ROWs (SR ROWs) (**Figure 1**). The proposed project is a U.S. Department of Agriculture, Rural Utilities Service, American Recovery and Reinvestment Act (ARRA), [Stimulus] Broadband Initiatives Program Project.

The Lone Mountain to Tuscarora fiber optic line segment would parallel SSR 18 (also known as County Highway 723 and North Tuscarora Road) and SR 226 within the SR ROWs. Along SSR 18 the fiber optic line would be on the north side of the road. Traveling eastward it would then be on the east, north, and then south sides of SR 226. The Dinner Station to Adobe Ranchos fiber optic line segment would parallel SR 225 and would be almost entirely on the east side of the highway after its interconnection with existing line on the north end. The SSR 18, SR 225, and SR 226 ROWs are managed by the Nevada Department of Transportation (NDOT). Approximately 19.6 miles of the proposed fiber optic line ROW (RTC-proposed ROW) would traverse private lands, 0.9 miles would cross state lands, and 16.5 miles would cross public land administered by the BLM. A 20-foot width would be needed for the proposed fiber optic line ROW. The total amount of area within the 20-foot wide corridor for both segments totals approximately 89.5 acres. Approximately 39.9 acres would be public land, 2.1 acres would be state lands, and 47.5 acres would be private lands, all within the SR ROWs.

As described in the revised *Plan of Development for Rural Telephone Company, Inc. – Dinner Station to Tuscarora*, dated September 2010, the fiber optic line project (Proposed Action) includes:

- Constructing approximately 37 miles of fiber optic line, in two segments, and associated vaults and line markers, between Lone Mountain Station and Tuscarora, and Dinner Station and Adobe Ranchos.
- Warning signs/line markers, to indicate the presence of a buried line, would also be placed along the route at culverts, cross roads, and some wash areas.
- Monitoring and treatment of the telecommunications line for the life of the ROW to prevent undue environmental degradation, such as invasion by noxious weeds.

Figure 1 General Project Location Map

This Environmental Assessment (EA) has been prepared to comply with the National Environmental Policy Act of 1969 (NEPA), in accordance with applicable regulations and laws including the President's Council on Environmental Quality regulations (40 CFR parts 1500-1509) and agency policy. The BLM is the lead agency for this EA. As NDOT is responsible for managing the SR 225 and SR 226 ROWs, the BLM coordinated with them during preparation of the EA.

1.2 AUTHORIZING ACTIONS

Authority for this action is found in Title V of the Federal Land Policy Act of 1976 (FLPMA). FLPMA Sec. 501 *et seq* authorizes the BLM to grant, issue, or renew rights of way over public lands. As defined in 43 CFR 2800, a ROW grant is required to use specific areas of public land for certain projects including fiber optic lines and other communication facilities. The BLM's objective is to grant ROWs that comply with regulations to any qualified individual, business, or government entity. It is the BLM's purpose to direct use of ROWs on public lands in a manner that protects natural resources, prevents unnecessary or undue degradation, promotes the use of ROWs in common, and coordinates BLM actions with state and local governments and other interested individuals and organizations.

The BLM official authorized to grant rights of way in the identified area is the Field Manager of the Tuscarora Field Office.

Implementing the Proposed Action would require authorizing actions from other federal, state, and local agencies with jurisdiction over certain aspects of the proposed project. BLM's ROW grant would be subject to RTC applying for and acquiring the following permits, as applicable, for the proposed telecommunications line.

- ROW for Telecommunications Installations – Nevada Department of Transportation (NDOT)
- Occupancy or Encroachment Permit, Category IC – NDOT
- Surface Area Disturbance (SAD) Permit – NDEP
- Stormwater General Permit (SWPPP) for Construction – NDEP
- ROW Use Permit, Nevada State Lands
- ROW Encroachment Permit, Elko County Planning and Zoning

A representative of the U.S. Army Corps of Engineers (USACE), Reno Regulatory Office, attended the initial project scoping meeting. No impacts to waterways (including Waters of the U.S.) are anticipated; therefore no permits and associated review by the USACE are required. USACE designated the BLM as the lead Federal agency for purposes of compliance with Section 7 of the Endangered Species Act and Section 106 of the National Historic Preservation Act for Department of the Army authorization required for this project (USACE 2010).

1.3 PURPOSE OF AND NEED FOR ACTION

The telecommunication infrastructure in the project area is operating at or near capacity and does not support high speed internet and other enhanced communication services that are now standard in urban areas throughout Nevada and the rest of the United States. The need for the Proposed Action is to install a fiber optic cable capable of providing greater bandwidth necessary to support high speed internet and enhanced capacities for voice and data transmission.

The purpose of the proposed fiber optic line is to provide residents of the rural areas of northwest Elko County with the same or similar telecommunication services that are available in nearby urban areas.

The federal action under consideration by the BLM is whether to grant the requested 30-year ROW to RTC for the construction, operation, and maintenance of underground fiber optic telecommunications lines and related components, or to deny the request and not allow the installation of fiber optic lines intended to meet the purpose stated above.

1.4 RELATIONSHIP TO BLM AND NON-BLM POLICIES, PLANS AND PROGRAMS

1.4.1 Land Use Plan Conformance

The Proposed Action has been developed to be consistent with the Record of Decision for the Elko Resource Management Plan (BLM 1987). BLM authorization of ROWs within designated transportation corridors identified in the Elko Resource Area Management Plan (ERMP; BLM 1987) and would minimize impacts by utilizing an existing developed corridor.

The Proposed Action specifically addresses and conforms to the ERMP objectives for the management of ROW corridors and wildlife, as described below.

Corridors – Collocation of utilities in corridors to minimize adverse environmental impacts and the proliferation of separate rights of way. (p. 11)

- 75% of the proposed line is within Corridors E-G and G-K, which are preferred utility routes. (Map 3)
- The remaining 25% parallels an existing highway and is being evaluated on an individual basis through this EA. (p. 11)

Wildlife – Manage high priority riparian/stream habitat to provide good habitat condition for wildlife and fish. (p. 30)

- Mitigation measures are provided to protect:
 - two areas identified as crucial winter habitat for deer. (Map 10)
 - known Sage Grouse strutting grounds that are within three miles. (Map 10)
 - high priority stream habitat located in Water Pipe Canyon. (Map 10)

1.4.2 State and Local Land Use Plans and Policies

State of Nevada

The Nevada Statewide Plan for Public Lands (Statewide Plan) and associated goals were adopted in 1986 (Nevada Division of State Lands 1985). The Proposed Action would comply with the Statewide Plan and would specifically serve the following goals:

Manage and utilize public lands on the basis of multiple use and sustained yield and in a manner that will conserve, protect, and preserve resources. Protect and preserve wildlife habitat and certain lands in their natural condition. Provide for the long-term benefit of residents and future generations (Statewide Plan, p. 10).

Growth and increasing demands for energy within Nevada and the nation call for the provision of corridors for transportation, utilities, and communications to be planned in harmony with other resources on public lands (Statewide Plan, p. 11).

Elko County

The Elko County Public Lands Policy Plan (County Plan) was prepared in 2008 in part to provide locally developed land management policies that enable the federal land management agencies to better understand and respond to the concerns and needs of Elko County in a collaborative process (ECPLUAC 2008). The Proposed Action would comply with the following policies outlined in the County Plan:

Policy 2-1 – Elko County supports the concept of Multiple Use Management as an overriding philosophy for management of the public lands based on multiple use and sustainable yield concepts, and in a way that conserves natural resources (County Plan, p. 21).

Policy 2-2 – Whenever possible, protect and preserve the quality of the environment, and the economic, cultural, ecological, scenic, historical, and archaeological values; protect and preserve wildlife habitat values compatible with economic development needed to provide for long term benefits for the people of Elko County and future generations (p. 21).

Policy 8-2 – Prevent the introduction, reproduction, and spread of designated noxious weeds and invasive exotic plants (p. 31).

Policy 15-5 – Optimize accessibility within the County and reduce the cost of movement between all communities across public lands. Public access to public lands is vital to Elko County's economic stability (p. 41).

Policy 16-11 – Elko County fully embraces the multiple use concept of public land management and encourages federal land management agencies to maximize public usage of lands while still addressing environmental concerns (p. 44).

The Proposed Action must also comply with other pertinent federal, state, and local laws, regulations, and plans.

2.0 ALTERNATIVES

RTC proposes to construct 37 miles of telecommunications fiber optic line, in two separate segments from Lone Mountain Station to Tuscarora, and Dinner Station to Adobe Ranchos, Nevada. Two alternatives were considered for analysis in this EA: the Proposed Action (**Section 2.1**) and the No Action Alternative (**Section 2.2**). The No Action Alternative is required to be considered by NEPA and the CEQ implementing regulations under 40 CFR 1500-1508. This chapter describes both of these alternatives in detail.

The Proposed Action is designed to collocate the proposed fiber optic line adjacent to or within existing ROWs in order to avoid creating an additional linear ROW in this generally undeveloped area. The proposed route would minimize surface disturbance while providing direct access for installation and future maintenance of the fiber optic line (**Section 2.3**).

2.1 PROPOSED ACTION ALTERNATIVE

2.1.1 Overview

The RTC project would include the construction, operation, and maintenance of a telecommunications system consisting of a fiber optic cable from Lone Mountain Station to Tuscarora, and from Dinner Station to Adobe Ranchos within existing highway ROWs. The proposed routes were selected to follow and be constructed within existing, previously disturbed ROWs along SSR 18, SR 225, and SR 226.

The project area includes a 20 foot wide corridor within the three SR ROWs. The RTC-proposed ROW lands would include approximately 16.5 miles of the proposed fiber optic line on public lands, 0.9 miles on state lands, and the remaining 19.6 miles on private land (**Figures 2A and 2B**).

Preparation of the proposed ROW for construction of the fiber optic lines would begin no sooner than April 2012; construction would likely take 2-4 months.

Figure 2A Land Status Map – Lone Mountain Station to Tuscarora Segment

Figure 2B Land Status Map – Dinner Station to Adobe Ranchos Segment

Table 1 lists the Cadastral legal description (township, range, and section) of the proposed fiber optic line alignment. A more detailed legal description of the RTC-proposed ROW, broken down into two identifiable segments, is provided in **Appendix A**. Mid-State Consultants, on behalf of RTC, has acquired ROW easements from private landowners and has provided this information to BLM.

Table 1 General Legal Description of the Proposed Fiber Optic Line

Township Range	Sections*
Lone Mountain Station to Tuscarora Segment	
SR 226	
T38N R54E	<u>5, 6, 8, 16, 17, 21, 22, 23, 24</u> , 25
T39N R53E	19, 29, 30, <u>32, 33, 34, 35, 36</u>
T39N R52E	3, 10, 15, 22, 23, 24
SSR 18	
T39N R51E	<u>1, 2</u>
T39N R52E	5, <u>6</u> , 8, <u>9</u> , 10, 15
Dinner Station to Adobe Ranchos Segment	
SR 225	
T35N R54E	3
T36N R54E	<u>2</u> , 11, <u>14</u> , 23, <u>26</u> , 35
T37N R54E	11, <u>14</u> , 23, <u>26</u> , 35

*Bold underscored numbers indicate sections where the fiber optic line would cross BLM lands.

Lone Mountain Station to Tuscarora Segment

The proposed project would begin at Lone Mountain Station in Section 25, Township 38 North (T38N), Range 54 East (R54E) and continue west along SR 226 to the intersection of the graveled North Tuscarora Road (SSR 18) in Section 15, T39N, R52E, where it would fork. The left fork would head west, and then terminate at the intersection with Airport/Tuscarora Road, in Section 2, T39N, R51E. From the intersection of SR 226 and North Tuscarora Road (SSR 18) the right fork of the line would continue north along SR 226, terminating in Section 3, T39N, R52E. The Lone Mountain Station to Tuscarora Segment is 25.3 miles in length (**Figure 2A**). SR 226 is an asphalt paved highway with a single lane in each direction, about 26 feet wide. SSR 18 is a gravel-maintained road of two-lane width, about 25 feet in width.

Dinner Station to Adobe Ranchos Segment

This segment would begin at an existing microwave tower, about 1.3 miles north of Dinner Station, located in Section 11 T37N, R54E (**Figure 2B**). The cell tower is on the west side of the road so the fiber optic line would cross to the east at this location and head south along the east side of the SR 225 ROW, terminating at the intersection with Adobe Ranches Drive. The Dinner Station to Adobe Ranchos Segment is approximately 11.6 miles in length. SR 225 is an asphalt

paved highway with a single lane in each direction, about 26 feet wide. There is an existing buried fiber optic line that this segment would replace.

Table 2 provides the proposed summary of surface disturbance by land ownership.

Table 2 Summary of Surface Disturbance

Land Ownership	Linear Miles of RTC-proposed ROW	Acres of Permanent RTC-proposed ROW (20 foot width)
Lone Mountain Station to Tuscarora Segment		
BLM	12.39	30.04
State	0.87	2.11
Private	12.04	29.19
Dinner Station to Adobe Ranchos Segment		
BLM	4.08	9.89
State	0.00	0.00
Private	7.54	18.28
TOTAL	36.92	89.50

A 20-foot ROW would be required for installation of both segments. Within the 20-foot ROW, direct surface disturbance width would average approximately 15 feet and would occur on areas traversed by the machinery used to plow the cable into the ground. Additional disturbance would result from other traffic in the RTC-proposed ROW, and from the excavation and installation of vaults and warning signs. Directional boring would be used to cross under driveways, roads, pipelines, canals, streams, wetlands, and potential sensitive habitats; about 40 borings are anticipated. This method would minimize the disruption of sensitive surface areas.

Existing roads would be used and no new access roads would be needed. Material staging would be needed to construct the fiber optic line. The staging areas would be situated on existing developed areas on privately owned land, completely devoid of any vegetation. The staging areas could either be situated at RTC’s Tuscarora Office, Tuscarora, Nevada, and/or at the Lone Mountain Station at the intersection of SR 226 and SR 225. No new disturbance would occur at the material staging areas. All materials would be delivered and stored at this facility.

Plowing is the most expedient construction method and would be used to the greatest extent possible along the entire route (**Photo 1**). A typical construction sequence would be as follows:

- Staking running line.
- Clearing and grading if required.
- Plowing, trenching, or boring.
- Cable splicing.



Photo 1 - Typical Fiber Optic Cable Installation Using a John Deere 310SE Backhoe and Two Caterpillar D8 Plows

2.1.2 Site Preparation

Communication

Pre-construction meetings would be held prior to construction activities being initiated with invitations sent to all involved parties. Construction progress updates would be provided to the BLM Authorized Officer on a regular basis, with alerts provided when the construction schedule changes.

RTC would ensure that all of its employees and contractors, if any, involved in all aspects of constructing the project have a thorough knowledge of and comply with the approved Plan of Development (POD) and all stipulations of the RTC-proposed ROW grant.

Surveying and Staking

The centerline of the construction ROW would be flagged with lath prior to construction. In areas where a road ROW fence is not present then the outer extent of the designated RTC-

proposed ROW would also be flagged to prevent accidental trespass. All personnel and equipment would be required to stay on the designated RTC-proposed ROW.

Clearing and Grading

Vegetation would only be removed where necessary to complete the proposed work. Site clearing would primarily consist of removing dense brush or large rocks. In grasslands, no clearing would be required, but in dense shrub lands, vegetation might need to be cleared using a bull dozer or motor grader.

In most cases, grading would not be required on the RTC-proposed ROW. Where grading would be required, topsoil would be stockpiled separately from other spoil material and used during RTC-proposed ROW restoration. Grading would be kept to a minimum.

2.1.3 Construction and Installation

The fiber optic cable conduit would measure less than 2 inches, outside diameter, and would be buried to a minimum 36 inches in depth using a standard cable plow. Underground vaults (3 feet by 3 feet, see Vaults section below) would be installed along the alignment at distances of 500 to 19,000 feet apart (8,604 feet on average). Fiber optic cable markers would also be placed along the alignment, generally within sight distance of each other, in order to identify the location of the line, especially near culverts, cross roads, and some drainages. No handholes, manholes, amplifiers, or regeneration stations would be installed. See **Appendix B** for detailed figures showing a typical plow detail, warning sign, and vault detail.

All perennial (i.e. live waters), ephemeral, and intermittent streams, meeting the definitions of a defined channel, would be bored under (see Stream and Wetland Crossings, below).

One construction unit would be operating along any one segment of the route during cable installation. Special construction crews would be responsible for boring (if needed), cleanup, and splicing. The construction unit would be expected to average 3-5 miles per day using standard plowing procedures. Construction would be slower in rocky areas and where boring activities would be conducted. RTC workers would have a thorough knowledge of the approved Plan of Development (POD) and would comply with the stipulations of the RTC-proposed ROW grant.

Vaults

An estimated 23 new sub-surface fiberglass, concrete, or metal vaults (**Appendix B**, Ref. Figure 12.4) would be installed along the fiber optic line routes (**Table 3**). Underground vaults would be located at reel ends where each new spool of cable would be spliced to the previously laid spool. Additional vaults would be placed at the road intersections along the route where there would be the need for subscriber connections. Underground vaults would be flush with the ground surface. The vaults would be 3 feet by 3 feet in size (0.0002 acre). Vaults would house splice cases and slack cable for future maintenance. Vaults would be installed in pits excavated using backhoes. The total disturbance for vault construction would be about 0.005 acres. As the fiber optic vaults along the route would be buried in line with the fiber conduit, vault construction disturbance would not cause any additional disturbance outside of the RTC-proposed ROW.

Table 3 Vaults and Associated Acres

Segment	# of Vaults	Acres
Lone Mountain Station to Tuscarora	15	0.0030
Dinner Station to Adobe Ranchos	8	0.0016
Total	23	0.0046

Plowing Cable

Large spools of cable and conduit would be placed along the route using backhoes to unload them from trailers. The plow line would be ripped to a depth of 36 inches using a dozer-mounted ripper. Cable mounted plows would directly plow the conduit from the spools into the ground at a minimum 36-inch depth. An area about 1 foot (12-inches) wide would be uplifted during installation of the cable conduit. Plowed material would typically fall immediately back into the trench so no backfilling would be required (**Appendix B**, Ref. Figure 12.1). A sufficient number of passes would be made with the plowing equipment to compact the plow line, so no berms would be left on the RTC-proposed ROW. Fiber optic cable would be blown through the conduit after all conduit is in place.

