



Federal Energy
Regulatory
Commission

Office of
Energy Projects

November 2017

Paiute Pipeline Company

Docket No. CP17-471-000

2018 Expansion Project Environmental Assessment



Cooperating Agencies:



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



Consolidated Municipality
of Carson City

Washington, DC 20426

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:
OEP/DG2E/Gas 2
Paiute Pipeline Company
2018 Paiute Expansion Project
Docket No. CP17-471-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this environmental assessment (EA) for the 2018 Expansion Project (Project) proposed by Paiute Pipeline Company (Paiute) in the above-referenced docket. Paiute requests authorization to construct approximately 8.46 miles of pipeline to upsize or loop four segments of Paiute's Carson and South Tahoe Laterals in Douglas and Lyon Counties and Carson City, Nevada. The Project would provide up to 4,604 dekatherms per day of new natural gas delivery capacity from Paiute's Tuscarora Gas Transmission Company's Interconnect (Tuscarora) at Wadsworth, Nevada to delivery points along Paiute's Carson and South Tahoe Laterals. The requested pipeline facilities would also allow 1,031 dekatherms per day of existing delivery capacity to be shifted from Paiute's Minden/Gardnerville Delivery Point on its Carson Lateral to the South Lake Tahoe City Gate, a point farther downstream on the South Tahoe Lateral.

The EA assesses the potential environmental effects of the construction and operation of the 2018 Expansion Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed Project, with appropriate mitigating measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The Bureau of Land Management (BLM) and the Consolidated Municipality of Carson City, Nevada (Carson City) participated as cooperating agencies in the preparation of the EA. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. The BLM intends to adopt and use the EA to consider the issuance of a right-of-way grant for the portion of the Project on federal lands.

Specifically, the 2018 Expansion Project would include:

- construction of 0.42 miles of new 12-inch-diameter pipeline paralleling Paiute's existing South Tahoe Lateral pipeline (Segment 1);
- replacement of 1.58 miles of existing 8-inch-diameter Carson Lateral Loop

- pipeline with 12-inch-diameter pipeline (Segment 2);
- replacement of 2.27 miles of existing 10-inch-diameter pipeline along Paiute’s existing Carson Lateral pipeline with 20-inch-diameter pipeline (Segment 3); and
- construction of 4.19 miles of new 20-inch-diameter pipeline loop paralleling Paiute’s existing Carson Lateral pipeline (Segment 4).

The FERC staff mailed copies of the EA to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the Project area. In addition, the EA is available for public viewing on the FERC’s website (www.ferc.gov) using the eLibrary link. A limited number of copies of the EA are available for distribution and public inspection at:

Federal Energy Regulatory Commission
Public Reference Room
888 First Street NE, Room 2A
Washington, DC 20426
(202) 502-8371

Any person wishing to comment on the EA may do so. Your comments should focus on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments, the more useful they will be. To ensure that the Commission has the opportunity to consider your comments prior to making its decision on this Project, it is important that we receive your comments in Washington, DC on or before **December 27, 2017**.

For your convenience, there are three methods you can use to file your comments with the Commission. In all instances please reference the project docket number (CP17-471-000) with your submission. The Commission encourages electronic filing of comments and has expert staff available to assist you at 202-502-8258 or FercOnlineSupport@ferc.gov.

- (1) You can file your comments electronically using the [eComment](#) feature located on the Commission's website (www.ferc.gov) under the link to [Documents and Filings](#). This is an easy method for submitting brief, text-only comments on a project;
- (2) You can also file your comments electronically using the [eFiling](#) feature on the Commission's website (www.ferc.gov) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on “[eRegister](#).” You must select the type of

filing you are making. If you are filing a comment on a particular project, please select “Comment on a Filing”; or

- (3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.214).¹ Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website (www.ferc.gov) using the eLibrary link. Click on the eLibrary link, click on “General Search,” and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP17-471). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnlineSupport@ferc.gov or toll free at (866) 208-3676, or for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to www.ferc.gov/docs-filing/esubscription.asp.

¹ See the previous discussion on the methods for filing comments.

TABLE OF CONTENTS

A.	PROPOSED ACTION	4
1.0	Introduction	4
2.0	Purpose and Need.....	4
3.0	Public Review and Comment.....	5
4.0	Proposed Facilities	7
5.0	Land Requirements.....	10
6.0	Construction, Operation, and Maintenance Procedures.....	12
7.0	Permits, Approvals, and Regulatory Requirements	22
8.0	Conformance with Applicable Land Use Plans	24
9.0	Non-Jurisdictional Facilities	25
B.	ENVIRONMENTAL ANALYSIS	26
1.0	Geology and Soils	26
2.0	Water Resources and Wetlands.....	44
3.0	Vegetation and Wildlife	53
4.0	Land Use, Recreation, and Visual Resources	66
5.0	Cultural Resources	73
6.0	Air Quality and Noise.....	76
7.0	Reliability and Safety	83
8.0	Cumulative Impacts.....	91
C.	ALTERNATIVES.....	101
1.0	No Action Alternative	102
2.0	System Alternatives.....	103
3.0	Route Alternatives	103
D.	CONCLUSIONS AND RECOMMENDATIONS	105
E.	REFERENCES	110
F.	LIST OF PREPARERS	116

LIST OF TABLES

Table 1	Summary of Project Pipeline Facilities	8
Table 2	Summary of Land Requirements by Acreage.....	10
Table 3	Staging Areas	11
Table 4	Access Roads	12
Table 5	Paiute’s Plans for the Project.....	13
Table 6	Proposed Sequential Schedule Construction	15
Table 7	Anticipated Environmental Permits, Approvals, and Consultations for the Project	23
Table 8	Acres of Impact by Soil Constraints	40
Table 9	Well Locations Identified within 150 Feet of the Project.....	45
Table 10	Surface Water Resources Crossed by the Project.....	48
Table 11	Extra Work Areas within 50 Feet of Waterbodies.....	50
Table 12	Vegetation Communities Affected by Construction and Operation of the Project	53
Table 13	Birds of Conservation Concern in the Project Area	61
Table 14	Special Status Species Potentially Occurring in the Project Area.....	63
Table 15	Pipeline Facility Land Uses by Acreage.....	66
Table 16	Grazing Allotments.....	69
Table 17	Public Land Crossed by Construction Right-of-Way	70
Table 18	Total Construction-related Emissions for the Project.....	79
Table 19	Estimated Existing Noise Levels	81
Table 20	Existing NSAs within 0.5 mile of Proposed Night Construction	82
Table 21	HCAs by Milepost	87
Table 22	Natural Gas Transmission Pipeline Significant Incidents by Cause 1997-2016.....	89
Table 23	Outside Forces Incidents by Cause (1997-2016).....	90
Table 24	Injuries and Fatalities – Natural Gas Transmission Pipelines	90
Table 25	Nationwide Accidental Deaths	91
Table 26	Geographic Scope for Cumulative Impact Analysis	93
Table 27	Projects Considered in Cumulative Impact Analysis	94

LIST OF FIGURES

Figure 1	General Location Map of the Project.....	9
Figure 2	General Pipeline Construction Sequence.....	17

LIST OF APPENDICES

Appendix A	Project Maps
Appendix B	Typical Pipeline Right-of-Way Cross Section Diagrams
Appendix C	Modifications to the FERC Plan and Procedures
Appendix D	Soil Types and Limitations by Milepost
Appendix E	Residential and Commercial Construction Plan

TECHNICAL ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	area of potential effect
BCC	birds of conservation concern
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
CAA	Clean Air Act
Carson City	Consolidated Municipality of Carson City, Nevada
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalents
Commission	Federal Energy Regulatory Commission
dBA	“A” weighted decibels
Dth/d	deckatherms per day
EA	environmental assessment
EI	environmental inspector
EIA	Energy Information Administration
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FERC Plan	<i>FERC Upland Erosion Control, Revegetation, and Maintenance Plan</i>
FERC Procedures	<i>FERC Wetland and Waterbody Construction and Mitigation Procedures</i>
g	gravity
GHG	greenhouse gas
HAPs	hazardous air pollutants
HCA	high consequence areas
ISWPP	Integrated Source Water Protection Program
L _{dn}	day-night average sound level

L _{eq}	equivalent sound level
MAOP	maximum allowable operating pressure
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MP	milepost
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NBMG	Nevada Bureau of Mines Geology
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEPA	National Environmental Policy Act of 1969
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NOI	Notice of Intent
NO _x	oxides of nitrogen
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSA	noise sensitive areas
O ₃	ozone
OEP	Office of Energy Projects
OPLMA	Omnibus Public Lands Management Act of 2009
OSHA	Occupational Safety and Health Administration
Paiute	Paiute Pipeline Company
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM ₁₀	particulate matter with an aerodynamic diameter ≤ to 10 microns
PM _{2.5}	particulate matter with an aerodynamic diameter ≤ to 2.5 microns
ppb	parts per billion

ppm	parts per million
Project	2018 Expansion Project
Project Plan	2018 Paiute Expansion Project <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>
Project Procedures	2018 Paiute Expansion Project <i>Wetland and Waterbody Construction and Mitigation Procedures</i>
RMP	Resource Management Plan
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SWPA	Source Water Protection Areas
TSP	total suspended particulates
Tuscarora	Tuscarora Gas Transmission Company
UDP	Unanticipated Discovery Plan
USACE	U.S. Department of Army, Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
VRM	Visual Resources Management

A. PROPOSED ACTION

1.0 Introduction

The staff of the Federal Regulatory Commission (FERC or Commission) has prepared this environmental assessment (EA) to assess the environmental impacts of the natural gas pipeline facilities proposed by Paiute Pipeline Company (Paiute), a wholly owned subsidiary of Southwest Gas Corporation. We¹ have prepared this EA in compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), as amended, Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508 (40 CFR 1500–1508), and the FERC implementing regulations at 18 CFR Part 380, as amended. The FERC is the lead federal agency for preparation of this EA. The U.S. Department of Interior, Bureau of Land Management (BLM) and the Consolidated Municipality of Carson City, Nevada (Carson City) participated as cooperating agencies in the preparation of this EA.

On October 24, 2016, the FERC approved Paiute’s request to use the pre-filing process for the planned 2018 Expansion Project (Project) and assigned the project Docket No. PF 17-2-000. On July 5, 2017, Paiute filed an application for a Certificate of Public Convenience and Necessity (Certificate) in Docket No. CP17-471-000 under Sections 7(c) and 7(b) of the Natural Gas Act (NGA). Paiute proposes to construct or replace about 8.46 miles of steel pipe in four separate segments of the existing Paiute system in Douglas and Lyon Counties, and Carson City, Nevada.

This EA is an important and integral part of the FERC’s decision on whether to issue Paiute a Certificate to construct, own, and operate the proposed pipeline facilities. The principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action;
- identify and recommend reasonable alternatives and specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts; and
- facilitate public involvement in the environmental review process.

The BLM Carson City District, Sierra Front Field Office has jurisdiction over federal land within the Project area. This EA will be used by the BLM in its decision-making process to determine whether to authorize Paiute’s right-of-way amendment across BLM-administered lands.

2.0 Purpose and Need

Paiute’s stated purpose of the Project is to meet the demand of its shippers in Carson City, Nevada, South Lake Tahoe, California, and surrounding areas. The Project need arises from the growing demands for natural gas from Paiute’s shippers, particularly

¹ “We,” “us,” and “our” refer to environmental staff of the Office of Energy Projects.

in the winter months. The Project would provide 4,604 dekatherms per day (Dth/d) of new transportation capacity, and shift an additional 1,031 Dth/d of current transportation capacity to a delivery point further downstream. Paiute has fully executed binding precedent agreements with two shippers for the Project. One Project shipper has requested 4,604 Dth/d of new transportation capacity from the Tuscarora Gas Transmission Company (Tuscarora) Interconnect to delivery points along Paiute's Carson and South Tahoe Laterals. Paiute has also contracted with another shipper for a delivery point change of 1,031 Dth/d of existing contract demand from Paiute's Minden-Gardnerville, Nevada Delivery Point on its Carson Lateral to the South Lake Tahoe City Gate, a point farther downstream on its South Tahoe Lateral. To meet the needs of Paiute's Project shippers, Paiute is proposing to place the Project in service by November 1, 2018.

Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decision on technical competence, financing, rates, market demand, gas supply, environmental impacts, long-term feasibility, and other issues concerning a proposed project. Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity.

As established by the BLM's responsibility under Title V of the Federal Land Policy and Management Act of 1976, as amended, the BLM is responding to Paiute's request for a right-of-way amendment grant and ensuring the activity protects the natural resources of public lands and prevents unnecessary or undue degradation. The BLM must determine whether to approve the requested right-of-way amendment grant. If the BLM decides to issue the right-of-way grant, it must also decide what terms and conditions would apply to the grant.

3.0 Public Review and Comment

On October 24, 2016, the Commission granted Paiute's pre-filing request and assigned a pre-filing Docket Number No. PF17-2-000. As part of the pre-filing process, Paiute hosted two informational open house sessions (one in the afternoon and one in the evening) in Carson City, Nevada on December 13, 2016. Paiute and FERC representatives were in attendance. Additionally, representatives from the BLM and Carson City participated in the afternoon and evening open house sessions, respectively. On January 26, 2017, the FERC issued a *Notice of Intent to Prepare an Environmental Assessment for the Planned 2018 Expansion Project and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to interested parties, including federal, state, and local officials, agency representatives, federally-recognized tribes; and property owners potentially affected by the proposed facilities. The NOI opened the

scoping period for 30 days. Written comments were received from one federal agency, one state agency, the Teamsters National Pipeline Training Fund, and one individual. The scoping comments pertained to permitting and consultation processes, information on union pipeline contractors, potential effects on the Carson River and other state of Nevada properties, air quality (dust), and stormwater drainage. These comments are summarized below, and are also further addressed in the applicable sections of the EA.

In its comments on the NOI, the U.S. Army Corps of Engineers (USACE) designated the FERC as the lead federal agency to act on their behalf for purposes of compliance with Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act (NHPA) for Department of Army authorization required for the Project. The USACE requested that the FERC coordinate its draft determinations for ESA and NHPA, as well as other information used in making that determination with the USACE office. Compliance with Section 7 of the ESA is provided in section B.3.2 and compliance with Section 106 of the NHPA is provided in section B.5.

The State of Nevada Clearinghouse commented that the Project may have the potential to impact State sovereignty of the Carson River and other State properties in Douglas and Lyon Counties, and Carson City. The State of Nevada Clearinghouse also commented that if there are plans to impact the bed of the Carson River below the ordinary high water mark, an application, application fee and project description would need to be submitted to the Nevada Division of State Lands for review. If the State of Nevada Clearinghouse determines that state sovereign land would be used or impacted, the appropriate authorization document would be required. The State of Nevada Clearinghouse issues of concern include, but are not limited to, changes in the channel, modifications of the banks, impacts on fish and wildlife habitat, vegetation, water flow and water quality, cultural or historical resources, impacts on the river itself and other riparian landowners upstream and downstream from the Project, and protection of public rights to access the navigable river. The Project would not cross the Carson River or have any impacts on its bed. A discussion on water resources and wetlands is provided in section B.2. A discussion on fish, wildlife, and vegetation is provided in section B.3, and a discussion on cultural and historic resources is provided in section B.5.

The Nevada State Clearinghouse also stated it was not notified about the Project. The clearinghouse is the single point of contact to alert Nevada State agencies and obtain feedback on proposed projects. Paiute had previously contacted the Nevada Department of Conservation and Natural Resources about the Project and, following this comment, Paiute added the Nevada State Clearinghouse to the Project stakeholder list.

The Teamsters National Pipeline Training Fund expressed a preference for using Teamsters National Pipeline Training Fund members for construction of the Project. The Teamsters National Pipeline Training Fund also guaranteed that at least 50 percent of their workers would be from the State of Nevada, and believes that its in-state workers would have vested interest in constructing the job in a safe and environmentally friendly

manner. The Teamsters National Pipeline Training Fund also referred to their Compliance, Safety Accountability, and Defensive Driving Training for their members, and their Teamsters Military Assistance Program. A description of Paiute's construction schedule and workforce requirements are provided in section A.6.1.

Mr. William Gilbert commented that he observed construction of Paiute's 2015 Elko Area Expansion Project. Mr. Gilbert requested that the FERC look at contractor problems that were observed in Paiute's Elko Expansion Project with the lack of dust suppression, staying on the right of way, and stormwater drainage. Dust suppression proposed for the Project is discussed in section B.6 and provided in detail in the Project-specific Dust Control Plan. Paiute has developed a Stormwater Pollution Prevention Plan for the Project which is discussed in section B.1.6. Environmental compliance inspection and monitoring, which includes ensuring contractors stay on the approved right-of-way during construction, is discussed in section A.6.10.

4.0 Proposed Facilities

The Project would involve construction of approximately 8.46 miles of pipeline to upsize or loop four segments of Paiute's Carson and South Tahoe Laterals in Douglas and Lyon Counties and Carson City, Nevada. Specifically, Paiute proposes to:

- construct 0.42 miles of new 12-inch-diameter pipeline paralleling Paiute's existing South Tahoe Lateral pipeline (Segment 1);
- replace 1.58 miles of existing 8-inch-diameter pipeline with 12-inch-diameter pipeline along Paiute's existing Carson Lateral (Segment 2);
- replace 2.27 miles of existing 10-inch-diameter pipeline with 20-inch-diameter pipeline along Paiute's existing Carson Lateral pipeline (Segment 3); and
- construct 4.19 miles of new 20-inch-diameter pipeline paralleling Paiute's existing Carson Lateral pipeline (Segment 4).

For the replacement of Segments 2 and 3, the existing pipeline segments would be abandoned in-place and by removal. Generally, the existing pipelines would only be abandoned by removal where portions of the proposed pipeline segment would be placed within the existing pipeline's trench. In some areas, constraints such as close proximity to roads and other underground utility lines influenced whether to install the proposed pipeline segments within the existing pipeline trench and/or right-of-way. Table 1 summarizes the Project's proposed pipeline facilities. The general location of the

proposed pipeline facilities are shown on figure 1 and additional Project location maps are in appendix A.²

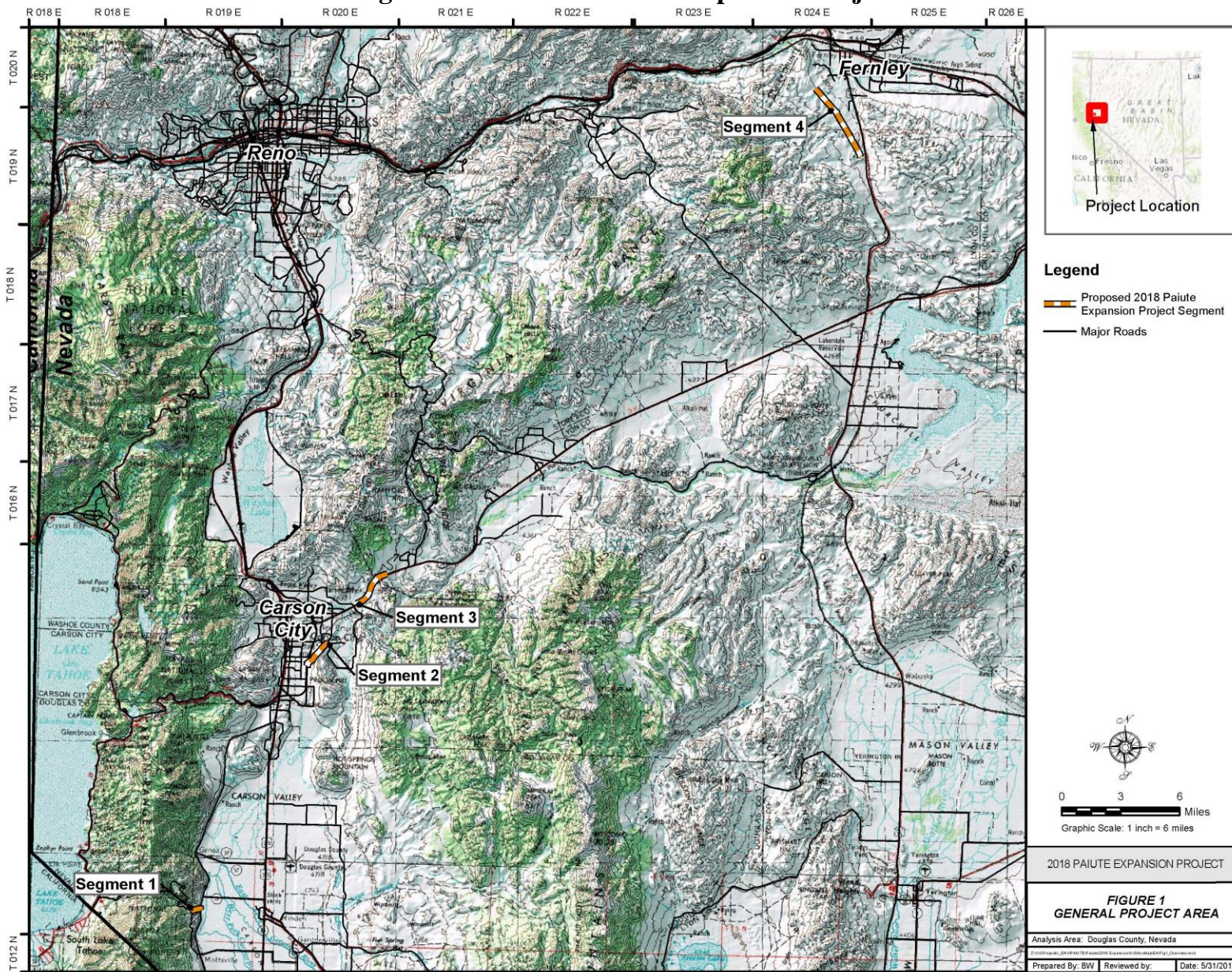
Table 1					
Summary of Project Pipeline Facilities					
Pipeline Facility	Pipeline Diameter	Approximate Length	Segment Mileposts (MP)	County	State
Installations					
Segment 1	12-inch	0.42 mile	0.00 to 0.42	Douglas	Nevada
Segment 2	12-inch	1.58 miles	0.00 to 1.58	Carson City	Nevada
Segment 3	20-inch	2.27 miles	0.00 to 2.27	Carson City	Nevada
Segment 4	20-inch	4.19 miles	0.00 to 4.19	Lyon	Nevada
Abandonment and Removal					
Existing Segment 2	8-inch	1.58 miles	0.00 to 1.58	Carson City	Nevada
Abandoned in-place			0.00 to 0.97		
Removed			0.97 to 1.58		
Existing Segment 3	10-inch	2.27 miles	0.00 to 2.27	Carson City	Nevada
Removed			0.00 to 2.03		
Abandoned in-place			2.03 to 2.27		
The typical depth of pipeline burial is 36-inches.					

The pipeline would be installed within a combination of private land; BLM rights-of-way; Nevada Department of Transportation (NDOT) rights-of-way; Carson City, Nevada rights-of-way; and State of Nevada land rights-of-way.

Project construction is anticipated to commence June 1, 2018 and be completed by October 31, 2018. The targeted in-service date for the Project is November 1, 2018.

2 Detailed alignment sheets identifying areas of Project disturbance, access roads, and staging areas can be viewed on the FERC internet website at <http://www.ferc.gov> as part of Paiute’s response to our Environmental Data Request filed on September 13, 2017. Using the “eLibrary” link, select “Advanced Search” from the eLibrary menu and enter 20170913-5004 in the “Accession Number” field. Be sure to use an appropriate date range.

Figure 1. General Location Map of the Project



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
 Copyright © 2012 National Geographic Society, iCubed

5.0 Land Requirements

Construction of the Project would temporarily impact about 119 acres, of which about 71 acres would be permanently used for operation. The land requirements for the construction right-of-way, staging areas, temporary workspace (TWS), and additional temporary workspace (ATWS) are summarized below in table 2.

Table 2		
Summary of Land Requirements by Acreage^a		
Project Component	Acreage Affected by Construction (acres)^b	Acreage Affected by Operation
Pipeline right-of-way	89.1	68.4
Additional Temporary Workspace	0.2	0.0
Temporary staging areas ^c	26.4	0.0
Access roads	3.3	2.6
TOTAL	119.0	71.0
<p>a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends.</p> <p>b Numbers shown represent total acres for the temporary and permanent right-of-way.</p> <p>c Staging areas may be used as contractor yards.</p>		

Pipeline Facilities

Segment 1 would be installed 15 feet from the existing pipeline and would use a 125-foot-wide construction right-of-way, consisting of 50 feet of existing permanent right-of-way with an additional 25 feet of TWS on the north side and 50 feet of TWS on the south side of the existing permanent right-of-way to accommodate construction on steep slopes. Typical pipeline right-of-way cross section diagrams are included in appendix B. The 50 feet of TWS (in addition to the typical 75-foot-wide construction right-of-way) is necessary in order to provide a safe work environment and promote effective implementation of various industry-standard construction techniques due to the steep grade. The proposed construction right-of-way would allow Paiute to implement the construction measures as identified in the 2018 Paiute Expansion Project *Upland Erosion Control, Revegetation, and Maintenance Plan* (Project Plan) and 2018 Paiute Expansion Project *Wetland and Waterbody Construction and Mitigation Procedures* (Project Procedures) while addressing site conditions and meeting Occupational Safety and Hazards Administration (OSHA) regulations (29 CFR Part 1926.650-.652, Subpart P).

At Segment 2, the total width of the construction right-of-way along Fairview Drive varies, but would use up to a width of 111-feet, consisting entirely of existing rights-of-way (Paiute and non-Paiute utility). The construction workspace would consist of Paiute's permanent right-of-way and would also include new 50-foot permanent right-of-way from approximate milepost 0.05 to milepost 1.0, as this portion of the proposed pipeline would not be installed within the permanent right-of way for the existing

pipeline to eliminate crossing Fairview Drive and other buried utility lines. Temporary workspace is needed to facilitate safe construction along South Edmonds Drive from approximate milepost 1.0 to segment milepost 1.58 to the Alternate Staging Area 2-1. Due to the restricted workspace along South Edmonds Drive, ATWS is also needed for purposes such as parking construction vehicles. This ATWS is located at approximately segment milepost 1.09 to segment milepost 1.15.

Segment 3 would use a 50-foot to 158-foot-wide construction right-of-way consisting of 50 feet of permanent right-of-way with up to an additional 108 feet of TWS. To facilitate safe construction and installation, TWS would be required from approximate milepost 0.46 to milepost 2.04, as Segment 3 closely parallels U.S. Highway 50 and crosses under a railroad bridge (MP 0.58).

Segment 4 would use a 75-foot-wide construction right-of-way. The segment would be constructed as much as possible within the existing 50-foot permanent rights-of-way. However, an additional 25-foot new permanent right-of-way would be needed to accommodate the segment’s 20-foot offset from the existing pipeline (see appendix B).

Staging Areas

Staging areas would temporarily disturb 26.4 acres, of which 8.6 acres are on BLM-administered land. In addition, staging areas would also be located on private lands, Carson City lands, and within NDOT public rights-of-way. Paiute would not locate staging areas at existing NDOT storage or work areas without written permission. The proposed staging areas may also be used as contractor yards. Paiute sited staging areas in previously disturbed land as much as practicable. Land requirements for staging areas are shown in table 3.

Table 3 Staging Areas					
Segment	Approx. milepost	Identifier	Dimensions (feet)	Area (acres)	Existing Land Use
Segment 1	0.42	Staging Area 1-1	Variable	1.04	Open Land/ Commercial/ Industrial
Segment 2	0.00	Staging Area 1-2	Variable	0.26	Commercial/ Industrial
	1.57	Staging Area 2-1	~ 143 x 145	0.47	Residential
	0.96	Staging Area 2-2	Variable	0.30	Commercial/ Industrial
Segment 3	0.00	Staging Area 2-3	Variable	0.27	Commercial/ Industrial
	2.27	Staging Area 3-1	~ 1260 x 100	1.91	Open Land
Segment 4	0.00	Staging Area 3-3	~660 x 600,	9.80	Open Land
	4.19	Staging Area 4-1	~540 x 240	2.96	Open Land
	3.50	Staging Area 4-2	~380 x 300	3.81	Commercial/ Industrial
	1.18	Staging Area 4-3	~450 x 245	2.46	Open Land
	0.00	Staging Area 4-4	Variable	3.19	Open Land

Access Roads

Four access roads would be needed to support the Project. Three access roads are existing, permanent access roads and one access road would be a new, temporary road on BLM land. Paiute would use Access Road 4-2, which stretches 0.6 mile through the Fernley 95A Speedway, primarily for light duty access to Segment 4. Heavy loads would use the new temporary road on BLM-administered lands (Access Road 4-1) to avoid damage to the existing paved road (Access Road 4-2). Segments 2 and 3 would be accessed directly from the public right-of-way and no new access roads are required for these segments. Access roads necessary for the Project are summarized below in table 4.

Table 4									
Access Roads									
Access Road	Milepost of Crossing	Used during Construction and Operation	Length (feet)	Approx. Current Width (feet)	Proposed Road Widening (feet)	Area (acres)	Existing or New Road	Surface Type	Land Ownership
Access Road 1-1	0.42	Yes	207	12	0	0.08	Existing	Soil	Private
Access Road 4-1	3.81	No ^a	1,870	0	18	0.75	New ^b	Soil	BLM
Access Road 4-2	3.38	Yes	3,177	12	0	0.88	Existing	Asphalt	Private
Access Road 4-3	1.27	Yes	5,926	12	0	1.63	Existing	Soil	Private/BLM
Segments 2 and 3 would be accessed directly from the public right-of-way.									
a Only used during construction (temporary).									
b The area proposed for Access Road 4-1 is previously disturbed (a two-track road).									

Although Paiute has identified areas where extra workspace, staging areas, and access roads would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Paiute would be required to file information on each of those areas for our review and approval prior to use.

6.0 Construction, Operation, and Maintenance Procedures

Paiute's proposed facilities would be designed, constructed, tested, operated, and maintained in accordance with the U.S. Department of Transportation's (USDOT) Minimum Federal Safety Standards promulgated in 49 CFR Part 192. The USDOT's regulations are intended to ensure adequate protection for the public and to prevent

natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Paiute would implement the construction procedures and mitigation measures contained in its Project Plan and Project Procedures. The Project Plan and Procedures are based on the FERC *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures) with certain requested modifications. These alternative measures and site-specific justifications are shown in appendix C. The majority of the modifications are requested because they are not applicable to the Project (i.e., no wetlands, no intermediate or major waterbodies, no agricultural lands or subsurface drainage systems within the Project area). We reviewed those site-specific modifications applicable to the Project and find that Paiute provided sufficient justification for each alternative measure. Further discussion of these site-specific alternative measures and waterbody impacts is found in section B.2.

Standard pipeline construction techniques would be implemented for installation of the pipelines. The pipelines would be constructed in a continuous operation known as a spread, consisting of equipment and crews handling various phases of construction activities. A construction spread would consist of a mainline pipeline crew and crossing crews as necessary for road crossings and waterbody crossings. Paiute would also implement provisions filed in the Project-specific construction, restoration, and mitigation plans prepared for the Project. These include the plans listed in table 5. We reviewed each of these plans and find them acceptable.

Construction of the proposed Project would follow industry-standard practices and procedures, which involve a series of discrete activities conducted in a linear sequence. These activities are described below.

Table 5	
Paiute's Plans for the Project^a	
Plan Name	General Description
Aerial Alignments	Aerial photograph-based drawings depicting proposed construction and operational workspace for the proposed pipeline
Hydrostatic Test Plan	Measures to test the pipeline in sections to ensure the system is free from leaks
Spill Prevention and Response Plan	Measures to address inadvertent chemical and fuel spills
Stormwater Pollution Prevention Plan	Erosion and sediment control measures during construction of the proposed pipeline

Table 5
Paiute's Plans for the Project^a

Plan Name	General Description
Restoration and Revegetation Plan	Site-specific activities Paiute would use in implementing restoration and revegetation in the Project area
Cultural Unanticipated Discovery Plan	Measures that would be implemented should previously unidentified cultural resources be discovered during construction
Paleontological Unanticipated Discovery Plan	Measures that would be implemented should paleontological resources be discovered during construction
Residential Construction Plan	Construction plan for residences within 50 feet of the construction workspace
Dust Control Plan	Measures to reduce dust during construction
Steep Slope Construction Plan	Measures to construct the pipeline on the steep slope of Segment 1
2018 Paiute Expansion Project <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>	Measures that would be implemented to minimize erosion and enhance revegetation
2018 Paiute Expansion Project <i>Wetland and Waterbody Construction and Mitigation Procedures</i>	Measures that would be implemented to minimize the extent and duration of project-related disturbances on waterbodies
Traffic Control Plan	Traffic control measures that would be implemented during construction
Unanticipated Contamination Discovery Plan	Measures that would be implemented if hazardous materials are encountered during construction
Noxious and Invasive Weed Control Plan	Measures to avoid and control the establishment of invasive species in the construction right-of-way
Asbestos Management Plan	Measures that would be implemented if suspected asbestos materials are encountered during construction
Wildlife Plan	Measures that would be implemented to minimize impacts on wildlife
Well Monitoring Plan	Measures to address potential concerns of residential and commercial well owners, maximize safety measures, minimize disturbance, and avoid or limit impact on wells
Rock Disposal Plan	Plan for removing rocks and large boulders from the right-of-way

^a These plans are too voluminous to include in this EA but can be viewed on the FERC website at <http://www.ferc.gov> as part of Paiute's Environmental Report filed on July 5, 2017. Using the "eLibrary" link, select "Advanced Search" from the eLibrary menu and enter 20170705-5079 in the "Accession Number" field. Be sure to use an appropriate date range.