Cable Markers

Warning signs (**Appendix B**, Ref. Figure 12.5) would be placed along the fiber optic line at 500 to 1,000 foot intervals (or line-of-sight), as well as at culverts, cross roads, and some wash areas.

Splicing Cables

Cable would be spliced and placed in a vault buried flush with the surface along the route (see Vaults section, above).

Access, Equipment, and Traffic

Construction personnel would access the RTC-proposed ROW via approved existing public or private roads. Private land access authorizations have been acquired from the private landowners. No new or reconstructed access roads would be necessary for this project. Existing roads, fences, structures, or drainage facilities that are damaged during construction would be replaced or repaired to a condition equal to or better than that which existed before the construction. The width and alignment of existing roads would not be altered. Roads would not be used if deep rutting (i.e., in excess of 3 inches) could occur.

During construction, traffic would be monitored and a traffic control plan for safety measures would be implemented in the project. Load limits would be observed at all times to prevent damage to existing road surfaces. Project activities would be limited during wet weather conditions to avoid construction equipment/vehicles from tracking excessive amounts of sediment onto paved roads.

Construction Equipment

Installation of the fiber optic line would involve various types of equipment, as noted in **Table 4**. When in use, the dump trucks would remain on the pavement and would not enter the RTC-proposed ROW; dump trucks would be stored at the staging area or would return to the yard of origin. The tractor-trailer would remain on existing dirt side roads where equipment would be unloaded. All other vehicles would either be staged at the material staging area(s) or within the approved RTC-proposed ROW. Construction vehicles would be left within the RTC-proposed ROW at the close of each workday and/or moved to the approved staging area(s).

Table 4 List of Possible Equipment to be Used

Task	Equipment Needed
Site Preparation	D8 Caterpillar Bulldozer with Rip Implement
	John Deer 310SE Backhoe
Site Excavation (in areas where ripping or trenching is required)	D8 Caterpillar Bulldozer
	John Deer 310SE Backhoe/Trackhoe
	Ditch Witch 3020
	10 Yard capacity Dump Truck
	Jackhammer/Tesmek 1100 Rocksaw (or similar) attached to Volvo 210C Excavator
Plowing	D8 Bulldozer with Plow Implement
	D8 Bulldozer with Winch for pull assistance
	John Deer 310SE Backhoe
	Tractor-trailer
Backfilling, Grading, and Restoration	D8 Bulldozer
	John Deer 310SE Backhoe
All Operations	Pickup Trucks
	Refueling Trucks (Pickup truck)

Construction Work Force

RTC personnel would install the fiber optic line. One construction unit would be operating along the segment of the route during cable installation. In addition to heavy equipment operators, laborers, and supervisors, crews utilizing four-wheel-drive pickups would provide manual labor for fencing, spool attachments, splicing, reclamation, etc. Each construction unit would require a workforce of approximately 15 workers, so an estimated total of 15 workers would be employed during this construction. If needed, RTC would subcontract out traffic control (i.e. flaggers, pilot car) in busy areas.

2.1.4 Site Access and Road Improvements

Principal access to the RTC-proposed ROW would be from SSR 18, SR 226, and SR 225 as the entire project would be within these highway ROWs. No road improvements would be needed. There would be no new road construction. The entire project would utilize access from these highways and would occur within the highway ROWs.

2.1.5 Maintenance Plan

A 20-foot wide ROW would be required for operation and maintenance of the fiber optic line. A regular maintenance program would be initiated once the fiber optic line becomes operational. Regular maintenance would consist of an annual visual inspection performed driving along the highways (SSR 18, SR 225, and SR 226) or by foot within the RTC-proposed ROW. Additional maintenance would be performed in response to any problems reported with the fiber optic line. The BLM would be notified prior to maintenance activities, other than visual inspections, performed within the RTC-proposed ROW.

2.1.6 Environmental Protection Measures

RTC has incorporated several environmental protection measures into the Proposed Action to reduce the environmental effects, ensure protection of sensitive resources, and comply with regulatory protective and monitoring requirements of applicable permits and plan approvals. The following sections describe the environmental protection measures incorporated into the Proposed Action.

2.1.6.1 Air Quality

A water truck would be on-site and used for dust control at all active construction areas. Equipment would be properly maintained to minimize emissions.

2.1.6.2 Cultural Resources

The following cultural resource protection measures would be implemented:

- RTC would avoid adverse effects to “historic properties” (i.e., any cultural resource site that qualifies for listing on the National Register of Historic Places (NRHP)) cultural property through project design or redesign. Protective measures outlined below would apply to both private and public lands along the RTC-proposed ROW and would remain in force for the life of the RTC-proposed ROW.
- If avoidance is not feasible or adverse effects cannot be effectively mitigated through avoidance, the BLM, in consultation with the State Historic Preservation Office (SHPO), shall ensure that RTC develops and implements an appropriate treatment plan designed to lessen or mitigate project-related effects to historic properties. Treatment would be conducted in accordance with the Secretary of the Interior's Standards for Archeological Documentation, (48 FR 44716). Completion of measures in the treatment plan, including curation of collected artifacts and submission of a final treatment report(s) acceptable to the BLM, would be a condition of the RTC-proposed ROW grant.
- If RTC abandons or withdraws its request for the Grant or Notice to Proceed prior to any construction, then RTC would incur no further expense for identification, evaluation, or treatment for any historic properties or paleontological resources except for completing work (fieldwork and post-fieldwork activities including production of final inventory, testing and data recovery reports covering the description and analysis of all data collected up to that point) that is ongoing as of the date of withdrawal or disapproval.

- An area of 100 feet (30 meters) before and after the direct bore at each historic property is to be established to help provide protection to the sites during construction. No new disturbance beyond the limits of the borrow ditch would be allowed in cases where avoidance would be accomplished by rerouting the cable in the borrow ditch along the highway or in the edge of the highway fill. Construction activities would not encroach into buffer zones except as allowed by provisions of an agency approved cultural resource treatment plan. Cable markers (warning signs) would not be installed within historic properties or within the viewshed of historic properties eligible under Criteria A, B, or C of the NRHP.
- RTC, through its archeological contractor, is to furnish the BLM with a report detailing results of monitoring and as-built locations of borings and reroutes in relation to the historic properties within 60 days of completion of monitoring.
- The installation and maintenance of the fiber optic cable would be conducted in an appropriate manner to prevent problems associated with runoff that could affect adjacent cultural sites. This includes the use of BMPs to minimize off-site erosion and sedimentation (**Sections 2.1.6.5 and 2.1.6.10**).
- A cultural resource monitor, funded by RTC, would be present unless directed otherwise by BLM during construction within 300 feet (90 meters) of all NRHP eligible sites, at all vault locations, and in areas such as floodplains or other locations having potential for deeply buried cultural deposits.
- Prior to construction, RTC would train workers and individuals involved in the construction and maintenance of the fiber optic cable regarding the potential to encounter historic or prehistoric sites artifacts and objects, the proper procedures in the event that cultural items are encountered, prohibitions on artifact and fossil collection, and prohibitions on disclosing the location of culturally sensitive areas.
- RTC would not disturb, alter, injure, or destroy any historical or archaeological site, structure, building, grave, object or artifact within the project area or surrounding lands. RTC would be responsible for ensuring that its employees, contractors or any others associated with the project do not collect artifacts, or damage or vandalize archaeological or historical sites or the artifacts within them. Should damage to cultural resources occur during the period of construction, operation, maintenance, or rehabilitation due to the unauthorized, inadvertent, or negligent actions of the proponent or any other project personnel, the proponent would be responsible for costs of rehabilitation or mitigation. Individuals involved in illegal activities may be subject to penalties under the Archaeological Resources Protection Act (16 U.S.C 470ii), the Federal Land Management Policy Act (43 U.S.C 1701), the Native American Graves and Repatriation Act (16 U.S.C. 1170) and other applicable statutes.
- If human remains/burials, cultural objects, sites, Native American funerary items, sacred objects, or any previously unidentified cultural (archaeological or historical) resources are discovered during the conduct of activities under the approved plan, the RTC would immediately cease all activities within 300 feet of the discovery, insure that the discovery is appropriately protected and immediately notify the BLM by telephone, followed by

written confirmation. Work would not resume within the avoidance area until the BLM Authorized Officer issues a written Notice to Proceed.

2.1.6.3 Threatened, Endangered, Candidate, and Sensitive Species (TEC&S)

If any TEC&S animals and plants or their habitats occur within or adjacent to the RTC-proposed ROW, the following mitigation measures would be implemented:

- Pre-construction surveys would be conducted for Sensitive bird species in conjunction with migratory bird surveys in suitable habitat and during nesting seasons (determined to be approximately April 1 to August 15), as appropriate. If any Sensitive or migratory bird species were discovered along the route, BLM would be notified and appropriate steps would be taken to minimize impacts.
- Construction activities would not occur or would be minimized in areas of potentially occupied habitat for sensitive species. Some of the construction work may occur in habitat potentially occupied by Columbia spotted frog (*Rana luteiventris*; candidate), greater sage-grouse (*Centrocercus urophasianus*; candidate), or pygmy rabbit (*Brachylagus idahoensis*; BLM sensitive).
- To avoid disturbance of greater sage-grouse breeding activities, construction would not be allowed to commence until after two hours of legal sunrise and would need to be curtailed one hour before legal sundown within three miles of the eight known active leks along the proposed route (all along Lone Mountain Station to Tuscarora) between March 1 and May 15.

2.1.6.4 Stream and Wetland Crossings

The fiber optic line would cross several named creeks (**Section 3.3.2, Table 10**), as well as meadows and riparian/wetland areas that are associated with several unnamed drainages and springs. In order to minimize impact to these drainages, boring would be utilized at all of these areas.

All waterways would be bored at a depth not less than 6 feet below ground surface (bgs) to prevent surface water loss from the stream channel. Boring would commence and conclude at least 10 feet from the edge of the surface water (or adjacent wetland, if present) to prevent disturbance to riparian vegetation and habitat.

2.1.6.5 Noxious Weeds

To minimize the introduction and establishment of noxious weeds in the disturbed areas, the following measures would be incorporated into the Proposed Action:

- RTC would implement a monitoring and weed control program along the fiber optic line corridor that would be in effect until the reclamation of disturbed areas has been determined successful per BLM standards. Weed control, if necessary, would include application of BLM-approved herbicides by a certified contractor. If herbicides are used, Pesticide Application Records (PARS) would be filled out daily and turned into

the BLM within two weeks and all herbicide applications would be in conformance with all BLM policies and regulations. Additionally, the applicator would follow all applicable state laws and regulations.

- RTC would use a certified weed-free seed mix during revegetation of disturbed areas along the corridor. The proposed seed mix for the project area is shown in **Table 5**.
- Equipment would be washed prior to arrival at the construction site and also during construction if noxious weeds were encountered along the route. Washing would occur at a location approved as suitable for such purposes by an authorized officer of the BLM.
- Areas of noxious weeds would be identified during pre-construction activities and avoided if possible. RTC would revisit these sites for no less than 3 years post-disturbance to document that noxious weeds have not re-infested the area and to eradicate any new noxious weeds as they grow.
- The occurrence of noxious weeds at any time would be reported to the BLM at any time during the life of the RTC-proposed ROW grant, if issued.

2.1.6.6 Water

Since all identified waters of the U.S. (including wetlands) would be avoided by boring underneath them, coverage under Nationwide Permit No. 12 – Utility Line Activities is not anticipated. The use of heavy equipment and other construction activities within 100 feet of surface waters would be conducted as directed by RTC’s environmental consultant in consultation with the BLM.

- Refueling and staging would not occur within 2,000 feet of live water and/or drainages.
- Sediment control measures as described in NDOT’s Construction Site BMPs Manual (NDOT 2006) would be utilized, as needed, at all drainages and stream locations. Construction vehicles would not cross channels with cut banks. Channels with cut banks would be bored and construction vehicles would use adjacent roads for crossing purposes.
- Most drainages that would be crossed are ephemeral; therefore, streamside vegetation is primarily comprised of upland species. Ephemeral drainages without defined channel and not requiring bank alteration would be plowed. For those drainages and streams with vertical or near-vertical banks (i.e., defined channels), vegetation impacts would be avoided by boring.
- Any intermittent or ephemeral channels would be crossed during baseflow or dry channel conditions (typically July-October) whenever feasible.
- RTC would comply with the stormwater pollution prevention plan (SWPPP) and the spill prevention, control, and countermeasures plan for the project.

2.1.6.7 Visual Resources

All facilities would be placed below the ground surface with the exception of warning signs. Warning signs would be as shown in **Appendix B**, Figure 12.5 and placed below the road grade

when possible. The intent would be to protect the background panoramic view from intrusion by the orange carsonite signs next to the highway.

2.1.6.8 Vegetation

The following measures would be implemented to minimize impact to vegetation resources.

- All disturbed areas would be restored to the original contour and reclaimed as described in the POD (Mid-State 2010).
- Reclaimed areas would be seeded using a BLM-approved grass seed mixture as listed in **Table 5** below. All disturbed areas would be seeded with relatively low-growing grasses only, as an effort to minimize attraction to wildlife for forage and cover and minimize wildlife mortalities on nearby roads. Areas would continue to be reseeded until accepted by an authorized officer of BLM as successfully re-vegetated.

Table 5 BLM-approved Seed Mixture

Variety/Cultivar and Species	Quantity of Pure Live Seed (PLS)/acre for Broadcast seeding*	# Seed per Acre**
Upland Areas		
Bannock thickspike wheatgrass	7.0 PLS lbs	1,078,000
Canbar Canby bluegrass	1.0 PLS lbs	926,000
Mountain Home, Idaho Sandberg bluegrass	1.5 PLS lbs	1,387,500
Total	9.5 PLS lbs	3,391,500 78 seeds/sq ft
Riparian/Meadow Areas		
Sodar streambank wheatgrass	11.0 PLS lbs	1,716,000 39 seeds/sq ft
Methods for application of seed is pending – suggested rates for: 1) broadcast seeding and harrowing, and 2) drill seeding.		

*Seed would be purchased on a Pure Live Seed Basis. Also, seed must be Certified or “Source Identified” with no detectable State of Nevada-listed noxious weeds. Broadcast over area, and then lightly cover (approximately 1/8 to 3/8 inch) with soil. Rates would be halved for drill seeding.

**Note: The USDA recommendation for drilled seeding rate for large-seeded species is 20 seeds (PLS) per square foot, and for small seeded species (most seed mixes) the rate is 30 to 50 seeds per square foot. Broadcast or aerial seeding is at the rate of 60 to 95 seeds per square foot (approximately double the drilled rate).

2.1.6.9 Wildlife, including Migratory Birds

The following measures would be implemented to minimize impact to wildlife.

- If construction were to be initiated prior to the end of nesting season (approximately April 1 to August 15), a nest survey would be conducted in areas where construction activities could impact existing vegetation. Any active nests found in the construction zone would be avoided by halting construction until an authorized officer of the BLM has determined that the young birds have fledged.

- All areas disturbed by plowing would be restored to original contour and reclaimed as described in the POD (Mid-State 2010). Restoration and reclamation activities would not be complete until the BLM Authorized Officer has determined in writing that the areas have been returned to acceptable condition.
- Construction would not occur on a big game crucial winter range area during critical winter periods from December 15 to March 15.

2.1.6.10 Paleontology

The following paleontological resource protection measures would be implemented:

- All vertebrate fossils and any plant or invertebrate fossils that could contribute to scientific knowledge of ancient and modern ecosystems are considered important. If important fossils are discovered during construction, work within 300 feet of the discovery would cease. RTC would ensure that the discovery is appropriately protected and immediately notify the BLM by telephone, followed by written confirmation. Work would not resume within the avoidance area until the BLM authorized officer issues a written Notice to Proceed.
- As recommended in the paleontological resource inventory report, a post-construction, pedestrian paleontological survey along the RTC-proposed ROW at and near the one known paleontological locality to identify and potentially recover any freshly exposed fossil bone would be conducted (Britt and Scheetz 2011).

2.1.6.11 Soils

The following measures would be implemented to minimize impact to soils:

- The erosion control and reclamation measures (Mid-State Consultants 2010, p.13-14) would be applied as work is being conducted. Soil erosion control measures would be monitored, especially after storms, and repaired or replaced if needed
- Plowed areas would be pre-ripped only as necessary to deal with hardground conditions, to allow successful cable installation, or to reduce the amount of disturbance likely to occur without pre-ripping.
- Soil stabilization measures (Mid-State Consultants 2010, p.13-14) would be implemented and repeated, if necessary, until erosion is eliminated.
- Equipment would be regularly maintained, and oil and fuel would be properly contained off-site in staging areas.
- Additional measures, including use of absorbent pads during refueling, would be employed to minimize potential soil contamination due to spills during construction, operation, and maintenance.
- RTC would adhere to their Spill Prevention Control and Countermeasures Plan (Mid-State Consultants 2010, p. 13). As required by Federal regulation (40 CFR part 112), contaminated soil from accidental spills would be cleaned up immediately, and any spill of a reportable quantity would be reported to the Nevada Division of Environmental Protection and the National Response Center.

- No construction or routine maintenance activities would be conducted when soils are too wet to adequately support construction equipment; work would cease when vehicles or construction equipment create a rut three-inches deep or greater.
- Soil disturbance would be limited to that which is necessary for construction.
- All disturbed areas would be restored to original contour and reclaimed. BLM would conduct a post-reclamation survey to verify reclamation success.

2.1.6.12 Noise

Most construction noise originates from internal combustion engines. A large part of the noise emitted is due to the air intake and exhaust cycle. Use of adequate muffler systems can control much of this engine noise (FHWA n.d.). All equipment would be properly muffled and construction would occur only during daylight hours.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not authorize the RTC-proposed ROW for the telecommunications fiber optic line. Because of the checkerboard land pattern in the project area, there is no way to avoid crossing public lands, The No Action Alternative therefore would result in RTC's inability to construct the proposed fiber optic line. The purpose of and need for the project would not be met; the residents of the rural areas of northwest Elko County would not be provided access to the same or similar telecommunication services that are available in nearby urban areas. Selection of the No Action Alternative would result in continuation of the resource conditions as described in the affected environment in Chapter 3 and other reasonably foreseeable future actions anticipated in Chapter 4 of this EA. Potential impacts predicted to result from the Proposed Action would not occur.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

NEPA directs the BLM and other Federal agencies to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources” (42 USC 4332). There have been no other fiber optic line route alternatives suggested that would meet the purpose and need for the Project while lessening the impact on the resources identified. Alternative routes were rejected in early discussions due to a desire to utilize existing ROWs to the maximum extent possible, an overall increase in distance in the ROW required for any alternate route, and the added difficulty and complexities associated with terrain encountered outside of the existing ROW corridor. Applicable design features have been incorporated into the Proposed Action to avoid or minimize disturbance to resources present within and near the project area. For these reasons, the EA focuses on the Proposed Action, in addition to the No Action Alternative, as described above in **Sections 2.1 and 2.2**.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the general setting, identifies the critical elements and other affected resources and uses of concern in the vicinity of the Proposed Action, and describes the affected environment and the predicted environmental consequences of the Proposed Action.

3.1 GENERAL SETTING

The project area is situated at the northern rim of the Great Basin section of the Basin and Range province (Grayson 1993:14). The Lone Mountain Station to Tuscarora segment extends across the Independence Mountains, a substantial range with the highest elevation at 10,439 feet above mean sea level (amsl), into the Independence Valley to the west. West of the Independence Valley are the Tuscarora Mountains. On the east side of the Dinner Station to Adobe Ranchos segment is the Adobe Range, a series of relatively low mountains running northeast to southwest, with a summit 7,475 feet above mean sea level (amsl). This segment runs along the foothills between the Adobe Range and the Independence Mountains.

The Lone Mountain Station to Tuscarora segment extends from the intersection of SR 225 and SR 226 on the east side of the Independence Mountains and heads west and slightly north toward Tuscarora in the Independence Valley. The Tuscarora Mountains are to the west. The Dinner Station to Adobe Ranchos segment heads south from the Dinner Station microwave tower (about 1.3 miles north of Dinner Station) along the foothills of the Independence Mountains to the Adobe Ranchos residential development, north of Elko.

The climate of the region is classified as mid-latitude steppe and desert characterized by hot summers and cold winters with semi-arid to arid conditions. The annual precipitation is 9.62 inches in Elko, south of the project area, and 12.60 inches in Tuscarora on the west end of the project area (Western Regional Climate Center, wrcc@dri.edu). The mean annual temperature ranges between 10.9 degrees F in January and 91.0 degrees F in July at Elko, Nevada. Varying elevations within the proposed project area contribute to a range of temperatures.

Most precipitation in the Great Basin is from westerly atmospheric circulation, though the Sierra Nevada and Cascade Mountains block much of the moisture from the Pacific storm patterns. The rain shadow effect coupled with frequent high pressure formation over the Great Basin forces the jet stream to stay to the north, increasing the aridity of the province. In this northern portion of the Great Basin most of the precipitation falls in the winter months in the form of snow (Beck and Jones 1997:167).

In general, the area is rural with ranching being the dominant land use. A couple of mining operations are also present, especially near Tuscarora. Residences are sporadic along the routes.

Pedestrian surveys of the fiber optic line routes were completed for special status species and to identify the baseline vegetation and wildlife along the route (JBR 2010). Class III cultural

resource surveys were completed along the entire length of the fiber optic line route (Baxter and Nash 2011). A paleontological inventory was conducted as well (Britt and Scheetz 2011).

3.2 SUPPLEMENTAL AUTHORITIES AND RESOURCES OF CONCERN

To comply with the NEPA, the BLM is required to address specific elements of the environment that are subject to requirements specified in statute or regulation or by executive order (BLM 1988, CEQ 1997, BLM 2008). **Table 6** outlines the elements that must be addressed in all environmental analyses, as well as other resources deemed appropriate for evaluation by the BLM, and denotes if the Proposed Action or No Action Alternative affects those elements.

Table 6 Potentially Applicable Supplemental Authority Concerns*

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Human Concerns				
Air Quality			X	Section 3.3.1.
Cultural Resources			X	See Section 3.3.2 and 4.2.1.
Environmental Justice		X		The EPA Environmental Justice analysis tool (EPA 2011) identified that 23.7 percent of the population within 5 miles of the project area is considered minority and 5.9 percent of the population is low income; however, no concerns have been identified and no disproportionate effects to these populations are anticipated to occur as the project would be within an existing road ROW. The fiber optic line would provide area users access to upgraded and advanced telecommunications.
Human Health and Safety	X			Safety codes and regulations would be strictly adhered to during the construction of the fiber optic line. The buried cable would not pose a human health and safety risk.
Native American Concerns	X			BLM consulted with Native American tribal officials from March through August, 2011. No locations of religious, traditional, or cultural importance within the project area were identified during this process. Section 3.3.3.
Wildlife/Animal Concerns				
Migratory Birds			X	Sections 3.3.4 and 4.2.2.
Threatened/Endangered Species			X	Sections 3.3.5 and 4.2.3.
Other Concerns				

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Areas of Critical Environmental Concern (ACEC)	X			No areas of critical environmental concern in the project area.
Farm Land-Prime/Unique	X			There are no known designated prime or unique farmlands in the project area.
Floodplain			X	Section 3.3.6.
Forests and Rangelands (HFRA)	X			No forest or rangeland HFRAs within the project area.
Non-Native Invasive and Noxious Species			X	Sections 3.3.7 and 4.2.4.
Waste, Hazardous/Solid		X		No chemicals subject to the Superfund Amendments and Reauthorization Act Title III would be used. Trash receptacles would be placed on-site for the full duration of the project. All wastes would be disposed off-site at a licensed facility. Diesel fuel used during construction of the fiber optic line would be stored in above ground tanks at RTC's staging area on private property. In addition, a fuel/lube truck would travel to some of the onsite machinery on an as-needed basis. Vehicles would be maintained and operated to prevent accidental leaks or spills. RTC would adhere to their Spill Prevention Control and Countermeasures Plan (SPCCP) to minimize adverse environmental impacts from spills. The Proposed Action would not result in any releases that would violate Federal or State hazardous material regulations.
Water Quality			X	Sections 3.3.6.
Wetlands, Riparian Zones			X	Section 3.3.6.
Wild and Scenic Rivers	X			There are no wild and scenic rivers in the project area.
Wilderness, Lands with Wilderness Characteristics	X			There are no Wilderness, Wilderness Study Areas, or Lands with Wilderness Characteristics in the project area.

* See Statute: NV-2009-030, BLM Manual, regulation or order that may require an element be addressed in a NV BLM EA or EIS.

Other elements of the human environment that have been considered for this EA are listed in **Table 7**. Resources that may be affected by the Proposed Action are further described in the EA. Rationales for those resources that would not be affected by the Proposed Action are listed in **Table 7**.

Table 7 Other Potential Land and Resource Management Issues

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Human Concerns				
Access	X			No access would be changed with the Proposed Action. Section 3.3.8.
Engineering	X			
Fire Management	X			
Geology		X		Surface geology along most of the fiber optic line route consists of Quaternary alluvial deposits shed from the Independence Mountains and the Adobe Range. In general, the oldest rocks in the area are thick sequences of tectonically deformed Paleozoic marine sediments overlain by Tertiary volcanic rocks and Tertiary terrestrial gravels and lake bed sediments interbedded with volcanic deposits.
Realty-Land Use			X	Section 3.3.8.
Recreation		X		There are no designated public recreation trails, campgrounds, or parks in the vicinity of the proposed project. No existing recreational uses or developments would be affected by the Proposed Action. Recreation use is already limited on the private land associated with the fiber optic line route.
Social or Economic		X		Construction of the fiber optic line would require an estimated total of 15 workers for a period of two to four months. This temporary influx of workers would provide a temporary income to the local establishments for services provided (trailer space rental, restaurant, groceries, etc.) but it would be very short-term and minimal. Current RTC employees would maintain the line once installed; no new workers would be required.
Visual Resources			X	Sections 3.3.9 and 4.2.5.

Element/Resource	Not Present	Present/Not Affected	Present/May be Affected	Comments
Wildlife/Animal Concerns				
Aquatic Species			X	Sections 3.3.11 and 4.2.7.
Livestock and Grazing		X		The proposed project would be entirely within the existing highway ROWs. The SR ROW corridors are fenced and grazing is not permitted within the SR ROW. No grazing allotments would be affected and no AUMs would be lost.
Sensitive Species			X	Sections 3.3.5 and 4.2.3.
Vegetation			X	Sections 3.3.10 and 4.2.6.
Wildlife			X	Sections 3.3.11 and 4.2.7.
Wild Horses and Burros	X			No herd management area within the project area.
Other Concerns				
Climate Change (GHG's, Wildfire, disease, etc.)			X	Section 3.3.12
Energy (Gas, Oil, Wind)		X		There are six Oil & Gas leases, three Oil & Gas developments, and one materials pit in the vicinity of the project area. In addition, the Golden Predator Mine holds a lease in the area. The proposed project would be within the existing highway ROWs and would not affect these leases.
Paleontological Resources			X	Section 3.3.13 and 4.2.8.
Soils			X	Section 3.3.14.

3.3 ANALYSIS OF AFFECTED RESOURCES

As identified in **Tables 6** and **7**, the resources and uses that are present and have the potential to be affected by the Proposed Action are presented and analyzed in the following subsections. Providing the analysis within the same subsections offers a format to allow the reader to understand the affected environment and the environmental consequences of the Proposed Action on each resource of concern.

Potential impacts are described in terms of duration (temporary, during construction; short-term, less than 5 years; or long-term, more than 5 years) and intensity. The thresholds of change for the intensity of a potential impact are defined as follows:

Negligible – The potential impact would be at the lowest level of detection.

Minor – The potential impact would be slight, but detectable.

Moderate – The potential impact would be readily apparent.

Major – The potential impact would be a severe or adverse impact or benefit.

3.3.1 Air Quality

Affected Environment

Elko County air quality is under the jurisdiction of the Nevada Division of Environmental Protection, Bureau of Air Pollution Control (BAPC) and the Bureau of Air Quality Planning (BAQP). BAQP monitors air quality to determine current and projected ambient air pollutants within the state of Nevada. Generally, air quality in Elko County is excellent (ECPLUAC 2008, p. 32-33). The proposed project area is located in an unclassified area (i.e., no monitoring has been conducted to determine its classification and no NAAQS violations would be expected) and thus is considered to be in attainment for all criteria air pollutants, including particulate matter (NDEP 2011; EPA 2010). The area is also within a designated Prevention of Significant Deterioration Class II area, which allows for moderate incremental increases in emission concentrations as long as the concentrations do not exceed standards set by the State of Nevada and the EPA.

Environmental Consequences of the Proposed Action

Surface disturbance related to construction would result in a short-term increase in particulate emissions from construction vehicles and generation of fugitive dust. Fugitive dust emissions would be expected to be short-term (for the duration of construction) and negligible to minor with implementation of the environmental protection measures incorporated in the Proposed Action (**Section 2.1.6.1**). A Surface Area Disturbance (SAD) permit application would be submitted to the NDEP for surface disturbance associated with the fiber optic line. The permit application would include a dust control plan.

3.3.2 Cultural Resources

Affected Environment

A project specific cultural resource inventory was conducted for the project (Baxter and Nash 2011). A 100 foot wide corridor that encompasses the Proposed Action route was inventoried at the Class III intensive level for cultural resources.

The inventory identified 23 archaeological sites and 13 isolated artifacts. Of the 23 sites, 15 are prehistoric, 7 are historic, and 1 is a multi-component prehistoric/historic site. Eight sites have been determined to be eligible for listing on the National Register of Historic Places (NRHP), under Criteria A, C, and/or D. The other 15 sites are generally small, sparse sites, which do not qualify for listing on the NRHP and require no protective measures.

Environmental Consequences of the Proposed Action

The proposed fiber optic line could impact cultural resources directly as the result of damage incurred by construction activities. Through project redesign the fiber optic line and associated activities would avoid impacts to the eight NRHP-eligible sites. Three avoidance options would be acceptable: avoidance by routing the project to the opposite side of the highway, avoidance by boring under the site, or rerouting the buried cable in the borrow ditch or edge of the highway fill where no intact cultural resource deposits exist. A buffer of 30 meters before and after the direct bore is to be established to help provide protection to the sites during construction. Furthermore, a cultural resource monitor would be present during construction activities in specific areas,

including at NRHP eligible sites, all vault locations, and areas such as floodplains or other locations having potential for deeply buried cultural deposits.

Potential viewshed issues would be relatively limited for the current project given that the fiber optic line would be underground and would parallel the highways (SSR 18, SR 225, and SR 226). The viewshed is already compromised by the highway, highway fences, utility lines, and other facilities. Disturbances resulting from cable installation would be temporary given that the ground would be leveled and would revegetate in a few years. The only permanent visible fixtures would be the buried cable warning makers and the tops of the vaults, both of which would be placed in locations away from historic properties where viewshed is an issue.

Since the mitigation measures outlined in **Section 2.1.6.2** and **Section 3.4.1** would be brought forth into the conditions of approval for the RTC-proposed ROW grant, impacts to known cultural resources would be avoided. There would be no Adverse Effects to NRHP-eligible cultural resource sites.

3.3.3 Native American Concerns

Affected Environment

The proposed project route is fully contained within the SSR 18, SR 225, and SR 226 highway ROWs, much of which is disturbed to some degree. Ethnographic evidence within the project area is lacking for the existence of any traditional, spiritual, or religious use other than camping and general food gathering.

Western Shoshone have stated that federal projects and lands actions can have widespread effects on their culture and religion as they consider the landscape to be sacred and as a provider. In response to these concerns, BLM regularly contacts and meets with tribal groups to discuss proposed federal actions and other issues and to ask for their views regarding land use proposals and other pending BLM actions that might affect traditional tribal activities, practices, or beliefs at particular locations on public lands. In accordance with federal statutes and regulations, the BLM officially notified appropriate tribal officials of the Proposed Action in March 2011 and conducted a tour and further communications with a tribal representative in July and August, 2011. No locations of religious, traditional, or cultural importance that would be affected by the Proposed Action were identified during this process.

Environmental Consequences of the Proposed Action

Because there are no known sites with traditional or spiritual significance to the Western Shoshone and the likelihood of encountering such sites is low, the Proposed Action would not inhibit any continuing or current religious practice or ceremony and would not have an adverse effect. Former campsites and other locations showing evidence of use are considered important to many Shoshone. A number of such sites were found during the archaeological inventory of the proposed project route. As identified in **Section 2.1.6.2** and **Section 3.4.1**, RTC has agreed to measures to avoid adverse impacts to cultural resource sites. Also, although the possibility of disturbing Native American grave sites is extremely low, inadvertent discovery procedures are noted in **Section 2.1.6.2**.

3.3.4 Migratory Birds

Affected Environment

Migratory birds are found in the vicinity of the project area as either seasonal residents or as migrants. Provisions of the Migratory Bird Treaty Act (16 USC 701-718h) prohibit the taking, killing, or possession of any migratory birds, including the taking of any nest or egg. As of November 2010, all native birds commonly found in the United States are protected under the Migratory Bird Treaty Act, except for resident native and introduced game birds, house sparrows (*Passer domesticus*), European starlings (*Sturnus Vulgaris*), rock doves (pigeons; *Columba livia*) and Eurasian collared doves (*Streptopelia decaocto*). There are numerous species of migratory birds that have the potential to use habitat in the project area. **Table 8** lists the species of concern from the Nevada Partners in Flight Bird Conservation Plan¹ that are a priority for management and are associated with habitat types in the area. The species in bold type are also designated as “BLM-Sensitive” (see next section on Special Status Species).

Migratory birds observed along the project area route in November 2010 include American crow (*Corvus brachyrhynchos*), red-tailed hawk (*Buteo jamaicensis*), black-billed magpie (*Pica hudsonia*), horned lark (*Eremophila alpestris*; **Table 8**), and common raven (*Corvus corax*; See **Table 8**). Other migratory birds expected in the area include great horned owl (*Bubo virginianus*; nest record near Tuscarora; NDOW 2010), American kestrel (*Falco sparverius*), northern harrier (*Circus cyanius*), lark bunting (*Calamospiza melanocorys*) and mountain bluebird (*Sialia currucoides*; NDOW 2010). Migratory bird egg-laying and rearing of young generally occurs between May 1 and July 15.

Table 8 Migratory Bird Species of Concern Potentially Present Along the Fiber Optic Line Route Based on Suitable Habitat Types

Common Name	Scientific Name	Obligate Species	Other Species	Associated Species
Sagebrush				
Greater sage-grouse	<i>Centrocercus urophasianus</i>	X		
Black rosy-finch	<i>Leucosticte atrata</i>		X	
Ferruginous hawk	<i>Buteo regalis</i>		X	
Gray’s flycatcher	<i>Epidonax wrightii</i>		X	
Loggerhead shrike	<i>Lanius ludovicianus</i>		X	
Vesper sparrow	<i>Pooecetes gramineus</i>		X	
Prairie falcon	<i>Falco mexicanus</i>		X	
Sage sparrow	<i>Amphispiza belli</i>		X	
Swainson’s hawk	<i>Buteo swainsoni</i>		X	
Burrowing owl	<i>Athene cunicularia</i>		X	
Sage thrasher	<i>Oreoscoptes montanus</i>		X	

¹ References to ‘species of concern’ in the 2001 Executive Order pertaining to those migratory bird species listed in 50 CFR 17.11, and in established plans such as for Partners in Flight physiographic areas.