6.1 Construction Schedule and Workforce

Paiute anticipates that the Project facilities would be constructed between June 1 and October 31, 2018. The construction contractor would determine the schedule for each component of the Project. The construction contractor would begin work in June 2018 with land clearing and grading in segments and/or areas outside of seasonal restrictions for biological resources, and then move sequentially through trenching, stringing, welding, lowering in, and backfilling through the end of October 2018. Table 6 shows Paiute’s proposed sequential construction schedule.

Paiute estimates the work force to be 15 to 18 personnel per construction spread with an anticipated two construction spread approach. More than one pipeline segment may be under construction at one time; each pipeline segment may represent a construction spread. However, the number of construction spreads would be determined by the construction contractor. The construction contractor would make the final decision on timing and duration of the various aspects of the construction schedule, consistent with any biological seasonal restrictions.

Table 6				
Proposed Sequential Schedule of Construction				
Proposed Sequential Construction Activities	Proposed Date Activity would Begin			
	Segment 1	Segment 2	Segment 3	Segment 4
Staking and Clearing	June 1, 2018	June 1, 2018	September 12, 2018	July 22, 2018
Grading	June 8, 2018	June 7, 2018	September 19, 2018	August 2, 2018
Trenching	June 29, 2018	June 22, 2018	October 4, 2018	August 15, 2018
Stringing	June 29, 2018	June 22, 2018	October 4, 2018	August 15, 2018
Bending	June 29, 2018	June 22, 2018	October 4, 2018	August 15, 2018
Welding	June 29, 2018	June 22, 2018	October 4, 2018	August 15, 2018
Lowering-in	August 17, 2018	June 25, 2018	October 10, 2018	September 4, 2018
Hydrostatic Testing	August 19, 2018	July 1, 2018	October 14, 2018	September 4, 2018
Backfill	August 21, 2018	July 4, 2018	October 18, 2018	September 6, 2018
Cleanup	August 21, 2018	July 6, 2018	October 20, 2018	September 6, 2018
Reclamation	August 23, 2018	July 13, 2018	October 22, 2018	September 8, 2018
In-service Date	November 1, 2018	November 1, 2018	November 1, 2018	November 1, 2018
Estimated End Date	September 11, 2018	July 21, 2018	November 1, 2018	October 10, 2018
The proposed schedule is approximate. The construction contractor would determine the final schedule, and it is assumed that there would be more than one spread operating on roughly the same proposed schedule.				

We received comments during scoping about the use of union pipeline contractors to construct the Project facilities. Paiute has noted that they employ an extensive, in-depth evaluation of its pipeline contractors and potential pipeline contractors. Paiute plans to issue a bid invitation for the proposed construction project to pipeline contractors that are approved bidders in the winter of 2017-2018. Currently, Paiute’s approved bidder list includes pipeline contractors that are both union and non-union. The pipeline

contractor that secures the contract to construct the proposed Project would be responsible for employing the workers needed to construct the pipeline to the standards incorporated into the contract. Paiute indicates that it would encourage the pipeline contractor to hire qualified local workers, military veterans, and subcontractors, and use local companies to provide materials, supplies, or services to the contractor.

Prior to construction, Paiute's survey contractor would survey each pipeline route and stake the pipeline centerline and limits of the construction right-of-way and TWS and mark the presence of other utilities.

Following issuance of the FERC Certificate, if approved, and receipt of the FERC notice to proceed with construction, crews would commence construction of the Project with clearing of the right-of-way by mowing and grading as necessary.

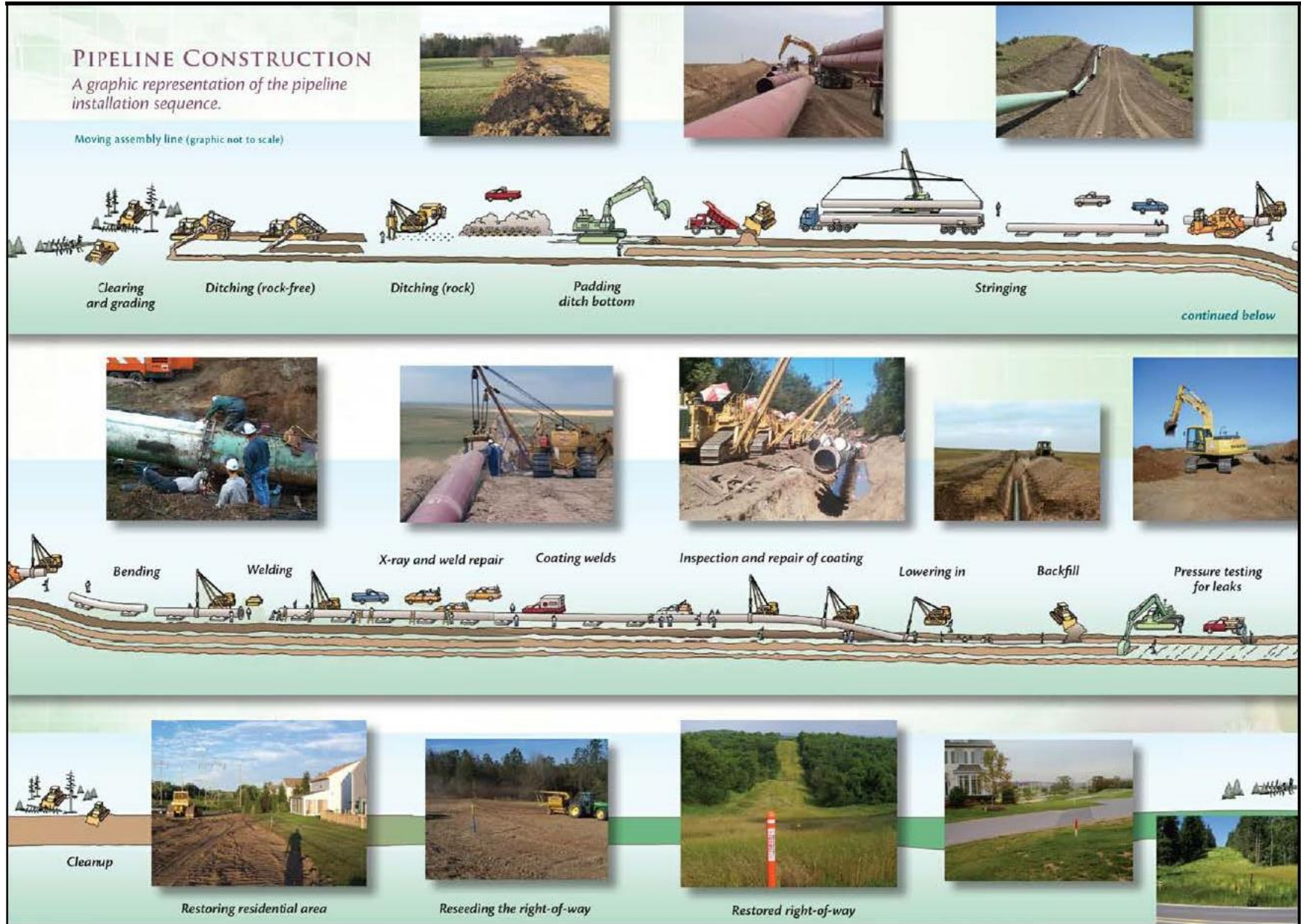
Once clearing and grading is completed it is followed by trenching, pipe laying, stringing, bending welding, coating, lowering-in, backfilling, hydrostatic testing, and cleanup and restoration. Figure 2 depicts the general sequence for conventional pipeline construction. Some areas may require special construction techniques including crossings of rights-of-way including roads and railroads, waterbodies, unusual topographies, and residential or commercial areas.

The trench would be excavated to a depth that meets or exceeds USDOT requirements for cover. Based on the proposed pipeline diameters, the width of the trench would typically be about 18 inches to 4 feet. Pipe would be strung so that it does not block passage of vehicles, livestock, or wildlife across the right-of-way. Gaps left in stringing would correspond with gaps left in the trench for this purpose.

Once a pipeline segment is in place, the new pipe would be hydrostatically tested with pressurized water to locate any leaks or weak spots. Each new pipeline segment would likely be hydrostatically tested as a single test section. During the hydrostatic test, a test section would be filled with fresh water from authorized intake points. Once the test section is filled, the pipe would be pressurized to at least 150 percent of the design maximum allowable operating pressure for the pipeline for a minimum of 8 hours. If leaks are detected during the test, defective pipe sections would be replaced, and the section would be retested until specifications are met. Hydrostatic testing is discussed further in section B.2.4.

A cathodic protection system associated with the existing pipeline system is currently in place. The proposed pipelines would be incorporated into this existing system through header cables to ensure connectivity.

Figure 2. General Pipeline Construction Sequence



Backfilling procedures would incorporate techniques to protect the pipe and coating from damage, to salvage valuable topsoil, and to prevent erosion of backfill material. After the pipe is installed, excavated spoil material would be used to cover the pipe. Trench spoils may be backfilled directly into the trench in areas where the spoils are composed of soft and loose earthen material and are free of rocks and hard clods. In rocky areas, padding material (consisting of original trench spoils screened of rock or of imported, rock-free fill material) would be used to cover and protect the pipeline and coating from rocks. Paiute would adhere to its Rock Disposal Plan for removing excess rocks and large boulders from the right-of-way. The remaining trench spoils would be backfilled after padding is completed. Following backfill, soils would be compacted and compaction testing would be conducted at regular intervals to match previous conditions as outlined in the Project Plan.

After backfilling, all graded areas would be restored to as near the natural or preexisting grade as practicable. However, steep cuts may be restored to a stable position and protected by appropriate erosion control measures in areas of erosive soils or slopes with potential for mass wasting (i.e., slumping or landslides). These locations may not be known until on-site inspections during construction.

Following backfill and cleanup, a vegetative cover composed of compatible native species, similar in composition to pre-construction conditions, would be re-established. Revegetation would be accomplished by following the Project Restoration and Revegetation Plan, which include measures such as decompacting all areas to be revegetated and outlines specific seeding procedures.

6.2 Pipe Storage

Required construction materials would be stored until needed at the existing facilities of the contractors and suppliers that provide the equipment, supplies, or labor to the Project. The new pipe would typically be stored at a vendor's coating yard until it is loaded onto trucks for stringing along the route. Pipe would then be stored on-site at the various staging areas and strung along the trench prior to welding and lowering in. Aggregate, asphalt, sand, and slurry materials needed for the Project would be purchased locally, and materials would be stored along the right-of-way in designated staging areas. Construction equipment would be delivered to designated staging areas or directly to the right-of-way by truck. Contractor equipment would be stored on the right-of-way overnight in open terrain and where permitted along the right-of-way.

6.3 Access Roads

Construction traffic during Project work would be limited to existing public roads, designated access roads, and the Project right-of-way. Four access roads are needed to support the Project. Three access roads are existing, while one new, temporary access road (Access Road 4-1) would be constructed on previously disturbed, BLM-

administered land on Segment 4. Paiute would primarily use the new temporary access road for heavier loads, as heavy loads would damage the existing paved road (Access Road 4-2). The right-of-way for Segments 2 and 3 would be accessed directly from public access roads/right-of-way.

The new access road at Segment 4 would be about 1,870-feet-long with about a 12-foot width for a travel surface. Construction of the temporary road may disturb up to an additional 6 feet, for a total width of 18 feet of disturbance. Following construction, this temporary road would be restored to previous land use or left in place upon landowner request. The existing roads that would be used for access have a soil or asphalt road surface, and all have an adequate width and surface for construction equipment. No upgrades to the existing roads would be needed. Access roads and their land requirements necessary for the Project are summarized in table 4.

6.4 Road and Railroad Crossings

All public road crossings would be installed in compliance with applicable permit drawings and specifications. The open-cut method would be employed unless otherwise stipulated by permits. Open-cut installations at non-paved road crossings would be backfilled and compacted to a specified density that is equal to or exceeds the density of the surrounding undisturbed earth, meeting local standards for minimum compaction. The surface of the road would be replaced as specified by permits. Unless otherwise required, crossings would be uncased. Where casings are specified, the casings would be electrically insulated from the carrier pipe.

At road crossings, Paiute would implement safety measures in its Traffic Control Plan to safeguard the public, including use of an adequate number of flagmen, barriers, warning signs, lights, and walkways around the work area. All roads would be kept open, or a suitable bypass road would be available to keep traffic moving during installation of the pipe and restoration of the road.

Segment 3 would cross a railroad; however, the railroad is bridged over the proposed pipeline. No special construction technique is anticipated to cross the railroad.

6.5 Residential Construction

Paiute's Project-specific Residential and Commercial Construction Plan discusses techniques such as avoiding removal of mature trees and landscaping within the construction work area unless necessary for safe operation of construction equipment or as specified in landowner agreements. This plan also describes measures to be implemented during construction in residential areas such as safety fencing and notification. We reviewed this plan and find it acceptable. Residential construction is further discussed in section B.4.1.

6.6 Drainage Crossings

The pipeline would cross 16 ephemeral drainages and would be installed by open cut during the normal period of no flow. The pipeline would be buried at a depth sufficient to provide a minimum of 48 inches of cover below the probable scour depth of the 100-year flood event calculated at that crossing. Should there be perceptible flow within the ephemeral drainages at the time of the planned crossing, Paiute would wait to cross the ephemeral drainage until there is no flow.

6.7 Steep Topography

Segment 1 is located in steep topography and would require special construction techniques and ATWS to ensure safe and successful construction and restoration. Paiute would construct Segment 1 in accordance with its Steep Slope Construction Plan. Equipment may be tethered via a winch line to other stabilized equipment at the top of the slope. In addition, two-tone cut-and-fill⁴ construction methods may be used for equipment and personnel safety considerations. ATWS along Segment 1 is necessary to accommodate excavated material from the temporary cut-and-fill areas while allowing for the temporary storage of trench spoil, potential excess rock, and salvageable topsoil.

6.8 Abandonment and Removal of Pipe

For Segment 2, the pipe would be abandoned in-place between the start of the segment to Carson City Gate No. 2 (MP 0.00 to MP 0.97), and the pipe would be removed from Carson City Gate No. 2 to the end of the segment (MP 0.97 to MP 1.58). For Segment 3, the pipe would be removed from the start of the segment to milepost 2.03, and the pipe would be abandoned in-place from milepost 2.03 to 2.27.

For Segment 2, the proposed pipeline would be placed within the existing trench from Carson City Gate #2 to the end of the segment, while other portions of the proposed pipeline would be replaced immediately adjacent to the existing pipeline.

6.9 Asbestos

Asbestos-containing materials are likely present on the existing pipeline. The existing pipe along these pipeline segments may be exposed at the upstream and downstream tie-in locations for the proposed Project during installation of the new pipe and removal of abandoned pipeline segments. Where an existing pipeline exhibiting asbestos-containing material is exposed, Paiute would follow its Asbestos Management Plan that provides proper asbestos abatement procedures and construction worker

⁴ Soil from the high side of the right-of-way would be moved to the low side to create a safe and level terrace.

protection protocols as outlined by the Nevada Division of Industrial Relations and the U.S. Environmental Protection Agency (EPA) Region 9.

6.10 Environmental Compliance Inspection and Monitoring

Paiute would provide environmental training to all Paiute and contractor personnel who would be on site during construction. This environmental training would cover the Project Plan and Project Procedures and stipulations of all applicable permits and plans applicable to the Project. For construction personnel deployed after construction begins, Paiute would provide training on site for each person before they begin work.

To ensure all work is done in compliance with measures discussed in this EA, Paiute would designate a minimum of one environmental inspector (EI) for each construction spread. The number and experience of EIs would be appropriate for the length of the construction spread and the number of resources affected. EIs would have peer status with all other activity inspectors and would have stop work authority. EIs would be responsible for inspecting construction activities for compliance with the Project Plan and Procedures, Project plans and permits, mitigation measures, and FERC's Certificate. Paiute would develop an Environmental Inspection Manual that includes contact lists, Project permits, FERC Certificate conditions, the Project Plan and Procedures, Project-specific plans, and alignment drawings. The manual would be distributed to the EI, Paiute field lead, Paiute engineers, and associated biological and archeological monitors as necessary.

In addition, Commission staff would inspect the Project during construction and restoration to verify compliance with the Commission's orders.

6.11 Operations and Maintenance

Paiute would operate and maintain the pipeline in accordance with the minimum federal safety standards identified in Title 49 CFR Part 192.

The work force during operation of the pipelines would vary depending on activity, but Paiute estimates one to four personnel four to five times per year along the length of the pipelines. No new additional permanent employment positions are anticipated to be created for Project operations. Paiute's operation and maintenance activities include routine visits to perform activities such as safety inspections and monitoring, pigging and integrity management activities, cathodic protection maintenance and repair, and replacement and maintenance of components such as regulators and valves.

The proposed pipelines would be added to Paiute's existing pipeline inspection program. Continuing surveillance of Paiute's pipeline system is conducted in accordance with USDOT requirements to determine the appropriate action concerning possible

changes in class location, failures, USDOT notification, leakage history, corrosion, substantial changes in cathodic protection requirements, and other unusual operating conditions. Operation and maintenance activities would also conform to all relevant safety regulations, as well as Paiute's safety and emergency plan manual.

Operation and maintenance of the pipelines would include vehicle travel along the permanent right-of-way conducting periodic right-of-way patrols and corrosion/leak detection surveys to detect conditions that may adversely affect the integrity of the pipelines. It is anticipated that one vehicle and two personnel would generally be required to perform these activities. All valves and corrosion control test stations would also be inspected regularly. No hazardous or industrial wastes or toxic substances of any kind would be stored, transported, or generated along the right-of-way upon completion of the pipeline construction; as well as during operation and maintenance of the pipelines.

The pipeline right-of-way, pipeline leak surveys, and cathodic protection maintenance would be inspected following USDOT and Paiute's internal requirements. Pipeline markers and signs would be inspected, maintained, and replaced as necessary to ensure that the pipeline location is visible from the ground. All inspection and maintenance work would be conducted from within the right-of-way.

7.0 Permits, Approvals, and Regulatory Requirements

Paiute would obtain all necessary federal, state, and local permits, licenses, and clearances related to construction of the proposed Project. Paiute would provide all relevant permits and approvals to the contractor who would perform the construction activities associated with the Project; the contractor would be required to be familiar with and adhere to applicable requirements.

Table 7 identifies the federal and state agencies that have relevant permitting requirements along with the related permits required for the Project. Paiute would be required to obtain all necessary permits regardless if they appear in the table or not.

Table 7
Anticipated Environmental Permits, Approvals, and Consultations for the Project

Administering Agency	Permit, Approval, or Consultation	Filing/Consultation Start Date (Anticipated)	Receipt Date/Completion Date (Anticipated)
Federal			
Federal Energy Regulatory Commission (FERC)	Section 7 of the Natural Gas Act, Certificate of Public Convenience and Necessity	July 5, 2017	<i>Pending</i>
USACE, Sacramento District, Reno Field Office	Section 404 of the Clean Water Act, Nationwide Permit 12	September 2017	(December 2017)
BLM, Carson City District, Sierra Front Field Office	Right-of-Way Application (SF-299)	October 2016	(December 2017)
	National Environmental Policy Act consultations	October 2016	October 2017
	Section 106 of the National Historic Preservation Act, Consultation	October 2016	January 31, 2017
U.S. Department of Interior, Fish and Wildlife Service (USFWS), Reno Field Office	Section 7 of the Endangered Species Act, informal Consultation	October 2016	January 23, 2017
U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS), Minden and Yerrington Service Center	Revegetation Seed Mix Consultations	January 2017	January 23, 2017
National Park Service (NPS), Regional Trails Center	Consultation	November 2016	January 18, 2017
Nevada			
Nevada Division of Environmental Protection (NDEP) – Bureau of Air Quality	Class II Air Quality Permit for Stand-Alone Disturbance	(February 2018)	(April 2018)
Nevada Division of Environmental Protection (NDEP) - Bureau of Water Pollution Control	Section 402 of the Clean Water Act, Temporary Discharge Permit	(April 2018)	(May 2018)
	Temporary Working in Waterways Permit	(April 2018)	(May 2018)
	Construction Stormwater Discharge General Permit (National Pollution Discharge Elimination System Permit)	(April 2018)	(April 2018)
	Surface water intakes determination	October 2016	October 31, 2016

Table 7			
Anticipated Environmental Permits, Approvals, and Consultations for the Project			
Administering Agency	Permit, Approval, or Consultation	Filing/Consultation Start Date (Anticipated)	Receipt Date/Completion Date (Anticipated)
Nevada Division of Environmental Protection (NDEP) - Bureau of Water Quality Planning	Section 401 of the Clean Water Act, 401 Water Quality Certification	Following receipt of USACE Section 404 Permit (September 2017)	(December 2017)
Nevada State Historic Preservation Office (SHPO)	Section 106 of the National Historic Preservation Act, Consultation	November 1, 2016 Amended letter: July 26, 2017	December 14, 2016 September 29, 2017
California-Nevada Chapter, Oregon-California Trail Association	Consultation	November 7, 2016	January 15, 2017
Nevada State Prison Preservation Society	Consultation	November 7, 2016	No response to date
Nevada Department of Wildlife (NDOW)	Consultations on sensitive species and habitats	September 2016	December 22, 2016
Nevada Natural Heritage Program (NNHP)	Consultations on sensitive species and habitats	September 2016	December 22, 2016
NDOT	Right-of-Way Occupancy Permit	October 2017	(March 2018)
County			
Douglas County	Consultation	December 2016	June 2017
Lyon County	Consultation	December 2016	June 2017
Local			
Consolidated Municipality of Carson City	Consultations Right-of way acquisition/permitting	December 2016 July 2017	June 2017 (January 2018)
City of Fernley	Consultations	December 2016	September 2017

8.0 Conformance with Applicable Land Use Plans

The 2001 Carson City Field Office Consolidated Resource Management Plan (RMP) has been reviewed and it has been determined that the proposed action conforms with the land use plan terms and conditions as required by 43 CFR § 1610.5. The BLM is currently revising the RMP for the Carson City District. The issuance of the approved revised RMP is expected in the Summer 2018. The existing RMP decisions will remain in effect during the RMP revision process until the revision is completed and approved.

The 2006 Carson City Master Plan has been reviewed and it has been determined the proposed action conforms with the land use goals and policies. Certain federal lands

were conveyed from the BLM to Carson City, Nevada. The proposed action (Segment 2, about milepost 0.05 to milepost 0.10 and about milepost 0.67 to 0.86) is located on lands that were conveyed to Carson City from the BLM. The land conveyance specified use of the land. The proposed action would be on land conveyed to Carson City that is known as “Silver Saddle Ranch and Carson River Area.” The specified use of the land includes the following:

- be managed by Carson City to protect and enhance the Carson River, the floodplain, and the surrounding upland, and important wildlife habitat;
- be used for undeveloped open space, passive recreation, customary agricultural practices and wildlife protection; and
- except Carson City may construct and maintain trailhead facilities on the land, conduct projects on the land to reduce fuels, maintain or reconstruct any improvements on the land that were in existence on the date of enactment of the Omnibus Public Lands Management Act of 2009 (OPLMA), and allow use of motorized vehicles on designated roads, trails, and areas in the south end of Prison Hill (BLM, 2012).

We, the BLM, and Carson City have determined that the proposed action is consistent with the specified uses of the land that was conveyed to Carson City by the BLM.

9.0 Non-Jurisdictional Facilities

Under Section 7 of the NGA, FERC is required to consider, as part of its decision to certificate jurisdictional facilities, related non-jurisdictional facilities that would be constructed in association with a project. These may be integral to the purpose of a project (e.g., facilities necessary to deliver, receive, or use the proposed gas volumes) or they may be minor, non-integral components of the jurisdictional facilities (e.g., a powerline to service an aboveground facility). There are no non-jurisdictional facilities associated with the Project.

B. ENVIRONMENTAL ANALYSIS

1.0 Geology and Soils

1.1 Geology

Topographic Setting

The Project would be located in northwestern Nevada within the Basin and Range Region physiographic province. Basin and range topography is characterized by tilted fault blocks forming sub-parallel mountain ranges and intervening sediment-filled basins developed during the early Miocene Epoch by extensional tectonic forces. Elevation ranges for each of the Project segments in the province are described below:

- Segment 1 traverses east to west from the floor of Carson Valley at an elevation of approximately 4,740 feet above mean sea level (msl) to the eastern slope of the Carson Range at approximately 5,390 feet above msl;
- Segment 2 extends southwestward onto the floor of the Eagle Valley running adjacent to Prison Hill at an elevation of approximately 4,680 feet above msl;
- Segment 3 is located northeast of downtown Carson City and traverses in a southwest-northeast direction on the floor of the Carson River Valley at approximately 4,650 feet above msl.; and
- Segment 4 traverses southeast towards the Virginia Range, where the elevation increases from 4,350 feet above msl to approximately 4,520 feet above msl. The northwest section of Segment 4 is within an unnamed northeast-southwest trending valley on the northern side of the Virginia Range, which opens into the Fernley Valley.

Geology

Bedrock in the Project area is generally characterized by Cretaceous Period intrusive igneous rocks, as well as Recent-age alluvium and colluvium overburden. The geology within each Project pipeline segment is summarized below.

Segment 1

Segment 1 is located within the Carson Range. Bedrock in Segment 1 has been mapped as Cretaceous “Granodiorite of Daggett Pass” (Ramelli et al., 2014) consisting of medium-to coarse-grained, well foliated hornblende-biotite granodiorite.

Segment 2

Segment 2 is located near the boundary between unconsolidated Quaternary Period (Quaternary) deposits and older bedrock that forms Prison Hill. Bedrock in the area has been mapped as Jurassic Period (Jurassic) dacite porphyry and metavolcanic breccia, arkosic and tuffaceous sandstone, sandy conglomerate, and siltstone (Bingler, 1977; Bell and Trexler, 1979).

Segment 3

Segment 3 is mapped predominantly as Quaternary unconsolidated gravels and coarse sands including alluvial-plain deposits, pediment gravel, and “Quaternary-Late Tertiary alluvial-fan deposits of Morgan Mill. The southwest portion of Segment 3 crosses an area of “basaltic andesite flows,” which form part of a Quaternary-Tertiary basaltic andesite vent complex. Further to the northeast, the Project area crosses areas mapped as various Tertiary tuffs, including the Mickey Pass Tuff, Eureka Canyon Tuff, and Nine Hill Tuff.

Segment 4

Segment 4 is mapped predominantly as unconsolidated coarse-grained Quaternary deposits, including alluvial fan deposits, alluvial wash deposits, beach deposits associated with prehistoric Lake Lahontan, and colluvium (Faulds and Ramelli, 2005; Faulds et al., 2008). The area also consists of Tertiary volcanic and sedimentary bedrock units including basalt flows and breccia, nonwelded tuff, shale, siltstone, tuffaceous sandstone, volcanoclastic sandstone, and conglomerate.

1.2 Mineral Resources

There are several historical and current mineral exploration sites and former claims located in the vicinity of the Project; however, no active sites would be crossed by the Project (Minobras, 1973). Segment 1 is approximately two miles northeast of a known occurrence of uranium owned by Lucky Strike Mining (Minobras, 1973). Segment 3 is approximately three miles southeast of a former mineral production site of gypsum anhydrite. The Project would not cross either of these mineral resource sites.

There is also an old strip mine located near Segment 3. This mine is an old non-active mine that likely operated in the 1940s or early 1950s and may have been a gypsum mine, given the location on a Gypsite outcrop on the geologic map. A General Land Office patent search yielded two mineral placer claims that included portions of the mine area. The Tonopah Placer Claim (Document No. 0337) was patented in 1909 and the Regan Placer Claim (Document No. 010870) was patented in 1920. General Land Office survey plats of Township 16 North Range 21 East from 1881 through 1939 focus on legal sections in the northern portion of the township (in the Silver City Mining District). No

mining claims or other indications of mining activity are shown in Section 30 on the plat maps.

The closest active mine to the Project is located approximately one mile north of Segment 3 (NBMG, 2016). This mine, Adams Claim Gypsum Mine, supplies calcium sulfate to Nevada and Central Valley in California (ACG Materials, 2017). The Project would not cross this mine, but would cross the access road to the mine, Linehan Road. Paiute would coordinate with the mine as details on the construction start date and the proposed Project timeline for Segment 3 are refined. Paiute would only close one lane at any given time during the trenching activities at Linehan Road and would employ a flagger (if appropriate) to assist in maintaining safe traffic flow.

We conclude that the Project would not affect present and/or future extraction of mineral resources in the Project area.

1.3 Paleontological Resources

Paleontological resources are the remains, imprints, or traces of once-living organisms preserved in rocks or sediments. Most commonly, these resources include mineralized, partially mineralized, or unmineralized bones and teeth, shells, wood, and leaf impressions; and less commonly, soft tissues, footprints, burrows, and microscopic remains. Paleontological resources are considered non-renewable and non-replaceable resources. Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used to assess the potential for occurrence of paleontological resources.

Early Miocene (4.8 to 5.1 million years) aged vertebrate fossils have been located historically in the Pine Nut Mountains, located southeast of Carson City (Everett et al., 2010). Segment 1, which is the closest segment to this mountain range, does not intersect with the Pine Nut Mountains; therefore, fossil disturbance would be limited, if any. Segment 2 runs adjacent to the Carson City Quarry. During construction of the quarry in the late 1890s, fossilized trackways were uncovered belonging to *mylodon harlani*, a species of giant ground sloth (Nevada State Board 1894, Riddle et al., 2012). Segment 3 has no known paleontological resource sites associated with it.

No previously documented vertebrate fossil discoveries are known in the area of Segment 4, even though the segment intersects mapped beach deposits associated with prehistoric Lake Lahontan. However, it is possible that invertebrate fossils may be found in the area of Segment 4. Gastropod and ostracod shells can be abundant in these beach gravel deposits, but vertebrate fossils, including mammal and bird, are rare (Morrison, 1964).

Paiute consulted with the BLM to determine if a Potential Fossil Yield Classification existed for segments on or near BLM land; however, the BLM does not currently have Potential Fossil Yield Classification mapping in the Project area. The BLM does have an inventory of known paleontological sites. The BLM reviewed the inventory and did not find any sites within one mile of the Project area.

Paiute has developed an acceptable Project Paleontological Resources Unanticipated Discovery Plan should paleontological resources be discovered during the construction. This plan would minimize any potential impacts on paleontological resources.

1.4 Geologic Hazards

Seismicity and Faulting

Seismic activity can cause earthquakes, landslides, rockfalls, surface faulting, and soil liquefaction hazards to occur. Earthquakes produce the most widespread damage because they can affect large areas. The shaking during an earthquake can be expressed in terms of the acceleration due to gravity (g), and seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake, expressed in terms of g. For reference, peak ground acceleration (PGA) of 10 percent of gravity (0.1 g) is generally considered the minimum threshold for damage to older structures or structures not constructed to resist earthquakes. The American Society of Civil Engineers Technical Council on Lifeline Earthquake Engineering defines the 10 percent probability of exceedance in 50 years (475-year return period) as the contingency design earthquake for pipelines.

The western Nevada area has relatively high seismic activity. The highest PGAs are associated with Segments 1, 2, and 3, which are located in the western part of the project area; PGAs are lower at Segment 4, which is located further east. Existing faults and estimated PGAs near each pipeline segment are described below:

Segment 1

Segment 1 crosses the Genoa Fault, on the eastern side of the Carson Range. The Genoa fault is a normal fault marking the transition zone between the Basin and Range Province and the northern Sierra Nevada. The Genoa Fault dips to the east at approximately 60 degrees and is classified by the Nevada Bureau of Mines and Geology (NBMG, 2016) and U.S. Geological Survey (USGS) (2016) as a Holocene to Late Pleistocene-age fault, with activity within the past 15,000 years. The Genoa Fault has estimated slip rates of 1 to 5 mm/year and is considered one of the most active faults in the Basin and Range province with multiple large displacements (≥ 5 m/event) during the late Holocene (Ramelli et al., 2014). According to Douglas County (2013), the size of

the ground offsets and the probable length of paleoearthquakes indicate a moment magnitude 7.2 for seismic events along this fault.