Common Name	Scientific Name	Obligate Species	Other Species	Associated Species
Calliope hummingbird	<i>Stellula calliope</i>		X	
Brewer's sparrow	<i>Spizella passerine</i>			X
Western meadowlark	<i>Sturnella neglecta</i>			X
Black-throated sparrow	<i>Amphispiza bilineata</i>			X
Lark sparrow	<i>Chondestes grammacus</i>			X
Green-tailed towhee	<i>Pipilo chlorurus</i>			X
Brewer's blackbird	<i>Euphagus cyanocephalus</i>			X
Horned lark*	<i>Eremophila alpestris</i>			X
Cliffs and Talus				
Prairie falcon	<i>Falco mexicanus</i>	X		
Black rosy-finch	<i>Leucosticte atrata</i>	X		
Ferruginous hawk	<i>Buteo regalis</i>		X	
Golden eagle	<i>Aquila chrysaetos</i>			X
White-throated swift	<i>Aeronautes saxatalis</i>			X
Say's phoebe	<i>Sayornis saya</i>			X
Common raven*	<i>Corvus corax</i>			X
Cliff swallow	<i>Petrochelidon pyrrhonota</i>			X
Violet-green swallow	<i>Tachycineta thalassina</i>			X
Canyon wren	<i>Catherpes mexicanus</i>			X
Rock wren	<i>Salpinctes obsoletus</i>			X
Wetlands and Lakes				
White-faced ibis	<i>Plegadis chihi</i>	X		
Snowy plover	<i>Charadrius alexandrinus</i>	X		
American avocet	<i>Recurvirostra Americana</i>	X		
Black tern	<i>Chlidonia niger</i>	X		
Sandhill crane	<i>Grus Canadensis</i>		X	
Long-billed curlew	<i>Numenius americanus</i>		X	
Short-eared owl	<i>Asio flammeus</i>		X	
American bittern	<i>Botaurus lentiginosus</i>			X
Great egret	<i>Ardea alba</i>			X
Snowy egret	<i>Egretta thula</i>			X
Cattle egret	<i>Bubulcus ibis</i>			X
Black-crowned night heron	<i>Nycticorax nycticorax</i>			X
Marsh wren	<i>Cistothorus palustris</i>			X
Common yellowthroat	<i>Geothlypis trichas</i>			X
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>			X

Common Name	Scientific Name	Obligate Species	Other Species	Associated Species
Agricultural Lands				
Sandhill crane	<i>Grus Canadensis</i>		X	
Long-billed curlew	<i>Numenius americanus</i>		X	
Short-eared owl	<i>Asio flammeus</i>		X	
Great-horned owl	<i>Bubo virginianus</i>			X
American kestrel	<i>Falco sparvarius</i>			X

Species in bold type are also designated as BLM-Sensitive or have State (NDOW) status.

*Species observed along the route in November 2010.

Environmental Consequences of the Proposed Action

Construction of the fiber optic line would temporarily disturb up to approximately 89.5 acres of the cultivated and native habitat types until the reclamation measures proposed in **Section 2.1.6.9** would establish native perennial grass cover similar to or better than pre-project conditions. Shrubs could naturally reestablish on the RTC-proposed ROW although no shrub seeding is proposed for reclamation as an effort to deter tall shrub cover and any attraction to some wildlife species in close proximity to high-speed vehicular traffic. Most habitats adjoining the SR ROW are already at their respective carrying capacities and would not support any additional animals. Displaced individuals or groups of animals that defend breeding and nesting territories such as small perching birds could be lost from the population until vegetation reestablishes on the ROW area. The remaining animals would be concentrated within adjoining habitat areas during non-breeding periods.

Construction of the proposed fiber optic line could potentially affect nesting birds, depending on the time of year that construction occurs. RTC has incorporated environmental protection measures (**Section 2.1.6.9**) in the Proposed Action to address potential impacts to migratory birds. These include limiting, to the extent possible, construction of the fiber optic line to times outside of the nesting period (approximately April 1 to August 15). If construction has to occur within the nesting period, a nesting bird survey would be conducted in areas of planned disturbance. For areas with identified nests, a buffer zone would be established around these areas until the young birds have fledged. This limitation would apply to construction of the fiber optic line on the private land as well, to ensure adherence to the Migratory Bird Treaty Act.

3.3.5 Special Status Species (Threatened, Endangered, Candidate, and Sensitive Species)

Affected Environment

As described in Table 9 below, the proposed ROW route passes through habitat for terrestrial wildlife species designated as Special Status Species, including two candidate species and 29 species designated as Nevada BLM Sensitive Species. In addition, there are four species designated as a State of Nevada Listed Species.

Nevada BLM policy is to provide Nevada BLM Sensitive Species with the same level of protection as is provided for candidate species in BLM Manual 6840.06C. BLM's Special Status Species Policy (6840) states that "... the BLM shall implement management plans that conserve

candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by BLM do not contribute to the need for the species to become listed” (section 6840.06C). The policy also states that ...“the protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species” (section 6840.06E). In the BLM Instruction Memorandum No. NV-98-013, Nevada protected animals that meet BLM’s 6840 policy definition are those species of animals occurring on BLM-managed lands in Nevada that are: (1) ‘protected” under authority of NACs 501.100 - 503.104; (2) have been determined to meet BLM’s policy definition of “listing by a State in a category implying potential endangerment or extinction,” and (3) are not already included as a federally listed, proposed, or candidate species. Definitions of special status species are as follows:

Federally Threatened or Endangered Species: Any species that the U.S. Fish and Wildlife Service (USFWS) has listed as an endangered or threatened species under the Endangered Species Act throughout all or a significant portion of its range.

Proposed Threatened or Endangered Species: Any species that the USFWS has proposed for listing as a Federally endangered or threatened species under the Endangered Species Act.

Candidate Species: Plant and animal taxa that are under consideration for possible listing as threatened or endangered under the Endangered Species Act.

BLM Sensitive Species: Species 1) that are currently under status review by the USFWS, 2) whose numbers are declining so rapidly that Federal listing may become necessary; 3) with typically small and widely dispersed populations; or 4) that inhabit ecological refugia or other specialized or unique habitats.

State of Nevada Listed Species: State-protected animals that have been determined to meet BLM’s Manual 6840 policy definition.

The listing of Nevada BLM Special Status Species is based on input provided by BLM, Nevada Department of Wildlife (NDOW), and USFWS in BLM Instruction Memorandum No. NV-2003-097 (July 29, 2003). The listing of Nevada state-protected species is contained in NAC Chapter 503, Sections 030 (Mammals), 050 (Birds), 065 and 067 (Fish), 075 (Amphibians), and 080 (Reptiles).

The effects of a Proposed Action on species that are listed or are proposed for listing as threatened or endangered are subject to consultation under Section 7 of the Endangered Species Act. A threatened, endangered, sensitive, and candidate species (special status) record search and consultation was completed by obtaining information from the NDOW and the Nevada Natural Heritage Program (NNHP) and reviewing the county species list, provided by the USFWS.

Each of these species was evaluated by their habitat preference to determine if the project area included suitable habitat. Special status animal and aquatic species having the potential to occur within the proposed project area are listed in **Table 9**. Descriptions of each species follow the table. The only observations made of special status wildlife were one occurrence of pygmy rabbit pellets along the Dinner Station to Adobe Ranchos segment. In general, the timing of the surveys (November 2010) was not ideal for wildlife observations.

Table 9 Special Status Species Potentially Present Along the Fiber Optic Line Route or in the Vicinity Based on Suitable Habitat Types

Common Name	Scientific Name	Status
Mammals		
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM Sensitive
Preble's shrew	<i>Sorex pleblei</i>	BLM Sensitive
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM Sensitive
Yuma myotis	<i>Myotis yumanensis</i>	BLM Sensitive
Long-eared myotis	<i>Myotis evotis</i>	BLM Sensitive
Long-legged myotis	<i>Myotis volans</i>	BLM Sensitive
Fringed myotis	<i>Myotis thysanodes</i>	BLM Sensitive, State Protected
Townsend's big-eared bat	<i>Plecotis townsendii</i>	BLM Sensitive, State Sensitive
Spotted bat	<i>Euderma maculatum</i>	BLM Sensitive, State Threatened
Pallid bat	<i>Antrozous pallidus</i>	State Protected
Birds		
Peregrine falcon	<i>Falco peregrines</i>	BLM Sensitive, State Endangered
Golden eagle	<i>Aquila chrysaetos</i>	BLM Sensitive, State Protected
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM Sensitive, State Protected
Prairie falcon	<i>Falco mexicanus</i>	BLM Sensitive, State Protected
Swainson's hawk	<i>Buteo swainsoni</i>	BLM Sensitive, State Protected
Ferruginous hawk	<i>Buteo regalis</i>	BLM Sensitive, State Protected
Western burrowing owl	<i>Athene cucularia</i>	BLM Sensitive, State Protected
Short-eared owl	<i>Asio flammeus</i>	BLM Sensitive, State Protected
Long-eared owl	<i>Asio otus</i>	BLM Sensitive, State Protected
Northern goshawk	<i>Accipiter gentiles</i>	BLM Sensitive, State Protected
Loggerhead shrike	<i>Lanius ludovicianus</i>	BLM Sensitive, State Protected
Vesper sparrow	<i>Poocetes gramineus</i>	BLM Sensitive, State Protected
Black rosy-finch	<i>Leucosticte atrata</i>	BLM Sensitive, State Protected
Lewis's woodpecker	<i>Melanerpes lewis</i>	BLM Sensitive, State Protected
Yellow-breasted chat	<i>Icteria virens</i>	BLM Sensitive, State Protected
Long-billed curlew	<i>Numenius americanus</i>	BLM Sensitive, State Protected
Greater sage-grouse	<i>Centrocercus urophasianus</i>	Federal Candidate
Sandhill crane	<i>Grus Canadensis</i>	BLM Sensitive, State Protected
Black tern	<i>Chlidonias niger</i>	BLM Sensitive, State Protected
Brewer's sparrow	<i>Spizella breweri</i>	State Protected and Sensitive
Sage thrasher	<i>Oreoscoptes montanus</i>	State Protected and Sensitive
White-faced ibis	<i>Plegadis chihi</i>	State of Nevada-Listed
Reptiles		
Pigmy short-horned lizard	<i>Phrynosoma douglassii</i>	BLM Sensitive, State Protected
Invertebrates		
Nevada viceroy (butterfly)	<i>Limenitus archippus lahontani</i>	BLM Sensitive, State Protected
Aquatic Species		
Columbia spotted frog (Great Basin Population)	<i>Rana luteiventris</i>	Federal Candidate

Common Name	Scientific Name	Status
Redband trout	<i>Oncorhynchus mykiss newberrii</i>	BLM Sensitive

Mammals

Pygmy Rabbit - Pygmy rabbits are a BLM Sensitive Species petitioned for listing as threatened or endangered under the Endangered Species Act of 1973. On September 30, 2010, the USFWS announced a 12-Month Finding in the Federal Register indicating that the species did not warrant protection under the Endangered Species Act (75 FR 60516). The Finding does not downplay the need to conserve, enhance, or protect pygmy rabbit habitat.

Typically, pygmy rabbits occur in habitats dominated by mature, dense stands of big sagebrush and green rabbitbrush (*Ericameria teretifolia*) found in relatively level areas of deep, soft soil (Katzner and Parker 1997), suitable for digging burrows. In Nevada, pygmy rabbit observations have been made over a wide variety of communities including those characterized by Wyoming, basin, mountain big sagebrush and big sagebrush-antelope bitterbrush vegetation types. In addition, they have been observed on the low sagebrush vegetation type in close proximity to pockets of big sagebrush, and on crested wheatgrass (*Agropyron cristatum*) seeding areas with big sagebrush as overstory plants.

Pygmy rabbits have been documented in the area along the Dinner Station to Adobe Ranchos segment, particularly in the northern portion near Dinner Station. Surveyors observed pygmy rabbit pellets in the Dinner Station area. In addition, with the presence of ephemeral and perennial drainages and big sagebrush as a shrub component, pygmy rabbit occurrence is possible within intact stands of sagebrush traversed by the project area.

Preble’s Shrew - This species is known to occur primarily within sagebrush habitat types, but may also occur in montane shrub (includes sagebrush) and riparian habitat types. Intact stands of sagebrush habitat are traversed by the project area.

Sensitive bats – Specific habitat information for each species can be found in **Appendix C**. Sensitive bat species may utilize riparian areas near the project area for foraging. There is no roosting habitat for bats within or near the project area.

Birds

Sensitive raptors – Specific habitat information for each species can be found in **Appendix C**. Sensitive raptors utilize the project area as foraging habitat. It is unlikely that any raptor would nest within the project area, as only sagebrush and riparian/meadow habitats are present. Raptor nests may be present in the vicinity (within 0.5 miles) of the project area in trees or on adjoining mountainous terrain.

Other sensitive birds: sagebrush – (loggerhead shrike, vesper sparrow, black-rosy finch, brewer’s sparrow, sage thrasher): Specific habitat information for each species can be found in **Appendix C**. Any of these birds may be present in shrubs within the project area.

Other sensitive birds: riparian – (Lewis’s woodpecker, yellow-breasted chat, long-billed curlew, sandhill crane, black tern, white-faced ibis): Specific habitat information for each species can be found in **Appendix C**. Any of these birds may be present within or in the vicinity of the project area within intact riparian habitat; however, presence within the project area itself is unlikely. The most suitable habitat area for most of these species is on private, irrigated ranch areas near the project area.

Greater Sage-grouse (Candidate) – The greater sage-grouse is a species featured in the 1986 Elko Resource Management Plan and was designated as a BLM Sensitive Species by the Nevada BLM State Director in 1997. It was petitioned for listing as threatened or endangered under the Endangered Species Act of 1973 in 2009, and on March 23, 2010, greater sage-grouse was found warranted for listing and was placed on the candidate list for future action (75 FR 13910).

Concerns about sage-grouse populations and habitat resulted in the Nevada State Governor’s Final 2001 Nevada Sage-grouse Conservation Strategy (State Strategy). The Northeastern Nevada Stewardship Group, Inc. (NNSG) was tasked with completing the June 2004 Elko County Sagebrush Ecosystem Conservation Strategy (Elko Strategy) as part of this overall State Strategy. The project area is within the North Fork Sage-grouse Population Management Unit (PMU) in Northeastern Nevada considered under the Elko Strategy by the NNSG. The North Fork PMU Conservation Assessment (a habitat analysis) is scheduled to be completed in March 2011.

Greater sage-grouse occur in sagebrush habitats in the Great Basin and in similar habitats in the western United States. During the winter season, the birds subsist almost entirely on sagebrush. During the spring season, males gather to display or “strut” on communal strutting grounds, or leks. Most sage-grouse leks are situated on level ground or on gently-sloping hillsides. Most are located in open areas away from trees and other potential raptor perches. Females come onto strutting grounds to mate, and then subsequently nest, usually within two miles of the lek. Wet meadow and riparian areas are utilized as brood-rearing habitats. These mesic areas, including seep and spring sites, provide a crucial source of insects and succulent forage for young birds. Together, the strutting grounds and nesting and brood-rearing areas form a sage-grouse habitat complex that may encompass areas from valley floors or benches up into the mountains, to include mountain meadow habitats.

Prior to field surveys, a data review was conducted in order to identify any potential or existing habitat for sage-grouse within the project area. Sage-grouse habitat occurs throughout the entire project area and sage-grouse are expected in the vicinity year-round. However, it is highly unlikely that the SR ROW, the proposed location for the fiber optic line, is frequently used by sage-grouse due to its immediate location to an existing highway.

Suitable nesting, fall/winter, and summer/brood-rearing habitat occurs within the general vicinity, adjacent to and outside the highway ROW. Sage-grouse data maintained by NDOW for the State of Nevada and BLM indicate eight active lek sites within a three-mile radius of the

project area in 2011. No sage-grouse or their sign were observed within the RTC-proposed ROW.

Reptiles

Pigmy horned lizard (Short-horned lizard ssp.) – The vicinity of the project area provides habitat for the pigmy horned lizard (*Phrynosoma douglassii douglassii*). This species is most likely to occur on suitable habitat within areas characterized by the Wyoming big sagebrush, basin big sagebrush, low sagebrush, and big sagebrush-bitterbrush vegetation types.

Invertebrates

Nevada viceroy (butterfly) – This butterfly species occupies riparian habitat with willow cover which serves as host plants for the insect's larvae. Willow cover is available in riparian areas within and in the vicinity of the project area.

Aquatic Species

Columbia spotted frog (Candidate) – The Columbia spotted frog, a candidate species for listing under the Endangered Species Act, has been documented in the Taylor Canyon Creek area (2003 record; NNHP 2010), which the project area intersects. The species is thought to occur throughout most of the canyon, especially in locations of beaver activity (Jeff Peterson, personal communication, 2010; Fisheries Biologist, Nevada Department of Wildlife), and thus could be present in the project area at the time of construction. This population in this area is considered part of the Great Basin Distinct Population Segment (DPS).

A Conservation Agreement and Strategy has been developed for the northeastern subpopulations of the Great Basin population of Columbia spotted frog. The Strategy identifies actions that are necessary to reduce or eliminate threats and provide for the long-term conservation of northeastern Nevada Columbia spotted frogs such that protection under the Endangered Species Act may not be necessary (CSFTT 2003).

Redband trout – The project area crosses Waterpipe Canyon and Taylor Canyon Creeks which support redband trout. This population is part of the Upper Snake River Basin.

Special Status Species Plants

No known plant species designated as threatened, endangered, candidate, or BLM Sensitive are known to occur in the project area.

No plants are currently listed as Endangered, Threatened, or Candidate within Elko County, Nevada. Prior to baseline surveys, JBR researched data from the NNHP to determine where in Elko County these species have been recorded.

Environmental Consequences of the Proposed Action

The Proposed Action would result in the temporary loss of about 89.5 acres of habitat on public lands and private lands until the reclamation measures proposed in **Section 2.1.6.8** would establish native perennial grass cover similar to or better than pre-project conditions.

Mammals

Pygmy rabbit – The potential for direct impacts to pygmy rabbit is very low. Potential impacts would be indirect and negligible to minor resulting from possible displacement if pygmy rabbits were present in the project area during construction activities. Impacts from a loss of habitat along the ROW would be minor.

Preble's shrew – The potential for direct impacts to Preble's shrew is very low. Potential direct impacts would be minor to moderate if this species were actually present in the project area during construction activities.

Sensitive bats – Impacts to sensitive bats from the loss of foraging habitat would be negligible.

Birds

Sensitive raptors – Impacts to sensitive raptor from the loss of foraging habitat would be negligible. If construction were to be initiated prior to the end of nesting season (approximately April 1 to August 15), a nest survey would be conducted in areas where construction activities could impact existing vegetation. Any nests found in the construction zone would be avoided by halting construction until an authorized officer of the BLM has determined that the young birds have fledged.

Other sensitive birds: sagebrush habitat – Suitable shrub habitat would be lost as a result of construction; this would be a minor indirect impact to all shrub-dependent sensitive birds. Shrubs could naturally reestablish on the RTC-proposed ROW although no shrub seeding is proposed for reclamation as an effort to deter tall shrub cover and any attraction to some wildlife species in close proximity to high-speed vehicular traffic. Most habitats adjoining the RTC-proposed ROW are already at their respective carrying capacities and would not support any additional animals. Displaced individual or groups of animals that defend breeding and nesting territories such as small perching birds would be lost from the population. The remaining animals would be concentrated within adjoining habitat areas during non-breeding periods. Reclamation efforts, including seeding with native vegetative species, would help to mitigate the effects of the construction activities. Timing of construction outside of the primary bird nesting period for 2011 (no construction during April 1 to August 15) would help to minimize disturbances to nesting birds or nests with young birds.

Other sensitive birds: riparian – Very little riparian habitat would be disturbed by construction activities as aquatic and wetland habitats would be bored under. The potential for direct impacts to riparian-dependent bird species is very low, as the presence of such species within the construction zone is unlikely. Sensitive birds present in the vicinity of the project area during construction may be temporarily displaced due to noise; this impact would be minor. Timing of construction outside of the primary bird nesting period for 2011 (no construction during April 1 to August 15) would help to minimize disturbances to any nesting birds.

Greater sage-grouse – The presence of this species within the actual RTC-proposed ROW is unlikely and thus the potential for direct impacts is very low. Potential impacts would be indirect and negligible to minor resulting from possible displacement if greater sage-grouse were actually present in the project area during construction activities.

Reptiles

Pigmy horned lizard – The potential for direct impacts to pigmy horned lizard is very low. Potential direct impacts would be minor to moderate if this species were actually present in the project area during construction activities.

Invertebrates

Nevada viceroy – Suitable willow habitat within the actual RTC-proposed ROW is very limited and thus the potential for direct impacts is very low. Potential impacts would be indirect and negligible to minor if the Nevada viceroy were actually present in the project area during construction activities and displaced. There would be no impact to larvae as no willow trees would be removed.

Aquatic Species

Boring under all wetlands and perennial streams (including culverts that carry them) would result in negligible impacts to Columbia spotted frog and redband trout.

Special Status Plants

There would be no known impacts to any known special status plant species due to a lack of habitat. Environmental protection measures as identified in **Section 2.1.6.8** would be implemented.

3.3.6 Water Resources (Including Waters of the U. S., Wetlands/Riparian Zones, and Floodplains)

Affected Environment

Surface Water

The majority of the project area is within the Humboldt River watershed with the western end of the Lone Mountain Station to Tuscarora segment entering the Snake River watershed. Tributaries of the North Fork of the Humboldt River, located north of the project area along SR 225, generally cross the project area from west to east and drain into the North Fork of the Humboldt River, including Mason Creek (**Appendix E Figure 1**). Dorsey Creek flows northward adjacent to the project segment at Dinner Station, and Sixteen-Mile Creek crosses SR 225 between Adobe Ranch and Dinner Station. Several other unnamed drainages also cross the corridor.

Eagle Rock Creek, Red Hill Creek, McClellan Creek, Hot Spring Creek, Fordman Creek, and several unnamed drainages cross southwest to northeast along the Lone Mountain Station to Tuscarora segment along SR 226, eventually draining into Pie Creek.

The westernmost 7.5 miles or so of the Lone Mountain Station to Tuscarora segment are within the Snake River watershed, primarily drained by the north-flowing Owyhee River. Tributaries of

the Owyhee River in the project area include South Fork Owyhee River, Carlin Creek, Coyote Canyon, Water Pipe Canyon, and Starvation Canyon, as well as several unnamed drainages (**Appendix E Figure 2**).

All streams crossed by the project corridor, whether perennial, intermittent, or ephemeral, have existing culverts underneath the roadway (**Table 10**). Culverts range from small (less than 24-inch diameter) to large (greater than 72-inch) corrugated metal pipes with and without concrete headwalls, as well as single and multiple concrete box culverts ranging in size from 2 feet by 4 feet to over 8 feet by 10 feet.

Table 10 Waterways along Project Route*

Crossing	Map No.
Lone Mountain Station to Tuscarora	
Dogies Well	2-1
Fordman Creek	2-2
McClellan Creek Culvert	2-3
McClellan Creek Diversion Ditch	2-4
Red Hill Creek	2-5
Eagle Rock Creek (1)	2-6
Eagle Rock Creek (2)	2-7
Unnamed Drainage (1)	2-8
Eagle Rock Creek (3)	2-9
Eagle Rock Creek (4)	2-10
Unnamed Drainage (2)	2-11
Unnamed Drainage (3)	2-12
Unnamed Drainage (4)	2-13
Unnamed Drainage (5)	2-14
Unnamed Spring (1)	2-15
Water Pipe Canyon	2-16
Starvation Canyon	2-17
Carlin Creek Culvert	2-18
Coyote Canyon	2-19
South Fork Owyhee	2-20
Dinner Station to Adobe Ranchos	
Dorsey Creek Culvert (1)	1-1
Dorsey Creek Culvert (2)	1-2
Dorsey Creek Culvert (main)	1-3
Dorsey Creek Culvert (3)	1-4
Unknown Drainage (1)	1-5
Dorsey Creek Culvert (4)	1-6
Sixteenmile Creek Culvert (1)	1-7
Sixteenmile Creek Culvert (2)	1-8
Unknown Drainage (2)	1-9

*All waterways would be bored under

Section 303(d) of the Clean Water Act requires states to compile a list of water bodies needing work beyond existing controls to obtain or maintain water quality standards consistent with designated beneficial uses. There are no Section 303(d) listed water bodies in the project area.

Groundwater

Plowing in the fiber optic cable conduit would uplift a trench about 12 inches wide to a depth of 36 inches using a standard cable plow. All waterways would be bored under at a depth not less than 6 feet bgs to prevent surface water loss from the stream channel. Trenching and/or boring would be between 3 to about 6 feet bgs in any location and based on soil survey information (NRCS 2010a and 201b), above the water table. There are four wells (#410558115515801, #410948115510901, #410809115513401, and #411305115552001) in the vicinity of the project route. Depth to groundwater in these wells ranged from 100 to 220 feet below ground surface (USGS 2011). Because the Proposed Action would be highly unlikely to intercept groundwater, groundwater resources should not be affected. Information provided on a recent fiber optic project in adjacent area did not encounter groundwater during installation activities (Grigg 2011).”

Waters of the United States, Including Wetlands

Waters of the U.S., including wetlands, are regulated under Section 404 of the Clean Water Act, as well as under Executive Order 11990 – Protection of Wetlands. Wetlands and waters of the U.S., as defined in 40 CFR 230.3 and 33 CFR Part 328.3, were not specifically delineated in the project area. However, during the field survey all water crossings were mapped by JBR Environmental Consultants, Inc. in November 2010 to determine if the crossing potentially met the definition of a waters of the U.S., including wetlands. A total of 29 perennial streams with adjacent wetlands, wetlands, or other surface water features, as well as 10 intermittent/ephemeral drainages lacking surface water, but exhibiting a defined bed, bank, and ordinary high water mark were identified. Wetlands were primarily associated with streams, both named and unnamed, and generally consisted of riparian vegetation including willow shrubs (*Salix* spp.) and meadow barley (*Hordeum brachyantherum*), bounded in the upland by sagebrush landscape. Wetland hydrology was primarily supported by surface flows.

Floodplains

In accordance with Executive Order 11988 on Floodplain Management, federal agencies should conduct an eight-step review process as part of their decision making on projects that have potential impacts to or within floodplains, including the following:

1. Determine if a Proposed Action is in the base floodplain (that area which has a one-percent or greater change of flooding in any given year).
2. Conduct early public review, including public notice.
3. Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.
4. Identify impacts of the Proposed Action.
5. If impacts cannot be avoided, develop measures to minimize the impacts and restore and preserve the floodplain, as appropriate.
6. Reevaluate alternatives.

7. Present the findings and a public explanation.
8. Implement the action.

Little data regarding floodplains or base flood elevations is available for the project area, as most of this area has not been mapped by the Federal Emergency Management Agency (FEMA). Mapped areas within the project area include the Dorsey Creek and Sixteenmile Creek crossings south of Dinner Station, the Coyote Canyon Creek crossing, the McClellan Creek crossing, and the South Fork Owyhee River near Tuscarora, all of which are within the 100-year floodplain (mapped as FEMA Zone A; subject to a one percent annual chance of flooding). Exact widths within the floodplain could not be determined from FEMA maps. Natural floodplains were observed most notably in the area surrounding Coyote Canyon Creek.

Environmental Consequences of the Proposed Action

Surface Water

Construction of the fiber optic line would not impact any perennial streams, intermittent/ephemeral streams, wetlands, water quality, or floodplains as they would be bored under (**Table 11; Appendix E – Figures 1 and 2**). All waterways would be bored at a depth not less than 6 feet below ground surface (bgs) to prevent surface water loss from the stream channel, and boring would commence and conclude at least 10 feet from the edge of the surface water (or adjacent wetland, if present) to prevent disturbance to riparian vegetation and habitat.

Water quality impacts would be temporary (during construction) and negligible. Water quality impacts would primarily be in the form of increased sedimentation in stream systems as restored areas are allowed to stabilize. Erosion control measures would limit the extent of these effects to local reaches immediately downstream of construction areas. The long-term presence and operation of the fiber optic line would not contribute to increased sedimentation except during occasional maintenance activities, if necessary.

Ground Water

Plowing in the fiber optic cable conduit would uplift a trench about 12 inches wide to a depth of 36 inches using a standard cable plow. All waterways would be bored under at a depth not less than 6 feet bgs to prevent surface water loss from the stream channel. Because trenching and/or boring would be between 3 to about 6 feet bgs in any location and based on soil survey information (NRCS 2010a and 201b), groundwater resources should not be affected. A recent fiber optic project in adjacent area did not encounter groundwater during installation activities (Grigg 2011).

Waters of the United States, Including Wetlands

Because disturbance to Waters of the U.S. would be avoided, coverage under a Nationwide Permit No. 12 – would not be anticipated.

Floodplains/Riparian Zones

Several Zone A areas have been designated by FEMA that are crossed by the project area, and natural floodplains were observed during field survey. The majority of streams were confined to their active channel, with no apparent adjacent floodplain observed. Only active channels and

adjacent riparian (wetland) vegetation would be bored under, thus some portion of FEMA-mapped floodplains could be affected by fiber optic installation. Temporary floodplain impacts would be in the form of trenching and surface disturbance, if they were to occur. There would be no adverse impacts to floodplain function from the surface disturbance or trenching processes. Again, most of the mapped floodplain areas would be avoided by boring, as streams and the wetlands adjacent to streams are present within the floodplains.

Environmental protection measures as identified in **Section 2.1.6.6** would be implemented.

3.3.7 Noxious Weeds and Invasive, Non-Native Species

Affected Environment

The BLM defines an invasive weed as, “a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the health of the site, it makes efficient use of natural resources difficult and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all” (BLM National List of Invasive Weed Species of Concern).

Invasive and non-native plant species may spread from infested areas by people, equipment, livestock, wildlife, and winds. They often exhibit aggressive growth and have the potential to seriously degrade the economic and ecological values of natural resources. Under Executive Order 13112, it is the policy of the land management agencies to prevent introduction of noxious weeds and invasive non-native species and to control their impact (EO 13112, 1999). Nevada Revised Statute 555.005 defines noxious weeds as plants which are likely to be “detrimental or destructive and difficult to control or eradicate.” **Appendix F** contains a list of noxious weeds recognized by the Nevada Department of Agriculture (NDOA 2005).

Scotch thistle (*Onopordum acanthium*) was observed in Taylor Canyon along Lone Mountain Station to Tuscarora SR ROW. Two occurrences in this area contained a single plant (4-5 feet tall) and one occurrence contained 13 plants.

Perennial pepperweed (*Lepidium latifolium*) was observed along Lone Mountain Station to Tuscarora SR ROW.

Environmental Consequences of the Proposed Action

The Proposed Action would create 39.9 acres of disturbance on public lands, 2.1 acres of disturbance on state lands, and 47.5 acres of disturbance on private lands, a total of 89.5 acres. Because vegetation removal and soil disturbance during construction of the proposed fiber optic line would expose areas for establishment of noxious weeds and invasive non-native species, RTC has incorporated measures in the Proposed Action to control and monitor noxious weeds. These measures would be employed until an authorized officer of BLM has verified successful reclamation of the project area to ensure establishment of desirable species in disturbed areas. Implementation of environmental protection measures as identified in **Section 2.1.6.5** would minimize potential establishment and/or spread of noxious weeds.

3.3.8 Land Use and Access

Affected Environment

The proposed project area is located in Elko County and includes public lands administered by the BLM, state lands, and private land. The proposed project would be accessed via SSR 18, SR 225, and SR 226 and contained within these same highway ROWs.

The Lone Mountain Station to Tuscarora segment of the Proposed Action would be located within the SSR 18 and SR 226 ROWs. Along SSR 18, the proposed project would be entirely on the north side from a beginning point approximately one mile southeast of the town of Tuscarora to the intersection with SR 226, where it would join with the proposed line on the east side of the SSR 226 ROW. The proposed project would then continue on the east and then north side of the highway until about half way to Lone Mountain Station. At that point it would cross under the highway to the south side of the SR 226 ROW and then continue to the intersection of SR 225 where it would link with an existing line on the western edge of the ROW (**Figure 2a**).

The northernmost point of the proposed Dinner Station to Adobe Ranchos segment would be located on the west side of SR 225 approximately one and a half miles north of Dinner Station. The proposed project would extend approximately 700 feet south where it would cross under SR 225 to the east side, and then continue south for approximately eleven miles to the termination point of the segment (**Figure 2b**).

The major land use within the SSR 18, SR 225, and SR 226 ROWs is transportation utilities. ROWs in and along the project area include state and county roads, power lines, and fiberoptic lines. Major land uses surrounding the highway ROWs include irrigated cropland, pastureland, rangeland, wildlife habitat, mineral extraction, and dispersed recreation such as off-highway vehicle use, hunting, and camping. There are nine BLM leases related to Oil & Gas, one material (i.e. gravel) pit, and one mineral exploration project near or adjacent to the project area. There are no BLM wilderness study areas, herd management areas, Christmas tree harvest areas, or fuel and post-harvest areas within the proposed project area (BLM 1987).

Environmental Consequences of the Proposed Action

The Proposed Action would add one additional fiber optic line ROW to the land uses within the proposed project area (Lone Mountain Station to Tuscarora segment). It would also replace another fiber optic line currently within the SR 225 ROW with an upgraded segment (Dinner Station to Adobe Ranchos). The Proposed Action would not interfere with other land uses or prevent existing access to public or private lands within the proposed project area. BLM authorization of ROWs within designated transportation corridors would be consistent with Elko Resource Area RMP (BLM 1987) and would minimize impacts by utilizing an existing disturbed corridor.

3.3.9 Visual Resources

Affected Environment

The proposed project is located within Interim Visual Resource Management (VRM) Class III. The Class III VRM objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the landscape. So changes caused by management activities may be evident and begin to attract attention, but these changes should remain subordinate to the existing landscape.

Because the project area spans approximately 37 miles, the description of characteristic landscape is general. The characteristic landscape along both segments includes wide, gently-sloping Pleistocene lake bottoms (valley areas) cut by shallow, sandy washes, with northerly trending mountain ranges on either side of the project area. The vegetation contributes to seasonal color variations of green and gray-green to light yellowish tan in the valley, to dark green in the mountains (piñon and juniper). Soil colors are primarily light tans and grays. Rock outcrop colors range from tan to a darker reddish-brown.

Man-made features in the area include structures, fences, range improvements, roads, and power lines. Almost all of these features are immediately adjacent and parallel to SSR 18, SR 225, and SR 226. The panoramic view along most of the route is essentially natural in appearance with those man-made features being in the direct foreground of the viewshed.

Environmental Consequences of the Proposed Action

The warning signs are the only part of the project which would cause changes to the viewshed and are required for safety reasons. The environmental protection measures for Visual Resources listed in **Section 2.1.6.7** should limit the intrusions to the viewshed. People traveling along the SR 225 would not likely notice a difference because the Dinner Station to Adobe Ranchos segment of the Proposed Action would replace an existing cable line that already has markers. Those traveling SSR 18 and SR 226 along the Lone Mountain Station to Tuscarora segment of the Proposed Action would likely see the warning signs marking the cable if looking in the ROW, but the signs would not attract the attention of the casual observer. For the most part, the signs would be placed at a lower level than the highway road bed and would not be noticeable. The Proposed Action would meet the objectives for Interim VRM Class III.

3.3.10 Vegetation

Affected Environment

The upland plant communities within the SR ROW which includes the project area (**Photo 2**) are almost exclusively comprised of sagebrush. The exceptions are an agricultural field (at McClellan Creek), a fire rehabilitation area (south of Dinner Station), a wetland grass area, and a planted wheatgrass area near Tuscarora. A description of the most common species observed during surveys is included in the section below.



Photo 2 - Typical Vegetation along the Project Area

Upland Shrub Community

The upland portions of the project area traverse communities that are dominated or codominated by Wyoming big sagebrush (*Artemisia tridentata* var. *wyomingensis*), big basin sagebrush (*Artemisia tridentata* var. *tridentata*), or low sagebrush (*Artemisia arbuscula*). These communities commonly include such shrub plants as rubber rabbitbrush (*Ericameria nauseosus* or *E. viscidiflorus*; Dinner Station to Adobe Ranchos), snakeweed (*Gutierrezia sarothrae*), winterfat (*Krascheninnikovia lanata*), and antelope bitterbrush (*Purshia tridentata*); and herbaceous plants such as matted buckwheat (*Eriogonum caespitosum*), povertyweed (*Iva axillaris*) (a native forb), spreading phlox (*Phlox diffusa*), and spiny phlox (*Phlox hoodii*); Great Basin wildrye (*Leymus cineris*), Idaho fescue (*Festuca idahoensis*), Indian ricegrass (*Achnatherum hymenoides*), and bottlebrush squirreltail (*Elymus elymoides*). Approximately 90 percent of the 37-mile project area traverses sagebrush shrub communities.

Crested wheatgrass (*Agropyron cristatum*) appears to have been used to reseed a large reclamation area (approximately three miles along the SR ROW) in Independence Valley east of Tuscarora. This seeding comprises eight percent of the project area.

The fire rehabilitation area south of Dinner Station is dominated by cheatgrass (*Bromus tectorum*), snakeweed, and rubber rabbitbrush, and comprises less than 0.1 percent of the project area.