Based on these data, there are significant risks of both ground surface rupture and ground shaking along the Genoa fault during future events. PGA with a 10 percent chance of exceedance in 50 years has been estimated at 30 percent g (USGS, 2015a). PGA with a 2 percent chance of exceedance in 50 years (which corresponds to a recurrence interval of approximately 2,500 years) has been estimated at 80 percent g (USGS, 2015b).

The town of Genoa, approximately 3 miles north of Segment 1, was subject to significant ground shaking during the June 3, 1887 Carson Valley Earthquake, which had an estimated magnitude of 6.5. Based on the reported damage to structures, it appears that “Modified Mercalli Intensity levels of VII to VIII were experienced in northern Douglas County from the 1887 earthquake” (Douglas County, 2013). The NBMG has established 100-meter buffer zones around the Genoa Fault (NBMG, 2016). Segment 1 runs across both the fault and its buffer zone.⁵

Segment 2

Segment 2, is located in relative close proximity to several Quaternary fault segments associated with the Carson City, New Empire, and Eastern Prison Hill Fault Zones; however, the pipeline does not cross directly over any of these fault zones. The Carson City, New Empire, and Eastern Prison Hill Fault Zones are classified as Holocene to Late Pleistocene-EPOCH faults, with activity within the past 15,000 years (NBMG, 2016; USGS, 2016). However, the faults closest to Segment 2 are classified as Late Pleistocene, and have demonstrated activity within the past 130,000 years.

The New Empire Fault Zone is the closest fault zone to Segment 2 with reported slip rates of less than 0.2 mm/ year (NBMG, 2016; USGS, 2016). Although the pipeline does not cross over any of these faults, it would intersect the associated 100-meter buffer zones at two locations in the central part of Segment 2 and at the northeastern end, near downtown Carson City.

Segment 2 could be subject to significant ground shaking from active faults in the Carson City area. PGA with a 10 percent chance of exceedance in 50 years has been estimated at 40 percent g (USGS, 2015a). PGA with a 2 percent chance of exceedance in 50 years has been estimated at 80 percent g (USGS, 2015b).

Segment 3

Several Quaternary fault segments associated with the Carson Lineament and New Empire Fault Zones have been mapped in the vicinity of Segment 3. Some of these faults

⁵ The purpose of the buffer zone is to account for discrepancies or uncertainties in fault mapping; there are no restrictions or regulations associated with the buffer.

have been classified as Holocene to Latest Pleistocene-Epoch faults, with activity within the past 15,000 years (NBMG, 2016; USGS, 2016). However, the faults closest to Segment 3 are considered older Quaternary, and not been active within the past 1,800,000 years.

The New Empire Fault Zone is closest to Segment 3. The central part of Segment 3 (near the Parker Carson STOL port) crosses a Quaternary fault segment of the New Empire fault zone and the associated 100-meter buffer zones.

Segment 3 could be subject to significant ground shaking from active faults in the Carson City area. PGA with a 10 percent chance of exceedance in 50 years has been estimated at 40 percent g (USGS, 2015a). PGA with a 2 percent chance of exceedance in 50 years has been estimated 80 percent g (USGS, 2015b).

There was significant structural damage in Carson City area during the June 3, 1887 Carson Valley Earthquake. The probabilities of earthquakes of various magnitudes occurring within 50 years and 50 kilometers of the Carson City area have been estimated at 70 percent for a magnitude 6.0 event; 50 to 55 percent for a magnitude 6.5 event; and 12 to 15 percent for a magnitude 7.0 event (Carson City, 2010).

Segment 4

Several Quaternary-Epoch segments, faults associated with the Pyramid Lake Fault Zone, are mapped in the vicinity of Segment 4. The youngest of these faults are classified as Holocene to Latest Pleistocene faults, with activity within the past 15,000 years (NBMG, 2016; USGS, 2016). The Pyramid Lake fault Zone is a ~50 km-long, northwest trending right-lateral fault zone that is part of a well-known, broader active shear zone called the Walker Lane. The Walker Lane accommodates up to 25% of the relative motion between the Pacific and North American plates and is characterized by complex fault patterns that bound the stable Sierra Nevada physiographic province and the Basin and Range physiographic province. The Walker Lane fault system has generated several large magnitude (>M 7) historic earthquakes that have ruptured the ground surface and produced prominent topographic scarps.

In Segment 4, PGA with a 10 percent chance of exceedance in 50 years has been estimated at 20 percent g (USGS, 2015a). PGA with a 2 percent chance of exceedance in 50 years has been estimated at 60 percent g (USGS, 2015a; 2015b).

Soil Liquefaction

Soil liquefaction is a phenomenon often associated with seismic activity in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like viscous liquid) when subjected to forces such as intense and prolonged ground shaking. For soil liquefaction to occur there needs to be:

1. lack of cohesive soils;
2. near-surface groundwater saturation; and
3. seismicity in the Project area.

Soils that are susceptible to liquefaction during a seismic event are generally limited to unconsolidated, clean sand (up to 35 percent non-plastic fines), lying below the water table. The greater the intensity and duration of the seismic event, the more likely liquefaction of these sediments could occur. Areas susceptible to liquefaction may include soils that are generally sandy or silty, and are generally located along rivers, streams, lakes, and shorelines or in areas with shallow groundwater.

Soil liquefaction is poorly characterized in northern Nevada, and no liquefaction susceptibility maps exist (NBMG, 2017). Liquefaction characterization in northern Nevada is generally conducted for site-specific circumstances or from known historical records. Publicly available site-specific liquefaction characterization and other general soil liquefaction susceptibility information available for the Project area is described below.

Segment 1

Much of Segment 1, to the west of the Genoa Fault, is located in areas of granitic bedrock. Liquefaction risks in areas directly underlain by granitic bedrock is unlikely. However, to the east of the Genoa Fault, unconsolidated alluvial fan sediments are found at the edge of the Carson Valley. Shallow groundwater is also present in this part of the valley. Because both unconsolidated sediments and shallow groundwater occur in this area, and given the seismic potential of the area, an earthquake-induced liquefaction risk exists. Areas of high liquefaction susceptibility have previously been mapped across much of the Carson Valley (Douglas County, 2013), including areas bordering the eastern side of Foothill Road, adjacent to the eastern end of Segment 1. Historically, liquefaction was reported in Genoa during the 1887 Carson Valley Earthquake (Douglas County, 2013). Genoa is similarly located at the western edge of Carson Valley, approximately 3 miles to the north of Segment 1.

Segment 2

The Eagle Valley floor, near Segment 2, is characterized by unconsolidated coarse-grained sediments and relatively shallow groundwater. Given these factors, and the PGA for the area, an earthquake-induced liquefaction risk may exist in the northern and southern parts of Segment 2. Based on water table elevation mapping in the area, groundwater is within 15 to 50 feet below ground surface (Maurer, 2011).

Bell and Trexler (1979) mapped the area in terms of potential for ground shaking during earthquakes. The northern and southern parts of Segment 2 were classified as Category II, which is associated with moderate severity of shaking. Category II includes

areas of unconsolidated deposits of low to moderate rigidity, where the depth to groundwater is between 10 and 33 feet.

The central part of Segment 2 is located at the edge of Prison Hill, an area directly underlain by unnamed Jurassic dacite porphyry and metavolcanic breccia, and is therefore not susceptible to soil liquefaction.

Segment 3

Segment 3 is characterized by areas of unconsolidated coarse-grained sediments and relatively shallow groundwater. Given these factors, and the area PGA potential, an earthquake-induced liquefaction risk may exist. Documented water table elevations in the area of Segment 3 are approximately 15 feet below ground surface (Maurer, 2011).

Bell and Trexler (1979) mapped the area in terms of “potential for ground shaking during earthquakes” and classified it as “Category II” or “Category III,” which are both associated with “moderate severity of shaking.” Category II includes areas of unconsolidated deposits of low to moderate rigidity, where the depth to groundwater is between 10 and 33 feet. Category III, which represents a lower degree of potential hazard, includes areas of unconsolidated deposits with moderate rigidity where the depth to groundwater is greater than 33 feet.

A portion of Segment 3, near the southwestern end of the segment, crosses basaltic andesite bedrock, and is therefore not susceptible to soil liquefaction.

Segment 4

Groundwater elevations in Segment 4 are not well documented. A recent basin modelling study (Epstein et al., 2007) assumed hydraulic heads of approximately 1,250 to 1,320 meters (4,100 to 4,300 feet) above msl, with the lowest values to the north of approximately 4,130 to 4,330 feet above msl. The local ground surface elevations range from approximately 4,350 to 4,540 feet above msl, with the lowest values to the north. Based on these results, the depth to groundwater appears to be greater than 200 feet below ground surface. Earthquake-induced liquefaction is not a concern in areas with deep depths to groundwater.

Landslides

Debris flows and mud flows are fast-moving landslides. Landslide information for the Project region was collected from published and unpublished sources. Landslide hazards exist with Project Segments 1, 2, & 3. Segment 4 is located in an unnamed valley with generally low to moderate slopes, and is therefore considered a low risk area for landslides.

Segment 1

This area has significant slopes, and because this area could be subject to significant ground shaking in an earthquake, there may be a risk of earthquake-induced landslides. However, during site visits, Paiute has not observed visual evidence of historical landslide activity, such as scarps, tension gashes, or lobes.

Segment 2

Carson City's Hazard Mitigation Plan (Carson City, 2010) maps Prison Hill as a "High" Landslide Hazard Area due to the presence of steep slopes. North of Prison Hill, areas that are relatively flat, were mapped as "Very Low" Landslide Hazard Areas. A risk of earthquake-induced landslides may exist because the central part of Segment 2 is located adjacent to Prison Hill, which could be subject to significant ground shaking during an earthquake. However, during site visits Paiute has not observed visual evidence of historical landslide activity, such as scarps, tension gashes, or lobes, in the Segment 2 Project area.

Segment 3

The southern part of Segment 3 near Carson City crosses an area of basaltic andesite that is mapped having "High" Landslide Hazard Area by Carson City (2010) due to the presence of steep slopes. However, during site visits Paiute has not observed visual evidence of historical landslide activity, such as scarps, tension gashes, or lobes, in the Project area of Segment 3.

In summary, even though landslides could occur in the Project area of Segments 1, 2, and 3, no visual evidence of historical landslide activity has been noted in the Project areas. We conclude that landslides are not anticipated to affect the Project.

Flooding

Due to the topography of Segment 1, flooding is not a major concern; however, the steep slope, particularly the existing ephemeral drainage, could be a conduit for water during flash flood events. Segments 2 and 3 of the Project are in the Carson River Basin which has flooding history dating back to 1852 (USGS, 2013). Therefore, the Project area for Segments 2 and 3 could be subject to flash flooding during significant precipitation events. Segment 4, which continues over the northern side of Virginia Range and into the Fernley Valley, could also be heavily impacted by high amounts of precipitation.

However, the pipeline segments are not located within Federal Emergency Management Agency mapped 100-year floodplains, nor are they located in proximity to perennial streams. Further, as discussed in section A.6.6, the pipeline would be installed by open cut at all 16 ephemeral drainage crossings, and would be crossed during the normal period of no flow. The pipeline would be buried at a depth sufficient to provide a minimum

of 48 inches of cover below the probable scour depth of the 100-year flood event calculated at that crossing. Therefore, even though flash flooding could occur in the Project area of Segments 2, 3, and 4, it is not anticipated to affect the Project due to construction occurring during the typical dry months, and would not impact operation of the pipeline due to the depth of pipeline burial below probable scour depth for a 100-year flood event.

Blasting

Blasting would not be utilized for the Project. In areas of shallow bedrock where rock may be encountered, such as Segment 1, rock may be removed using rock saws, rock trenchers, hydraulic hammers, and/or mechanical rippers.

1.5 Geologic Hazards Impact Mitigation

Mitigation of Seismic Hazards

Earthquakes can cause pipeline damage if the ground surface was to break or shift along a fault line. Buried pipelines that cross active faults can be subjected to abrupt deformation in a narrow zone during fault rupture that extends to the ground surface. Large permanent ground deformation caused by faulting can rupture pipelines resulting in loss of pressure integrity. Pipeline performance depends in large part on the angle of crossing and width of fault deformation. Depending on the crossing angle, the pipeline could be subjected to a combination of tension, bending, or compression. Generally speaking, pipelines can be designed to resist large tensile and bending deformations without rupture, albeit with severe distortion due to plastic deformation. Pipeline facilities are designed, constructed, and monitored in accordance with applicable industry standards and requirements and regulations of the USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA) which are protective of public safety.

In September 2017, Paiute developed specific design criteria for Segment 1 of the Project, where the pipeline crosses the Genoa fault, in order to maximize the pipeline's ability to withstand significant levels of fault displacement (SSD, Inc. 2017). As discussed, the Genoa fault is classified as a Holocene-age active fault capable of generating a magnitude of M7 or greater earthquakes. Faulting along the Genoa fault has the capacity for surface rupture with an estimated fault offset displacement of 8 to 14 feet. A large magnitude earthquake on the Genoa fault could result in the pipeline being pulled upward and/or laterally out of the trench on the downhill side of the fault such that the pipeline is no longer being buried over a significant portion of its length. Also, sections of the pipeline could experience plastic deformation due to bending and axial tension. As such, Paiute's design performance goal was to design the pipeline to withstand fault movement without loss of pressure integrity.

To mitigate for these potential effects, Paiute's Segment 1 pipeline design would generally consist of bends oriented away from the existing pipeline to reduce the axial

loads induced on the pipeline. If subjected to the large axial tension loads generated in the pipeline by the fault movement, the spring-like flexural action of these bends would provide a means to accommodate large fault movements and reduce the axial force. The design scheme would also utilize thicker grade pipe across the fault that would provide increased resistance to bending deformations with increased compression and tension strain capacities.

In addition, Paiute's design would consist of a mitigation trench across the fault zone that would allow the pipeline to be pulled upward and/or laterally out of the trench under minimal soil resistance. The mitigation trench would consist of shallow sloped side walls, shallow cover depth (3 feet) and include a loosely compacted, cohesionless granular (sand/gravel) bedding and backfill material wrapped in a layer of geotextile fabric to prevent infiltration of fine soil particles over time. Paiute recommends that the trench be annually inspected for washouts and erosion and maintained if necessary. We have reviewed Paiute's Genoa Fault crossing design, and find it acceptable. However, **we recommend that:**

Prior to construction of Segment 1, Paiute should file with the Secretary of the Commission (Secretary), a revised Genoa Fault crossing design plan which provides a(n):

- a. soil boring log information and profile, including the depth to the water table;**
- b. inspection and maintenance plan;**
- c. welding inspection guidelines;**
- d. detailed design profile of the mitigation trench;**
- e. discussion on why Paiute would use three types of piping and a TSC model for the X80 piping; and**
- f. clarification for the peak horizontal offset from the existing pipeline.**

Likewise, in September 2017, Paiute investigated the pipeline's crossing of the Pyramid Lake fault within Segment 4 of the Project (InfraTerra, Inc. 2017). As discussed, the Pyramid Lake fault Zone is capable of generating magnitude 7 or greater earthquakes. The fault crossing investigation for Segment 4 included desktop geologic and geomorphic mapping of Quaternary units and fault features, field reconnaissance, and paleoseismic screening trenches for determining the location, width, type, and amount of deformation of the Pyramid Lake fault at the pipeline crossing. The investigation found that the Project pipeline route crosses a complicated zone of faults associated with the southern termination of the Pyramid Lake fault. Lateral surface fault offsets of 9 to 15 feet, based on records of past earthquakes, were estimated for the central part of the fault zone. However, this magnitude of co-seismic displacement is not anticipated at the southern end of the fault, as the fault is dying out and the greatest surface offset along faults typically is recorded near the center of a fault zone.

Mapping and trenching during the Pyramid Fault Zone investigation where the Segment 4 pipeline crosses the fault showed two fault traces with zones of fault-related deformation roughly four to ten feet wide. The investigation results recommended using approximately 5.2 feet as a co-seismic displacement value for the pipeline's design analysis. Because the pipeline design plan for the Segment 4 crossing is not complete, **we recommend that:**

Prior to construction of Segment 4, Paiute should file with the Secretary the results of the pipeline design plan to avoid possible impacts from fault displacement on the pipeline.

Soil Liquefaction Mitigation Measures

Seismically induced liquefaction could damage a pipeline due to loss of shear strength resulting in stress on the pipeline, or could result in flotation of the pipeline under these conditions. In August and September 2017 Paiute conducted field investigations to determine the presence or absence of liquefiable soils for Segments 1, 2, and 3, where an earthquake-induced liquefaction risk may exist (Arcadis, 2017). Earthquake-induced liquefaction is not a concern on Segment 4 due to the depth of groundwater (>200 feet) in this area and, therefore, no mitigation has been proposed for that segment.

In order to assess the potential for seismic-induced soil liquefaction at each of the three pipeline segments (1, 2, and 3), Paiute conducted subsurface soil investigations to evaluate near surface groundwater conditions; and characterize subsurface soils at each segment. Likewise, Arcadis performed laboratory particle size analysis of selected soil samples collected from the soil borings and conducted a seismic design hazard analysis using ground motions associated with a 10-percent-probability of exceedance in 50 years (design operational earthquake). Generally, soils most susceptible to liquefaction are loose, saturated, granular cohesionless soils such as clean sands, non-plastic silty sands, non-plastic silts and gravels that lie within the zone of groundwater saturation, and that are susceptible to prolonged ground shaking.

The results of the soil liquefaction analysis showed that soil conditions that could be susceptible to soil liquefaction were only present within Segment 3. Subsurface soil conditions at Segment 3 (soil boring 3-1) found a silty sand layer within the saturated zone representing about a 5.5-foot-thick layer of susceptible soils between the top of the saturated zone at 18.5 feet below ground surface to a depth of 24 feet below ground surface. As discussed, Segment 3 could be subject to significant ground shaking from active faults in the Carson City area.

Pipeline burial depths are typically limited to the upper five feet of soils. As such, Paiute's pipeline would be installed well above the susceptible soils found in Segment 3. However, given the conditions found in Segment 3, it is possible that the pipeline could be subjected to several inches of permanent settlement of soils below the pipeline

following a significant seismic event. However, modern steel pipelines are designed, and pipelines are constructed to absorb this amount of settlement without experiencing stresses exceeding the pipe's elastic range. As such, we anticipate that no additional design measures are warranted to mitigate for liquefiable soils along Paiute's proposed pipeline for Segment 3.

Based on Paiute's proposed mitigation measures and our recommendations, we do not anticipate any significant geologic hazard impacts on Project facilities.

1.6 Soils

Soil characteristics in the Project area were identified and assessed using the Natural Resources Conservation Service's (NRCS) Web Soil Survey (NRCS, 2017a). Soils for each pipeline segment are described below.

Segment 1

Soils overlying the granodiorite bedrock in the area of Segment 1 are mapped as "Toiyabe-Rock outcrop complex" (NRCS, 2016) derived from granitic parent material. These soils are generally thin, with bedrock typically occurring at depths of 15 to 60 inches below ground surface. The soils within the Project area of Segment 1 are further classified as the Mottsville and Toiyabe series. The Mottsville series consists of excessively drained, very deep soils that formed in alluvium derived from granite rocks. These soils can be found within alluvial fans, and have slopes of 4 to 15 percent within the Project area. The floor of Carson Valley is characterized by surficial unconsolidated alluvial fan deposits of middle Holocene to Recent age. The Toiyabe series are excessively drained, shallow soils formed in colluvium and residuum derived from granite rock. The slopes of these soils within the Project area are 30 to 50 percent. The soils within the Project area of Segment 1 are used primarily for watershed, wildlife habitat, and urban development.

Segment 2

The soils within the Project area of Segment 2 consist primarily of the Koontz, Haybourne, Greenbrae, and Indiano soil series. The Koontz series consists of well drained, shallow or very shallow soils that formed in residuum and colluvium derived from metamorphic rocks. The Project area of Segment 2 is relatively level with slopes between 0 and 2 percent; however, a small portion of the Koontz soil series (with from 30 to 50 percent) is mapped in the Project area. The Haybourne and Greenbrae series consist of well drained, very deep soils that formed in alluvium derived from granitic rocks or from mixed sources. Haybourne soils are found on alluvial fans, and have slopes of 0 to 4 percent within the Project area. Greenbrae soils are found on alluvial fans or terraces and have 4 to 8 percent slopes within the Project area. The Indiano series consists of well drained, moderately deep soils that formed in residuum and colluvium derived from altered volcanic rocks. These soils are found on mountains, plateaus, hills,

and rock pediments, and have slopes ranging from 4 to 15 percent within the Project area. Soils within the Project area of Segment 2 are primarily used for urban development.

Segment 3

The soils within the Project area of Segment 3 consist primarily of the Xerta, Reno, and Hunewill soils series. The Xerta series consists of well drained, moderately deep soils formed in residuum derived from basalt. These soils are found on plateaus and hills, and have slopes ranging from 4 to 30 percent within the Project area. The Reno series consists of well drained, moderately deep soils formed in alluvium from mixed rocks. These soils are found on or around alluvial fans, and slopes within the Project area range from 0 to 4 percent. The Hunewill soil series consist of well drained, very deep soils formed in alluvium derived from mixed rocks. These soils are found on stream terraces, and slopes within the Project area range from 4 to 8 percent. The soils within the Project area of Segment 3 are used primarily for urban development.

Segment 4

The soils within the Project area of Segment 4 consist primarily of the Biddleman, Piroutte, and Cleaver soils series. The Biddleman series consists of well drained, very deep soils formed in alluvium derived from mixed rocks over lacustrine deposits. These soils are found on beach terraces, and slopes within the Project area typically range from 0 to 15 percent. The Piroutte soils series consists of well drained, shallow soils formed in residuum and colluvium derived from volcanic rocks. These soils are found on mountains, plateaus, and hills, and slopes typically range from 0 to 50 percent. The Cleaver soils series consists of well drained, shallow soils that formed in alluvium derived from igneous rocks. These soils are found on fan remnants, and slopes typically range from 2 to 30 percent. The soils within the Project area of Segment 4 are used primarily for industrial development and wildlife habitat.

Soil Impacts and Mitigation

Soil limitations and potential impacts were assessed using the NRCS Web Soil Survey (NRCS, 2017a). Appendix D summarizes the impacts by milepost for each soil map unit and characteristics such as the potential for erosion (from water and wind), restoration potential, resistance to compaction, drainage class, approximate depth to bedrock, and potential for trench caving. Table 8 summarizes the acres of soil constraints affected by the Project.

Table 8		
Acres of Impact by Soil Constraints		
Constraint	Rating	Acres Affected^d
Drainage Class	Excessively Drained	7.84
	Well Drained	105.38
Water Erosion Hazard	Slight	54.12
	Moderate	51.82
	Severe	7.28
Wind Erosion Hazard ^a	Low	20.14
	Moderately Low	54.01
	Moderate	13.65
	Moderately High	17.57
Restoration Potential	High	7.84
	Low	55.73
	Moderate	39.39
Resistance to Compaction	High	18.11
	Low	57.02
	Moderate	54.22
Depth to Bedrock (cm) ^b	High	1.98
	0-50	58.52
	>50-100	29.45
	>100-200	0.00
Severe Potential for Trench Caving ^c	>200	25.26
	Yes	32.13
	No	81.09
<p>** Constraint ratings for soil map unit "Gypsum Land" are not included as data for this soil type was not available.</p> <p>a High = Wind Erodibility Group (WEG) 1-2; Moderately High = WEG 3; Moderate = WEG 4-5; Moderately Low = WEG 6; Low = WEG 7-8 (NRCS 2017a).</p> <p>b Depth to lithic or paralithic bedrock or duripan, if present (NRCS 2017a); cm = centimeter</p> <p>c Based on soil classification and NRCS 2017 interpretation of unstable excavation walls for shallow excavations (numeric rating 0.5 or greater).</p> <p>d Acreages based on soil map units within pipeline construction right-of-way, access roads, workspaces, and staging areas.</p>		

Poorly Drained Soils

When water is removed from the soil so slowly that the soil is saturated periodically or remains wet greater than seven days, soils are likely poorly drained. Paiute would limit construction work, where possible, to periods when groundwater is at its lowest annual level to minimize the detrimental effects on the soil. Dewatering may be necessary if the groundwater infiltrates the trench. A temporary discharge permit for trench dewatering would be obtained from the Nevada Department of Environmental Protection (NDEP) Bureau of Water Pollution Control. All the soils within the Project area are either well drained or excessively drained (appendix D). Therefore, ponding of water in trenches is not expected except potentially in areas of shallow groundwater.

Erosion

Soils within the Project area have variable potentials for wind and water erosion (appendix D). Construction activities in the construction rights-of-way would expose bare soil, increasing the potential for erosion by both wind and water. Wind erosion commonly occurs on dry, fine sandy soils when vegetative cover is lacking and strong winds are prevalent. Erosion also is related to the capacity for water to pass through the soil surface. Slope gradient, vegetation cover, and the amount of rainfall also influence erosion by water. Erosion from water is most severe on moderate-to-steep slopes during periods of high-intensity rainfall or rapid snowmelt. Without adequate protection, erosion may result in the discharge of sediment into ephemeral drainages.

To minimize or avoid potential impacts due to soil and water erosion, Paiute would follow erosion and sedimentation control devices as outlined in the Project Plan and the Project's Stormwater Pollution Prevention Plan. Erosion control measures that would be implemented may include temporary and permanent slope breakers, sediment barriers (such as silt fencing and straw bales), erosion control fabric, mulch, and timely revegetation practices.

Restoration Potential

Soil restoration potential reflects the ability of a soil to recover from degradation by restoring functional and structural integrity. Re-establishment of a preferred natural plant assemblage and maintaining the ability to capture, store, and release water are two examples of restoration goals. The NRCS applies ratings of soil restoration potential to prioritize areas for restoration projects and identify the likely recovery performance of each area. Most of the soils in the Project area have moderate restoration potential; however, all soils are expected to be somewhat hampered by limited precipitation, and some soils by shallow bedrock or sodic conditions. Careful adherence to the Project's Restoration and Revegetation Plan would help ensure that revegetation is successful where these soils occur. The revegetation methods and seed mixes designated in the plan are based on native species that currently occupy the Project area and are, therefore, best adapted to the growing conditions in the area. Revegetation would be monitored for a minimum 2-year period following completion of restoration activities. The average length of time for each vegetation type to establish to pre-construction conditions is expected to be 2 to 3 years. Success of revegetation would be evaluated based on whether the restored areas appear to have reached their site potential as determined by observations of adjacent, undisturbed areas. If revegetation is not successful, additional measures would be developed.

Soil Compaction

Movement of heavy equipment within the construction rights-of-way can result in soil compaction. The potential for soil compaction would increase where heavy

equipment operates on wet soils with high clay content. Compaction results in a loss of pore space in the soil, which restricts water penetration, development of vegetation roots, and the diffusion rate of oxygen into soils.

Most soils within the Project area have low to moderate resistance to compaction by vehicle and heavy equipment travel (appendix D). Paiute would follow the mitigation measures for soil compaction outlined in the Project Plan and within the Project's Restoration and Revegetation Plan. If subsequent construction and clean-up result in further soil compaction, the soil would be tilled.

Trench Caving

The sidewalls of trenches may cave-in where soils are dominated by unconsolidated materials and rock fragments. Excavations in wet soils can also experience problems with sidewall caving. Paiute would excavate the trench wider at the top and shore-up the sidewalls, as necessary, when workers are present in areas that are susceptible to caving and to meet all OSHA standards. Soils that have a severe potential for trench caving are abundant along Segments 3 and 4, and are listed by segment milepost in appendix D.

Soil Segregation

Grading, trenching, and backfilling could mix topsoil with less productive subsoil. Topsoil salvage for the Project would follow procedures provided in the Project Plan, unless otherwise specified by the landowners or permitting agencies. In areas of relatively level terrain, topsoil would be removed from the trench line and spoil areas to a maximum depth of 12 inches and stockpiled in a windrow, where possible, on the non-working side of the right-of-way. In areas of irregular topography, topsoil would be stripped from the width of the disturbed area and stockpiled in a similar manner. Topsoil salvage would not be necessary in areas where poor soils are located (indicated by barren soils), at bedrock outcrops, within paved public right-of-way, or on steep slopes that may pose potential safety hazards to equipment operators and other workers.

Temporary erosion controls would be installed immediately after initial disturbance of the soil. Permanent erosion and sediment control measures would be installed, as necessary. Erosion and sediment control measures would be implemented to minimize erosion and sediment transport in the open trench. Trench breakers, generally consisting of sand-filled bags or foam, would be constructed in the open trench in areas of sloping terrain to reduce transport of sediment and to control runoff from channeling. Gravel or stone track-out pads would be installed at access points to public roadways, in accordance with permitting agencies, to prevent or minimize tracking mud, dirt, sediment, or similar materials onto the roadway. Deposits tracked by vehicles or transported off the right-of-way by wind or storm water would be promptly cleaned up. Airborne dust that results from construction would be controlled by spraying the right-of-

way with fresh water, a dust palliative, or other suitable measures, in accordance with the Project Dust Control Plan and permitting agencies. Water used for dust suppression would be obtained from a local water source (see section 2.4).

Cropland and Residential Areas

The U.S. Department of Agriculture defines “prime farmland” as land best suited to food, feed, forage, fiber, and oilseed crops (NRCS, 2017c). This designation includes cultivated land, pasture, woodland, or other lands that are either used for food or fiber crops or are available for these uses. Urbanized land and open water are excluded from prime farmland. Prime farmland typically contains few to no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., artificial drainage). Three soil map units within the Project area for Segment 2 are designated as “Prime Farmland if Irrigated”; however, these areas are along a roadway, and none of the Project area for Segment 2 is currently farmed. Construction would temporarily impact 12.8 acres of this soil type.

No agricultural drainage tile or irrigation systems are known to be present within the Project area; however, there is a drainage system associated with a residential property along Edmonds Drive (Segment 2). A portion of the Project area for Segment 2 is adjacent to a residential area; however, no soils within residential areas would be impacted by the Project.

Contaminated Soils

A review of state and federal databases compiled by Environmental Data Resources, Inc. (EDR 2016a, 2016b) was conducted. The EDR report provides a summary of all facilities in proximity to the Project area that are listed on local, state, and federal databases and may represent the potential for a recognized environmental condition, as defined under ASTM International standard practices for Phase I Environmental Site Assessments.⁶ Upon review of this information, Paiute conducted a field review in October 2016 to further identify potential contaminated and hazardous waste sites. Based on the EDR report review, knowledge of the site topography, and the field review, the potential for contaminated soils within the Project area were identified.

Of the mapped EDR sites, only one record indicated a site directly along the Project alignment; however, map searches using the former facility name indicate the site is located 600 to 700 feet north of Segment 3 and would not be impacted by the Project.

⁶ A complete Phase I Environmental Site Assessment was not conducted for the Project area but a similar screening methodology was applied.

This site, listed as an auto repair facility and historical auto station,⁷ was flagged by EDR due to the potential for illegal dumping and disposal/storage of hazardous waste, petroleum products and/or chemicals. There is no documented contamination, and therefore no mapped areal extent associated with this site. However, this facility presents only a limited concern to the Project area based on the distance from the Project area and observed field conditions.

EDR mapped other sites in proximity to the Project area, but due to factors such as a detailed review of data available from local, state and federal sources and as reported by EDR (*e.g.*, type and extent of contamination), topography, the presumed direction of groundwater flow, distance from the Project area, and the field review of the Project area, the EDR-mapped sites in proximity to the Project area were determined very unlikely to result in contaminated soils in the Project area. Based on available information, no contaminated or hazardous waste sites with the potential to impact the Project area were identified within 0.25 mile of the proposed facilities. The Carson River Mercury Superfund site is located along the Carson River basin, with the majority of the site located 4.6-miles northeast of Segment 3 (EPA, 2016a). Due to topography, the presumed direction of groundwater flow, and distance from the Project area, it is unlikely that this Superfund site would have an impact on soils within the Project area.

During a field review of the Project, a tank, drum, container, and debris were observed along Segment 4 (near Staging Area 4-2). These items were inspected, as well as the surrounding soil. No stains or leaks were observed; no sign of contaminated soils was present.

While contaminated soils are not expected in the Project area, Paiute has developed a Project Unanticipated Contamination Discovery Plan that outlines procedures that would be followed if contaminated soils are encountered during construction.

We conclude that Paiute's use of erosion control measures in their Project's Erosion Control Revegetation and Maintenance Plan and Restoration and Revegetation Plan and would adequately minimize impacts on soils.

2.0 Water Resources and Wetlands

2.1 Groundwater Resources

There are no EPA-designated sole-source aquifers within the Project area or in the State of Nevada (EPA, 2016a). The principal aquifers that underlie the Project area are Basin and Range basin-fill aquifers. Aquifers within the Basin and Range Province are

⁷ The inclusion of this facility in the EDR report does not represent a known environmental impact, rather it simply represents what EDR classifies as "High Risk Historical Records." Upon field review it was determined based on the location of the facility and the observed soil conditions within the Project area that the potential for soil contamination within the Project area in association with this record was very low.

not regional or continuous due to complex faulting in the region. However, these aquifers are the most productive within the region, and comprise the primary groundwater resource utilized in the area. Basin-fill sediments are composed of primarily unconsolidated sand and gravel of Quaternary and Tertiary age. Recharge to the basin-fill aquifers is derived from precipitation falling on the mountains surrounding the basins infiltrating through coarse alluvial fan sediments on the flanks of the mountains. Groundwater discharge from the basin-fill aquifers is by evapotranspiration, discharge to streams and springs, underflow, interbasin flow, and withdrawal by wells. In general, groundwater quality from the basin-fill aquifers within the Project area is fresh with total dissolved solids concentrations that range from 0 to 500 milligrams per liter (USGS, 2000). EDR’s review of state and federal databases does not indicate the presence of contaminated groundwater within 1 mile of the Project segments (EDR, 2016a; 2016b).

Public and Private Water Supply Wells

The Nevada Division of Water Resources database was reviewed to identify public water supply wells within 150 feet of the proposed pipeline construction workspace. A total of 28 wells were identified within 150 feet of the proposed pipeline construction workspace and are summarized in table 9. No public water supply wells were identified within 150 feet of the proposed pipeline construction workspace.

Table 9						
Well Locations Identified within 150 Feet of the Project						
Facility	NDWR Well Log ID	County, State	Approximate Milepost	Type	Distance (feet) and Direction to Proposed Pipeline	
Segment 2	12536	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	12537	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	13247	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	13259	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	13390	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	13391	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	13392	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	19987	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	19989	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	22866	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	25261	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	95896	Carson City, NV	1.09	Domestic	45.9 ^a	West
Segment 2	111702	Carson City, NV	1.14	Test Well	73.7	East
Segment 2	117331	Carson City, NV	1.14	Test Well	73.7	East
Segment 2	1286	Carson City, NV	1.25	Domestic	53.9	West
Segment 2	2081	Carson City, NV	1.25	Domestic	53.9	West
Segment 2	14758	Carson City, NV	1.25	Domestic	53.9	West
Segment 2	94493	Carson City, NV	1.25	Domestic	53.9	West

Table 9						
Well Locations Identified within 150 Feet of the Project						
Facility	NDWR Well Log ID	County, State	Approximate Milepost	Type	Distance (feet) and Direction to Proposed Pipeline	
Segment 2	37754	Carson City, NV	1.26	Unused	10.7	West
Segment 2	37755	Carson City, NV	1.26	Domestic	10.7	West
Segment 2	37756	Carson City, NV	1.26	Domestic	10.7	West
Segment 2	7036	Carson City, NV	1.28	Domestic	26.2	West
Segment 2	110087	Carson City, NV	1.28	Domestic	26.2	West
Segment 3	92215	Lyon County, NV	0.03	Monitoring Well	34.6	South
Segment 3	13260	Carson City, NV	0.77	Commercial	124.7	Northwest
Segment 3	17212	Carson City, NV	0.77	Domestic	124.7	Northwest
Segment 3	83424	Carson City, NV	2.26	Monitoring Well	172.0	North
Segment 3	83425	Carson City, NV	2.26	Monitoring Well	172.0	North

a A cluster of wells are located 45.9 feet from the proposed Pipeline.
 NDWR Nevada Division of Water Resources

Groundwater Impacts and Mitigation Measures

Construction, operation, and maintenance activities associated with the Project have the potential to impact groundwater. Short-term effects include alteration of overland flow and groundwater recharge resulting from clearing of vegetation, grading, and trenching activities and potential spills and leaks of fuels into shallow groundwater aquifers. However, with the implementation of mitigation measures proposed by Paiute, impacts from construction, operation, and maintenance activities are expected to be minimal. Measures that Paiute would implement include the following:

- Areas cleared of vegetation, and areas disturbed during construction, would be minimized to the smallest possible footprint necessary to construct safely.
- At least two weeks prior to construction, Paiute would notify the Carson City Development Engineering Department of the construction start date (for work within the Source Water Protection Areas [SWPAs]) within the vicinity of the Project area around pipeline Segments 2 and 3 (see section B.2.2).
- Implement the Well Monitoring Plan that outlines measures to address potential concerns of residential and commercial well owners, maximize safety measures, minimize disturbance, and avoid or limit impacts on wells. Paiute would offer to conduct pre-and post-construction well testing. If well monitoring is permitted by a landowner, Paiute would measure well yields and collect water quality data for each well prior to construction. After pipeline construction and installation, Paiute would perform an additional analysis of well yields and water quality for each well analyzed prior to construction. If it is determined that the post-construction

data show a significant reduction in yield or water quality compared to the pre-construction data, which likely resulted from the Project construction, Paiute would provide a temporary source and work with the well owner to ensure that necessary measures are taken to restore the well to pre-construction conditions or replace the well.

- Implement the project-specific Spill Prevention and Response Plan that outlines proper storage, containment, and handling procedures to prevent the inadvertent release of fuels, solvents, or lubricants used during construction. The Spill Prevention and Response Plan also describes acceptable measures to be implemented by Paiute personnel and contractors to prevent and control inadvertent spills of materials.

However, Paiute has not identified specific measures to avoid impacts from heavy equipment on wells located within construction work areas during construction.

Therefore, **we recommend that:**

Prior to construction, Paiute should file with the Secretary, for review and written approval by the Director of the Office of Energy Projects (OEP), measures it would implement during construction for the protection of wells within the construction right-of-way.

Based on these mitigation measures and our recommendation, we conclude that the Project would not have a significant impact on groundwater resources.

2.2 Surface Water Resources

The Project is located within the Upper Carson (Segments 1, 2, and 3), Middle Carson (Segment 3), and Granite Springs Valley watersheds (Segment 4). Based on a review of USGS topographic maps and Paiute's aquatic resources delineation of the Project area in October 2016 and April 2017, 16 ephemeral drainages would be crossed by the Project. One ephemeral drainage has characteristics to potentially be jurisdictional Waters of the U.S. (*e.g.*, discernible beds, banks, or definable channels) and a potential hydrological connection to the Carson River, a traditionally navigable water. All waterbodies crossed by the Project, as well as the anticipated method of crossing, are provided in table 10.

At approximate milepost 1.94, Segment 4 crosses a stock pond occupying a dammed portion of an ephemeral drainage. At the time of Paiute's field survey, the stock pond was dry and did not support vegetation. High rain and runoff has resulted in a breach of this stock pond since the field delineation in October 2016.

Table 10
Surface Water Resources Crossed by the Project

Milepost	Waterbody Name^a	Feature ID	Flow Regime	Crossing Width (feet)	FERC Classification^b	Crossing Method^c
Segment 1						
0.31	Unnamed Ephemeral #1	U1	Ephemeral	108	Minor	Open-cut
Segment 2						
1.11, 1.12, 1.15, 1.16	Unnamed Ephemeral #4	U4	Ephemeral	45	Minor	Open-cut
1.06, 1.07, 1.11	Unnamed Ephemeral #5	U5	Ephemeral	48	Minor	Open-cut
1.01	Unnamed Ephemeral #6	U6	Ephemeral	41	Minor	Open-cut
1.00	Unnamed Ephemeral #7	U7	Ephemeral	99	Minor	Open-cut
0.47, 0.48	Unnamed Ephemeral #10	U10	Ephemeral	145	Minor	Open-cut
Segment 3						
0.02, 0.05, 0.06, 0.09	Unnamed Tributary of Carson River ^{d,e}	U12	Ephemeral	146	Minor	Open-cut
0.15, 0.16	Unnamed Ephemeral #13	U13	Ephemeral	204	Minor	Open-cut
1.07	Unnamed Ephemeral #15	U15	Ephemeral	204	Minor	Open-cut
Segment 4						
0.27	Unnamed Ephemeral #25	U25	Ephemeral	56	Minor	Open-cut
1.31	Unnamed Ephemeral #29	U29	Ephemeral	764	Minor	Open-cut
1.52	Unnamed Ephemeral #31	U31	Ephemeral	484	Minor	Open-cut
1.57	Unnamed Ephemeral #32	U32	Ephemeral	444	Minor	Open-cut
1.90	Unnamed Ephemeral #33	U33	Ephemeral	444 + 240 ^f	Minor	Open-cut
4.10	Unnamed Ephemeral #35	U35	Ephemeral	168	Minor	Open-cut
3.25	Unnamed Ephemeral #41	U41	Ephemeral	14	Minor	Open-cut

a Drainages listed in order from north to south; names assigned to unnamed drainages were assigned during field surveys and are not sequential and are not consecutive.

b FERC defines a “waterbody” as any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes. FERC classifies waterbodies into three categories based on the width of the water level at the time of crossing: minor waterbodies are those that are less than or equal to 10 feet wide, intermediate are those greater than 10 feet but less than 100 feet wide, and major waterbodies are those that are 100 feet or greater in width. The FERC classification listed here only applies during periods of perceptible flow.

c Crossing methods are preferred methods; all crossings would be constructed in accordance with Project Plan and Procedures and alternate crossing methods would be used as necessary for compliance.

d State Water Quality and Fisheries Classification Beneficial Uses: A = Watering of Livestock; B = Irrigation; E = Recreation Not Involving Contact with Water; F = Municipal or Domestic Supply; G = Industrial Supply; H = Propagation of Wildlife. All other waterbodies are not assessed by State of Nevada (NDEP 2014). Waterbody does not appear to be connected to a State waterbody with designated beneficial uses.

e Likely jurisdictional under Section 404 of the CWA

f U33 consists of two ephemeral drainages that are in close proximity to each other such that it is difficult to differentiate between them. Therefore, they are mapped together and two crossing widths are provided; one for each ephemeral drainage.

Public Watershed Areas

The NDEP has established several programs to protect surface and groundwaters of the state. One of these programs is the NDEP Integrated Source Water Protection Program (ISWPP). The ISWPP is designed to better engage and support local communities in source water protection and protect and provide safe drinking water (NDEP, 2010). As a part of this program, NDEP provides local support to communities to develop and implement Community Source Water Protection Plans. Over the years, these state and local programs have expanded from a focus on wellhead protection for groundwater sources to an ISWPP that includes groundwater wells, springs, and surface water sources. Through the ISWPP, communities are actively engaged in every aspect of source water protection planning including the identification and protection of SWPAs.

Based on a review of available information and consultation with NDEP Bureau of Safe Drinking Water, Carson City Department of Public Works, Lyon County Utilities, the City of Fernley, and the Bureau of Reclamation, no SWPAs were identified within three miles of Segment 1, portions of Segments 2 and 3 cross known SWPAs, and Segment 4 is located within three miles of known SWPAs.

Sensitive Surface Waters

Waterbodies may be considered sensitive to Project construction for several reasons, including the presence of critical aquatic habitat or special-status species; the presence of high-quality recreation, visual resources, or historic value (Nationwide Rivers Inventory waterbodies); listing by the EPA as a 303(d)-impaired water; or a location within an important riparian area. Waterbodies may also be considered sensitive if they are of special interest to a land management agency, resource agency, or Federally Recognized Tribe. Paiute performed an evaluation of various databases which identify designated critical habitats and habitats protected for threatened and endangered species, the Natural Resource Inventory database, and the National Wild and Scenic River System database. No sensitive surface waters were identified near the Project area.

Extra Work Spaces within 50 feet of Waterbodies

Paiute proposes modification of the FERC Procedures for three extra work spaces located within 50 feet of ephemeral drainages classified as State of Nevada Waters. A summary of each extra work area is provided in table 11. The Project would be constructed in accordance with the Project Plan and Project Procedures and construction activities would comply with NDEP Temporary Working in Waterways Permits and Paiute's NDEP Construction Stormwater General Permit. The Project Plan and permit conditions include requirements for turbidity monitoring, equipment cleaning, best management practices, fuel storage, and other specifications to avoid, detect, and mitigate impacts on State of Nevada Waters. These measures would provide adequate protection against the introduction of sediment and sediment-laden water into ephemeral drainages.

Table 11
Extra Work Areas within 50 Feet of Waterbodies^a

Extra Work Area	Approx. Acreage	Approx. milepost	Waterbody Name(s)	Distance from Waterbody	Existing Conditions	Justification
Segment 2, Staging Area 2-2	0.3	1.02 1.01 0.93	U6 U7 U8	15 feet 10 feet 20 feet	Staging Area 2-2 is within an existing disturbed area near Paiute's existing Carson City Gate No. 2 at the intersection of Fairview Drive and South Edmonds Drive. Staging Area 2-2 is located on land owned by the State of Nevada as well as within Paiute right-of-way associated with Carson City Gate No. 2.	Staging Area 2-2 is within an existing disturbed area on the east side of the intersection of Fairview Drive and South Edmonds Drive, which eliminates the need for additional access roads or disturbance within the undisturbed areas east of the pipeline right-of-way. Due to the condition of the area, it is not anticipated that significant grading would be required in association with the use of this staging area.
Segment 3, Staging Area 3-1	1.9	2.04 2.26	U21 U22	31 feet, Within Workspace	Staging Area 3-1 is within an existing disturbed area near Paiute's existing Carson Pressure Limiting Station and adjacent to the shoulder for U.S. Highway 50. Staging Area 3-1 is located on land owned by Carson City.	Both ephemeral drainages are located within a relatively disturbed area and serve as drainage features for either U.S. Highway 50 (U21) or the two-track road associated with the existing pipeline and transmission line corridor (U22). Due to the gentle topography, significant grading is not anticipated in association with the use of this staging area.
Segment 4, Staging Area 4-4	3.2	0.00 0.02	U23 U24	Within Workspace	Staging Area 4-4 is used as open land/rangeland. The staging area is directly adjacent to the pipeline corridor and encompasses Paiute's existing Fernley Valve Assembly at the intersection of an existing BLM road and the pipeline right-of-way. Staging Area 4-4 is located on BLM-administered lands.	Staging area 4-4 was selected based on proximity to the BLM access road currently used for access to the existing Fernley Valve Assembly. U23 currently runs parallel to the existing BLM road, crossing under the road through a culvert just east of Staging Area 4-4. The portion of Staging Area 4-4 crossed by U23 and U24 is expected to be used primarily for improved turning and access to the western portions of the staging area by larger trucks and significant ground disturbance (such as grading) is not expected within U23 or U24.

^a FERC defines a "waterbody" as any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes.

Surface Water Impacts and Mitigation

Paiute developed the Project to avoid waterbodies to the maximum extent possible. No perennial or intermittent waterbodies would be crossed by the Project; however, construction of the Project could result in minor, temporary impacts on 16 ephemeral drainages crossed by the Project.

The ephemeral drainages are anticipated to be dry during the time of crossing. If there is no flow in the ephemeral drainages at the time of crossing, Paiute would follow the standard upland construction techniques in accordance with the Project Plan. Should there be perceptible flow within the ephemeral drainages at the time of the planned crossing, Paiute would wait to cross the ephemeral drainages until there is no flow. To minimize impacts on ephemeral drainages crossed by the Project, such as introducing sediment into the drainage, Paiute would implement measures in its Plan and Procedures, including sediment and erosion control devices such as silt fence, straw bales, and slope breakers. In addition, Paiute would adhere to its Spill Prevention and Response Procedures to avoid or minimize impacts from leaks and spills of hazardous materials. Further, the pipeline would be buried at a minimum depth of four feet below scour depth where it crosses ephemeral drainages. After construction is completed, all ephemeral drainages would be restored to pre-construction conditions to the extent feasible, and all excess materials would be removed. In addition, Paiute would restore the stock pond along Segment 4 to pre-construction conditions or in conformance with landowner agreements.

For the portions of Segments 2 and 3 within SWPA's, Paiute would contact the Carson City Development Engineering Department at least two weeks ahead of the planned construction start date, per Carson City's request. An inspector from its Environmental Control Department would inspect the Project area once or twice a day to ensure there are no sources of contamination.

Based on Paiute's proposed crossing methods and adherence to measures its Project Plan and Project Procedures, we conclude that the Project would not have a significant impact on surface water resources.

2.3 Wetlands

Paiute reviewed National Wetlands Inventory Program mapped wetlands for the Project (USFWS, 2016a). In addition, Paiute conducted an aquatic resources delineation of the Project area in October 2016 and April 2017. Wetland delineations were conducted in accordance with the Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region Version (Version 2.0) (USACE, 2010) and the routine determination guidelines provided in the USACE Wetland Delineation Manual (Technical Report Y-87-1) (Manual) (USACE, 1987). No wetlands were observed

within the Project area during the aquatic resources delineation; therefore, the Project would not affect wetlands.

2.4 Hydrostatic Testing

In compliance with the USDOT regulations and in accordance with Paiute's Hydrostatic Test Plan, Paiute would perform hydrostatic testing of the new pipeline segments prior to them being placed into service.

About 579,984 gallons of water would be required for the testing of all segments of the proposed Project. Specifically, the water requirements for each segment are as follows:

- Segment 1: 12,707 gallons
- Segment 2: 48,737 gallons
- Segment 3: 182,211 gallons
- Segment 4: 336,329 gallons

The hydrostatic test water would be obtained from municipal sources. Paiute has coordinated with Douglas County (Segment 1), Carson City (Segments 2 and 3), and the City of Fernley (Segment 4) regarding water use for the Project. Hydrants were identified as potential water sources for Segments 1, 2, and 3 and a hydrant and a well were identified as potential water sources for Segment 4. Paiute would obtain applicable permits from these entities for water use for the Project. To reduce the overall water requirements, test water would be reused as dust control along the right-of-way.

Once the pipe segment is tested, the test water would be collected in trucks and used for dust control and revegetation along the pipeline right-of-way. Discharge rates would be controlled by operating valves at the end of the water truck. Test water would be discharged following guidelines in the Project Procedures and in accordance with all federal, state, and local requirements and best management practices for protection of water quality and stream flows when applied to the right-of-way as dust abatement. No rust inhibitors would be added to the test water, and the water discharged would only contain minor amounts of sediment and iron oxide from the weld areas. Discharge water samples would be collected and analyzed in accordance with National Pollutant Discharge Elimination System permit conditions established by the NDEP.

Based on Paiute's proposed mitigation measures and adherence to required permit conditions, we conclude that the discharge of hydrostatic test water would not have a significant impact on groundwater or surface water resources.

3.0 Vegetation and Wildlife

3.1 Vegetation

The Project area occurs near the western edge of the Basin and Range physiographic province. The four segments occupy similar habitat types within the Carson River valley (Segments 1, 2, and 3) and the lower slopes of the Virginia Mountains (Segment 4). The Project area falls within the Sierra Nevada-Influenced Semiarid Hills and Basins Ecoregion (Segments 1, 2, and 3) and the Lahontan Salt Shrub Basin Ecoregion (Segment 4) of the Central Basin and Range of Nevada.

The vegetation communities in the Project area were verified during field surveys conducted in October 2016 and April 2017. The vegetation in the Project area generally consists of desert shrub and annual grassland. Descriptions of the vegetation communities found within the Project area for each segment are provided in table 12.

Table 12		
Vegetation Communities Affected by Construction and Operation of the Project		
Vegetative Community	Pipeline Right-of-Way	
	Acreage Affected by Construction	Acreage Affected by Operation^a
Segment 1		
Annual Grass / Forbs	3.39	1.12
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> Shrubland Alliance	0.10	0.04
<i>Chrysothamnus</i> / <i>Ericameria</i>	0.10	0.00
Inter-Mountain Basins Big Sagebrush Shrubland	2.51	0.99
Inter-Mountain Basins Montane Sagebrush Steppe	0.77	0.35
Developed-Low Intensity	0.54	0.11
Developed-Open Space	0.43	0.19
Segment 2		
Artemisia tridentate spp. (Tridentata, wyomingensis)	0.21	0.21
Inter-Mountain Basins Big Sagebrush Shrubland	0.53	0.51
Developed – High Intensity	0.56	0.51
Developed - Medium Intensity	9.22	7.73
Developed – Low Intensity	4.66	3.17
Developed-Open Space	0.18	0.00
Segment 3		
<i>Artemisia</i> (<i>arbuscula</i> , <i>tridentata</i> ssp. <i>vaseyana</i>)	0.19	0.12
<i>Artemisia arbuscula</i>	1.39	0.63
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> Shrubland Alliance	0.28	0.25
Inter-Mountain Basins Big Sagebrush Shrubland	14.28	2.71
Inter-Mountain Basins Greasewood Flat	1.71	0.00
Microphytic Playa Sparse Vegetation [placeholder]	0.09	0.09

Table 12		
Vegetation Communities Affected by Construction and Operation of the Project		
Vegetative Community	Pipeline Right-of-Way	
	Acreage Affected by Construction	Acreage Affected by Operation^a
Agriculture-General	0.05	0.05
Developed-High Intensity	3.43	1.06
Developed-Medium Intensity	9.72	4.20
Developed-Low Intensity	11.25	5.10
Developed-Open Space	1.44	0.72
Segment 4		
Inter-Mountain Basins Mixed Salt Desert Scrub	53.66	40.61
Inter-Mountain Basins Semi-Desert Grassland	0.24	0.24
Inter-Mountain Basins Greasewood Flat	0.09	0.09
Microphytic Playa Sparse Vegetation [placeholder]	0.04	0.04
Developed-Low Intensity	0.18	0.14
Developed-Open Space	0.11	0.03
Notes:		
a	Acreage affected by operations is expected to return to existing conditions in the long-term.	
*	Developed Land Use types are defined as follows: Open Space- areas with some construction materials but mostly vegetation, impervious surfaces account for less than 20% of land cover, Low Intensity- areas with a mixture of constructed materials and vegetation, impervious surfaces account for 20-49% of land cover, typically single-family housing units, Medium Intensity- areas with a mixture of constructed materials and vegetation, impervious surfaces account for 50-79% of land cover, typically single family housing units, High Intensity- areas that are highly developed, impervious surfaces account for 80-100% of land cover, typically areas where people reside or work in high numbers.	

Segment 1

Segment 1 is predominantly located on relatively steep and undisturbed grassland and shrubland habitat. Dominant plants within the Segment 1 Project area include the native species big sagebrush, rubber rabbitbrush, and bitterbrush. Non-native species present include cheatgrass, crested wheatgrass, and smooth brome.

Segment 2

The Segment 2 Project area habitat is largely disturbed, suburban, city edge, and roadside. Habitat in the Project vicinity to the east is less disturbed, consisting of Carson City Open Space and rolling, hilly grasslands, as well as mixed sagebrush habitat. Dominant plants in the Segment 2 Project area include the native species rubber rabbitbrush, bitterbrush, big sagebrush, and four-wing saltbush. A substantial portion of the shrub understory is dominated by the non-native species cheatgrass.

Segment 3

The Segment 3 Project area habitat is largely disturbed, suburban, city edge, and roadside. However, intact grasslands are located on the BLM land north of the Project area. Dominant plants within the Segment 3 Project area include the native species rubber rabbitbrush, as well as non-native species cheatgrass and smooth brome. Occasional small thistle populations, were noted along this segment. However, due to the dry conditions and the season of the field surveys, the species of thistle could not be identified.

Segment 4

Segment 4 is primarily desert shrub rangeland. Much of the Project area within this segment is currently used as rangeland. However, the southern portion has been developed into the Fernley 95A Speedway. Dominant plants within the Segment 4 Project area include the native species rubber rabbitbrush and four-wing saltbush, as well as the non-native species cheatgrass. Other native species present include short-spine horsebrush, big sagebrush, Nevada jointfir, and shadscale. Occasional small thistle populations were also noted along this segment. However, due to the dry conditions and the season of the field surveys, the species of thistles could not be identified.

Noxious Weeds and Invasive Species

Noxious weeds and invasive species are opportunistic and often non-native plant species that readily invade disturbed areas, producing monocultures, and preventing native plant species from establishing communities. Noxious weeds also degrade most agricultural and natural resources, including soil and water, wildlife habitat, and recreational and wilderness values. New roads and pipeline/utility rights-of-way can become pathways for the spread of invasive plants; and weed infestations can become permanent if left untreated. Once introduced, invasive species may spread and impact adjacent properties.

The State of Nevada officially designated noxious weeds under the Nevada Control of Insects, Pests and Noxious Weeds Act Nevada Revised Statutes (NRS) Chapter 555. In addition to the noxious weed species listed under NRS 555, the BLM Carson City District also manages Bull thistle, cheatgrass, and Russian knapweed as invasive weed species throughout the region (BLM, 2015).

During field surveys conducted in October 2016, several non-native, introduced upland plant species were observed, lending to vegetative land cover that is significantly altered and disturbed. These areas have been planted with introduced species, most likely for the purposes of livestock forage production such as cheatgrass, crested wheatgrass, and smooth brome. These introduced species were especially prevalent in areas along Segments 2, 3, and 4. Additionally, occasional small thistle populations were also noted

along Segments 3 and 4. The exact species of thistle could not be determined during Paiute's field survey.

In April 2017, the Carson City Parks, Recreation and Open Space Department conducted a field visit to the areas of Segments 2 and 3 and recorded perennial pepperweed, and Scotch thistle near Segment 3. These infestations were reported to be very small and primarily localized to the area around Centennial Drive, segment milepost 2.01.

Vegetation Impacts and Mitigation Measures

In total, the Project would impact approximately 119 acres of various land use and habitat types. Of the 119 acres that would be temporarily impacted by construction, approximately 68.4 acres would be in the permanent right-of-way (both existing and proposed). The remaining 50.6 acres are TWS, ATWS, staging areas and access roads and includes the construction of the new temporary access road.

Direct adverse impacts on local vegetative communities would primarily result from proposed construction activities, including the cutting, clearing, and removal of existing vegetation within the Project construction workspace. Other direct impacts have the potential to occur from post-construction conditions, including decreased density of desirable species and altered composition of vegetation, increased erosion potential and sediment runoff, and the introduction or spread of noxious weeds and other invasive species. Indirect impacts on vegetation may occur primarily from the potential spread of unwanted species on or adjacent to the right-of-way after construction activities.

Impacts on vegetation from construction of the Project would be minimized by implementing minimization strategies during pre-construction planning, using specialized construction techniques and measures during construction, implementing appropriate restoration techniques, and conducting post-construction monitoring.

Paiute developed a Project Restoration and Revegetation Plan. Under this plan, all reseeding would be completed as soon as practical following construction or in accordance with landowner or agency guidelines. Seeding would occur within the recommended seeding dates and or may be deferred until the most appropriate season for successful establishment. NRCS recommends that seeding occur in late fall, prior to the beginning of the winter rainy/snowy season. Specifically for Segments 2 and 3, Carson City has requested that reseeding occur in the late fall months, preceding receipt of winter precipitation. If seeding cannot be completed prior to the beginning of the rainy season, it would be accomplished as soon as possible thereafter. If not completed by late winter, seeding may be deferred until the following fall and additional mechanical erosion control measures, such as mulching and/or surface roughening, may be applied to the right-of-way. Seed mixes were developed in consultation with the NRCS, the BLM, and the Carson City Parks, Recreation and Open Space Department. Native, local species

would be used to the extent that they are commercially available. As necessary, measures would be taken to prevent cattle/wild horses from entering restoration areas.

Paiute also developed an acceptable Noxious and Invasive Weed Control Plan, which incorporates recommendations from the BLM and the Carson City. Paiute would implement its Noxious and Invasive Weed Control Plan to prevent noxious weeds and invasive plants from becoming established in the Project area and prevent the spread of existing populations. Specific measures include:

- prior to construction or disturbance, areas of known noxious weeds may be pre-treated with herbicides or manually removed, if practicable and feasible;
- areas cleared of vegetation, and areas disturbed during construction, would be minimized to the smallest possible footprint;
- preventing the spread of noxious weeds and invasive species by pressure washing all equipment prior to mobilization to the Project area;
- treating identified noxious weeds in accordance with approved state and/or county methodologies;
- completing all reseeded as soon as practical following construction or in accordance with landowner or agency guidelines; and
- using weed-free mulch on slopes and other areas concurrent with or immediately after seeding, where necessary, to stabilize the soil surface and reduce wind and water erosion.

Given the implementation of mitigation measures in Paiute's Plan and Procedures, Project Restoration and Revegetation Plan, and Noxious and Invasive Weed Control Plan, we conclude that the Project would not have a significant impact on vegetation.

3.2 Wildlife

Vegetation communities described in section 3.1 provide habitat for wildlife in the Project area. Common wildlife species that inhabit the Project area are rabbits, coyotes, ravens, rodents, kit fox, lizards, and snakes.

The short-term habitat loss and fragmentation during construction would reduce habitat availability for a variety of common wildlife species. However, temporary habitat reduction would have short-term effects on common wildlife species because many of the species that inhabit the Project area are considered habitat generalists that are not tightly restricted to a specific habitat type (i.e., rabbits, coyotes, ravens, rodents, and snakes). In most instances, habitat loss would have minor impacts on common wildlife species because the Project area is in previously disturbed areas adjacent to existing pipelines. Wildlife could also seek refuge in adjacent habitat of similar quality. Following

completion of construction activities, areas of vegetation disturbed during construction would be reseeded with native shrubs, grasses, and forbs to restore affected wildlife habitat, unless otherwise directed by landowners. After restoration is completed, displaced wildlife species are expected to reoccupy the affected areas to the extent that they currently use them. Additionally, measures identified in Paiute's Wildlife Plan would further reduce impacts. Measures included in the Wildlife Plan are further discussed below. For these reasons we conclude that the Project would not have a significant impact on wildlife.

Game Species

Paiute consulted with the Nevada Department of Wildlife (NDOW) on wildlife resources in the Project area. The NDOW identified occupied mule deer distribution within the Project area for Segments 1, 2, and 3. The field surveys conducted by Paiute in October 2016 confirmed the presence of potential habitat for mule deer. The NDOW also identified occupied bighorn sheep distribution about four-miles from Segment 4. However, no potential habitat for bighorn sheep was identified during Paiute's field surveys. No other big game distributions or habitats are known to occur in the vicinity of the Project area. Potential habitat was also identified for the following game species: chukar, California quail, and the gray partridge.

Impacts on game species would be minimal due to the short-term and localized nature of construction activities, as well as implementation of protective measures in its Wildlife Plan, including putting ramps in the trench at 1,000-foot intervals, fencing off any open trenches at night, and inspecting open trenches daily to ensure that wildlife is not trapped in the open trench. Further, following construction, all areas disturbed during construction would revert to preconstruction conditions. No major alterations to big game use and occurrence patterns would occur from the construction and operation of the proposed action. Therefore, we conclude that the Project would not significantly affect game species.

Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and make short- or long-distance migrations for the non-breeding season. Neotropical migrants migrate to and from the tropical regions of Mexico, Central and South America, and the Caribbean.

Migratory birds, including raptors and non-raptors species, are protected under the Migratory Bird Treaty Act ([MBTA]-16 U.S. Code 703-711). Bald Eagles and Golden Eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S. Code 668-668d). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, or nests unless authorized under an U.S. Fish and Wildlife Service (USFWS) permit. Executive Order

13186 directs federal agencies to avoid and minimize impacts on migratory bird resources when conducting agency actions; evaluate effects of actions on migratory birds; identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the USFWS, emphasizing species of concern, priority habitats, and key risk factors, with particular focus given to population-level impacts.

On March 30, 2011, the USFWS and the FERC entered into a *Memorandum of Understanding (MOU) Between the Federal Energy Regulatory Commission and the U.S. Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds"*. The MOU focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the FERC and the USFWS by identifying areas of cooperation. This voluntary MOU does not waive legal requirements under the MBTA, ESA, the Federal Power Act, the NGA, or any other statutes, and does not authorize the take of migratory birds.

The USFWS has further identified bird species that “without additional conservation actions are likely to become candidates for listing under the ESA of 1973” (USFWS 2008), and refers to these species as birds of conservation concern (BCC). These BCC species are generally a subset of the species protected by the MBTA. Although all MBTA-covered species are afforded protections, BCC species are considered priorities for conservation efforts and are specifically referenced in the MOU.

The Project area may provide forage, cover, roosting, and nesting habitat for a variety of raptor and non-raptor bird species protected by the MBTA. Of these species, only the sage sparrow was observed in the Project area during Paiute’s field surveys. After accounting for range and habitat limitations, the BCC list for this area (bird conservation list 8, USFWS 2017) includes a total of nine species that are potentially present in the Project area and are listed in table 13.