Wetland/Riparian Community

Streamside and wetland plant communities are present within the project area adjacent to streams. These communities are dominated by willow species. Riparian/wetland plants observed in the existing SR ROW which includes the project area included meadow barley, horsetail (*Equisetum sp.*), curly dock (*Rumex crispus*), arctic rush (*Juncus arcticus*), cinquefoils (*Potentilla spp.*), and Kentucky bluegrass (*Poa pratensis*). These communities comprise less than 0.1 percent of the project area. A (wet) agricultural field at McClellan Creek occurs along 450 feet of the RTC-proposed ROW and comprises about 0.1 percent of the project area.

A wetland grass community present in the Owyhee Valley east of Tuscarora contains arctic rush and meadow barley. This community extends about three quarters of a mile along the RTC-proposed ROW and comprises approximately two percent of the project area.

Environmental Consequences of the Proposed Action

The Proposed Action would result in disturbance of approximately 89.5 acres of vegetation as a result of clearing and installation of the fiber optic line. The main vegetation type affected is the upland shrub community as it is most prevalent in the SR ROW and project area. Re-seeded and rehabilitated areas would also be affected. This would be short-term and minor, as the area would be seeded after construction. Clearing of vegetation would be kept to a minimum. An estimated 10 vaults would be installed along the fiber optic line, resulting in a long-term loss of 0.005 acre of vegetation; this would be a long-term, negligible impact. Implementation of environmental protection measures and subsequent seeding, as identified in **Section 2.1.6.8**, would minimize loss of vegetation.

3.3.11 Wildlife

Affected Environment

The 20-foot wide project area corridor is within a mostly fenced road right of way and habitat is primarily comprised of big sagebrush, low sagebrush and sagebrush-bitterbrush vegetation types, the same as adjacent areas. Sagebrush has been identified by the NDOW Wildlife Action Plan as a key habitat for wildlife conservation (WAPT 2006).

Upland Habitat Areas: The project area is located on the ROW associated with a raised highway roadbed primarily within, or adjacent to, sagebrush habitats dominated by Wyoming big sagebrush, big basin sagebrush, or low sagebrush. These areas are dissected by perennial, intermittent, and ephemeral drainage areas with upper bank overstory vegetation, dominated by basin big sagebrush and rubber rabbitbrush, and lower bank vegetation comprised of both mesic (moist soils) and xeric (dry soils) species depending on the area.

Riparian and Dry/Wet Meadow Habitat Areas: A relatively small percentage of the project area is located within floodplain and riparian areas associated with lotic (moving water) habitat. The

project area also crosses dry and wet meadow areas. Depending on the area, overstory vegetation on upper banks is dominated by stands of basin big sagebrush and rubber rabbitbrush. Scattered stands of willow are present as overstory riparian vegetation on upper and lower bank areas and within floodplains. Willow cover varies from areas with no presence, areas with isolated young plants, to those with continuous stands with solid cover. Understory vegetation in these areas are dominated by aquatic plants and other herbaceous species associated with moist soils (see Vegetation, **Section 3.3.10**).

General Wildlife

As per the BLM Elko Field Office Wildlife Lists, there are approximately 246 bird species, 28 reptile and amphibian species, and 76 mammal species that could inhabit the Field Office area on a seasonal or yearlong basis.

Approximately 100 bird species, 70 mammal species, and many reptile and a few amphibian species occur on the various habitat types provided in the sagebrush-steppe of northeastern Nevada. In addition, approximately 70 aquatic birds species could utilize habitat provided by seasonally-flooded agricultural areas, perennial streams and associated riparian areas, wet meadows, and wetlands on a seasonal or yearlong basis that are directly within, or in close proximity to, the proposed project. A number of passerine bird and mammalian species, including those that are considered wetland- or riparian obligates, also inhabit these areas on a seasonal basis.

A baseline wildlife survey was conducted along the project corridor in November 2010 in order to identify common and sensitive terrestrial and avian wildlife species within the project area. General wildlife surveys were limited to incidental observations and characterization of vegetative habitat communities throughout the project area. Observations of special status species are discussed in section 3.3.5.

Regarding general wildlife, surveyors observed coyote (*Canis latrans*), skunk (*Mephitis mephitis*), badger (*Taxidea taxus*), and red fox (*Vulpes vulpes*) along Dinner Station to Adobe Ranchos segment. Coyote were also observed along Lone Mountain Station to Tuscarora segment. Black-tailed jackrabbit (*Lepus californicus*) and cottontail rabbit (*Sylvilagus floridanus*) were observed along both Dinner Station to Adobe Ranchos and Lone Mountain Station to Tuscarora segments. Other mammals expected in the vicinity include big brown bat (*Eptesicus fuscus*), little brown myotis (*Myotis lucifugus*), meadow vole (*Microtis pennsylvanicus*), Ord's kangaroo rat (*Dipodomys ordii*; NDOW 2010).

Big Game

Mule Deer (*Odocoileus hemionus*): There is mule deer summer range in the vicinity of Lone Mountain Station to Tuscarora segment, in the Independence and Bull Run mountains, and the area provides migration corridors as mule deer travel southwest to the Dunphy Hills area to winter. Mule deer were observed during the November 2010 survey in the area along both Dinner Station to Adobe Ranchos and Lone Mountain Station to Tuscarora segments.

Pronghorn (*Antilocapra americana*): The Proposed Action areas along Dinner Station to Adobe Ranchos and Lone Mountain Station to Tuscarora (west to Eagle Rock Creek) segments provide pronghorn habitat. Pronghorn were observed during the November survey along Dinner Station to Adobe Ranchos segment.

Amphibians and Reptiles

Amphibian species require both aquatic habitats (for breeding, at a minimum) and terrestrial habitats to complete their life cycle, thus habitat connectivity between aquatic and terrestrial habitats is key to habitat suitability. In addition, aquatic habitats are often in a state of succession due to water availability, and may disappear for a variety of reasons. In order for an amphibian population to survive, individuals must be able to move between suitable habitats (NDOW 2006), and habitat fragmentation prevents movements at the necessary scale. Along the project area corridor, wetted backwaters along streams provide excellent habitat for amphibian species, provided that these areas receive adequate water during spring flow periods (NDOW 2006). Amphibian species may be present in any aquatic habitat or terrestrial habitat (in the vicinity of aquatic habitat) along the project area route. Pacific chorus frogs (*Pseudacris regilla*) have been documented in Sixteenmile Creek (T36N, R54E, Section 26; NDOW 2010).

Reptiles are cold-blooded, egg-laying vertebrates that are generally small and located in warm habitats. Great Basin snake and lizard species are expected within the project area in low densities. Reptile species that may be present in the project area include collared lizard (*Crotaphytus collaris*), western fence lizard (*Sceloporus occidentalis*), and western rattlesnake (*Crotalis viridis*; NDOW 2010).

No amphibians or reptiles were observed during the November 2010 survey within the project area.

Fishes

Perennial reaches of streams in the project area support a variety of nongame fish species including Lahontan speckled dace (*Rhinichthys osculus robustus*), redband shiners (*Richardsonius balteatus*), and Tahoe and mountain suckers (*Catostomus tahoensis* and *C. platyrhynchus*). Brook trout (*Salvelinus fontinalis*) and redband trout (*Oncorhynchus mykiss*) (see Special Status Species) are also present in Taylor Canyon and Waterpipe Canyon Creeks. Seasonal streams in the project area, including Dorsey Creek, Sixteenmile Creek, Eagle Rock Creek, and Carlin Creek may support aquatic species for part of the year.

Environmental Consequences of the Proposed Action

The Proposed Action would result in the temporary loss of about 89.5 acres of habitat on public lands and private lands until reclamation efforts are successful in providing native perennial grass cover similar to or better than pre-project conditions. Shrubs could naturally reestablish on the RTC-proposed ROW although no shrub seeding is proposed for reclamation as an effort to deter tall shrub cover and any attraction to some wildlife species in close proximity to high-speed vehicular traffic. Since most habitats adjoining the RTC-proposed ROW are already at their respective carrying capacities and would not support any additional animals, displaced

individuals or groups of animals that defend breeding and young-rearing/nesting territories would be lost from the population until vegetation reestablishes on the ROW area. The remaining animals would be concentrated within adjoining habitat areas during non-breeding periods.

Impacts to wildlife would be short-term and minor. Construction disturbance would be entirely within the SR 225, SR 226, or SSR 18 ROWs, which are generally fenced. Although some wildlife may inhabit or frequent the SR ROW, it is likely that most wildlife are habituated to the traffic on the road and would avoid machinery. Minimal indirect impacts to some small, less mobile individuals would likely occur as they could be forced to disperse from the area or may be killed or injured during construction activities. Wildlife in the area would likely be displaced temporarily from active construction areas into adjacent undisturbed habitat. Populations on the whole would not be affected. Efforts would be made to avoid shrubs that provide important habitat for birds and other animals. All perennial drainages would be bored under surface and any sub-surface clay layer soils, thus avoiding impacts to aquatic wildlife habitat in conformance with Federal and State of Nevada laws relative to these Proposed Actions on waterways. Short-term disturbance-related impacts would be negligible and would last only as long as construction activities are being conducted or until the implementation of successful reclamation and revegetation of the disturbed area has occurred. Environmental Protection Measures listed in **Section 2.1.6.9** (e.g., project scheduling, revegetation, BMPs to prevent sedimentation) would be implemented and followed in order to minimize impacts to fisheries and wildlife.

3.3.12 Climate Change

Affected Environment

Given the natural variability of the Earth's climate, it is difficult to determine the extent of change that humans cause. Throughout the history of the earth the temperature of the earth has fluctuated from much colder to much hotter than the current time. Global temperature changes result from numerous factors such as location and relative position of land mass, activity of the sun, and type and concentration of gasses in the atmosphere as caused by life on earth or eruption of volcanoes. Recent data suggest that human activity has increased the release of sufficient volumes of greenhouse gasses, carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons, to influence climate change.

According to the U.S. Energy Information Administration, the levels of several important greenhouse gases have increased by about 25 percent since large-scale industrialization began (EIA 2011). Assessments generally suggest that the Earth's climate has warmed over the past century and that human activity affecting the atmosphere is likely an important driving factor. For example, a study by Karl *et al* predicts an increase of one to two degrees Fahrenheit over the next nine years for the southwest part of the United States (Karl et al. 2009). A NASA study concluded that an increase of 2 to 6 degrees centigrade can be expected over the next century (NASA 2011). Despite the minor differences in the conclusions of studies like these, there is *very high confidence* that the net effect of human activities since 1750 has been one of warming (IPCC 2007).

Environmental Consequences of Proposed Action

The human activities associated with the Proposed Action would not be expected to have any effect on greenhouse gas emissions or climate change. Carbon emissions from construction vehicles and equipment usage in the near-term would not measurably change the current level of greenhouse gasses in the right of way corridor from those associated with use of the existing state highway. Energy consumption associated communication activities conducted in the area served by the right of way would be expected to remain the same or decrease upon activation of the new facility since the upgraded line would use the same or less energy to operate. Finally, because the facility would be constructed underground, it would not result in any measurable reduction of permeable ground surface and vegetation within the ROW.

3.3.13 Paleontological Resources

Affected Environment

Paleontological resources are the fossilized remains of invertebrate and vertebrate animals and multi-cellular plants, including imprints. These resources are non-renewable. Vertebrate fossils have been reported along SR 225 between the Adobe Range and Devils Gap/Mahala Creek area which includes the Dinner Station to Adobe Ranchos segment area.

A project specific paleontological inventory was conducted in the project area (Britt and Scheetz 2011). The inventory indicated that the Lone Mountain Station to Tuscarora segment will cross one paleontological site containing fragmentary Miocene-aged bones scattered over a broad area. Weathered bone fragments are common in the natural gravel pavement. Bone in this gravel is derived from weathering and erosion of the Miocene-aged stratum in a south-facing blocky outcrop. In-situ (i.e., in place) bones are sparse. No other fossils were observed during the field survey.

Environmental Consequences of Proposed Action

The Proposed Action may adversely impact the paleontological site crossed by the proposed Lone Mountain Station to Tuscarora fiber optic line segment (Britt and Scheetz 2011). If vertebrate or other important fossils are observed during trenching, activities would be halted in the area and the Elko BLM Field Office notified immediately (see **Section 2.1.6.10**). Construction would not resume until the fossils have been evaluated by authorized BLM personnel or a qualified paleontologist. Should rare, articulated, or particularly important fossils be exposed, work in the area would cease until recovery or protective measures have been completed to the satisfaction of the BLM. With these protective measures and the lack of significant recorded paleontological resources in the project area, impacts to this resource would be negligible.

3.3.14 Soil Resources

Affected Environment

Using the NRCS web soil surveys of Elko County, Nevada (NV763 and NV767), 25 soil units or soil associations have been identified along the proposed fiber optic line route (NRCS 2010a; NRCS 2010b); 17 along the Lone Mountain Station to Tuscarora Segment and 8 along the

Dinner Station to Adobe Ranchos Segment. Generally, soils range from moderately fine textures on the tops of fans and terraces, to moderately coarse-textured soils in valley bottoms, alluvial fans, and windblown areas. The soil units and descriptions are provided in **Appendix G**.

Environmental Consequences of the Proposed Action

The Proposed Action would result in disturbance of approximately 90 acres of existing soils as a result of clearing and installation of the fiber optic line. Soils would be disturbed to a depth of 4 feet as a result of conduit installation via trenching and up to two feet deeper during boring activities. The removal or disturbance of soil would result in a permanent modification to the soil structure. An estimated 23 vaults (0.0002 acres of disturbance each) would be installed along the fiber optic line, resulting in a long-term loss of 0.005 acre of soils. Although clearing of vegetation would be kept to a minimum, erosion of soils may occur in areas along the fiber optic line, until reclamation occurs. Implementation of environmental protection measures, as identified in **Section 2.1.6.11**, would minimize loss of soil from erosion due to wind and water. Impacts would be long-term and minor.

3.4 MITIGATION AND MONITORING

3.4.1 Cultural Resources Protection

Cultural resources would be avoided by project activities by boring under the site or rerouting the buried cable in the borrow ditch or edge of the highway fill where no intact cultural resource deposits exist. A buffer of 30 meters before and after a direct bore would be established to help provide protection to the sites during construction. Avoidance of adverse impacts to NRHP-eligible cultural resources would require the use of an archaeological monitor whenever construction is planned within 300 feet of any of the eight NRHP-eligible properties. See additional environmental protection measures at **Section 2.1.6.2**.

3.4.2 Noxious Weeds and Invasive, Non-native Species

As presented in **Section 2.1.6.5**, to minimize the introduction and establishment of noxious weeds in the disturbed areas, the following measures would be incorporated into the Proposed Action:

- RTC would implement a monitoring and weed control program along the fiber optic line corridor that would be in effect until the reclamation of disturbed areas has been determined successful per BLM standards. Weed control, if necessary, would include application of BLM-approved herbicides by a certified contractor. If herbicides are used, Pesticide Application Records (PARS) would be filled out daily and submitted to the BLM on an annual basis and all herbicide applications would be in conformance with all BLM policies and regulations. Additionally, the applicator would follow all applicable state laws and regulations.
- RTC would use a certified weed-free seed mix during revegetation of disturbed areas along the corridor. The proposed seed mix for the project area is shown in **Table 5**.
- All RTC vehicles and equipment shall be cleaned of mud, dirt, and plant parts with a high-pressure water spray at the nearest commercial car wash prior to entering the **ROW site**, and also during construction if noxious weeds were encountered along the route. Cleaning efforts shall concentrate on tracks, feet, or tires, and the undercarriage, with special emphasis

on axles, frames, cross members, motor mounts, the underside of running boards, and front bumper/brush guard assemblies.

- Areas of noxious weeds would be identified during pre-construction activities and avoided if possible. RTC would revisit these sites for no less than 3 years post-disturbance to document that noxious weeds have not re-infested the area and to eradicate any new noxious weeds as they grow.
- The occurrence of noxious weeds at any time would be reported to the BLM at any time during the life of the ROW grant, if issued.

3.4.3 Wildlife, including Migratory Birds

Construction would be limited to outside the nesting season for migratory birds (April 1 – August 15). If construction were to be initiated prior to the end of the nesting season, a pre-construction nest survey would be conducted in areas where construction activities could impact existing vegetation, so that active nests could be avoided until after fledging. Pre-construction surveys would be conducted for Sensitive bird species in conjunction with migratory birds in suitable habitat. If any Sensitive migratory bird nests were discovered along the route, BLM would be notified and the nest would be avoided until birds had fledged.

4.0 CUMULATIVE IMPACTS

This chapter analyzes the potential cumulative impacts that would result from the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

The resources analyzed in Chapter 3 have been evaluated for cumulative impacts. BLM has determined that cumulative impacts would be negligible for most resources, including air quality, water, range, land use, Native American concerns, and soils.

Cumulative effects study areas (CESA) were evaluated for each of the resources, and a general CESA was defined as extending approximately 1.5 miles on both sides of the proposed corridor, which encompasses approximately 77,710 acres (**Figure 3**). The timeframe for the cumulative assessment assumes 30 years, which is the approximate estimated life of the fiber optic line.

4.1 DESCRIPTION OF PROJECTS

The primary activities that would contribute to cumulative effects include past, present, and reasonably foreseeable future actions including ranch and housing development, recreation, livestock grazing, wildfires and burned area rehabilitation, drilling activities for geothermal resources and locatable mineral exploration activities, pipeline installation, and other ROW activities (power lines, roads, and other utilities). Past, present, and reasonably foreseeable future projects are described in this section, with respect to the CESA.

Figure 3 General Cumulative Effects Study Area

4.1.1 Past and Present Activities

Historic activities in the CESA have included other ROW activities (roads, power lines, and other utilities), grazing, wildfire suppression and burned area rehabilitation activities, and salable and locatable mineral exploration and development activities.

Grazing in the area has occurred since the mid 1850s with the establishment of the ranches in the area. After the Taylor Grazing Act of 1934, the number of both cattle and sheep were reduced. Grazing and hay production are the two largest land uses in the area of the proposed project.

Wildland fires have affected grazing and wildlife habitat use in the CESA area. According to the BLM fire data, the 2005 Oyster fire and the 2006 Basco fire burned 2,708 acres within the CESA. The Taylor Canyon Fire (2006) burned nearly 4,500 acres in portions of the Independence Valley and Independence Mountains, and unknown acreage within the CESA (at least 3 miles of the proposed alignment along SR 18 appears to have been affected). Thus, burned acres reported in the CESA represent a conservative estimate. Emergency stabilization and rehabilitation actions that BLM has taken since these fires occurred include seeding, and closing the burned areas to grazing until revegetation objectives are met.