Paiute anticipates clearing the right-of-way outside of the avian breeding season (May 15 to July 15) to avoid an impact on nesting migratory birds. However, if construction is delayed into the avian breeding season, Paiute would have a qualified biologist survey the construction workspace ahead of vegetation clearing to determine if migratory bird nests are present. The survey area would include the construction right-of-way and a 300-foot-wide buffer around the construction workspaces. Surveys would be conducted a maximum of 2 weeks prior to clearing activities. If nests are located, or if other evidence of nesting (e.g., mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size of which will depend on species-specific habitat requirements) would be delineated. The entire area would also be avoided to prevent destruction or disturbance to nests until they are no longer active.

Further, Paiute would adhere to the BLM Nevada Wildlife Survey Protocols (BLM, 2014), which outline specific survey requirements and agency contact procedures.

Impacts on migratory and other birds would be minimal because of the short-term and localized nature of construction activities, as well as implementation of the previously discussed protective measures. No major alterations to migratory bird use and occurrence patterns, or to ecosystems or biodiversity, would occur from the construction and operation of this Project. For these reasons, we conclude that the Project would not have a significant impact on migratory birds. Additional discussion on birds is presented below in Special Status Species.

Table 13

Birds of Conservation Concern in the Project Area

Common Name	Scientific Name	Federal or State Status	Habitat
Bald Eagle	<i>Haliaeetus leucocephalus</i>	SE, NS, SWAP_SoCP, MBTA, BGEPA	Usually nests in forests or tall trees near large water bodies. Conifers are preferred as winter roost sites. There is potentially suitable riparian nesting habitat for bald eagles within 10 miles of the Project area and/or vicinity. Bald eagles may use portions of the right-of-way for foraging.
Short-eared Owl	<i>Asio flammeus</i>	SWAP_SoCP, MBTA	Breeding habitat occurs within open country marshes, grasslands and tundra. There is potentially suitable grassland breeding habitat in the Project area and/or vicinity.
Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>	NS, SWAP_SoCP, MBTA	Uses a variety of habitats that are open, arid, and treeless with low vegetation. Most common where mammal burrows are available for nesting. Will often breed near agricultural lands, golf courses, and roadsides, but will not tolerate highly disturbed areas. There is open, arid, treeless habitat in the Project area where burrowing owls could nest and suitable small mammal burrows are present within the Project area and/or vicinity.
Brewer's Sparrow	<i>Spizella breweri</i>	NS, MBTA	Breeds in sagebrush, forages in sagebrush and shrub/scrub habitat Brewer's sparrow is likely to occur due to suitable foraging habitat in the Project area and/or vicinity.
Green-tailed Towhee	<i>Pipilo chlorurus</i>	MBTA	Prefers low shrubs, pinyon-juniper and sage-brush habitats. There is scattered green-tailed towhee habitat within the Project area and vicinity.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	NS, MBTA	Prefers open areas with scattered trees and shrubs Habitat for loggerhead shrike may be present in the Project area and vicinity.
Long-billed Curlew	<i>Numenius americanus</i>	MBTA	Agricultural and wet meadows, prairies and grassy meadows near water. Habitat may be found in the vicinity of Segment 1
Sage Sparrow	<i>Amphispiza belli</i>	MBTA	Chaparral dominated by chamise and/or California sagebrush. Observed during field surveys. Suitable habitat for sage sparrow is present in the Project area and vicinity.
Sage Thrasher	<i>Oreoscoptes montanus</i>	MBTA, NS	Sagebrush, brushy slopes, mesas; in winter, also deserts. Breeds almost entirely in sagebrush areas, either in wide-open flats or where sagelands meet open pinyon-juniper woods. More widespread in migration and winter, occurring in grassland with scattered shrubs, desert, pinyon-juniper woods, and other semi-open areas. The sage thrasher is likely to occur in the Project area due to its habitat preferences.
BGEPA	Federally protected under Bald and Golden Eagle Protection Act		
MBTA	Federally protected under the Migratory Bird Treaty Act		
NNHP	Ranked as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable) by Nevada Natural Heritage Program		
NS	Nevada BLM sensitive species		
SE	State listed endangered		
SWAP_SoCP	Nevada State Wildlife Action Plan (2012) Species of Conservation Priority		

Fisheries

The Project crosses 16 ephemeral drainages, none of which have sufficient flow for supporting fish.

However, measures in the Project Plan and Procedures, including erosion control devices, such as silt fence, straw bales, and slope breakers, would be implemented to prevent erosion and sedimentation during construction and restoration. These measures would prevent sediments or other substances from being transported downstream of potentially jurisdictional waterbody U12 into the Carson River, which supports fisheries, during seasonal flood events. Therefore, we conclude that the Project would not impact fisheries.

Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are:

- species federally listed as endangered or threatened, species considered as candidates for such listing by the USFWS, or species petitioned for listing under the ESA;
- species managed by the BLM to prevent listing under the ESA; and
- species that are state-listed as threatened or endangered or otherwise designated as a state protected species.

Paiute consulted with USFWS, BLM, NDOW, and NNHP to identify federal- and state-listed species potentially present in the Project area. To determine the potential for the occurrence of these species or their habitats, Paiute, as our non-federal representative, conducted field surveys of the entire Project area in October 2016 and additional surveys in portions of the Project area in April 2017. The survey protocols were based on established protocols and were discussed with biologists at resource agencies and documented survey results were provided to the resource agencies. Information on the species potentially occurring in the Project area is presented in table 14.

Table 14
Special Status Species Potentially Occurring in the Project Area

Species	Federal Status	State Status	Habitat
Plants			
Lahontan milkvetch <i>Astragalus porrectus</i>		NNHP	Habitat is typically hot, gravelly sandy washes or open, calcareous or alkaline gullies on clay badlands, knolls, or playa edges in the shadscale zone in the foothills of desert mountains typically 1,250 to 1,700 meters in elevations. Historically known to occur in proximity to Segment 4. Suitable habitat for this species is present in the vicinity of the Project.
Sagebrush pygmyleaf <i>Loeflingia squarrosa</i> <i>ssp. Artemisiarum</i>	NS	NNHP	Typically located in dry soils and loose sands of washes, areas bordering clay slicks, and stabilized, low sand dunes. Found in Great Basin scrub and Sonoran Desert scrub most often under Gilia and Linanthus. Historically known to occur in close proximity to Segment 3. Suitable habitat for this species is present surrounding in area.
Mammals			
Mexican free-tailed bat <i>Tadarida brasiliensis</i>		NNHP	Habitat ranges from lowland deserts, shrublands, woodlands, and forests to high mountains. Major roosts are primarily in caves in the southwestern United States; generally, buildings (generally old ones) in the southeastern United States (sometimes in hollow trees). There is suitable foraging and living habitats for this species in the Project area.
Birds			
Bald Eagle* <i>Haliaeetus leucocephalus</i>	BGEPA, NS, MBTA	SE	Usually nests in forests or tall trees near large water bodies. Conifers are preferred as winter roost sites. There is potentially suitable riparian nesting habitat for Bald Eagles within 10 miles in the Project area and/or vicinity. May use portions of the right-of-way for foraging.
Ferruginous Hawk <i>Buteo regalis</i>	MBTA, NS		Inhabits open country including grasslands and shrublands, while avoiding forests, steep terrain, and high elevations. Most likely to be found in sagebrush scrub, but may also occur in salt desert scrub and sagebrush steppe. May also be associated with pinyon-juniper blocks. There is sagebrush scrub habitat in the Project area where Ferruginous Hawks could nest. Ferruginous Hawks could also pass through the Project area during spring and fall migration.
Golden Eagle <i>Aquila chrysaetos</i>	BGEPA, MBTA, NS		Nests in rugged crags, canyons, cliffs, and mountains. Forages in areas surrounding nest sites and can be found in any habitat type. Generally, found in open country, including prairie, shrubland, open woodland, and barren areas. There is suitable nesting and foraging habitat within 10 miles of the project area. The Project area consists of suitable sagebrush shrubland foraging habitat.

Table 14
Special Status Species Potentially Occurring in the Project Area

Species	Federal Status	State Status	Habitat
Sage Thrasher* <i>Oreoscoptes montanus</i>	MBTA, NS		Sagebrush, brushy slopes, mesas; in winter, also deserts. Breeds almost entirely in sagebrush areas, either in wide-open flats or where sagelands meet open pinyon-juniper woods. More widespread in migration and winter, occurring in grassland with scattered shrubs, desert, pinyon-juniper woods, and other semi-open areas. The Sage Thrasher may occur in the Project area due to its habitat preferences.
Swainson's Hawk <i>Buteo swainsoni</i>	MBTA, NS		Uses open grasslands and shrublands, and is well adapted to agricultural areas. Typically nests in scattered trees near open areas for foraging, usually in large, deciduous trees, often in riparian areas. Sometimes nests in junipers in the Great Basin. There are potentially suitable nesting trees and open habitats for Swainson's Hawks to breed in the vicinity of the Project. Swainson's Hawks could also migrate through the Project area and vicinity or use the Project area and vicinity for foraging.
Western Burrowing Owl* <i>Athene cunicularia hypugaea</i>	MBTA, NS		Uses a variety of habitats that are open, arid, and treeless with low vegetation. Most common where mammal burrows are available for nesting. Will often breed near agricultural lands, golf courses, and roadsides, but will not tolerate highly disturbed areas. There is open, arid, treeless habitat in the project area where Burrowing Owls could nest and suitable small mammal burrows are present within the Project area and/or vicinity.
Reptiles			
Desert Horned Lizard <i>Phrynosoma platyrhinos</i>		SE	Found on sandy flats, alluvial fans, along washes, and at the edge of dunes. Sometimes found on hardpan or among rocks, but patches of sand are generally present. Associated with sagebrush, saltbush, and greasewood in the Great Basin. Vulnerable to impacts of habitat transition to annual grasses and weeds and the concomitant impacts on ant species composition. May occur in Project area and vicinity where sagebrush habitat or washes are present.
Northern Desert Horned Lizard <i>Phrynosoma platyrhinos</i>		SE	Found on sandy flats, alluvial fans, along washes, and at the edge of dunes. Sometimes found on hardpan or among rocks, but patches of sand are generally present. Associated with sagebrush, saltbush, and greasewood in the Great Basin. Vulnerable to impacts of habitat transition to annual grasses and weeds and the concomitant impacts on ant species composition. May occur in Project area and vicinity where sagebrush habitat or washes are present.
BGEPA	Federally protected under Bald and Golden Eagle Protection Act (BGEPA)		
MBTA	Federally protected under the Migratory Bird Treaty Act		
NNHP	Ranked as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable) by Nevada Natural Heritage Program		
NS	Nevada BLM sensitive species		
SE	State listed endangered		
* = Also listed on the BCC list for USFWS Region 8			

Federally Listed Species

In accordance with Section 7 of the ESA, the FERC, in coordination with the USFWS, must ensure that any federal action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally listed threatened or endangered species or result in an adverse modification of the designated critical habitat of a federally listed species.

As our non-federal representative, Paiute informally consulted with USFWS. In letters dated September 7, 2016, the USFWS stated that the Lahontan cutthroat trout, the North American wolverine, and the Yellow-billed cuckoo may occur in the Project area (USFWS, 2016b; 2016c; 2016d; 2016e). No designated or proposed critical habitat for federally listed species was identified by the USFWS within the Project area.

Paiute sent a letter to the USFWS stating that the Project would have no effect on federally listed species on January 23, 2017 and USFWS acknowledged receipt via electronic mail on January 23, 2017. No comments have been received to date.

No perennial streams with habitat for Lahontan cutthroat trout or riparian habitat, which could provide nesting areas for Yellow-billed cuckoo, would be disturbed by the Project. Therefore, we conclude that the Project would have *no effect* on the Lahontan cutthroat trout or the Yellow-billed cuckoo. We also conclude that the Project would have *no effect* on the proposed threatened North American wolverine due to the absence of suitable habitat in the Project vicinity. Therefore, no further ESA consultation is required.

BLM Sensitive Species

A letter dated September 9, 2016 from NDOW identified areas of priority and general habitat for the greater sage-grouse, a Nevada BLM sensitive species, located west of Segment 4 (NDOW, 2016a). These areas are more than two miles from the Project area, and no radio-marked tracking locations or lek sites are known within four miles of the Project area. A letter dated September 12, 2016 from NNHP identified the potential presence of Nevada BLM plant and animal sensitive species near the Project area (NNHP, 2016): sand cholla, sagebrush pygmyleaf, and Carson Valley silverspot.

Based on Paiute's field surveys, no habitat for the Nevada BLM sensitive species greater sage-grouse, sand cholla, and Carson Valley silverspot was identified in the Project area. Potential habitat is present for the sagebrush pygmyleaf in the Segment 3 Project area. However, impacts on sagebrush pygmyleaf are not anticipated, as the Project would be located in predominantly disturbed areas, which are unlikely to provide habitat for sagebrush pygmyleaf. Therefore, we conclude that the Project is not likely to have adverse impacts on BLM sensitive species.

State Listed Species

NNHP and the NDOW identified Nevada State-ranked species with the potential to occur within the Project area, including two plant species (Lahontan milkvetch and Nevada suncup), three invertebrate species (Carson Valley wood nymph, northern Sierra endemic ant, and Nevada viceroy), one mammal species (Mexican free-tailed bat), one amphibian species (northern leopard frog), one mollusk species (California floater), three reptile species (desert horned lizard, subspecies northern desert horned lizard, and the western pond turtle), and six avian species (bald eagle, ferruginous hawk, golden eagle, sage thrasher, Swainson’s hawk, western burrowing owl). No species-specific surveys were completed.

Potential habitats are present for Lahontan milkvetch (Segment 4 only), Mexican free-tailed bat (all segments), desert horned lizard (all segments), and northern desert horned lizard (all segments). Impacts are expected to be short-term as all areas disturbed during construction would be revegetated and restored to pre-construction conditions. Further, impacts on these species would be minimal due to siting of the proposed action in predominantly disturbed areas, which are unlikely to support these species.

Impacts on avian species listed above would be similar to impacts on migratory birds that were previously discussed. Impacts would be minimal because of the short-term and localized nature of construction activities and Paiute’s avoidance of the bird nesting season.

For these reasons, we conclude that impacts on state-listed species would not be significant.

4.0 Land Use, Recreation, and Visual Resources

4.1 Land Use

Construction of the Project would temporarily disturb approximately 119 acres of land, of which about 71 acres consists of permanent right-of-way. Land use types found along the right-of-way include industrial/commercial, residential, and open land. Table 15 summarizes the acreage of each land use type that would be affected by construction and operation of the proposed Project.

Table 15			
Pipeline Facility Land Uses by Acreage^a			
Segment	Land Use	Acreage Affected by Construction^b	Acreage Affected by Operation
Segment 1	Industrial/Commercial ^c	1.0	0.3
	Open Land ^d	6.9	2.5
Segment 2	Industrial/Commercial	8.4	6.4
	Residential ^e	0.9	0.0
	Open Land	6.0	5.7

Table 15			
Pipeline Facility Land Uses by Acreage^a			
Segment	Land Use	Acreage Affected by Construction^b	Acreage Affected by Operation
Segment 3	Industrial/Commercial	25.7	11.9
	Open Land	15.8	3.0
Segment 4	Industrial/Commercial	15.7	11.9
	Open Land	38.6	29.3
TOTAL		119.0	71.0
a Based on field surveys by Paiute and augmented by review of recent aerial photography.			
b This acreage includes staging areas and access roads associated with the pipeline segment.			
c Industrial/commercial includes buildings, facilities and businesses that focus on service, manufacturing and distribution, and roads.			
d Open Land includes non-forested rangeland, pastureland, prairie, and open land in the early stages of succession			
e Residential includes rural and developed residential property.			

Land Use Impacts and Mitigation

In areas of open lands, or where the rights-of-way or construction workspace are unpaved, the landscape would be reseeded and restored after construction, unless directed otherwise by the landowner. During restoration, Paiute would post signage to discourage travel on the restored-right of-way, as needed. Some areas may also have temporary fences to limit access to the right-of-way, and other areas may be roughened to discourage non-essential vehicles from traveling on the right-of-way. Following the completion of pipeline installation and right-of-way restoration, the construction rights-of-way would be returned to their existing land use.

Industrial/commercial land use could be temporarily affected during Project construction primarily by traffic delays and potential road closures. However, Paiute would maintain traffic flow to the extent practicable by implementing its Traffic Control Plan. At road crossings, safety measures to safeguard the public would be used, including an adequate number of flagmen, barriers, warning signs, lights, and walkways around the work area. All roads would be kept open, or a suitable bypass road would be available to keep traffic moving during installation of the pipe and restoration of the road. Roadways would be open-cut or bored, depending on the requirement of the governing agency. Unpaved roads would generally be crossed in one day. Where the pipeline would be installed under the paved road surface, via open-cut methods, Paiute would maintain traffic flow and install steel plates or resurface the area at the end of the workday.

Construction of portions of both Segment 2 and Segment 3 would be conducted within public road right-of-way. If work within the public right-of-way is necessary, traffic control would meet the NDOT, Federal Highway Administration Manual on Uniform Traffic Control Devices, Carson City and any other local standards for

construction work on the shoulder of the roadway and detour routes. Both Fairview Drive and South Edmonds Drive are two-lane minor arterials, with moderate traffic. U.S. 50 is a heavily traveled four-lane principal arterial, with a two-way left turn lane, and a speed limit of 55 mph. Due to the restricted workspace at Segment 2 along South Edmonds Drive, it may be necessary to temporarily close the north bound lane on this road for safety reasons. Should the need to temporarily close the north bound lane of South Edmonds Drive be identified, traffic control would meet the NDOT, Manual on Uniform Traffic Control Devices, and Carson City standards. A similar lane closure may also be required for construction under the Virginia and Truckee Railway rail line on Segment 3. If road work is necessary Paiute would concentrate resources and efforts to expedite the work in these areas to minimize the duration of the lane closure. The lane would be left open when not actively in use for Project construction.

Four residences and eight businesses (24 individual structures associated with each business) are within 50 feet of proposed construction workspaces. Paiute would implement the Project's Residential and Commercial Construction Plan, which includes mitigation measures such as installing and maintaining temporary construction fencing throughout active construction (see appendix E). If requested by individual landowners, a temporary gate may also be installed. No work is anticipated within landscaped areas on private lands within 25 feet of the construction work areas. Paiute prepared a site-specific drawing for one commercial property that would be less than 25 feet from construction workspaces where there is not a fence or other barrier between the commercial property and the construction work area (appendix E). We reviewed these plans and found them acceptable.

Pipeline operation and maintenance activities would have minimal or no effect on existing land uses in the vicinity of the Project. There would be no impact on existing access points along the pipeline segments, and access would be maintained for commercial/industrial, residential, and recreational uses. Minimal impacts on vegetation are expected by maintenance activities during operations. Impacts from maintenance of the pipeline would be limited to infrequent traffic along the pipeline rights-of-way, which would be similar to the current level of activity within the existing rights-of-way.

4.2 Range

BLM-administered land within the vicinity of the proposed Project facilities is primarily used as rangeland. The grazing allotments that would be crossed by the Project are available for cattle and sheep grazing leases. The allotment name, animal unit months, allotment acreage, and seasons of use for the grazing allotments are provided in table 16.

Table 16 Grazing Allotments								
Segment	Allotment Name	BLM Acreage in Allotment	Animal Unit Months	Mileposts	Length Crossed (miles)	Season of Use	Temporary Impacts on BLM Grazing Allotment Acreage	Permanent Impacts on BLM Grazing Allotment Acreage
Segment 3	Carson Plains/Gold Hill	23,175	535 (Sheep)	0.00 to 1.36	1.36	4/01 to 5/31	0.3**	None
	Duck Hill	3,956	186 (Sheep)	1.36 to 1.85, 1.97 to 2.27	0.79	5/01 to 6/30, 11/16 to 12/15	None**	None
Segment 4	Horse Spring*	14,548	600 (Cattle)	0.00 to 4.19	4.19	11/01 to 3/31	18.6	None
* Horse Spring Allotment is currently vacant								
** Both the Carson Plains/Gold Hill and Duck Hill include almost the entire extent of Segment 3; however, only 0.3 acre of Segment 3 permanent right-of-way is located on BLM land outside of the fenced NDOT public road right-of-way associated with US 50.								

Range Impacts and Mitigation

Construction impacts on grazing would be minimal as the sheep allotments along Segment 3 would not be significantly impacted by work in close proximity to the NDOT right-of-way. Additionally, the allotment along Segment 4 is currently vacant. The BLM determined that the development of a Project-specific grazing deferment plan is not needed. Although no loss of animal unit months is expected, approximately 18.6 acre of rangeland within the currently vacant grazing allotment along Segment 4, and a total of 0.3 acres directly adjacent to Highway 50 on Segment 3, would be expected to be closed to grazing during construction and revegetation.

Following construction, the portion of the grazing allotments within the rights-of-way may be temporarily fenced and closed to grazing to facilitate successful revegetation. However, following restoration and successful revegetation, no grazing allotments would be affected and no animal unit months would be lost because the right-of-way would be available for livestock grazing.

4.3 Recreation and Special Use Areas

No national or state parks or forests, Federally-Recognized Tribal reservations, or conservation land would be affected by the Project. No wilderness areas designated under the Wilderness Act; designated or proposed National Trails; registered natural landmarks; or other natural, recreational, or scenic areas would be crossed by the Project. None of these designated areas are within 0.25 mile of the Project with exception of two national historic trails. The Old Kingsbury Grade, a briefly used branch of the California

National Historic Trail and the Pony Express National Historic Trail, runs up Haines Canyon approximately 0.2 mile north of Segment 1. The National Park Service concurred that the Project would not impact these historic trails via email correspondence dated January 18, 2017.

Approximately 18.94 acres would be within BLM-administered land and about 10.57 acres would be within public land administered by Carson City or the State of Nevada. Public lands and BLM-administered lands would be crossed by the Project at the mileposts summarized in table 17.

Segment	Segment Mileposts	Agency	Use Type	Crossing Length (miles)	Acreage Affected by Construction¹
Segment 1	NA	NA	NA	NA	NA
Segment 2	0.10 to 0.68, 0.85 to 1.00	State of Nevada	Open Space	0.73	4.73
	0.05 to 0.10, 0.68 to 0.85	Carson City, NV	Open Space	0.22	1.27
Segment 3	1.09 to 1.25 2.03 to 2.27	BLM Carson City, NV	Open Space Carson City Golf Course (impacts would be directly adjacent to Highway 50)	0.16 0.24	0.30 2.27
Segment 4	0.0 to 0.05, 1.01 to 1.40, 3.81 to 4.19	BLM	BLM Land	0.82	18.65
1 Acreage affected by construction includes permanent rights-of-way, TWS, ATWS, staging areas, and access road 4-1.					
* This table does not include public right-of-way associated with roads.					
** This table does not include areas on Segment 2 and 3 where BLM is the underlying fee owner.					

Recreation and Special Use Areas Impacts and Mitigation

Approximately 1.27 acres of open space land owned by Carson City would be impacted during construction of the Project. The land owned by Carson City within the Project area was directly transferred, along with other federal public lands, along the Carson River by Congress under the authority of the OPLMA of 2009 (Public Law 111-11, Section 2601). The portions of land adjacent to the Project area were transferred to be managed by Carson City as “undeveloped open space for passive recreation, customary agricultural practices and wildlife protection.” As a part of the land transfer, Carson City entered into a conservation easement on the transferred lands. The conservation easement dated December 2012 outlines both permitted and prohibited activities, and permits the right of Carson City to maintain or replace existing facilities and structures. The installation of underground utilities on Carson City lands transferred under OPLMA is currently under legal review by the BLM and Carson City to determine

consistency with the terms and conditions outlined in OPLMA and the Conservation Easement (Public Law 111-11, BLM 2012).

In addition to managing lands transferred under OPLMA, Carson City also maintains a multipurpose paved bike and pedestrian trail within the Carson City public road right-of-way, Carson City land, and a negotiated easement on State of Nevada lands along Segment 2. The multipurpose trail is offset 25-feet from Fairview Drive's shoulder, running parallel to the proposed pipeline, from Edmonds Drive to East Fifth Street. Construction activities may temporarily impact this trail; however, these impacts would be short term in duration. The anticipated longest duration that the trail would be closed is the length of the proposed construction schedule for Segment 2 (June 1 – July 13). The trail is frequently used by students at the nearby Carson City High School and Empire Elementary School during the school year and the proposed construction schedule should limit impacts on the trail to periods when school would not be in session. Other users of the trail would have to use alternative routes during this time. While no disturbance to the trail is proposed, if the trail is damaged during construction due to Project activities, Paiute would repair the trail and return it to pre-existing conditions, or better. Paiute would continue to consult with Carson City on minimizing impacts on the multipurpose trail and its users.

On Segment 2, an additional approximate 4.73 acres of land owned by the State of Nevada would be impacted during construction of the Project. These lands are classified as open land and are currently used for recreational activities similar to those on Carson City managed lands. The North Loop Connector trail is a dirt trail system located on both Carson City and State of Nevada lands on the west side of Prison Hill just east of the Project area. This trail is used for non-motorized recreation as a part of the Prison Hill Recreation Area and Silver Saddle Ranch. The trailhead for this system is located near Paiute's existing Carson City Gate #5 along East 5th Street. Project related construction impacts on the existing dirt trail system are not anticipated at this time as the closest segments of the North Loop Connector trail are located more than 500 feet from the construction right-of-way.

Portions of Segment 3 also cross Carson City lands directly adjacent to NDOT right-of-way associated with the Eagle Valley Golf Course. In this general area, the NDOT right-of-way narrows and construction activities would impact approximately 4.57 acres within permanent construction right-of-way and a proposed staging area located on lands owned by Carson City. No short term or long-term impacts on existing recreational uses or developed recreational facilities (including the golf course) on these lands would occur from the Project.

Portions of Segments 2 and 3 cross land where BLM is the underlying fee owner. This BLM fee land occurs in portions of the Carson City right-of-way on Segment 2 (MP 1.40 to MP 1.44) and portions of the NDOT right-of-way on Segment 3 (MP 0.97 to MP 1.25). These lands are managed by Carson City and NDOT and the current land use

consists of Industrial/Commercial (public road right-of-way). There would be no impacts on BLM fee ownership lands outside of public rights-of-way and existing negotiated permanent easements. The impacts on existing public road rights-of-way are discussed in the Land Use section above.

BLM-administered lands are available for dispersed recreation and hunting along Segment 4. Recreation uses in the vicinity of the Project are primarily dispersed recreation including hunting, camping, four-wheel vehicle use, snowmobile use, sightseeing, and rockhounding. Limited hunting may occur on the public lands along Segment 4. Peak season for hunting on BLM-administered land within and adjacent to the Project occurs from mid-September through early February (NDOW 2016b). Construction is anticipated to take place outside of peak season for hunting (June 1-October 31, 2018). Further, construction would take place primarily in areas already disturbed along existing rights-of-way. Therefore, no impacts on dispersed recreation and hunting are anticipated.

Along Segment 4, Paiute proposes to cross the Fernley 95A Speedway, a Lyon County special recreational land use. Paiute has coordinated with the owner of the Fernley 95A Speedway to determine how best to mitigate impacts on the speedway. The speedway is open year-round; however, Paiute would coordinate with the landowner on the best timing to conduct work so that there are minimal interruptions to the speedway users, such as avoiding days when races are scheduled.

Given that Project construction would take place primarily in previously disturbed areas along existing rights-of-way, Paiute's proposed mitigation measures, and on-going coordination with landowners and land management agencies, we conclude that the Project would not have significant impacts on recreation and special use areas.

4.4 Visual Resources

The BLM uses the Visual Resources Management (VRM) system to identify and classify visual resources on BLM-administered land as described in BLM Manual 8400 (BLM 1984). The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or observation points. Factors typically considered when measuring public concern for visual resources include type of users, amount of public use, public interest, adjacent land uses, and viewing distance. The system is based on the premise that public lands have a variety of visual values, and these values mandate different levels of management and provide a means to evaluate proposed projects to ensure that visual management objectives are met.

Segments 1, 2, and 3, located on private, state, or locally administered lands, do not have a VRM designation. Segments 2 and 3 are partially located on BLM-administered lands through an existing BLM grant (Nev 060169). BLM-administered lands in Carson City are designated as VRM Class III (partially retain existing

landscape). Class III VRM objectives are to partially retain the existing character of the landscape, and the level of change to the characteristic landscape should be moderate. Segment 4 is also partially located on BLM-administered lands that have an undesignated VRM.

Visual Resources Impacts and Mitigation

To minimize potential visual impacts, Paiute has proposed a pipeline route adjacent to existing pipeline rights-of-way for each segment of the Project. Temporary short-term visual impacts would occur during construction with the presence of construction equipment, erosion control devices, and increased vehicle traffic. There would be little visual impact after the Project is constructed because the proposed pipeline would be buried. Maintenance of the pipeline would occur periodically during operation, and trucks would be visible periodically. However, the rights-of-way would be consistent with existing conditions and have minimal visual impacts.

After construction, short-term visual impacts would be associated with the unvegetated construction areas until restored and revegetated. Some construction areas are previously disturbed or occur in heavily trafficked utility and transportation rights-of-way. After construction, the disturbed portions of the pipeline rights-of-way and extra work spaces would be revegetated and re-contoured, unless requested otherwise by the landowner. Following restoration and successful revegetation of the Project-related disturbances, the pipeline would represent a minimal modification of the landscape.

The pipeline warning markers would cause minimal long-term changes to the view shed because there are currently warning markers for existing pipeline segments in or adjacent to the current rights-of-way. Additional warning markers would be installed for the proposed Segments 1 and 4, which parallel existing Paiute transmission lines, and the existing warning markers for Segments 2 and 3 would be replaced following completion of construction.

Under the BLM's VRM Class III designation, changes to the view shed caused by management activities may represent a moderate modification of the existing character of the landscape. The visual modifications associated with the proposed action would represent a minimal modification of the landscape and would be consistent with the management objectives of VRM Class III areas.

5.0 Cultural Resources

Section 106 of the NHPA of 1966, as amended, requires that all federal agencies, including the FERC, take into account the effects of its undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Historic properties are prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional, religious, or cultural

importance, which are listed or eligible for listing on the National Register of Historic Places (NRHP). Paiute provided us with information, analyses, and recommendations, as allowed under the ACHP's implementing regulations for Section 106 of the NHPA at 36 CFR 800.2(a)(3), and outlined in our *Guidelines for Reporting on Cultural Resources Investigations for Natural Gas Projects*. Paiute, as a non-federal entity, assisted us in meeting our obligations under section 106 and the implementing regulations at 36 CFR 800.

5.1 Consultations

On November 30, 2016, Paiute sent letters to federally recognized tribes (Tribes) concerning the Project. These included the Washoe Tribe of California and Nevada and affiliated colonies (Stewart Community, Dresslerville Colony, Carson Colony), the Pyramid Lake Paiute Tribe, the Fallon Paiute-Shoshone Tribe, the Reno-Sparks Indian Community, the Yerington Paiute Tribe, and the Walker River Paiute Tribe.

The Washoe Tribe of California and Nevada sent a letter to Paiute on December 5, 2016. They expressed concern about a portion of the Project, and requested that an archaeological monitor be present during construction in the identified sensitive area. Paiute would have a qualified cultural resource contractor monitoring the Project's construction activities and would implement the Cultural Unanticipated Discovery Plan (UDP) if cultural resources or human remains are encountered. The UDP is discussed further below. Additionally, the Pyramid Lake Paiute Tribe informed Paiute that the Tribe would like to be involved in the Project. Communications are ongoing with the Pyramid Lake Paiute Tribe. No additional responses were filed by Paiute.

On November 30, 2016, Paiute sent letters to the Nevada State Historic Preservation Office (SHPO) and to the BLM. The letters presented the recommendations that no historic properties would be affected. The Nevada SHPO accepted the proposed area of potential effects (APE) and recommendations in a letter dated December 14, 2016, and the BLM concurred with Paiute's recommendations on January 30, 2017. In a letter dated July 26, 2017 to the Nevada SHPO, Paiute noted modifications to the route and workspaces and elaborated more information through email correspondence, dated August 25-September 1, 2017. In a letter dated September 29, 2017, the Nevada SHPO agreed with Paiute's recommendations that no historic properties would be affected by the Project.

5.2 Overview and Inventory Results

For assessment of potential impacts on historic properties or properties of cultural concern, the direct APE is defined as the permanent and temporary rights-of-way, access roads, and temporary staging areas of each of the four pipeline segments plus 50 feet on all sides. Approximately 283.4 acres were reviewed for cultural resources for the Project. An indirect APE is defined as the area within which the project may have long-term effects

such as visual or auditory changes to the character, nature or setting of important cultural or historical locations or structures. Because construction disturbance would be temporary and no new permanent above ground structures would be constructed, the indirect APE was assessed on historic structures within one-mile, and including, the direct APE.

Paiute conducted background research consisting of records and literature searches.

Segment 1

The proposed pipeline is within an existing, previously disturbed pipeline right-of-way. There have been previous surveys in the immediate area, and there are no historic properties in the APE.

Segment 2

The Project area has been surveyed multiple times and there are no historic properties in the APE. The nearby Nevada State Prison National Register Historic District (NR# 15000320) was assessed for the potential for indirect effects to contributing properties, and it was recommended that there would be no effects to historic properties. The SHPO and we agree.

Segment 3

The Project area has been surveyed and no historic properties are within in the APE.

Segment 4

No historic properties were recorded in the APE.

The Nevada SHPO concurred with the recommendations in the survey reports that the Project would have no effect on historic properties and we agree.

5.3 Unanticipated Discovery Plan

Paiute developed a UDP for the Project, which outlines procedures that would be followed by Paiute and its contractors in the event cultural resources or human remains are encountered during construction of the Project. On December 14, 2016, the SHPO suggested revisions to the Cultural UDP. The Cultural UDP was submitted to the BLM for review on April 26, 2017. The BLM and SHPO comments were incorporated into the Cultural UDP. Paiute resubmitted the Cultural UDP to the SHPO for review. On June 6, 2017, the SHPO stated they do not have any comments or concerns with the Cultural UDP. We and the BLM find the Cultural UDP acceptable.

5.4 Compliance with NHPA

Paiute investigated approximately 283.4 acres for cultural resources and submitted the survey reports to interested parties for comments. The Nevada SHPO concurred that the Project activities would have no effects on historic properties.

No traditional cultural properties or properties of religious or cultural importance to Tribes have been identified by Paiute, its consultants, the Nevada SHPO, or Tribes contacted by the applicant and its consultants. The FERC staff agrees that the Project would have no effects on historic properties.

6.0 Air Quality and Noise

6.1 Air Quality

Construction and operation of the Project would impact local and regional air quality in the Project area. Although some air emissions would be generated by operation and maintenance of the Project, the majority of air emissions associated with the Project would result from construction.

The term air quality refers to relative concentrations of pollutants in the ambient air. The subsections below describe air quality concepts that are applied to characterize air quality and to determine the significance of increases in air pollution.

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare. NAAQS have been developed for seven “criteria air pollutants”, including nitrogen dioxide, carbon monoxide (CO), ozone, sulfur dioxide (SO₂), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA, 2016b). Additional pollutants, such as volatile organic compounds (VOC) and hazardous air pollutants (HAP), are emitted during fossil fuel combustion. These pollutants are regulated through various components of the CAA that are discussed further below.

The EPA, and state and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory

agencies to determine compliance with the NAAQS. If criteria pollutant concentrations are below the NAAQS, the area is in attainment; if criteria pollutant concentrations exceed the NAAQS, the area is in nonattainment; and lastly, if an area was formerly nonattainment and is currently in attainment, the area is in maintenance. The Project area, including Douglas County, Lyon County, and Carson City, is designated attainment for all criteria pollutants (EPA, 2016c).

States are required to implement and enforce the NAAQS through State Implementation Plans, which must be approved by the EPA. State Implementation Plans describe how ambient air quality standards would be achieved and maintained. Under the provisions of the CAA, states can have requirements more stringent than those of the national program; both the national and state requirements must be met. In addition to the federal standards, Nevada has air quality standards that are managed through the NDEP and are discussed further below.

Greenhouse gases (GHG) occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. Carbon dioxide, methane, and nitrous oxide are GHG that are emitted during fossil-fuel combustion. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the CAA. GHGs emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age. These elevated levels of GHGs are the primary cause of warming of the climate system since the 1950s. During construction and operation of the Project, these GHGs would be emitted from the majority of construction and operational equipment, as well as from fugitive methane leaks from the pipeline and aboveground facilities. GHG emissions are typically used as a proxy to evaluate impacts on climate change.

Federal Regulatory Requirements

The provisions of the CAA that are applicable to the Project are discussed below. The federal air quality requirements are contained in 40 CFR 50 through 99.

The CAA mandates the General Conformity rule to ensure that federal actions in nonattainment and maintenance areas do not interfere with a state's timely attainment of the NAAQS. Because the Project would not be located in a nonattainment area, the CAA General Conformity rule does not apply.

The Project does not involve the construction or modification of new compressor facilities or aboveground facilities, and would therefore not result in significant operational emissions; therefore, no other applicable federal regulations apply to the Project.

State Regulatory Requirements

Fugitive dust is regulated by NAC 445B.22037. Paiute must implement best practical methods to prevent particulate matter from becoming airborne, including paving, chemical stabilization, watering, phased construction, and revegetation. No more than 5 acres of land or topsoil can be disturbed without obtaining an operating permit. Paiute submitted an acceptable Dust Control Plan as part of its application for an operating permit in September 2017.

Heavy-duty diesel emissions are regulated by NAC 445B.589. Paiute would comply with this regulation that adopts California exhaust emission standards and test procedures.

Visible emissions and idling of on-road vehicles are regulated by NAC 445B.576. Off-road and non-road vehicles are not subject to this regulation. Paiute would comply with the applicable requirements of this regulation. There are no other applicable federal, state or local air quality regulations.

Air Quality Impacts and Mitigation

Project construction would result in temporary and localized increases in emissions that would last the duration of construction activity (i.e., 4 months). Exhaust emissions would be generated by the use of heavy equipment and trucks powered by diesel or gasoline engines. Exhaust emission would also be generated by delivery vehicles and construction workers commuting to and from work areas. Exhaust emissions would depend on the equipment used and the horsepower-hours of operation.

Construction activities would also result in the temporary generation of particulate emissions due to traffic and activity on unpaved and paved roads, and the generation of fugitive dust associated with trenching, backfilling, and other earth-moving activities. Fugitive dust emissions are a function of the construction activity, soil type, moisture content, wind speed, precipitation, and roadway conditions. Dust minimization techniques would be implemented on site, as detailed in the Project-specific Dust Control Plan.

The total construction-related emissions for the Project are estimated in table 18. Emissions of NO_x, CO, total suspended particulates (TSP), PM₁₀, PM_{2.5}, SO₂, VOCs, GHG, and HAPs from construction equipment engines were calculated based on the anticipated types of non-road equipment and their levels of use. Emission factors for the diesel and gasoline non-road equipment engines were based on vendor specifications and EPA Tier IV emission standards (40 CFR § 1039), or other EPA tiered standards if noted in vendor specifications. The use of ultra-low sulfur diesel fuel was assumed for the non-road diesel engines. Actual emissions from each individual segment may be lower than what is represented.

Source	Tons for Project Duration								
	NO _x	CO	SO ₂	TSP	PM ₁₀	PM _{2.5}	VOC ^a	HAPs ^b	GHG ^c
Unpaved Roads	-	-	-	153.6	43.9	4.4	-	-	-
Paved Roads	-	-	-	6.2	1.24	0.30	-	-	-
Disturbed Areas	-	-	-	184.5	66.4	17.5	-	-	-
Fuel Combustion Sources	66.0	69.1	0.083	2.63	2.63	2.63	28.4	0.1	50,381
TOTAL	66.0	69.1	0.083	346.9	114.2	24.8	28.4	0.1	50,381
a VOC – non-methane/ethane volatile organic compounds, as stated in 40 CFR §51.100(s).									
b HAPs – as aggregated total HAPs.									
c GHG – as carbon dioxide equivalents (CO ₂ e).									

Mitigation measures to reduce impacts on air quality include implementation of the Dust Control Plan and include measures such as dust control using water, or other dust suppressant, throughout construction. Trackout pads would be used to ensure that dirt on vehicles is knocked off, limiting re-entrained dust on paved roads. Standard controls for general construction equipment would also include speed limits. To minimize fugitive dust, soils would be stabilized as soon as possible after disturbance, and soil piles would be wetted with water or otherwise treated with a dust suppressant or covered when left inactive for long periods of time. The Project Plan would be implemented and includes use of best management practices.

Exhaust emissions from diesel- and gasoline-fueled construction equipment engines would be minimized by federal design standards imposed at the time of manufacture of the vehicles. Exhaust emissions would also comply with EPA mobile and non-road emission regulations (40 CFR Parts 85, 86, 89, and 1039). Emissions would be further controlled by purchasing commercial gasoline and diesel fuel products, specifications of which are controlled by federal and state air pollution control regulations applicable to fuel suppliers and distributors. Construction equipment may be equipped with retrofit controls to reduce exhaust emissions of NO_x and diesel particulate emissions. Vehicles would be maintained to the manufacturer's specifications.

Construction emissions would occur over the duration of construction activity and would be emitted at different times and locations throughout the Project area. Construction emissions would be minor and would result in short-term, localized impacts in the immediate vicinity of the construction work areas. With the mitigation measures proposed by Paiute, we conclude air quality impacts from construction would be temporary and would not result in significant impacts on local or regional air quality.

The Project does not involve the construction or modification of new compressor facilities or aboveground facilities, and would therefore not result in significant operational emissions. However, fugitive emissions (i.e., minor leaks) would occur at valves, seals, and along the length of the pipeline. Approximately 2 tpy CO₂e could leak

from the pipeline as methane each year. This estimate was quantified using the emission factors from table 6-9 of the American Petroleum Institute's *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry*.

The Project would result in GHG emissions. Direct GHG emissions from construction were estimated in table 18 and estimates from operation were summarized above. The Project's requested certificated capacity of 4,604 Dth/d is designated for industrial, commercial, and residential use in Nevada. The downstream GHG emissions of the proposed Project were estimated using a USEPA-approved methodology, to be approximately 90,000 metric tons per year of CO₂e. The Project also proposes to change the delivery point of 1,031 Dth/d of existing contract demand. However, the downstream emissions of the delivery point change were not calculated because this Project modification would not result in changes to the capacity of the existing pipeline system, and would not result in increased downstream GHG emissions. The downstream emissions estimate assumes maximum load operation of the Project facilities for the entire year and that all of the gas to be transported is eventually combusted. This is a conservative estimate, as projects are designed for peak use and rarely transport at maximum capacity 365 days per year.

In an effort to provide some context, the downstream emissions estimate was compared to the GHG inventory for both the State of Nevada and the national level using GHG inventory data from the Energy Information Administration (EIA) (EIA, 2017). The EIA inventory identified that fossil-fuel related sources emitted 35.2 million metric tons of GHGs in Nevada and 5,249.3 million metric tons of GHG at the national level in 2015, the year with the most recently-available data. The downstream use of the Project-related natural gas could potentially increase GHG emissions from the 2015 levels by 0.25 percent within Nevada and by 0.002 percent at the national level. This estimate represents the upper bound for the amount of end-use combustion that could potentially result from the gas transported by this Project. No standard methodology exists to determine how a project's contribution to GHG emissions would translate into physical effects on the environment for the purposes of evaluating the Project's impacts on climate change. Without an accepted methodology, the Commission cannot make a finding whether a particular quantity of GHG emissions poses a significant impact on the environment, whether directly or cumulatively with other sources, and how that impact would contribute to climate change.

6.2 Noise

The ambient sound level of a region is defined by the total noise generated within the specific environment and is usually comprised of natural and manmade sounds. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the week.

The unit of noise measurement is the decibel, which measures the energy of the noise. Because the human ear is not uniformly sensitive to noise frequencies, decibels on the "A" weighting frequency scale (dBA) was devised to correspond with the ear's sensitivity. The A-weighted frequency scale uses specific weighting of a sound pressure level to determine the human response to sound. Because noise levels can vary over a given time period, they are further quantified using the equivalent sound level (L_{eq}) and day-night average sound level (L_{dn}). The L_{eq} is an average of the time-varying sound energy for a specified time period. Noise levels are perceived differently, depending on length of exposure and time of day. The L_{dn} takes into account the duration and time the noise is encountered. Specifically, the L_{dn} is the L_{eq} plus a 10 dBA penalty added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.).

Federal Noise Regulations

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA, 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an L_{dn} of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSAs). NSAs are defined as homes, schools, churches, or any location where people reside or gather.

No other applicable state or local noise regulations from the State of Nevada, Carson City, Douglas or Lyon Counties were identified for the Project.

Ambient Noise Conditions

Existing noise levels vary generally with population density. This proposed action would primarily take place in rural and suburban areas within Carson City and Douglas and Lyon Counties. Table 19 shows typical day-night average noise levels for land uses with different population densities.

Table 19	
Estimated Existing Noise Levels	
Residential Land Use Category	Typical L_{dn}, dBA
Very noisy urban	67
Noisy urban	62
Urban and noisy suburban	57
Quiet urban and normal suburban	52
Quiet suburban	47
Very quiet suburban and rural	42
Source: ANSI/ASA S12.9-2013/Part 3	

Residences are located adjacent to the proposed construction at Segments 1, 2, and 3. Residences are also located within 0.5 mile of the construction activity that is proposed to occur at night near Segments 1 and 3. This night work is proposed for the open cut construction of three road crossings. Table 20 lists the proximity to each NSA at the proposed locations for night work. Existing noise at all NSAs is expected to be influenced by existing vegetation, topography and road networks and would generally be in the range of 40 dBA to 70 dBA, depending on how close a residence is located to existing roads and time of day.

Table 20		
Existing NSAs within 0.5 mile of Proposed Night Construction		
Number	Type of NSA	Distance and Direction from Source
Segment 1		
1	Residence	1,900 feet north
2	Residence	2,200 feet north
3	Residence	2,100 feet northeast
4	Residence	1,970 feet northeast
5	Residence	2,100 feet northeast
6	Residence	2,600 feet northeast
7	Residence	2,900 feet northeast
8	Residence	2,300 feet southeast
9	Residence	2,500 feet southeast
Segment 3		
10	Residential Community	1,450 feet east
Source: ANSI/ASA S12.9-2013/Part 3		

Noise Impacts and Mitigation

Noise would be generated during construction of the Project. Most construction activities would occur during the daytime, however the open cut construction of three road crossings may occur during the night and are further discussed below. Project construction would not involve horizontal directional drilling, blasting, or pile driving. Construction activities in any one area could last from several weeks to several months on an intermittent basis. There are several NSAs located adjacent to construction work areas in Segment 2 (MP 1.03 to MP 1.58), Staging Area 2-1 (MP 1.58), and Segment 3 (MP 0.00 to MP 0.57). Construction at these locations would occur during the daytime only. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be localized and limited to the duration of construction activity (i.e., 4 months).

Paiute proposed three road/racetrack crossings to be completed during the night when traffic levels are lowest or based on landowner preference. The open cut crossing

of Kingsbury Grade on the western end of Segment 1 may be completed at night when traffic levels are lowest and would be completed as stipulated in the NDOT permit. As shown in table 25, the closest structure to the Kingsbury Grade crossing is 1,900 feet north of the proposed crossing. Paiute completed a noise modelling analysis for night work based on anticipated construction equipment. The results indicate a L_{dn} of 54.9 dBA at the closest NSA during night work construction.

At Segment 3, pipeline installation and removal at the V&T railroad crossing at the border of Lyon County and Carson City would likely require night work within paved areas of US 50. The closest NSA to Segment 3 is a residential community about 1,450 feet east of the proposed night construction. The results of the noise analysis Paiute completed indicate a L_{dn} of 51.5 dBA at the closest NSA during night construction.

The racetrack at Segment 4 may be crossed at night, if stipulated in the landowner agreement. There are no NSAs within 0.5 mile of Segment 4. Therefore, no noise impacts would occur to NSAs at Segment 4.

During construction, Paiute would employ noise mitigation measures to ensure that sound muffling devices, which are provided as standard equipment by the construction equipment manufacturer, are kept in good working order. In order to mitigate impacts from night work, Paiute would limit the hours and types of equipment operated during night construction to keep noise levels below 55 dBA L_{dn} at nearby NSAs. If Paiute is unable to keep noise levels below 55 dBA L_{dn} during night construction, Paiute would install sound barriers to reduce noise levels.

Based on the generally rural setting of the majority of the Project, the temporary nature of construction activities, and the measures proposed by Paiute to mitigate impacts from both daytime and nighttime construction, we believe that the Project would not result in significant noise impacts on nearby residents. The Project would not result in any operational noise and would have no sound level impacts on NSAs in the Project area once construction is complete.

7.0 Reliability and Safety

Most natural gas consumed in the United States is delivered to consumers through gathering, transmission and distribution pipelines. The natural gas delivered by these pipelines represents approximately 25 percent of total energy consumption in the United States according to the USDOT's PHMSA (2013). Because of the critical role transmission pipelines play in supplying a large portion of the country's energy needs, it is imperative that they are and remain safe and reliable. Pipelines and related appurtenant facilities are designed and maintained to comply with PHMSA regulations, which are intended to provide for public safety and reliability and minimize the risk of system failure.

The natural gas transmission industry has an excellent track record of public safety and reliability. Nevertheless, the transportation of natural gas by transmission pipelines involves some incremental risk to the public in the event of an accidental release of natural gas. The predominant hazard is a fire or explosion following pipeline ruptures.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless (Paiute adds a chemical odorant to the gas to produce the familiar “natural gas smell”). It is non-toxic, but is classified as a simple asphyxiate, exhibiting an inhalation hazard. If methane is inhaled in high concentrations, oxygen deficiency can result in serious injury or death.

Methane has an auto-ignition temperature of approximately 1,000 degrees Fahrenheit and is flammable at approximate concentrations of between 4.0 and 15.0 percent in air. Methane is buoyant at atmospheric temperatures and disperses rapidly in air. An unconfined mixture of methane and air is not explosive, but it can ignite if the concentration of methane is within the flammable range and there is an ignition source. A flammable concentration of methane within an enclosed space in the presence of an ignition source can explode.

7.1 Safety Standards

The USDOT is mandated to provide pipeline safety under Title 49, U.S.C. Chapter 601. The USDOT’s PHMSA administers a national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and other entities at the federal, state, and local level.

The USDOT provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. A state may also act as USDOT's agent to inspect interstate facilities within its boundaries (delegated authority); however, the USDOT is responsible for enforcement actions. Nevada does not have the delegated authority to inspect interstate pipeline facilities.

The USDOT pipeline standards are published in Parts 190-199 of Title 49 of the C.F.R. Part 192 specifically addresses natural gas pipeline safety issues.

Under a MOU dated January 15, 1993, between the USDOT and the FERC, the USDOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant “certify that it will design, install, inspect, test, construct, operate,

replace, and maintain the facility for which a Certificate is requested in accordance with Federal safety standards and plans for maintenance and inspection”. Alternatively, an applicant must “certify that it has been granted a waiver of the requirements of the safety standards by the Department of Transportation in accordance with section 3(e) of the Natural Gas Pipeline Safety Act of 1968”. The FERC accepts this certification and does not impose additional safety standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum for it to promptly alert USDOT. The Memorandum also requires the FERC to refer complaints and inquiries made by state and local governments, and the general public involving safety matters related to pipelines under the Commission's jurisdiction.

The FERC also participates as a member of the USDOT's Technical Pipeline Safety Standards Committee which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipelines associated with the proposed Project must be designed, constructed, operated, and maintained in accordance with the USDOT Minimum Federal Safety Standards in 49 C.F.R. Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The USDOT specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

The USDOT also defines area classifications, based on population density in the vicinity of a pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined below:

- Class 1 Location with 10 or fewer buildings intended for human occupancy.
- Class 2 Location with more than 10 but less than 46 buildings intended for human occupancy.
- Class 3 Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period.
- Class 4 Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures; hydrostatic test pressures; MAOP; inspection and testing of welds; and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. Preliminary class locations for the proposed Project have been developed based on the relationship of the pipeline centerline to other nearby structures and manmade features. The Project would consist of Class 1 locations at Segments 1 and 4 and Class 3 locations at Segments 2 and 3.

If a subsequent increase in population density adjacent to the right-of-way results in a change in class location for the pipeline, Paiute would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required, to comply with the USDOT requirements for the new class location.

The USDOT Pipeline Safety Regulations require operators to develop and follow a written integrity management program that contains all the elements described in 49 CFR 192.911, and address the risks on each transmission pipeline segment. The rule establishes an integrity management program which applies to all high consequence areas (HCA).

The USDOT has published rules that define HCAs where a gas pipeline accident could do considerable harm to people and property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for USDOT to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method, an HCA includes:

- current class 3 and 4 locations,
- any area in Class 1 or 2 where the potential impact radius⁸ is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle,⁹ or
- any area in Class 1 or 2 where the potential impact circle includes an identified site.

An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that

⁸ The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline in psig multiplied by the square of the pipeline diameter in inches.

⁹ The potential impact circle is a circle of radius equal to the potential impact radius.

is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate.

In the second method, an HCA includes any area within a potential impact circle which contains:

- 20 or more buildings intended for human occupancy, or
- an identified site.

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. The USDOT regulations specify the requirements for the integrity management plan at section 192.911. The pipeline integrity management rule for HCAs requires inspection of the pipeline HCAs at least once every 7 years.

Paiute has identified HCAs along the proposed pipeline route. Paiute currently uses the second method described above to identify HCAs. Table 21 lists the HCAs by segment milepost that would be created by the proposed pipeline segments or are existing HCAs. The pipeline segments located within HCAs would be subject to enhanced operation and maintenance activities as required by Paiute’s Integrity Management Plan.

Pipeline Facility	Location	Begin Milepost	End Milepost	Crossing Length (miles)	Basis for HCA Identification
Segment 2 ^a	Carson City	0.84	0.91	0.07	Identified Sites
	Carson City	1.03	1.21	0.18	Identified Sites
Segment 3 ^a	Lyon County	0.00	0.22	0.22	Identified Site
	Carson City	2.18	2.27	0.09	Identified Site
Segment 4 ^a	Lyon County	2.79	3.92	1.13	Identified Site

a The new HCAs shown in the table encompass the existing HCAs.

There are no existing HCAs along Segment 1, nor would there be any created HCAs, because there are no buildings or identified sites within a potential impact circle along the segment.

Existing HCAs in Segments 2, 3, and 4 raise more concerns during construction. Paiute would mitigate these concerns by lowering the pressure within the existing HCA pipelines in the areas of construction.

The USDOT prescribes the minimum standards for operating and maintaining pipeline facilities, including a requirement to establish a written plan governing these activities. Each pipeline operator is required to establish an emergency plan that includes procedures to minimize the hazards of a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- emergency system shutdown and safe restoration of service;
- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards.

The USDOT requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

Paiute has an emergency response plan included in its Emergency Plan Manual used for all Paiute facilities in accordance with Title 49 C.F.R. § 192.615. The Emergency Plan Manual would be applicable to the Project facilities once they become operational. Paiute also meets annually with the public, including emergency response agencies and liaison meetings with other utilities, excavators, Commission, and PHMSA representatives, to discuss emergency response. No changes to emergency response procedures have been identified, or are anticipated, for the proposed Project.

7.2 Pipeline Accident Data

The USDOT requires all operators of natural gas transmission pipelines to notify the USDOT of any significant incident and to submit a report within 20 days. Significant incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization; or
- involve property damage of more than \$50,000 (1984 dollars).¹⁰

During the 20-year period from 1997 through 2016, a total of 1,329 significant incidents were reported on the more than 300,000 total miles of natural gas transmission pipelines nationwide (PHMSA, 2017).

¹⁰ \$50,000 in 1984 dollars is approximately \$118,811 as of March 2017 (Consumer Price Index, Bureau of Labor Statistics, April 27, 2017)

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 22 provides a distribution of the causal factors as well as the number of each incident by cause.

The dominant causes of pipeline incidents are corrosion and pipeline material, weld or equipment failure constituting 52.2 percent of all significant incidents. The pipelines included in the data set in table 22 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of significant incidents is strongly dependent on pipeline age. Older pipelines have a higher frequency of corrosion incidents and material failure, because corrosion and pipeline stress/strain is a time-dependent process.

The use of both an external protective coating and a cathodic protection system,¹¹ required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially protected pipe.

Table 22		
Natural Gas Transmission Pipeline Significant Incidents by Cause 1997-2016^a		
Cause	No. of Incidents	Percentage
Corrosion	317	23.9
Excavation ^b	204	15.3
Pipeline material, weld or equipment failure	376	28.3
Natural force damage	149	11.2
Outside force ^c	86	6.5
Incorrect operation	44	3.3
All other causes ^d	153	11.5
TOTAL	1,329	-
a All data gathered from PHMSA (2016) Significant incident files, April 27, 2017. http://primis.phmsa.dot.gov/comm/reports/safety/		
b Includes third party damage		
c Fire, explosion, vehicle damage, previous damage, intentional damage		
d Miscellaneous causes or unknown causes		

Outside force, excavation, and natural forces are the cause in 33.0 percent of significant pipeline incidents. These incidents result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and intentional damage. Table 23 provides a breakdown of outside force incidents by cause.

¹¹ Cathodic protection is a technique to reduce corrosion (rust) of the natural gas pipeline through use of an induced current or a sacrificial anode (like zinc) that corrodes at faster rate to reduce corrosion.

Cause	No. of Incidents	Percent of all Incidents
Third party excavation damage	296	14.4
Operator excavation damage	47	2.3
Unspecified excavation damage	7	0.3
Heavy rain/floods	100	4.9
Earth movement	46	2.2
Lightning/temperature/high winds	38	1.8
Natural force	17	0.8
Vehicle (not engaged with excavation)	84	4.1
Fire/explosion	14	0.7
Previous mechanical damage	9	0.4
Fishing or maritime activity	8	0.4
Intentional damage	5	0.2
Unspecified/other outside force	1	0.0
TOTAL	717	-

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, older pipelines contain a disproportionate number of smaller-diameter pipelines; which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movement.

Since 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (*e.g.*, oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts.

7.3 Impacts on Public Safety

The service incidents data summarized in table 24 include pipeline failures of all magnitudes with widely varying consequences.

Year	Injuries		Fatalities	
	Employees	Public	Employees	Public
2012	1	6	0	0
2013	0	2	0	0
2014	1	0	1	0
2015	1	13	4	2
2016	2	1	2	1

Table 24 presents the average annual injuries and fatalities that occurred on natural gas transmission lines between 2012 and 2016. The data has been separated into employees and nonemployees to better identify a fatality rate experienced by the general public. Fatalities among the public averaged 1 per year over the 12-year period from 2005-2016 (PHMSA, 2017).

The majority of fatalities from pipelines are from local distribution pipelines not regulated by the FERC. These facilities are natural gas pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, these distribution lines are smaller diameter pipes and/or plastic pipes which are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to the FERC regulated natural gas transmission pipelines.

The nationwide totals of accidental fatalities from various anthropogenic and natural hazards are listed in table 25 to provide a relative measure of the industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously, however, because individual exposures to hazards are not uniform among all categories. The data nonetheless indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to other categories. Furthermore, the fatality rate is much lower than the fatalities from natural hazards such as lightning, tornados, or floods.

The available data show that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. From 1997 to 2016, there were an average of 66 significant incidents and 2 fatalities per year (PHMSA, 2017). The number of significant incidents over the more than 300,000 miles of natural gas transmission lines indicates the risk is low for an incident at any given location. The operation of the proposed Project would represent a slight increase in risk to the nearby public.

Table 25	
Nationwide Accidental Deaths^a	
Type of Accident	Annual No. of Deaths
All accidents	123,706
Motor Vehicle	43,945
Poisoning	29,846
Falls	22,631
Injury at work	5,113
Drowning	3,443
Fire, smoke inhalation, burns	3,286
Floods ^b	82
Tornado ^b	70

Table 25	
Nationwide Accidental Deaths^a	
Type of Accident	Annual No. of Deaths
Lightning ^b	48
Natural gas distribution lines ^c	11
Natural gas transmission pipelines ^c	2
<p>a All data, unless otherwise noted, reflects 2007 statistics from U.S. Census Bureau, Statistical Abstract of the United States: 2012 (129th Edition) Washington, DC, 2009; https://www.census.gov/library/publications/2011/compendia/statab/131ed.html</p> <p>b NOAA National Weather Service, Office of Climate, Water and Weather Services, 30 year average (1986-2015) http://www.weather.gov/om/hazstats.shtml.</p> <p>c PHMSA (2017) significant incident files, April 27, 2017. http://primis.phmsa.dot.gov/comm/reports/safety/, 20 year average.</p>	

8.0 Cumulative Impacts

Cumulative impacts result when the environmental effects associated with a proposed action are added to the impacts associated with projects in the past, present, and reasonably foreseeable future in the same general location. Although impacts of the separate projects may be relatively minor, the additive or collective effects may be significant. The Project’s direct and indirect impacts are discussed in other sections of this EA.

The purpose of this cumulative impact analysis is to both identify and describe cumulative impacts that would result from implementation of multiple projects in the Project’s vicinity and timeframes. This cumulative impact analysis generally follows the methodology set forth in relevant guidance (Council on Environmental Quality, 1997; EPA, 1999). Under this methodology, we looked for commonalities of impacts from other projects and the proposed Project, based on NEPA documentation, agency and public input, and best professional judgment. An action must meet the following three criteria to be included in the cumulative impacts analysis:

- impact a resource area potentially affected by the proposed Project;
- cause this impact within all, or part of, the proposed Project area; and
- cause this impact within all, or part of, the time span for the potential impact from the proposed Project.

The actions considered in the cumulative impact analysis may vary from the Project in nature, magnitude, and duration. These actions are included based on the likelihood of completion, and only projects with either ongoing impacts or that are “reasonably foreseeable” future actions were evaluated. Existing or reasonably foreseeable actions that would be expected to affect similar resources during similar periods as the projects were considered further. The anticipated cumulative impacts of

the proposed Project and these other actions are discussed below, as well as any pertinent mitigation actions.

8.1 Cumulative Impacts Geographic Scope

The cumulative impacts geographic scope is the area of analysis for cumulative impacts. The geographic scope is reasonably sized to prevent dilution of the cumulative impacts over large areas. Guidance from the CEQ was used to identify geographic boundaries (CEQ, 1997) for the geographic scopes related to various resources and pipeline segments.

The geographic scopes for the cumulative impact analysis for the Project are presented below in table 26. The largest geographic scope is the 12-digit hydrologic unit code (HUC).

The 12-digit HUC watershed geographic scope is particularly suited for water and wildlife resources because, as surface disturbances occur and water flows continue downstream, localized impacts become more diluted and eventually reach a point where they are not measurable. The watershed boundary also provides sufficient range for movement of various wildlife species. The geographic scope for other resources are also defined in table 26. In general, except for air resources, these geographic scopes are more localized to the Project area due to the more localized nature of the resource. The geographic scope for air resources encompasses a larger area due to the movement of potential pollutants in the atmosphere.

Table 26	
Geographic Scope for Cumulative Impact Analysis	
Environmental Resource	Area of Impact
Soils and Geology	Construction workspaces
Groundwater, Wetlands, Vegetation, Wildlife	HUC 12 Watershed
Surface Water Resources	HUC 12 Watershed
Cultural Resources	Area of Potential Effects
Land Use	1-mile radius from Project area
Visual	0.25 mile and existing visual access points (e.g., road crossings)
Noise – Operations	Other facilities that would impact any noise sensitive area (NSA) located within 1 mile of a noise emitting permanent aboveground facility
Noise – Construction	0.25 mile from pipeline
Air Quality – Operations	31.1 miles from Project area
Air Quality – Construction	0.25 mile from pipeline

8.2 Identified Projects

Paiute reviewed publicly available data and we also consulted with the BLM and Carson City to identify other projects near the proposed Project that may result in cumulative impacts. These projects are summarized in table 27.