Settlement and residential development began in the 1850s with Elko founded in 1868. The 2009 population estimate for Elko County was 47,896, a 5.8 percent increase from 2000 (Source U.S. Census Bureau: State and County QuickFacts). The town of Elko had a population of 16,708 in 2000 which increased to 17,156 in 2008, a 2.7 percent increase (Source: Population Division, U.S. Census Bureau). The small settlement of Tuscarora has a population of 266 currently (Zip4All 2010). There are scattered houses and ranches within the CESA.

There are three main ROW corridors in the CESA: SSR 18, SR 225, and SR 226, which generally have a road disturbance width of 50 feet creating approximately 280 acres of disturbance. There are approximately 118 miles of local and rural roads and 11.5 miles of dirt road/trail within the CESA. In addition, several overhead power distribution and transmission lines to 345kV capacities intersect or parallel different sections of the highway ROWs. Other present activities within the CESA area include grazing, crop production (primarily hay), geothermal exploration drilling, road maintenance activities, and recreation. Grazing and crop production on public and private lands is an ongoing activity by the ranching operations along SR 225. Projects involving public land that intersect or are in close proximity to the Proposed Action on the SR 225 and SR226 area include Oreana to Hunt Idaho 345kV, Humboldt 120kV, Anglo Gold 120kV, Wells Rural Electric 120kV and Ormat Tuscarora 120kV transmission lines; single phase power lines; the Humboldt and Eight Mile Creek electrical substations; the 42-inch diameter Ruby Pipeline natural gas line and associated Weiland Flat Compressor Station.

Road maintenance activities on SR 225, SR 226, SSR 18, and adjacent roads are conducted on an as-needed basis. This includes surface maintenance and snow removal on the highways and grading on secondary roads. Many of the roads leading from the highways are on private land and are thus maintained by the land owner. Recreation use is likely to occur during all seasons

including hunting, fishing, camping, four-wheel use, snowmobile use, sightseeing, and rock hounding.

The Ruby Pipeline project recently affected a substantial area of the CESA along the Lone Mountain Station to Tuscarora segment. The Ruby Pipeline is a 680-mile, 42-inch diameter natural gas pipeline that passes through or follows the SR 226 ROW. The pipeline enters the CESA near Eagle Rock Creek and exits the CESA near the mouth of Taylor Canyon. The Ruby Pipeline ROW is 300 feet wide with work occurring approximately 75 to 260 feet in width on the ROW within the CESA. In addition, authorized access roads, storage yards, work stations, and other necessities are located on or near the project area. Construction of the Ruby Pipeline created extensive surface disturbance from late 2010 through fall of 2011. The initial stage of the reclamation effort for the Ruby Pipeline project within the CESA has been completed and will be monitored over the next three years to ensure satisfactory outcomes in compliance with the stipulations in the Ruby Pipeline ROW grant.

4.1.2 Reasonably Foreseeable Future Actions

Wildland fires are likely to continue to occur within the Adobe Range, areas to the east and west, in the Independence Valley, and the Independence Mountains. It is impossible to predict the location and size of future fires, but within the next 20 years, one or more large fires will likely occur within the CESA. Similar to the previous fires, BLM would take actions as necessary to suppress fires and stabilize and rehabilitate the burned areas, in cooperation with other federal, state and local agencies and affected landowners.

Current mineral exploration activities will likely continue to occur within the CESA. All minerals activities on BLM lands would be subject to laws and regulations governing mineral exploration and development. The BLM would manage any such activity on public land and take action, as necessary, to prevent undue and unnecessary degradation.

Current livestock grazing, ranching, and recreation activities would continue to occur in the reasonably foreseeable future within the CESA area. Grazing on public lands would be subject to multiple use management strategies, terms and conditions of permits, and fire closures by BLM. Residential development would also continue to occur.

Table 11 summarizes the cumulative disturbances of the proposed fiber optic line and the other activities described in this section.

Table 11 Summary of Disturbance

Activity Description	Mileage (if applicable)	Total (acres)
Fiber optic line (Proposed Action; 20-foot-wide disturbance proposed)	36.9	89.5
Existing fiber optic line (20-foot-wide disturbance assumed)	8.4	20.4
Existing ROWs (Transmission/Distribution Lines, pipelines, etc; assumes 50 foot ROW)	29.4	178.2
Existing ROWs (State highways, county highways, including SR 225, SR 226, and SSR 18; 50-foot wide disturbance assumed)	46.2	280.2
Existing ROWs (Local and rural roads; 25-foot wide disturbance assumed)	118.6	359.4
Dirt road/trail (12-foot wide disturbance assumed)	11.5	16.7
Ruby Pipeline (300-foot wide disturbance assumed)	~5	*181.8
Wildland Fire	-	2,708.0
Golden Predator Mine (exploration)	-	21.0
Taylor Canyon Barite Mine (inactive)	-	~50.0
Starvation Canyon Gold (exploration)	-	~50.0
Total		3,955.2

*Because exact acreage of disturbance for Ruby pipeline was not available, for purposes of this EA disturbance was assumed to be 300 feet wide for 5 miles within the CESA.

4.2 CUMULATIVE EFFECTS

The following sections discuss the cumulative effects of the Proposed Action when combined with impacts from the activities described above (i.e., exploration development, livestock grazing, ranching, administrative land uses, etc.) within the respective CESAs. The CESAs are shown in **Figure 3**. The following affected resources are analyzed:

- Cultural Resources
- Migratory Birds
- Special Status Species (including TES Species)
- Noxious Weeds and Invasive, Non-Native Species
- Visual Resources
- Vegetation
- Wildlife
- Paleontological Resources

4.2.1 Cultural Resources

Most cultural properties tend to degrade over time due to natural forces but many survive for thousands and even millions of years. Modern human activity tends to exacerbate the damage

and as a consequence cultural resources are disappearing at an ever increasing rate. Most of the recorded cultural resources in the CESA exhibit impacts resulting from modern use of the land. Many of the impacts of the proposed fiber optic line would be mitigated through implementing protective measures described in the cultural resource mitigation section. Similar measures would be implemented for other types of federal undertakings and would also limit cultural resource impacts.

4.2.2 Migratory Birds

A cumulative loss of habitat in the CESA has the potential to impact migratory birds by increasing the loss of additional nesting and foraging habitat; and loss of individual birds, young birds, and nests due to ground disturbing activities or other activities in the CESA, such as grazing and ranching activities. Fires have affected the largest amount of habitat compared to impacts resulting from other projects within the CESA, although burned vegetation would not result in the long-term loss of habitat unless invasive species were to become established in burned areas. Of the 2,700 acres burned in the last five years in the CESA, the majority is expected to return to suitable habitat. The incremental loss of migratory bird habitat (0.005 acre) in the project area would be negligible compared to amount of available habitat in the CESA and surrounding areas.

4.2.3 Special Status Species (including TES Species)

Wildfires have had, and are likely to have, the greatest temporary to long-term impacts to sagebrush areas that provide habitat for many wildlife species designated as Special Status Species. Over 2,700 acres have burned in the CESA in the past five years. Much of this burned area has been in sagebrush habitat, and post fire rehabilitation activities including seeding of shrub, forbs and grasses are completed to help restore lost habitat. However, the cumulative number of transmission lines and power lines are influencing wildlife use (e.g. sage grouse) on thousands of acres of habitat on the CESA. Transmission and power line structures that do not have effective and maintained predatory bird perch and nest deterrents allow for expansion of predatory birds into areas where these relatively high-above-ground features did not exist prior to the given projects. This increases risks for predation by rapidly expanding numbers of predatory birds, primarily common ravens. An unknown number of bird collisions (e.g. sage grouse) occur during flight in association with these lines. Sage grouse potentially avoid suitable habitat within an approximate 600-meter distance on either side of transmission/power line structures (Braun 1998). Due to the small amount of suitable sagebrush habitat that would be affected by the fiber optic line, the cumulative impacts from it are negligible.

Past and current agricultural practices have maintained many habitat areas used by migratory and sensitive birds in the Independence Valley. However, former and recent type-conversions of hundreds of acres of native rangelands from sagebrush-grasslands to crested wheatgrass seeding or hay crop (circle pivot) areas have impacted habitat for sagebrush-obligate species or those species that utilize sagebrush habitat on a seasonal basis. Big sagebrush could reestablish over time on the crested wheatgrass seeding areas (beneficial for wildlife, crested wheatgrass and site dynamics) and many non-sagebrush obligate species could utilize hay crop areas without detrimental effects.

Past and ongoing grazing disturbances, particularly livestock use of streamside vegetation, has affected riparian habitat and has indirectly affected aquatic species such as Upper Snake River redband trout and Columbia spotted frog. The Proposed Action would bore under all perennial waters and there would be no adverse impacts to riparian vegetation or flowing streams. Overall cumulative impacts to special status aquatic species from installation of the fiber optic line would be negligible to minor.

4.2.4 Noxious Weeds and Invasive, Non-Native Species

The Proposed Action combined with past, present, and reasonably foreseeable surface disturbance within the CESA area has the potential to create conditions favorable for the establishment/invasion of invasive non-native species and noxious weeds, and other undesirable plants. Future occurrence of a large wildland fire poses the greatest risk for invasion of weeds in the area. Consistent with BLM policy, use of suitable seed mixes with only certified weed-free and tested seed, combined with implementation of prompt and appropriate revegetation techniques would reduce the potential for undesired weeds to invade burned areas. The potential for the establishment of noxious and/or invasive non-native weeds within the CESA area may be greater if the fire burns on private lands where federal involvement is limited.

The environmental protection measures discussed in **Section 2.1.6.5** are standard operating procedures that are applied to all BLM actions to prevent weed species from spreading and dominating disturbed sites (i.e., cleaning the undercarriage of vehicles prior to entering the project area).

4.2.5 Visual Resources

Surface disturbance within the CESA area has the potential to result in short- and long-term visual impacts, principally contrasting with the elements of line and color in the landscape. The CESA area on public land has a VRM Class III designation. There have been and would be several projects that would have an impact on the visual resources of the area including the Proposed Action. However, location of the Proposed Action within existing ROWs would follow the existing line, minimizing the impact. After successful reclamation, the line and color would be less visible. The Proposed Action is expected to add long-term cumulative effects to visual resources of the area, but the level of impact when combined with past, present, proposed, and reasonable foreseeable future projects do not exceed VRM Class III management objectives.

4.2.6 Vegetation

Past and on-going disturbances, such as livestock grazing, wildfire, and developments, have affected vegetation in the CESA. Areas that remain barren until vegetation becomes established, have a minor short-term impact to wildlife and livestock forage. The additional long-term loss of approximately 0.005 acre represents less than 1 percent of the CESA area. This is negligible when combined with the 2,708+ acres recently burned within the CESA and the 215 miles of linear disturbance by highways, pipeline installation, and other actions in the area. If a major fire were to occur in the CESA area, BLM would assess impacts of the loss of vegetation and wildlife habitat, and propose measures needed to stabilize and rehabilitate the burned area.

4.2.7 Wildlife

The cumulative loss of habitat in the CESA area has the potential to adversely impact wildlife. Fires have affected the largest amount of habitat compared to impacts resulting from other projects within the CESA area, although burned vegetation would not result in the long-term loss of habitat unless invasive species were to become established in burned areas. Of the 2,700 acres burned in the last five years in the wildlife CESA, the majority is expected to return to suitable wildlife habitat. The construction of power transmission lines, pipelines, and roads has also affected a large amount of wildlife habitat in the CESA (at least 30 miles). However, the addition of a buried cable within the existing SR ROW disturbance would result in a short-term loss of forage and habitat, and this would not result in an adverse cumulative impact.

Past and ongoing grazing disturbances, particularly livestock use of streamside vegetation, has affected riparian habitat and aquatic wildlife species (i.e., amphibians), but the Proposed Action would bore under all perennial waters and there would be no adverse impacts to riparian vegetation along streams, and thus no adverse cumulative impacts to streamside vegetation that provides habitat for aquatic species. Regarding water quality, best management practices and storm water management during construction and operation would prevent any significant storm water runoff or wastewater from disturbed areas from reaching surface water features, groundwater, or wetlands. Overall, the 0.005 acre of long term surface area disturbance contributes negligibly to the cumulative loss of wildlife habitat for terrestrial and aquatic species attributable to other activities in the area.

4.2.8 Paleontological Resources

Encountering paleontological resources during construction has the potential to destroy and/or lose the resource. However, it also has the potential of providing additional data and rare or previously unknown specimens which can further scientific knowledge. Additional impacts to paleontological resources in conjunction with the fiber optic line would be unlikely (Britt and Scheetz 2011). Impacts to paleontological resources associated with federal land management decisions/actions would be minimized or reduced in accordance with federal legislation and existing standard operating procedures. Thus, cumulative impacts to paleontological resources would be negligible to minor.

5.0 CONSULTATION AND COORDINATION

This EA was prepared by JBR Environmental Consultants, Inc. under the direction of the BLM Tuscarora Field Office, Elko, Nevada. Assistance was provided by BLM resource specialists; consultation with other local, state, and federal agency resource personnel; review of company and agency files; field reconnaissance; and review of supporting documentation.

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5.2 PERSONS, GROUPS, TRIBES, AND AGENCIES CONSULTED

Tribes

Duckwater Shoshone Tribe

State Agencies

Nevada State Historic Preservation Office
Nevada Department of Wildlife
Nevada Natural Heritage Program
Nevada Division of Environmental Protection, Water Pollution Bureau

Federal Agencies

Army Corps of Engineers, Reno Regulatory Office
U.S. Fish and Wildlife Service

5.3 PUBLIC NOTICE AND AVAILABILITY

BLM will issue a news release to announce the availability the EA for a 30 day comment period. The EA will be posted to the Elko District BLM webpage for public review. In order for the BLM to offer a right of way grant, it must first issue a Finding of No Significant Impact and a Decision Record informing the public of the selected alternative and the appeal process.

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APPENDIX A – LEGAL LOCATIONS OF RIGHTS-OF-WAY

Lone Mountain Station to Tuscarora and
Dinner Station to Adobe Ranchos Fiber Optic Lines
BLM ROW Locations

Township and Range	Section	Quarter Sections (or Lots)
Lone Mountain Station to Tuscarora Segment		
T39N R51E	1	NE SE; NW SE; NE SW; NW SW
	2	NE SE; NW SE
T39N R52E	6	Lot 6; NE SW
	9	Lot 1; Lot 2
T39N R53E	32	SE NE; NE NE
	33	NW NW; SW NW; SE NW; NE SW; NE SE; NW SE; SE SE
	34	SE SW; SW SW; SE SE; SW SE
	35	NE SW; NW SW; SE SW; NE SE; NW SE; SW SE
	36	NE SW; NW SW; SE SW; SE SE
T38N R54E	5	NW SW; SW SW
	6	Lot 4; Lot 5; SE NW; NE SW; NE SE; NW SE
	8	SW NE; NE NW; NW NW; SE NW; NW SE; SW SE; SE SE
	16	SW NW; SE SW; SW SE
	17	NE NE; SE NE
	21	NE NE; NW NE;
	22	SW NE; SE NE; NW NW; SW NW; SE NW
	23	SW NW
	24	SW SW
Dinner Station to Adobe Ranchos Segment		
T37N R54E	14	NE SW; SE SW
	26	NW NE; SW NE; NW SE; SW SE
T36N R54E	2	NE NW; SE NW; NE SW; SE SW
	14	NE NW; SE NW; NW SW; SW SW
	26	NW NW; SW NW; NW SW; SW SW

APPENDIX B – FACILITY DESIGN FIGURES

APPENDIX C – ADDITIONAL SPECIAL STATUS SPECIES INFORMATION

MAMMALS

Small-footed Myotis - Small-footed myotis bats often roost in caves, abandoned mine workings, or in rock fissures on cliff faces. Roost sites are limited in the vicinity of the project area; suitable foraging habitat occurs on upland and riparian areas along the SR ROWs.

Yuma Myotis - The Yuma myotis bat is often associated with water, including small ponds, lakes, and streams. Yuma myotis potentially roost in buildings, caves, trees and under bridges. These roost sites are limited in the vicinity of the project area. Foraging habitat is present within the project area.

Long-eared Myotis - This bat species utilizes a variety of roost locations such as buildings, tree cavities, or under tree bark. These roost sites are limited in the vicinity of the project area. Primary foraging habitat occurs in riparian areas near the project area.

Long-legged Myotis - This bat species uses a variety of sites for roosting, including rock crevices and trees. It is likely to forage in the vicinity of the project area.

Fringed Myotis - This bat species is uncommon in the Great Basin. Foraging habitat is present in the vicinity of the project area.

Townsend's Big-eared Bat - This bat species generally requires caves for roosting. Foraging habitat is present in the vicinity of the project area.

Spotted Bat - Roosting sites include rock crevices on steep cliff faces, which are not present in the project area. This species may utilize riparian areas for foraging, near the project area.

Pallid Bat – Day roosts include rock outcrops, mines (largest maternity colony is in historical mine workings in Pershing County, NV), caves, hollow trees, buildings, and bridges. Night roosts are commonly under bridges (Bradley et al. 2006). The project area vicinity provides foraging habitat.

BIRDS

Peregrine falcon - This species is a potential migrant that could utilize suitable habitat in the area on a seasonal basis. There are no known specific habitat areas, such as roosting, nesting or foraging sites in the project area. However, there is historical documentation of peregrine falcon in the vicinity of the project area (NDOW 2010).

Golden eagle – Nesting habitat for golden eagle is available primarily on cliff sites on adjoining mountainous terrain. Black-tailed jackrabbits (*Lepus californicus*) provide a primary forage base. Two golden eagles were observed during field investigations for the Elko to Wild Horse Fiber Optic Line (November 2008). Due to the close proximity of those observations, it is possible that the same eagle was observed twice. Records of golden eagle nests occur in canyon areas north of the Lone Mountain Station to Tuscarora segment (Starvation Canyon and McClellan Creek; NDOW 2010). Golden eagles are protected under the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d).

Bald Eagle - Upland areas along the project corridor provide suitable foraging habitat for bald eagles during the late fall and winter. Upland foraging areas are widely dispersed over tens of thousands of acres throughout the general area. Areas that provide intact habitat with shrub cover

for prey species, such as black-tailed jackrabbit, and adjoining areas with open water foraging increase the suitability of the habitat. There are no known specific habitat areas such as roosting or nesting sites directly within the project area; however, there is historical documentation of bald eagle in the vicinity (NDOW 2010). Bald eagles are protected under the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d).