Table 27
Projects Considered in Cumulative Impact Analysis

Project name, sponsor/proponent, and location	Approximate distance and direction	Project description	Footprint/layout and anticipated impacts	Permits or authorizations and environmental reviews required	Current status and schedule
NDOT Kingsbury Grade Hydraulic Project	Within and adjacent to the eastern end of Segment 1	Project involves replacement of drop inlets	Not available	Not available	2019
Digital 395 Middle Mile Project	4 miles to the west of Segment 1 in Minden, NV (and continues south of Minden)	Install 593 miles of fiber optic cable and associated infrastructure	1,029 acres; mostly constructed in disturbed rights-of-way	NEPA Environmental Assessment (Lead agencies: National Telecommunication and Information Administration and California Public Utilities)	Completed in 2014
California Integrated Weed Management, U.S. Forest Service, Humboldt-Toiyabe National Forest System Lands in California	3.5 miles southwest of Segment 1	Development and implementation of an Integrated Weed Management System to treat noxious and invasive weeds	693,721 acres, impacts on soils/watersheds, wilderness/recreation, heritage resources/tribal relations, aquatic and terrestrial wildlife, vegetation, and livestock grazing would occur; a quantitative assessment of impacts is not available.	NEPA Environmental Assessment (Lead agency: U.S. Forest Service)	Proposed for April 2017, planning in progress
Silver Saddle Ranch / Prison Hill Multi-use Path Loop, Carson City (proponent and location), Nevada	Adjoining to the east and up to 3 miles to the south of Segment 2	A multi-use path loop that goes around Prison Hill and connects to Silver Saddle Ranch	Not available	Not available	Completed

Table 27
Projects Considered in Cumulative Impact Analysis

Project name, sponsor/proponent, and location	Approximate distance and direction	Project description	Footprint/layout and anticipated impacts	Permits or authorizations and environmental reviews required	Current status and schedule
North Prison Hill Trailhead Project, Carson City (proponent and location), Nevada	East of Segment 2, distance not available	New trailhead for existing trail	Not available	Not available	Proposed for 2018, planning in progress
Carson River Trail System, Phase 2 – Ranch Connections, Carson City (proponent and location), Nevada	East of Segment 2, distance not available	Provides a non-motorized path from the North Prison Hill Trailhead Project to Silver Saddle Ranch and provides another section to the loop path system around the base of Prison Hill	Not available	Not available	Schedule not available, planning in progress
Unnamed off-street/paved/shared path along the north side of US Highway 50, Carson City (proponent and location), Nevada	Parallels Segment 3, approximately 25 feet	Connects Carson City to Lyon County and provides an off-street alternative to accessing the disc golf course complex being planned off Flint Drive and Rifle Range Road	Not available	Not available	Schedule not available, planning in progress
Virginia and Truckee Historic Railway Reconstruction Project	Approximately 2 to 3 miles northeast of Segment 3, near V&T Railroad	Two new permanent features; a new alternative terminal site and a new 9,000-foot segment of railway to the terminal site	Approximately 30 acres	NEPA Environmental Assessment (Lead agencies: Federal Highway Administration and Nevada Department of Transportation)	EA completed in 2011, assumed as past project

Table 27
Projects Considered in Cumulative Impact Analysis

Project name, sponsor/proponent, and location	Approximate distance and direction	Project description	Footprint/layout and anticipated impacts	Permits or authorizations and environmental reviews required	Current status and schedule
BC Ranch, planned residential community	Surrounding/adjacent to the north end of Segment 4	The planned residential community includes 2,179 single family units at full build-out, two commercial sites, school, and common open space.	Total development is 908.09 acres, which includes 180.91 acres of open space.	City of Fernley Development Permit (approved 7/18/05), other future permits may include City of Fernley Building Permit, Special Use Permit	Schedule unknown, at conceptual design level, no recorded maps
BLM Disposal Lands Under Development Consideration	Adjacent to the north end of Segment 4	The scope of the planned development is not known at this time; development is still in early planning stages	The total area of the BLM lands proposed for disposal and potential development is 1,280 acres.	Details as to the status of the development proposal are not available.	Schedule not available, no documents are available for public review.

8.3 Impact Analysis

Geology, Soils, and Paleontological Resources

Because direct impacts on geology, soils, and paleontological resources would be highly localized and limited to the period of construction, cumulative impacts on these resources would only occur if other projects are constructed at the same time as the proposed facilities and with overlapping footprints. The NDOT Kingsbury Grade Hydraulic Project was identified as having some overlap at the eastern end of Segment 1, however this project does not share the same construction timeframe with proposed Project. No other projects were identified to have areas of disturbance that would overlap with the Project's construction limits. Therefore, the Project would have no contribution to cumulative impacts on these resources.

Water Resources

The Project's impacts on water resources could result in downstream impacts on groundwater and surface water resources, and as such, the geographic scope for cumulative impacts includes the HUC-12 sub-watersheds crossed by the Project. These impacts would be limited to areas that are affected by the projects that are in close proximity, as localized impacts become more diluted and eventually reach a point where they are not measurable as distance increases. The NDOT Kingsbury Grade Hydraulic Project is planned for 2019, which would be after the completion of the Project. Regarding the California Integrated Weed Management in Humboldt-Toiyabe National Forest System Lands in California, if treatments are conducted during a similar timeframe as the Project, it could contribute to cumulative impacts on water resources within the geographic scope. However, this project is a federal action that is also subject an environmental analysis under the National Environmental Policy Act and expected to utilize best management practices to minimize impacts on water resources. The North Prison Hill Trailhead Project is proposed to occur in 2018, however the footprint of this project is relatively small and is expected to be short-term. As previously discussed, the Project would require the crossing of 16 ephemeral drainages and impacts on these ephemeral drainages from construction of the proposed Project would be temporary and short-term. In addition, Paiute would adhere to the Project Procedures to minimize impacts on water resources and would only construct across waterbodies during no flow conditions. Therefore, we conclude that impacts associated with the construction and operation of the Project's impacts, in addition to the potential impacts of the identified projects on water resources would not be cumulatively significant.

Vegetation and Wildlife

Construction of the Project would primarily have minor, short-term impacts on vegetative communities that provide habitat for wildlife. Cumulative impacts on vegetation and habitat can result in increased habitat fragmentation. The proposed Project would mostly be constructed in previously disturbed rights-of-way which reduces the amount of habitat fragmentation and removal of native vegetation. Other projects listed in table 27 could also impact vegetation and wildlife habitat. However, most of the projects identified in table 27 are not expected to occur concurrently with the proposed Project. As previously discussed, the Project's potential impacts on wildlife, including migratory birds and sensitive species, such as displacement from construction noise, would be temporary and all areas would revert to preconstruction conditions following construction. Further, impacts on vegetative communities and wildlife habitat during construction would be mitigated by implementing the measures contained in the Project Plan and Project Procedures, the Project Noxious and Invasive Weed Control Plan, and the Project Restoration and Revegetation Plan. Therefore, we conclude that the Project would not contribute to significant cumulative impacts on vegetation and wildlife.

Land Use, Recreation, and Visual Resources

Project construction would result in short-term construction activities in existing commercial/industrial and residential areas along Segments 2 and 3. The facilities proposed as part of this Project would be installed in existing, previously disturbed rights-of-way and would not permanently alter existing access or land uses. In addition, given that most of the projects identified in table 27 are not expected to occur concurrently with the proposed Project, we conclude that the Project would not contribute to cumulative impacts on land use.

The geographic scope includes local recreation facilities, including the Eagle Valley Golf Course, the Fernley 95A Speedway, and dispersed recreational (BLM and Carson City-administered) lands. Currently, recreational opportunities within the geographic scope and immediately adjacent to the Project are limited to existing recreational facilities because the surrounding land is largely developed for commercial or residential use. BLM-administered rangeland and open land within and adjacent to the Project (in Segment 4) are available for dispersed recreation and are used for hunting (primarily upland bird and small game species) during designated hunting seasons from mid-September through early February (NDOW, 2016). Project construction is not expected to significantly overlap with the peak hunting seasons. Long-term operation of the Project would also not affect hunting access to BLM-administered lands; therefore, we conclude that construction and operation of the Project, in combination with other projects, would not result in significant cumulative impacts on recreation.

Until successful revegetation has been achieved, livestock grazing would be discouraged within the disturbed portions of the right-of-way by fencing. Efforts would

be made to control or restrict grazing on restored and revegetated areas during the first two to three years. Efforts may include fencing areas where livestock have access to the right-of-way and/or negotiations with landowners to ensure that livestock do not have access to areas that are being restored and revegetated. Following restoration and successful revegetation, no grazing allotments would be affected and no animal unit months would be lost because the permanent rights-of-way would be available for livestock grazing and dispersed recreation. Impacts from the proposed Project would be minor, short-term, and temporary, and none of the projects identified in table 27 are expected to have impacts on grazing. Therefore, we conclude that the Project would not contribute to cumulative impacts on livestock grazing within the geographic scope.

Cultural Resources

The geographic scope for cultural resources is the APE. No historic properties were identified within the Project's direct APE. The only historic properties considered for indirect effects were those contributing to the significance of the Nevada State Prison National Register District. The Nevada State Prison National Register District is within the geographic scope of Segment 2. Pipeline construction along Segment 2 would be temporary and would occur more than 0.25 mile from any of the buildings or structures that contribute to the setting and feeling of the NRHP district. There would be no additions or modifications to above-ground structures along Segment 2. Visual effects of construction would be temporary, and the pipeline corridor would be returned to its pre-construction condition. There would be no long-term direct or indirect effects to historic properties from construction of Segment 2 or any of the other Project segments. Therefore, the Project would have no contribution to cumulative effects on cultural resources.

Air Quality and Noise

Air quality impacts are limited to the construction phase of the Project. Construction emissions may impact air quality locally and temporarily. Combustion emissions from construction equipment would be minimized because engines on construction equipment must meet standards included in EPA regulations for non-road source emissions and imposed on equipment manufacturers. Fugitive dust emissions would occur from vehicle traffic on unpaved roads and construction activities on unpaved disturbed areas. Mitigation measures to reduce fugitive dust emissions include dust control using water, or other dust suppressant, throughout construction. Trackout pads would be used to ensure that dirt on vehicles is knocked off, limiting re-entrained dust on paved roads. Standard controls for general construction equipment would also include speed limits. Additionally, to minimize fugitive dust, soils would be stabilized as soon as possible after disturbance, and soil piles would be wetted with water or otherwise treated with a dust suppressant or covered when left inactive for long periods of time. Because of these mitigation measures, construction equipment emissions and fugitive dust emissions from soil disturbance are not anticipated to cause exceedances of ambient air

quality standards. Air quality impacts would be localized, temporary, and naturally attenuated upon Project completion.

As indicated in table 27, the North Prison Hill Trailhead Project is planned to be constructed near the Segment 2 Project area in 2018. Therefore, the Project and the North Prison Hill Trailhead Project may be constructed simultaneously. However, based on the mitigation measures identified above and in the Project Dust Control Plan, and the temporary and localized air quality impacts, construction emissions from the Project are not expected to be significant and would not contribute to a significant cumulative impact on air quality. No other projects listed in table 27 occur within the same geographic scope and timeframe as the proposed Project.

Operation and maintenance of the pipelines would include vehicle travel along the permanent rights-of-way for periodic patrols and corrosion/leak detection surveys to detect conditions that may adversely affect the integrity of the pipeline. One vehicle, typically a pickup truck, and two employees, would generally be required to perform these activities several times per year. Operation and maintenance activities may occur at the same time as other projects listed in table 27; however, based on the limited scope and duration of maintenance activities, we conclude that there would not be a significant cumulative impact on air quality.

The Project could contribute to cumulative noise impacts during construction; however, these cumulative impacts would be temporary and transient. If the North Prison Hill Trailhead Project is constructed simultaneously near Segment 2, there could be a cumulative noise impact. The majority of noise impacts associated with the Project would be limited to the period of construction. As a result, noise impacts would be temporary and localized. Therefore, we conclude that there would not be significant cumulative impacts on noise levels.

Staff's Conclusion on Cumulative Impacts

We identified planned activities in the Project area that met the criteria for inclusion in the cumulative impact analysis. Implementation of best-management practices and proposed mitigation plans would minimize environmental impacts, and when the impacts of Paiute's 2018 Expansion Project are added to the impacts of other identified projects, the cumulative impacts would be minimal.

C. ALTERNATIVES

In accordance with NEPA and FERC policies, we identified and evaluated alternatives to the Project including the no-action alternative, system alternatives, and route alternatives. These alternatives were evaluated using a specific set of criteria. The evaluation criteria applied to each alternative include a determination whether the alternative:

- meets the objective of the proposed Project;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over the proposed Project.

The analysis of alternatives is based on information provided by Paiute; consultations with federal and local agencies; review of aerial photographs, USGS topographic maps, other publicly available information; and pipeline system maps. Additionally, Paiute participated in the FERC's pre-filing process, which emphasizes the identification of potential stakeholder concerns early in the development of a project, as well as the identification and evaluation of alternatives that may avoid or minimize issues.

Through environmental comparison and application of our professional judgment, each alternative is considered to a point where it becomes clear if the alternative could or could not meet the three evaluation criteria. To ensure a consistent environmental comparison and to normalize the comparison factors, we generally use desktop sources of information (e.g., publicly available data, geographic information system data, aerial imagery) and assume the same right-of-way widths and general workspace requirements. Where appropriate, we also use site-specific information (e.g., field surveys or detailed designs). Our environmental analysis and this evaluation consider quantitative data (e.g., acreage or mileage) and uses common comparative factors such as total length, amount of collocation, and land requirements.

The impacts associated with the Project were described in detail in section B of this EA. Because the alternatives represent mostly alternative locations for natural gas facilities, the specific nature of these impacts on the natural and human environments would generally be similar to the impacts described in section B.

In recognition of the competing interests and the different nature of impacts resulting from an alternative that sometimes exist (i.e. impacts on the natural environment versus impacts on the human environment), we also consider other factors that are relevant to a particular alternative and discount or eliminate factors that are not relevant or may have less weight or significance.

The alternatives were reviewed against the evaluation criteria in the sequence presented above. The first consideration for including an alternative in our analysis is whether or not it could satisfy the stated purpose of the Project. An alternative that cannot achieve the purpose for the project cannot be considered as an acceptable replacement for the project. All of the alternatives considered here are able to meet the Project purpose stated in section A.2 of this EA.

Many alternatives are technically and economically feasible. Technically practical alternatives, with exceptions, would generally require the use of common construction methods. An alternative that would require the use of a new, unique or experimental construction method may not be technically practical because the required technology is not available or is unproven. Economically practical alternatives would result in an action that generally maintains the price competitive nature of the proposed action. Generally, we do not consider the cost of an alternative as a critical factor unless the added cost to design, permit, and construct the alternative would render the project economically impractical.

Alternatives that would not meet the Project's objective or were not feasible were not brought forward to the next level of review (i.e., the third evaluation criterion). Determining if an alternative provides a significant environmental advantage requires a comparison of the impacts on each resource as well as an analysis of impacts on resources that are not common to the alternatives being considered. The determination must then balance the overall impacts and all other relevant considerations. In comparing the impact between resources, we also considered the degree of impact anticipated on each resource. Ultimately, an alternative that results in equal or minor advantages in terms of environmental impact would not compel us to shift the impacts from the current set of landowners to a new set of landowners.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. In section B, we evaluated each environmental resource potentially affected by the Project and concluded that constructing and operating the Project would not significantly impact these resources. Consistent with our conclusions, the value gained by further reducing the (not significant) impacts of the Project when considered against the cost of relocating the route/facility to a new set of landowners was also factored into our evaluation.

1.0 No Action Alternative

Under the no action alternative, Paiute would not implement the proposed action avoiding the potential environmental effects associated with the proposed action; however, the Project objectives would not be met. Paiute's stated purpose of the Project is to meet the demands of Paiute's shippers in Carson City, Nevada and South Lake

Tahoe, California and surrounding areas. According to Paiute, the Project would meet the growing demand for natural gas, particularly in the winter months. The incremental Project capacity is fully subscribed by two Project shippers. Paiute is proposing to place the proposed facilities into service by November 2018 (pending regulatory approvals) in accordance with its commercial agreements for the Project.

Although a Commission decision to deny the proposed action would avoid the environmental effects addressed in this EA, other natural gas companies could construct projects in substitute for the natural gas supplies offered by Paiute. Such alternative projects could require the construction of additional and/or new pipeline facilities in the same or other locations to transport the gas volumes proposed by the Project. These projects would result in their own specific environmental effects that could be equal to or greater than those described for the current proposal. Because the No Action Alternative would not meet the Project objectives and because we found that the Project would not result in a significant impact, this alternative is not recommended.

2.0 System Alternatives

System alternatives would make use of other existing, modified, or proposed pipeline systems to meet the objectives of the Project. The purpose of identifying and evaluating system alternatives is to determine whether the environmental effects associated with construction and operation of the Project could be avoided or reduced by using another pipeline system, while still meeting the objectives of the Project.

For the proposed Project, a system alternative would need to be capable of transporting an additional 4,604 Dth/d of new natural gas in order to meet the demands of Paiute's shippers, and allow for the shifting farther downstream of 1,031 Dth/d of existing transportation capacity from the Minden-Gardnerville, Nevada Delivery Point to the South Lake Tahoe City Gate. The next closest source of natural gas serving the area is the Tuscarora Gas Pipeline System, which is northwest of Reno, Nevada, at least 40 miles in distance. The Paiute system is physically closer to the Carson City and Lake Tahoe areas than Tuscarora's facilities. There are no other existing natural gas transmission systems in the region capable of transporting the required volumes without expansion or construction of a new system. Given the greater distance between the Project area and Tuscarora's facilities, any expansion of the Tuscarora system or construction of a new pipeline from Tuscarora to the Project area would result in greater environmental impacts. In addition, the Project already makes substantial use of existing Paiute infrastructure to minimize impacts on the environment and to meet the proposed need.

3.0 Route Alternatives

The primary objective in evaluating route alternatives is to avoid, minimize, or mitigate adverse effects, while satisfying the objectives of the Project. Alternative

pipeline routes can be characterized as major, involving reroutes of considerable distances to avoid impacts on large resource areas and construction issues; or minor, involving relatively short route variations to avoid impacts on local resources or addressing construction issues.

Our review of the proposed Project found no significant environmental impacts that would drive an evaluation of additional major route alternatives or minor route variations, as the proposed route follows existing right-of-way. In addition, we received no comments during scoping that suggested we consider route alternatives to the proposed Project.

In conclusion, we have determined that the proposed Project, as modified by our recommended mitigation measures in section D below, is the preferred alternative that can meet the Project objectives.

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this EA, it has been determined that if Paiute constructs and operates the proposed facilities in accordance with its application and supplements, and the FERC staff's recommended mitigation measures, approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. It is recommended that the FERC Order contain a finding of no significant impact and include the mitigation measures listed below as conditions to any Certificate FERC may issue.

1. Paiute shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Paiute must:
 - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of OEP **before using that modification.**
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project, including abandonment activities. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction, operation, and abandonment activities.
3. **Prior to any construction**, Paiute shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors, and contractor personnel would be informed of the environmental inspectors' authority and have been or would be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of**

construction, Paiute shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Paiute's exercise of eminent domain authority granted under Natural Gas Act section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Paiute's right of eminent domain granted under the Natural Gas Act section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Paiute shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, as well as staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's Plan and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands. Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the authorization and before construction begins**, Paiute shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Paiute must file revisions to the plan as schedules change. The plan shall identify:

- a. how Paiute will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
 - b. how Paiute will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to on-site construction and inspection personnel;
 - c. the number of environmental inspectors assigned per construction spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - d. company personnel, including environmental inspectors and contractors, who will receive copies of the appropriate material;
 - e. the location and dates of environmental compliance training and instructions Paiute will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel changes);
 - f. the company personnel (if known) and specific portion of Paiute's organization having responsibility for compliance;
 - g. the procedures (including use of contract penalties) Paiute will follow if noncompliance occurs; and
 - h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for:
 - i. the completion of all required surveys and reports,
 - ii. the environmental compliance training of on-site personnel,
 - iii. the start of construction, and
 - iv. the start and completion of restoration.
7. Paiute shall employ at least one environmental inspector per construction spread. The environmental inspectors shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

- d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Paiute shall file updated status reports with the Secretary on a **biweekly basis until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Paiute's efforts to obtain the necessary federal authorizations;
 - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
 - c. a listing of all problems encountered and each instance of noncompliance observed by the environmental inspectors during the reporting period (both for the conditions imposed by FERC and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
 - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
 - e. the effectiveness of all corrective actions implemented;
 - f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Paiute from other federal, state, or local permitting agencies concerning instances of noncompliance, and Paiute's response.
9. **Paiute must receive written authorization from the Director of OEP before commencing construction of any Project facilities.** To obtain such authorization, Paiute must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. **Paiute must receive written authorization from the Director of OEP before placing its Project into service.** Such authorization would only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.

11. **Within 30 days of placing the authorized facilities in service**, Paiute shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying the certificate conditions Paiute has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
12. **Prior to construction of Segment 1**, Paiute shall file with the Secretary a revised Genoa Fault crossing design plan which provides a(n):
 - a. soil boring log information and profile, including the depth to the water table;
 - b. inspection and maintenance plan;
 - c. welding inspection guidelines;
 - d. detailed design profile of the mitigation trench;
 - e. discussion on why Paiute is using three types of piping and a TSC model for the X80 piping; and
 - f. clarification for the peak horizontal offset from the existing pipeline.
13. **Prior to construction of Segment 4**, Paiute shall file with the Secretary the results of the pipeline design plan to avoid possible impacts from fault displacement on the pipeline.
14. **Prior to construction**, Paiute shall file with the Secretary, for review and written approval by the Director of OEP, measures it would implement during construction for the protection of wells within the construction right-of-way.

E. REFERENCES

- ACG Materials. 2017. Adams Quarry – near Carson City, Nevada. [Web Page]. Located at <http://www.acgmaterials.com/location-adams-quarry-nevada/>. Accessed: January 20, 2017.
- ANSI/ASA S12.9-2013/Part 3 Quantities and Procedures for Description and Measurement of Environmental Sound-Part 3: Short-term Measurements with an Observer Present.
- Arcadis. 2017. Paiute Pipeline Company 2018 Expansion Project Liquefaction Assessment.
- Bell, J.W. and D.T. Trexler. 1979. Earthquake Hazards Map, New Empire Quadrangle. Nevada Bureau of Mines and Geology, Urban Map 1Bi. [Web Page]. Located at <http://pubs.nbmgs.unr.edu/EQ-hazards-map-New-Empire-7-5-p/um1bi.htm>. Accessed: October 2016.
- Bingler, E.C. 1977. Geologic map of the New Empire Quadrangle. Nevada Bureau of Mines and Geology, Map 59. [Web Page]. Located at <http://pubs.nbmgs.unr.edu/Order-as-M59-p/um1bg.htm>. Accessed: October 2016.
- Bureau of Land Management (BLM). 2001. Carson City Field Office Consolidated Resource Management Plan. May 2001. Carson City Field Office, Carson City, Nevada.
- BLM 2012. Final Environmental Assessment FONSI and Decision Record, Carson City Land Conveyance. DOI-BLM-NV-C020-2001-0518-EA. October 2012. 13 pages.
- BLM. 2012. (A 6.0 conformance with applicable land use plans
- BLM. 2014. Wildlife Survey Protocols BLM Nevada, Draft. July 2014. 32 pages.
- BLM. 2015. Carson City District Integrated Weed Management Plan. [Web page]. Located at <https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage¤tPageId=61953>. Accessed: April 12, 2017.
- Carson City. 2010. Carson City Hazard Mitigation Plan. November. [Web Page]. Located at <http://www.carson.org/home/showdocument?id=27671>. Accessed: October 2016.
- Douglas County. 2013. Douglas County Hazard Mitigation Plan. [Web Page]. Located at <http://www.douglascountynv.gov/DocumentCenter/View/2255>. Accessed: October 2016.

- Environmental Data Resources (EDR). 2016a. Paiute Pipeline 2018 Expansion Project. Lyon, NV. Inquiry Number: 4723241. September 14.
- EDR. 2016b. Paiute Pipeline 2018 Expansion Project. Silver Springs, NV. Inquiry Number: 4723241.5w September 14.
- Energy Information Administration (EIA). 2017. State Emissions by year, 1990 - 2015. Available online at: <https://www.eia.gov/environment/emissions/state/>. Accessed: November 8, 2017.
- EPA. 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety", and sometimes referred to as the EPA "Levels" Document. Office of Noise Abatement & Control. EPA 550/9-74-004.
- EPA. 2016a. Enviromapper. [Web page]. Located at <https://www.epa.gov/emefdata/em4ef.home>. Accessed: December 2016.
- EPA. 2016b. National Ambient Air Quality Standards (NAAQS). Available online at: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>, Last updated 3/29/2016. Accessed: June 2017.
- EPA. 2016c. The Green Book Nonattainment Areas for Criteria Pollutants. Available online at: <http://www.epa.gov/airquality/greenbook/>. Accessed June 2017.
- Epstein, B., G. Pohll, D. Bansah, and A. Makowski. 2007. Regional Groundwater Model Development for the Fernley/Wadsworth Hydrographic Basins, Nevada. Desert Research Institute, Division of Hydrologic Sciences, Publication 41229. February. [Web Page]. Located at <http://www.cityoffernley.org/DocumentCenter/Home/View/1457>. Accessed: October 2016.
- Everett, L., Yun, M., Downs, W., Pederson, J., Kelly, T.S., Henry, C., and J. Trexler. 2010. Recognition of the Hemphillian/Blancan Boundary in Nevada. *Journal of Vertebrate Paleontology* 22(2):429-442.
- Faulds, J.E. and A.R. Ramelli. 2005. Preliminary Geologic Map of the Fernley East Quadrangle, Lyon and Washoe Counties, Nevada. Nevada Bureau of Mines and Geology, Open-File Report 05-9. [Web Page]. Located at <http://pubs.nbmgs.unr.edu/Geol-map-Fernley-East-quad-p/of2005-09.htm>. Accessed: October 2016.
- Faulds, J.E., A.R. Ramelli, and C.D. Henry. 2008. Preliminary Geologic Map of the Fernley West Quadrangle, Lyon, Storey, and Washoe Counties, Nevada. Nevada Bureau of Mines and Geology, Open-File Report 08-4. [Web Page]. Located at

<http://pubs.nbmng.unr.edu/Geol-map-Fernley-West-quad-p/of2008-04.htm>.
Accessed: October 2016.

InfraTerra, Inc. 2017. Engineering Geology Report Paiute Pipeline Segment 4 Pyramid Lake Fault Crossing.

Maurer, D.K. 2011. Geologic Framework and Hydrogeology of the Middle Carson River Basin, Eagle, Dayton, and Churchill Valleys, West-Central Nevada. U.S Geological Survey, Scientific Investigations Report 2011-5055. [Web Page]. Located at <http://pubs.usgs.gov/sir/2011/5055/>. Accessed: October 2016.

Minobras. 1973. Nevada Industrial Minerals. P.36. [Web Page]. Located at <http://thediggings.com/mines/usgs10198080>. Accessed: January 16, 2017.

Morrison, R.B. 1964. Lake Lahontan: Geology of Southern Carson Desert, Nevada, Geological Survey Professional Paper 401.

Nevada Bureau of Mines and Geology (NBMG). 2015. Major Mines of Nevada 2014. Mineral Industries in Nevada's Economy.

NBMG. 2016. MyHAZARDS web application. [Web Page]. Located at <https://gisweb.unr.edu/MyHAZARDS/>. Accessed: October 2016.

NBMG. 2017. Personal Communication. [Apr 27 email to Heather Stoller, Arcadis, Las Vegas, Nevada. RE: Nevada Fault/Earthquake Questions Regarding Pipeline Installation]. R.D. Koehler, NBMG.

Nevada Division of Environmental Protection (NDEP). 2010. Nevada Integrated Source Water Protection Program. www.ndep.nv.gov/bwpc/sourcewater.htm. Accessed: December 2016.

NDEP. 2014. Nevada 2012 Water Quality Integrated Report with EPA Overlisting. https://ndep.nv.gov/bwqp/file/IR2012_Report_Final.pdf.

NDEP. 2016. Ambient Air Quality Monitoring Program -Table of Monitor Sites. [Web Page]. Located at <http://ndep.nv.gov/baqp/monitoring/sites.html>. Accessed: January 20, 2017.

Nevada Department of Wildlife (NDOW). 2016a. Personal Communication [September 9 Letter to L. Swierk Arcadis, Highlands Ranch, Colorado. RE: Paiute 2018 Expansion Project from Bonnie Weller, GIS Specialist/Biologist III, NDOW.]

Nevada Department of Wildlife (NDOW). 2016b. 2016-2017 Upland Game Bird, Rabbit, Dove and Crow Seasons, Limits, and Regulations. 2 pages. [Web Page]. Located at

http://www.ndow.org/uploadedFiles/ndoworg/Content/Wildlife_Education/Publications/Upland-Game-Brochure.pdf. Accessed: January 6, 2017.

Nevada Natural Heritage Program (NNHP). 2016. Personal Communication [September 12 Letter to L. Swierk Arcadis, Highlands Ranch, Colorado. RE: Data request received 08 September 2016 from Eric Miskow, Biologist/Data Manager, NNHP.]

NOAA National Weather Service, Office of Climate, Water and Weather Services, 30 year average (1986-2015). [Web page]. Located at <http://www.weather.gov/om/hazstats.shtml>. Accessed: April 30, 2017

National Resource Conservation Service (NRCS). 2016. Web Soil Survey. [Web Page]. Located at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: October 2016.

NRCS. 2017a. Web Soil Survey. [Web page]. Located at <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed: January 20167.

NRCS. 2017b. Prime Farmland. [Web page]. Located at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/null/?cid=nrcs143_014052. Accessed: January 2017.

Pipeline and Hazardous Materials Safety Administration (PHMSA). 2013. General Pipeline FAQs. Last updated January 23, 2013. [Web page]. Located at <https://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687cf7b00b0f22e4c6962d9c8789/?vgnextoid=a62924cc45ea4110VgnVCM1000009ed07898RCRD&vgnnextchannel=f7280665b91ac010VgnVCM1000008049a8c0RCRD>. Accessed: April 6, 2017.

PHMSA. 2015. Pipeline Incident 20 Year Trends: All-Reported Incident 20 Year Trend (filtered for onshore natural gas transmission). [Web page]. Located at http://opsweb.phmsa.dot.gov/primis_pdm/all_reported_inc_trend.asp. Accessed: April 27, 2017.

PHMSA. 2017. Significant incident files, 20 year average. [Web page]. Located at <http://primis.phmsa.dot.gov/comm/reports/safety/>. Accessed: April 27, 2017.

Ramelli, A.R., J.C. Yount, D.A. John, and L.J. Garside. 2014. Geologic Map of the Minden Quadrangle, Douglas County, Nevada and Alpine County, California. Nevada Bureau of Mines and Geology, Map 182. [Web Page]. Located at <http://pubs.nbmgs.unr.edu/Geol-Minden-quad-p/m182.htm>. Accessed: October 2016.

Riddle, J.E., Loyd, S.M., Branham, S.L., and C. Thomas. 2012. Images of America: Nevada State Prison. South Carolina: Arcadia Publishing. March 26.

- SSD, Inc. 2017. Assessment of the 12.75-Inch Diameter Paiute Segment 1 Gas Pipeline at the Genoa Fault Crossing and Development of Fault Crossing Design Recommendations.
- State Historic Preservation Office (SHPO). 2016. 2018 Paiute Pipeline Expansion Project, Nevada, Ref: CO002022.0001 / Docket No. PF17-2 / Undertaking #2017-4605. Letter from Rebecca Palmer, Nevada SHPO to Arcadis, U.S., Inc., December 14, 2016. 2 pages.
- State Wildlife Action Plan (SWAP_SoCP). 2012. Nevada Wildlife Action Plan. Nevada Department of Wildlife, Reno.
- U.S. Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. TR Y- 87-1. Vicksburg, MS: Environmental Laboratory, U.S. Army Corps of Engineers Waterways Experiment Station.
- USACE. 2010. Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Nobel. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Census Bureau. 2012. Statistical Abstract of the United States: 2012 (129th Edition) Washington, DC, 2009. [Web page]. Located at <https://www.census.gov/library/publications/2011/compendia/statab/131ed.htm>. Accessed: April 30, 2017.
- U.S. Department of Labor. Bureau of Labor Statistics (BLS). 2017. CPI Inflation Calculator. [Web page]. Located at https://www.bls.gov/data/inflation_calculator.htm. Accessed: April 28, 2017.
- U. S. Energy Information Administration (EIA). 2016. Annual Energy Outlook 2016: With Projections to 2040. [Web page]. Located at www.eia.gov/forecasts/aeo. Accessed: November 2, 2016.
- U.S. Environmental Protection Agency (EPA). 1971. "Noise from Construction Equipment and Operations, Building Equipment and Home Appliances," NTID300.1, December 31, 1971.
- U.S Geologic Society (USGS). 2000. Ground Water Atlas of the United States, California, Nevada, HA 730-B. https://pubs.usgs.gov/ha/ha730/ch_b/B-text2.html. Accessed December 2016.
- USGS. 2013. Nevada Flood Chronology. [Web Page]. Located at http://nevada.usgs.gov/water/Historic_Floods/Carson/decjan_1868.htm. Accessed: January 16, 2017.