Prairie falcon - The project area provides some foraging habitat for this species. Black-tailed jackrabbits provide a forage base. Nesting habitat is provided primarily on cliff areas on surrounding mountainous terrain and the species is likely to be present in the vicinity (NDOW 2010)

Swainson's hawk –Primary nesting habitat consists of quaking aspen stands or other deciduous tree stands, which are not present within the project area. Willows and shrubs in the project area, such as serviceberry and big sagebrush, may provide potential nesting habitat. Sagebrush/grass areas and riparian areas provide primary foraging habitat during the summer period, and during migration or seasonal movements. There is one record of a Swainson's hawk nest along the Lone Mountain Station to Tuscarora segment at the mouth of Coyote Canyon (NDOW 2010). This nest is located within 0.5 miles of the project area.

Ferruginous hawk – In Nevada, this species prefers to nest in scattered juniper woodlands that are found on the edge of salt desert shrub or sagebrush vegetation types overlooking broad valleys. They also nest on top of “tall” sagebrush/other shrubs, rock outcrops, manmade structures, or on deciduous trees such as quaking aspen or cottonwoods. The project area does not provide pinyon-juniper habitat, but ferruginous hawks may utilize sagebrush along the corridor for foraging or during migration or seasonal movement events.

Western Burrowing owl - Abandoned mammal burrows, such as those created by badgers, provide nesting habitat for burrowing owls. This species tends to use disturbed or open sites with minimal vegetation for nesting and loafing, such as recent burned areas or areas near troughs, corrals, or livestock mineral licks where open terrain exists; these sites may allow increased visibility from the burrow entrance. Fence posts, such as those along the SR ROW fence, provide areas for temporary perching. Burrowing owls have not been observed in the vicinity of the project area.

Short-eared owl - The project area and vicinity provides foraging habitat for this ground-nesting species. This species has been observed foraging on crested wheatgrass seeding areas with a sagebrush component on the Elko District. It has also been documented on wildfire-impacted areas. Relative to nesting in “open areas”, nests with young have been documented on the eastern side of the Elko District, on mine sites under consideration for reclamation with no appreciable perennial vegetation.

Long-eared owl - The project area vicinity provides habitat for this tree-nesting species. BLM personnel have observed this species nesting and roosting in two separate areas in willow stands on the flanks of mountains on the Elko District. The species is likely to occur in the vicinity of the project area (NDOW 2010).

Northern Goshawk - Quaking aspen woodland sites provide preferred nesting habitat for this species in surrounding areas. Montane shrub, montane riparian, and sagebrush/grass areas

provide primary foraging habitat during the summer period, and during migration or seasonal movement events. This species may forage in the vicinity of the project area.

Loggerhead shrike – Potential nesting habitat is provided in the areas characterized primarily by the basin, Wyoming, and mountain big sagebrush, and big sagebrush-bitterbrush vegetation types. Foraging habitat is provided in these same areas with variable canopy cover of brush species. This species may occur in the sagebrush habitats within or in the vicinity of the project area.

Vesper sparrow – This species is a ground-nester. Within the vicinity of the project area, it is associated with sagebrush grasslands.

Black-rosy finches – The vicinity of the project area provides suitable winter habitat on sagebrush grasslands.

Lewis' Woodpecker - Riparian habitat areas within the project area provide potential foraging habitat for this species.

Yellow-breasted Chat - Primary nesting and foraging habitat for this species occurs in montane riparian habitat. The project area within Taylor Canyon that is associated with Taylor Canyon Creek riparian habitat would provide marginally primary suitable habitat.

Long-billed Curlew - Primary nesting and foraging habitat for this species occurs in riparian/meadow habitat, which is present within and in the vicinity of the project area. The highest density of nesting pairs would likely occur in close proximity to irrigated hay meadows associated with private ranch areas. Feeding forays on areas with insect (e.g. grasshopper) concentrations could occur on open grasslands in the vicinity of the project area.

Sandhill Crane - Primary nesting and foraging habitat for this species occurs on or near riparian/meadow habitat in the vicinity of the project area. A pair with an apparent active nest has been observed by BLM personnel on a meadow area the west side of Taylor Summit around 100 yards from Highway 226 and the project area in the late 1990s. Nesting pairs may occur on irrigated hay meadows associated with private ranch areas outside but in the vicinity of the project area.

Black tern - This species inhabits marsh and lakeshore habitat, which is extremely limited in the project area. Some limited use, however, could occur on private ranch areas.

Brewer's sparrow – This species is strongly associated with sagebrush, in areas with scattered shrubs and short grass, and within large sagebrush patches (NDOW 2006). Brewer's sparrow is a widely distributed and abundant species in Nevada (GBBO 2010) and is likely to occur within the project area and vicinity within sagebrush habitat. A nest with eggs was observed by BLM personnel on public lands about 1.5 miles east of Highway 225 near Dinner Station in early July 2006.

Sage thrasher – This species is strongly associated with sagebrush, and specifically areas with high shrub cover and low tree (juniper) density (GBBO 2010). This species has been observed by BLM personnel flying across Highway 225 north of the Dinner Station Ranch during the spring

period. Sage thrasher is likely to occur within sagebrush habitat within and in the vicinity of the project area.

White-faced Ibis (State of Nevada-Listed Species) - This shorebird species requires dense emergent wetland plant cover for nesting primarily provided by hardstem bulrush (*Schoenoplectus acutus* var. *acutus*). No known nesting colonies occur in the vicinity of the project area. During the late spring and summer, white-faced ibis have been observed in Northeastern Nevada flying relatively fast and direct in tight flocks within flooded areas including riparian corridors. It is unknown if these flocks are comprised of non-breeding birds. They will readily seek flooded habitat areas like those on private lands and surrounding riparian areas for foraging that are relatively far away from potential roost sites with emergent vegetation. Individual white-faced ibis have been observed on occasion in Northern Nevada on riparian/meadow and wetland areas.

**APPENDIX D – SPECIAL STATUS PLANT SPECIES
IN ELKO COUNTY AND POTENTIALLY IN PROJECT AREA**

STATE SENSITIVE PLANT SPECIES

Only species in bold font have the potential to occur in the project area corridor.

Vascular Ferns and Relatives	
<i>Botrychium crenulatum</i>	Crenulate Moonwort
Vascular Flowering Plants	
<i>Antennaria arcuata</i>	Meadow Pussytoes
<i>Arabis falcifruca</i>	Elko Rockcress
<i>Artemisia packardiae</i>	Packard's Artemisia
<i>Artemisia papposa</i>	Owyhee Sagebrush
<i>Astragalus anserinus</i>	Goose Creek Milkvetch
<i>Astragalus calycosus</i> var. <i>monophyllidius</i>	One-leaflet Torrey Milkvetch
<i>Astragalus robbinsii</i>	Robbins' Milkvetch
<i>Astragalus robbinsii</i> var. <i>occidentalis</i>	Lamoille Canyon Milkvetch
<i>Astragalus yoder-williamsii</i>	Mud-flat Milkvetch
<i>Collomia renacta</i>	Barren Valley Collomia
<i>Cryptantha interrupta</i>	Interrupted Cat's-eye
<i>Cymopterus nivalis</i>	Snow Wavewing
<i>Draba sphaeroides</i>	Mountain Whitlow-grass
<i>Ericameria watsonii</i>	Watson's Goldenweed
<i>Erigeron latus</i>	Broad Fleabane
<i>Eriogonum argophyllum</i>	Ruby Valley Buckwheat
<i>Eriogonum lewisii</i>	Lewis' Buckwheat
<i>Gentianella amarella</i>	Northern Gentian
<i>Hackelia ophiobia</i>	Three Forks Stickseed
<i>Ivesia rhypara</i>	Grimy Ivesia
<i>Ivesia rhypara</i> var. <i>rhypara</i>	Grimy Ivesia
<i>Lathyrus grimesii</i>	Grime's Vetchling
<i>Lepidium davisii</i>	Davis' Peppergrass
<i>Leptodactylon glabrum</i>	Owyhee Prickly-phlox
<i>Lesquerella occidentalis</i> ssp. <i>cinerascens</i>	Western Bladderpod
<i>Machaeranthera grindelioides</i>	Western Aster
<i>Machaeranthera grindelioides</i> var. <i>depressa</i>	Rayless Tansy-aster
<i>Mentzelia dispersa</i> var. <i>latifolia</i>	Mada Stickleaf
<i>Opuntia pulchella</i>	Sand Cholla
<i>Phacelia incana</i>	Western Phacelia
<i>Phacelia minutissima</i>	Tiny-flower Phacelia
<i>Potentilla cottamii</i>	Cottam's Potentilla
<i>Primula capillaris</i>	Ruby Mountains Primrose
<i>Primula cusickiana</i>	Wallowa Primrose
<i>Ranunculus glaberrimus</i> var. <i>reconditus</i>	Obscure Buttercup
<i>Silene nachlingerae</i>	Jan's Catchfly
<i>Silene scaposa</i> var. <i>lobata</i>	Lobed Catchfly
<i>Trifolium leibergii</i>	Leiberg's Clover
<i>Viola lithion</i>	Rock Violet

APPENDIX E – WATERWAYS MAPPED ALONG THE PROJECT AREA

APPENDIX F – NOXIOUS WEEDS LIST FOR NEVADA

Under Nevada Administrative Code (NAC) 555.010, weeds in Nevada are categorized as either A, B, or C.

Category A Weeds

These weeds are not found or are limited in distribution throughout the state; actively excluded from the state and actively eradicated wherever found; actively eradicated from nursery stock dealer premises; and control is required by the state in all infestations (NDOA 2005).

Category B Weeds

These weeds are established in scattered populations in some counties of the state; actively excluded where possible; actively eradicated from nursery stock dealer premises; and control is required by the state in areas where populations are not well established or previously unknown to occur (NDOA 2005).

Category C Weeds

These weeds are currently established and widespread in many counties of the state with abatement at the discretion of the state quarantine officer (NDOA 2005).

Nevada’s Noxious Weeds

Category A Weeds	
African Rue	<i>Peganum harmala</i>
Austrian fieldcress	<i>Rorippa austriaca</i>
Austrian peaweed	<i>Sphaerophysa salsula / Swainsona salsula</i>
Black henbane	<i>Hyoscyamus niger</i>
Camelthorn	<i>Alhagi camelorum</i>
Common crupina	<i>Crupina vulgaris</i>
Dalmation Toadflax	<i>Linaria dalmatica</i>
Dyer’s woad	<i>Isatis tinctoria</i>
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>
Giant Reed	<i>Arundo donax</i>
Giant Salvinia	<i>Salvinia molesta</i>
Goats rue	<i>Galega officinalis</i>
Green Fountain grass	<i>Pennisetum setaceum</i>
Houndstongue	<i>Cynoglossum officinale</i>
Hydrilla	<i>Hydrilla verticillata</i>
Iberian Starthistle	<i>Centaurea iberica</i>
Klamath weed	<i>Hypericum perforatum</i>
Malta Star thistle	<i>Centaurea melitensis</i>
Mayweed chamomile	<i>Anthemis cotula</i>
Mediterranean sage	<i>Salvia aethiopsis</i>
Purple loosestrife	<i>Lythrum salicaria, L.virgatum</i> and their cultivars
Purple Star thistle	<i>Centaurea calcitrapa</i>
Rush skeletonweed	<i>Chondrilla juncea</i>
Sow Thistle	<i>Sonchus arvensis</i>
Spotted Knapweed	<i>Centaurea masculosa</i>
Squarrose knapweed	<i>Centaurea virgata</i>
Sulfur cinquefoil	<i>Potentilla recta</i>
Syrian Bean Caper	<i>Zygophyllum fabago</i>
Yellow Starthistle	<i>Centaurea solstitialis</i>
Yellow Toadflax	<i>Linaria vulgaris</i>

Category B Weeds	
Carolina Horse-nettle	<i>Solanum carolinense</i>
Diffuse Knapweed	<i>Centaurea diffusa</i>
Leafy spurge	<i>Euphorbia esula</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Musk Thistle	<i>Carduus nutans</i>
Russian Knapweed	<i>Acroptilon repens</i>
Sahara Mustard	<i>Brassica tournefortii</i>
Scotch Thistle	<i>Onopordum acanthium</i>
White Horse-nettle	<i>Solanum elaeagnifolium</i>
Category C Weeds	
Canada Thistle	<i>Cirsium arvense</i>
Hoary cress	<i>Cardaria draba</i>
Johnson grass	<i>Sorghum halepense</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Poison Hemlock	<i>Conium maculatum</i>
Puncture vine	<i>Tribulus terrestris</i>
Salt cedar (tamarisk)	<i>Tamarix spp</i>
Water Hemlock	<i>Cicuta maculata</i>

APPENDIX G – SOILS DESCRIPTIONS

Details of each soil or soils association is listed below for each segment of the fiber optic line. The name of the soil or soil association is listed with the NRCS map unit numbers as described in the Soil Survey of Northwest Elko County Area, Nevada, Part of Elko and Eureka Counties (NV763) and Elko County, Nevada, Central Part (NV767).

Lone Mountain Station to Tuscarora Soils

Map Unit Symbol	Map Unit Name	Description
120	Cotant, moderately steep-Lerrow-Cotant association	This soil unit is found from 5,000 to 6,500 feet amsl on hills. This association is found in areas with 2 to 30 percent slopes with a drainage class of well drained.
126	Cotant-Lerrow-Akler association	This soil unit is found from 5,700 to 6,750 feet amsl on hills. This association is found in areas with 4 to 50 percent slopes and is classified as well drained.
183	Crooked Creek-Welsum association	This soil unit is found from 5,800 to 6,300 feet amsl on floodplains. This association is found in areas with 0 to 2 percent slopes with a drainage class of poorly drained to very poorly drained.
184	Crooked Creek silty clay loam	This soil unit is found from 5,200 to 7,000 feet amsl on floodplains. This soil is found in areas with 0 to 2 percent slopes, with a drainage class of poorly drained.
185	Crooked Creek, moderately wet-Crooked Creek association	This soil unit is found from 5,600 to 6,000 feet amsl on floodplains. This association is found in areas with 0 to 2 percent slopes with a drainage class of poorly drained.
191	Tustell-Gance-Mahala association	This soil unit is found from 5,500 to 6,200 feet amsl on fan remnants. This association is found in areas with 4 to 50 percent slopes with a drainage class of well drained.
270	Pernty, steep-Loncan-Pernty association	This soil unit is found between 5,000 to 7,800 feet amsl on mountains. This association is found in areas with 15 to 50 percent slope and is well drained.
307	Akler-Lerrow association	This soil unit is found from 6,200 to 6,500 feet amsl on hills. This association is found in areas with 4 to 15 percent slopes with a drainage class of well drained.
458	Donna-Stampede association	This soil unit is found from 5,700 to 6,400 feet amsl on fan remnants. This association is found in areas with 2 to 15 percent slopes and is well drained.
464	Stampede silt loam	This soil unit is found between 5,300 to 6,200 feet amsl on fan remnants. This association is found in areas with 2 to 8 percent slope and is well drained.
578	Sumine-Tusel-Hapgood association, very steep	This soil unit is found from 5,200 to 7,400 feet amsl on mountains. This association is found in areas with 50 to 75 percent slopes with a drainage class of well drained.
586	Sumine-Loncan-Cleavage association	This soil unit is found between 5,000 to 7,100 feet amsl on mountains. This association is found in areas with 8 to 50 percent slope and is classified as well drained.
690	Welch, drained-Welch association	This soil unit is found from 5,000 to 7,000 feet amsl on floodplains. This association is found in areas with 2 to 4 percent slopes with a drainage class of very poorly drained.
763	Yuko-Tuffo-Yuko, moderately steep	This soil unit is found from 5,300 to 6,500 feet amsl on hills. This association is found in areas with 2 to 30 percent slopes

Map Unit Symbol	Map Unit Name	Description
	association	with a drainage class of well drained to somewhat excessively drained.
912	Tuffo-Yuko-Tuffo, moderately steep association	This soil unit is found from 6,000 to 6,400 feet amsl on fan remnants. This association is found in areas with 4 to 30 percent slopes with a drainage class of well drained to somewhat excessively drained.
1700	Cotant-Quartz-Ninemile association	This soil unit is found between 5,000 and 6,300 feet amsl on hills. This association is found in areas with 15 to 50 percent slope with a drainage class of well drained.
1828	Cotant-Lerrow-Akler association	This soil unit is found from 6,200 to 6,700 feet amsl on hills. This association is found in areas with 4 to 50 percent slopes and is classified as well drained.

Dinner Station to Adobe Ranchos Soils

Map Unit Symbol	Map Unit Name	Description
161	Sonoma-Sonoma, rarely flooded association	This soil unit is found from 5,900 to 6,100 feet amsl on floodplains. This association is found in areas with 0 to 2 percent slopes with a drainage class of poorly drained.
183	Crooked-Creek-Welsum association	This soil unit is found from 5,800 to 6,300 feet amsl on floodplains. This association is found in areas with 0 to 2 percent slopes with a drainage class of poorly drained to very poorly drained.
469	Stampede-Donna association	This soil unit is found from 5,500 to 6,200 feet amsl on fan remnants. This association is found in areas with 2 to 15 percent slope with a drainage class of well drained.
482	Hunnton-Wieland-Hunnton, gravelly association	This soil unit is found from 5,500 to 6,200 feet amsl on fan remnants. This association is found in areas with 2 to 30 percent slopes with a drainage class of well drained.
834	Alburz-Welch association	This soil unit is found between 6,100 to 6,400 feet amsl on floodplains. This association is found in areas with 0 to 2 percent slopes and a drainage class of poorly drained to very poorly drained.
990	Eboda-Hart Camp-Cotant association	This soil unit is found from 6,100 to 6,900 feet amsl on hills. This association is found in areas with 4 to 15 percent slopes with a drainage class of well drained.
1272	Wieland-Gance-Dacker association	This soil unit is found between 5,700 to 6,200 feet amsl on fan remnants. This association is found in areas with 2 to 30 percent slopes and is classified as well drained.
2081	Idgell-Gance-Eboda association	This soil unit is found from 6,000 to 6,700 feet amsl on fan remnants. This association is found in areas with 2 to 30 percent slopes with a drainage class of well drained.

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