- USGS. 2016. Quaternary Fault and Fold Database of the United States. [Web Page]. Located at <http://earthquake.usgs.gov/hazards/qfaults/>. Accessed: October 2016.
- U.S. Fish and Wildlife Service (USFWS). 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. [Web page]. Located at <https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>. Accessed: April 30, 2017. 85 pp.
- USFWS. 2016a. Wetlands Mapper. [Web page]. Located at <https://www.fws.gov/wetlands/data/mapper.HTML>. Accessed: December 2016.
- USFWS. 2016b. 08ENV00-2016-SLI-0477, List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. [Web Page]. Located at <http://ecos.fws.gov/ipac>. Accessed: September 7, 2016. [Segment 1]
- USFWS. 2016c. 08ENV00-2016-SLI-0478, List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project [Web Page]. Located at <http://ecos.fws.gov/ipac>. Accessed: September 7, 2016. [Segment 2]
- USFWS. 2016d. 08ENV00-2016-SLI-0479, List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. [Web Page]. Located at <http://ecos.fws.gov/ipac>. Accessed: September 7, 2016. [Segment 3]
- USFWS. 2016e. 08ENV00-2016-SLI-0480, List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project. [Web Page]. Located at <http://ecos.fws.gov/ipac>. Accessed: September 7, 2016. [Segment 4]

F. LIST OF PREPARERS

Federal Energy Regulatory Commission

Mallory, Christine – **Project Manager, Introduction, Water Resources, Vegetation, Wildlife, Threatened and Endangered Species, Land Use, Cumulative Impacts, Alternatives**

M.S., Environmental Management, 2013, Samford University

B.S., Biology, 2012, Stillman College

Rana, Tony – **Geology and Soils, Groundwater**

M.S., International Development, 2012, Tulane University Law School – Payson Center for International Development

Graduate Studies, Hydrogeology and Geochemistry, 1985-1988, Oklahoma State University

B.S. Geology, 1984, New Jersey City University

Augustino, Kylee – **Air Quality and Noise, Reliability and Safety**

M.S., Environmental Engineering, Johns Hopkins University, 2016

B.A. & Sc., Biology and Geography, McGill University, 2005

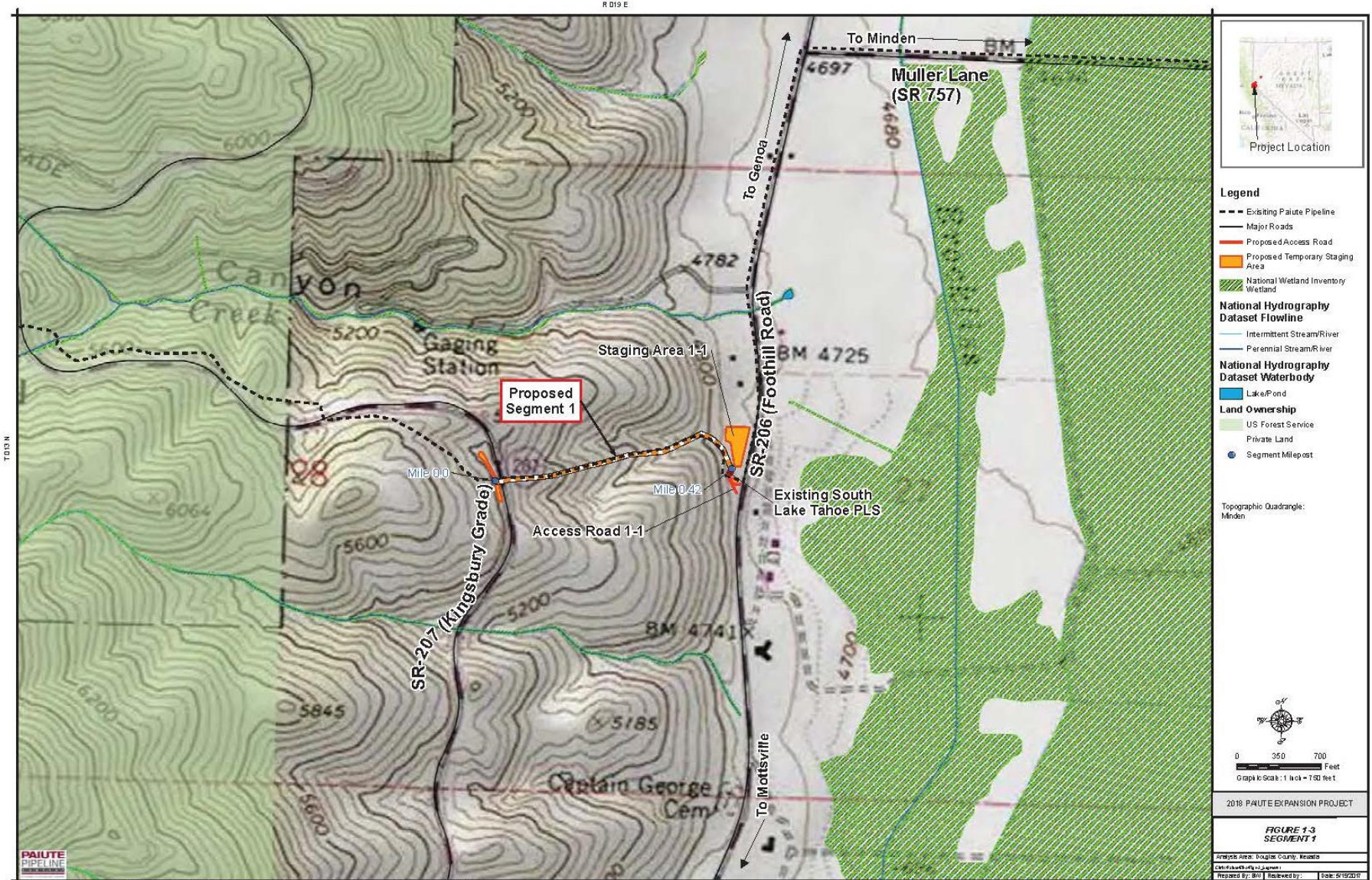
Howard, Eric – **Cultural Resources**

M.A., Anthropology, 1998, University of Tennessee

B.A., Anthropology, 1992, University of Tennessee

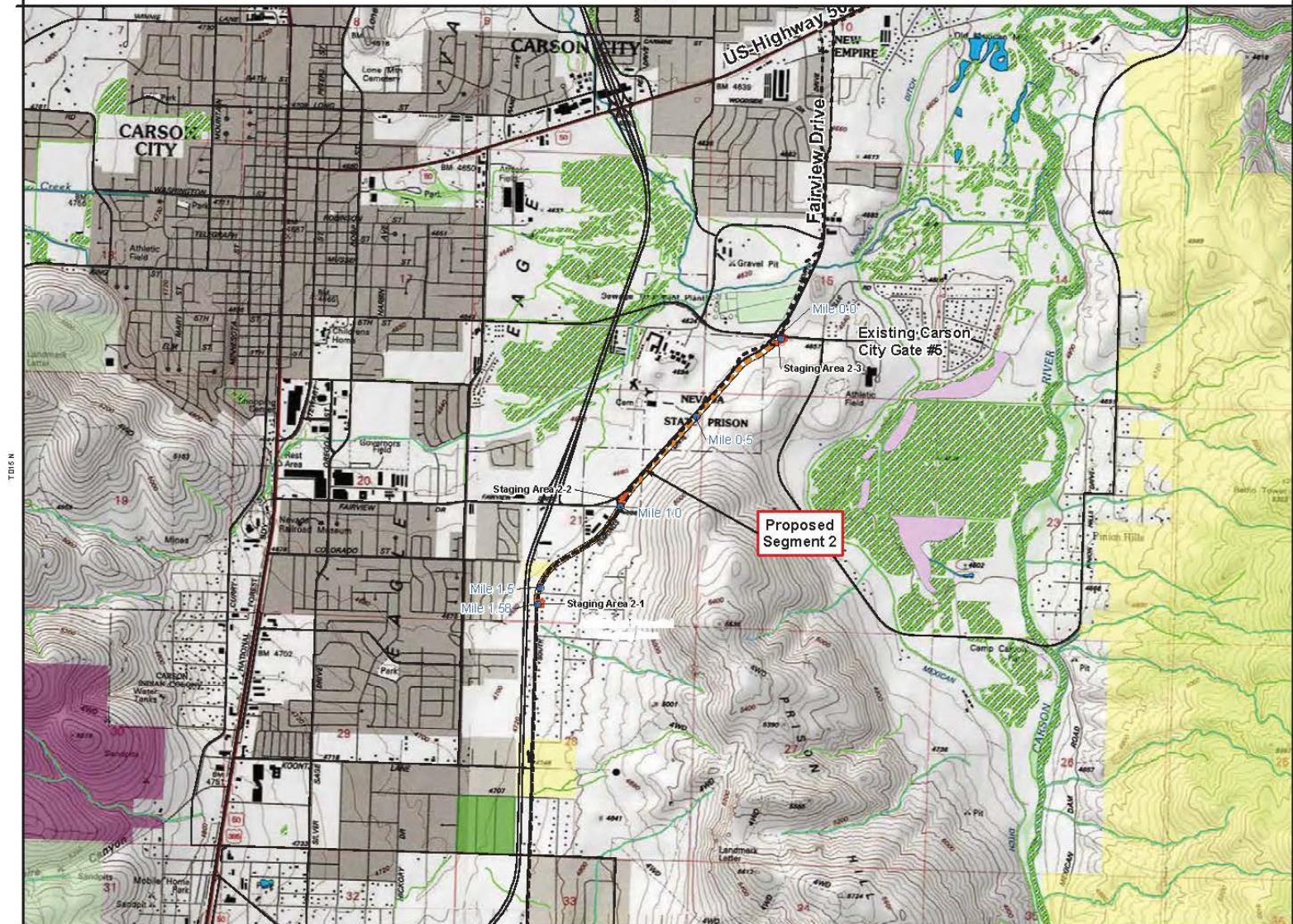
APPENDIX A

Project Maps



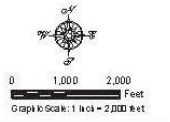
Source: Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox Labs, Swatchtopo, Mapbox, © OpenStreetMap contributors, and the GIS User Community. Contour data: 2013 National Wetland Inventory.

R020 E



- Legend**
- Proposed 2018 Paiute Expansion Project Segment
 - Existing Paiute Pipeline
 - Major Roads
 - Proposed Temporary Staging Area
 - National Wetland Inventory Wetland
- National Hydrography Dataset Flowline**
- Intermittent Stream/River
 - Perennial Stream/River
- National Hydrography Dataset Waterbody**
- Lake/Pond
 - Reservoir
 - Swamp/Marsh
- Land Ownership**
- US Forest Service
 - Private Land
 - NV State
 - Bureau of Land Management
 - Bureau of Indian Affairs
 - Segment Milepost

Topographic Quadrangle:
NewEmpire, 1977



2018 PAIUTE EXPANSION PROJECT

**FIGURE 1-4
SEGMENT 2**

Analysis Area: Municipality of Carson City, Nevada
City: Carson City, Nevada
Prepared by: BMD | Reviewed by: [redacted] | Date: 4/27/2011

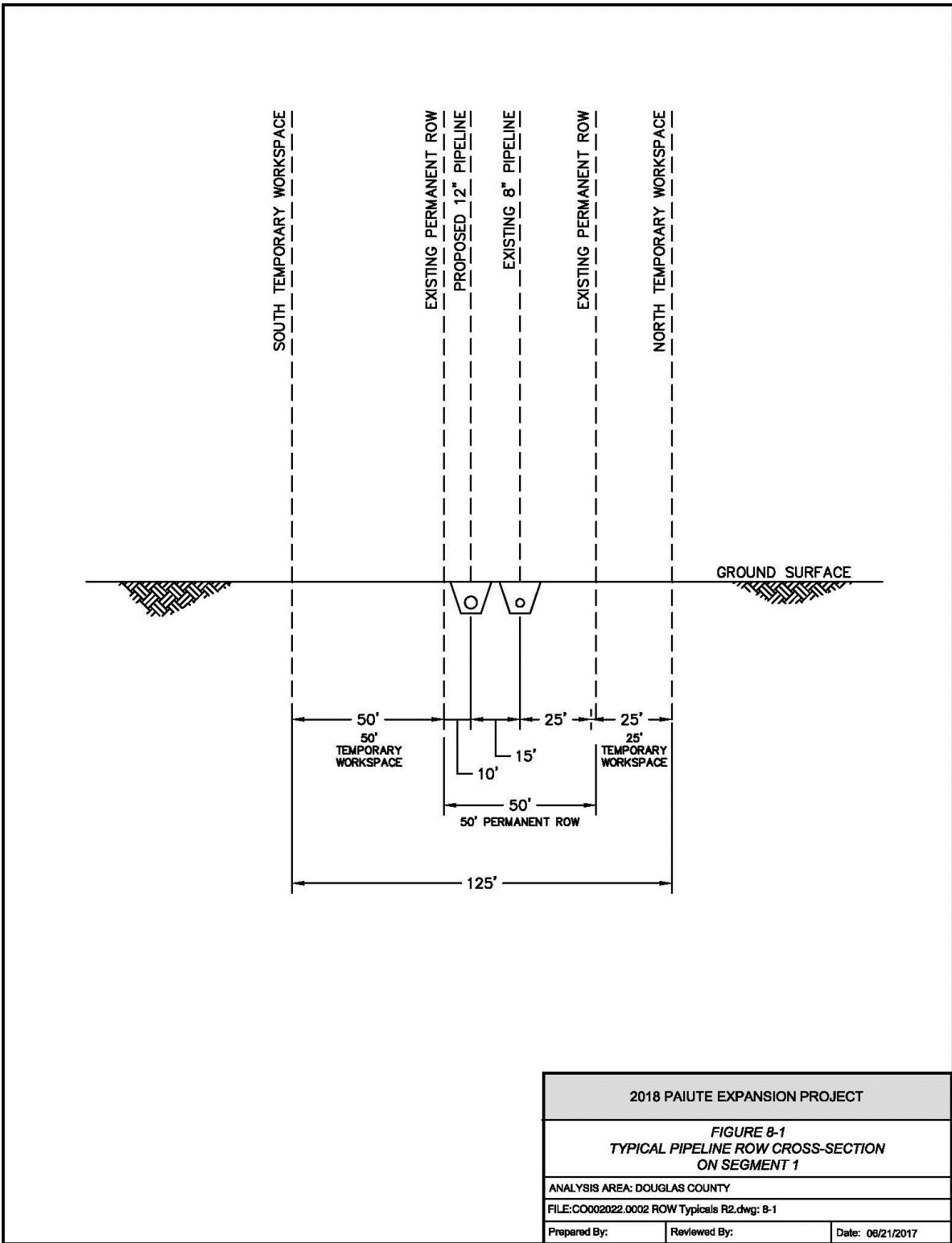
A-2

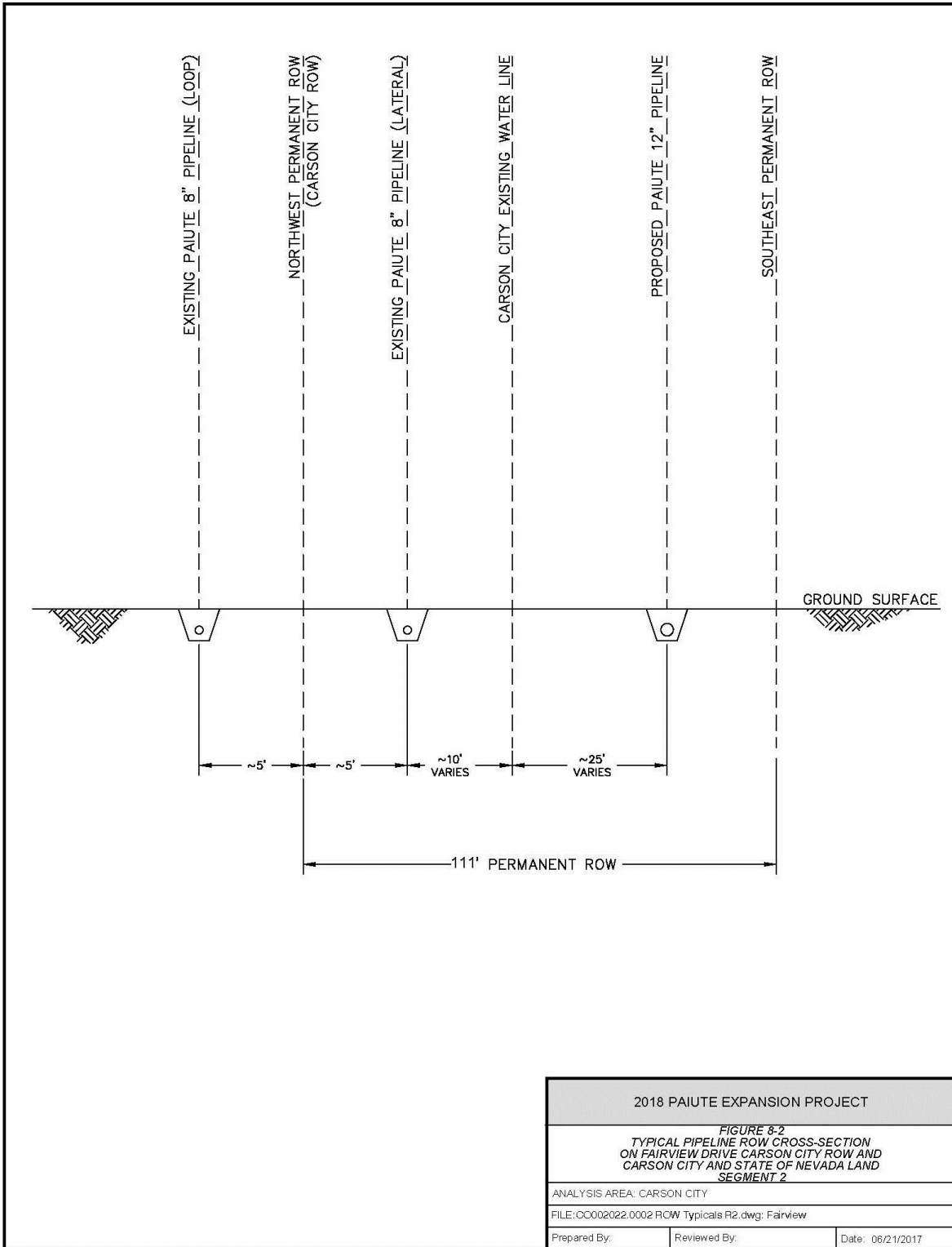
T019 N

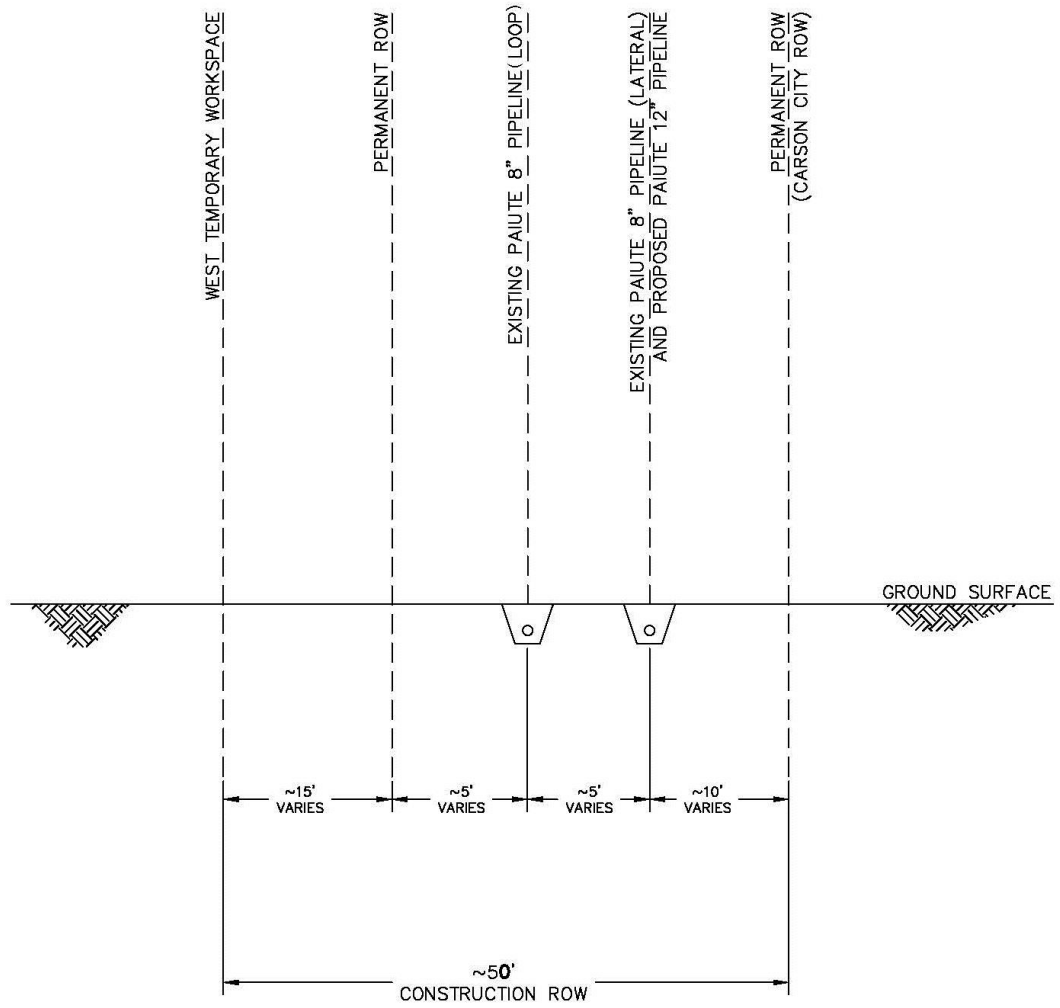
Source: Layer Center; Software: Esri, HERE, DeLorme, InRoads, Intermap, iTP Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapInfo Intl, OpendStreetMap contributors, and the GIS User Community
Copyright 2011, Esri. All rights reserved.

APPENDIX B

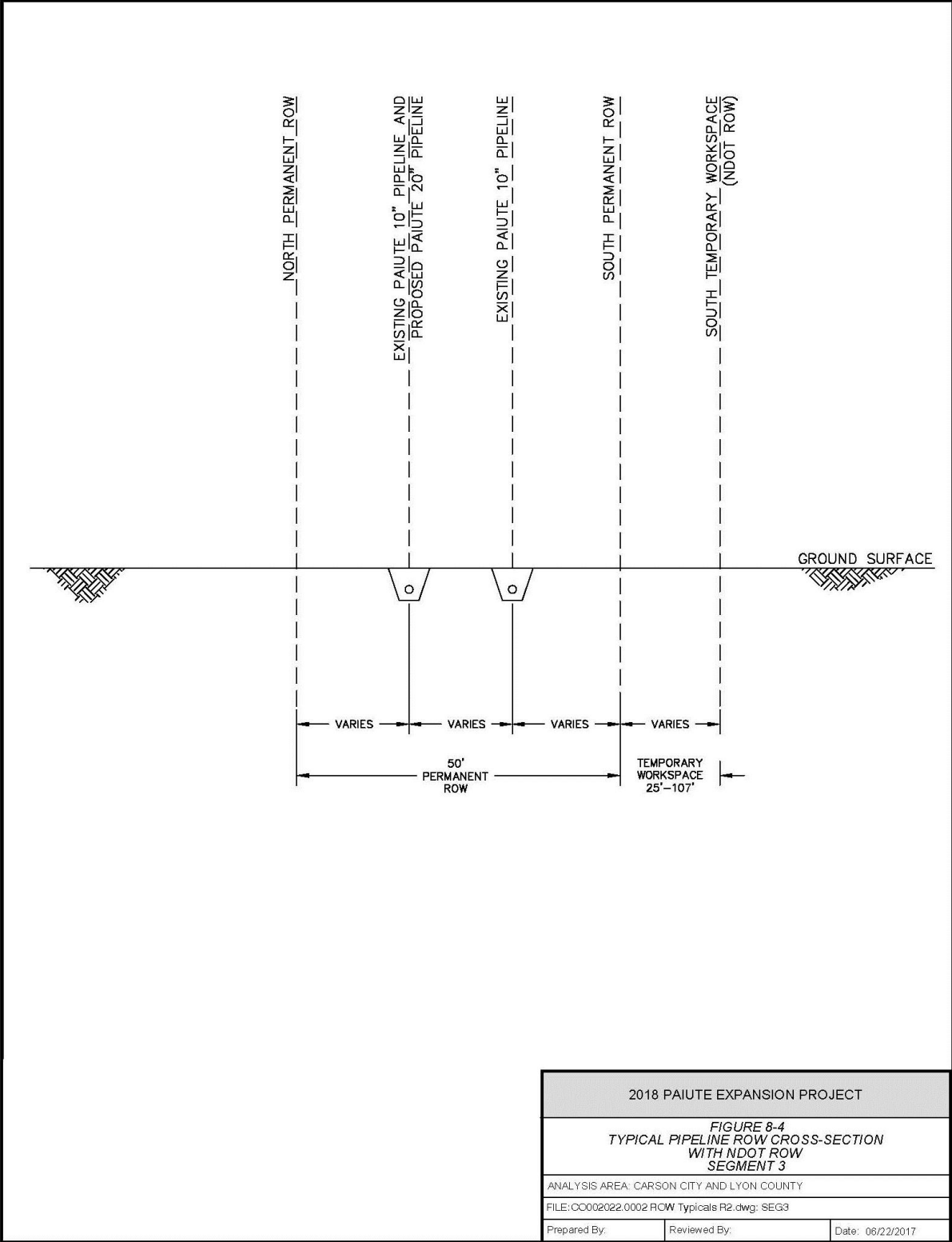
Typical Pipeline Right-of-Way Cross Section Diagrams



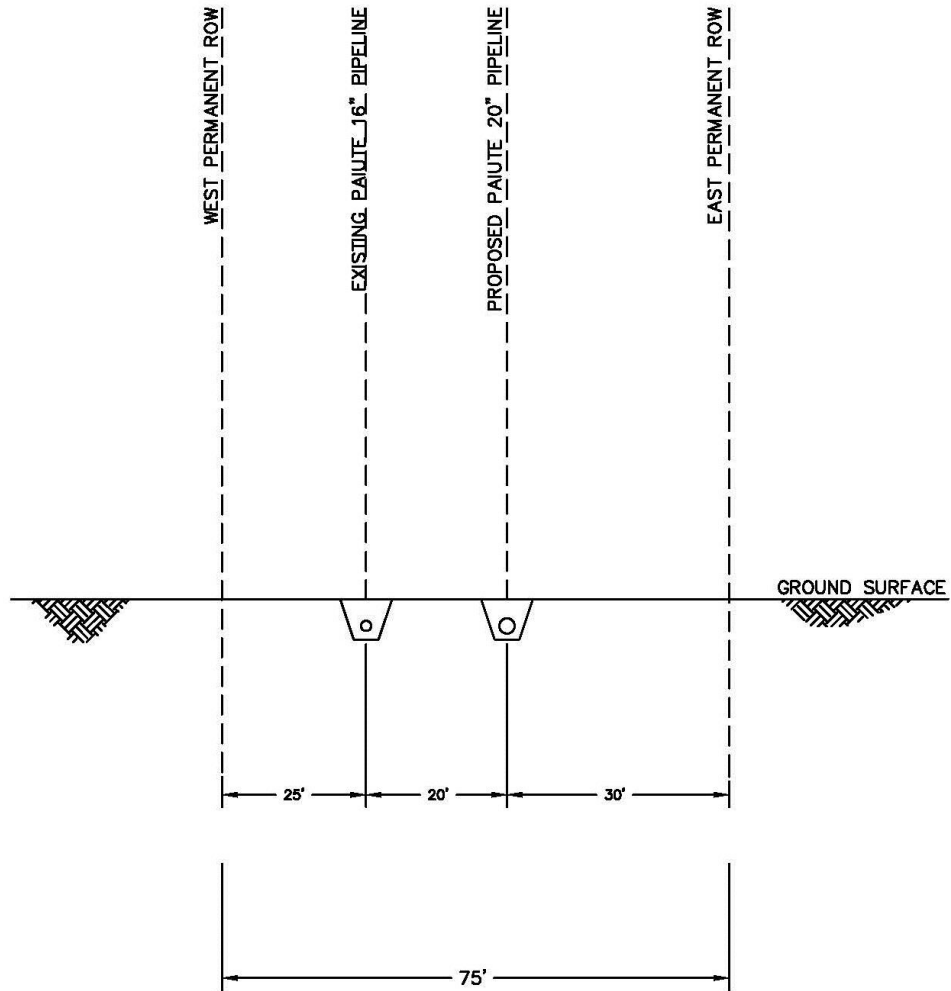




2018 PAIUTE EXPANSION PROJECT		
FIGURE 8-3 TYPICAL PIPELINE ROW CROSS-SECTION ON EDMONDS DRIVE, CARSON CITY ROW SEGMENT 2		
ANALYSIS AREA: CARSON CITY		
FILE: CO002022.0002 ROW Typical R2.dwg; Edmonds		
Prepared By:	Reviewed By:	Date: 06/22/2017



2018 PAIUTE EXPANSION PROJECT		
FIGURE 8-4 TYPICAL PIPELINE ROW CROSS-SECTION WITH NDOT ROW SEGMENT 3		
ANALYSIS AREA: CARSON CITY AND LYON COUNTY		
FILE:CC0002022.0002 ROW Typical R2.dwg; SEG3		
Prepared By:	Reviewed By:	Date: 06/22/2017



2018 PAIUTE EXPANSION PROJECT		
FIGURE 8-5 TYPICAL PIPELINE ROW CROSS-SECTION IN SEGMENT 4		
ANALYSIS AREA: CARSON CITY AND LYON COUNTY		
FILE: CO002022.0002 ROW Typical R2.dwg; SEG4		
Prepared By:	Reviewed By:	Date: 08/21/2017

APPENDIX C

Proposed Modifications to the FERC Plan and Procedures

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
1	General	General	Minor formatting changes	Project sponsor to Paiute, should to will, etc.	NA
2	I.A	I.A	Insertion	Where the Project Plan departs substantially from the FERC Plan, the Project specific text is highlighted by bold text. Other changes throughout the Project Plan are noted in italics. Very minor formatting changes (Project sponsor to Paiute, should to will, etc.) are not specifically called out in the Project Plan text.	NA
3	II.B.6	II.B.6	Modification	Ensuring the placement of slope breakers...	Ensuring that the design of slope breakers...
4	II.B.12	II.B.12	Insertion	Determining the need for and ensuring that erosion controls are properly installed to prevent...	Ensuring that erosion controls are properly installed to prevent...
5	II.B.15	II.B.15	Insertion	Keeping records of compliance with the environmental conditions of the FERC's Orders, and the mitigation measures proposed by Paiute in the application submitted to the FERC, and other federal, state, or local permits during active construction and restoration	Keeping records of compliance with the environmental conditions of the FERC's Orders, and the mitigation measures proposed by Paiute in the application submitted to the FERC, and other federal or state environmental permits during active construction and restoration
6	III.B	NA	Removed	Removed, Not Applicable <i>No drain tiles and irrigation systems identified within the Project area.</i>	Drain Tile and Irrigation Systems 1. Attempt to locate existing drain tiles and irrigation systems. 2. Contact landowners and local soil conservation authorities to determine the locations of future drain tiles that are likely to be installed within 3 years of the authorized construction. 3. Develop procedures for constructing through drain-tiled areas, maintaining irrigation systems during construction, and repairing drain tiles and irrigation systems after construction. 4. Engage qualified drain tile specialists, as needed to conduct or monitor repairs to drain tile systems affected by construction. Use drain tile specialists from the project area, if available.
7	III.C	NA	Removed	Removed, Not Applicable <i>Per the BLM, no grazing deferment plan was necessary for the Project.</i>	Grazing Deferment Develop grazing deferment plans with willing landowners, grazing permittees, and land management

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					agencies to minimize grazing disturbance of revegetation efforts.
8	III.E	III.C	Modification	Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., slash, mats, garbage, drill cuttings and fluids, excess rock) throughout the construction process. Off-site disposal in other than commercially operated disposal locations is subject to compliance with all applicable survey, landowner permission, and mitigation requirements.	Determine methods and locations for the regular collection, containment, and disposal of excess construction materials and debris (e.g., timber, slash, mats, garbage, drill cuttings and fluids, excess rock) throughout the construction process.
9	III.F.4	NA	Removed	Removed, Not Applicable <i>Blasting is not proposed.</i>	Develop specific blasting procedures in coordination with the appropriate agencies that address pre- and post-blast inspections; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs. Use appropriate methods (e.g., blasting mats) to prevent damage to nearby structures and to prevent debris from entering sensitive environmental resource areas.
10	III.I	III.G	Modification	Project construction is not planned to occur during winter weather conditions. Paiute shall develop and file a Project specific Winter Construction Plan with the Director if construction is required during winter weather conditions.	If construction is planned to occur during winter weather conditions, project sponsors shall develop and file a project-specific winter construction plan with the FERC application. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations. The plan shall address: 1. winter construction procedures (e.g., snow handling and removal, access road construction and maintenance, soil handling under saturated or frozen conditions, topsoil stripping); 2. stabilization and monitoring procedures if ground conditions will delay restoration until the following spring (e.g., mulching and erosion controls, inspection and reporting, stormwater control during spring thaw conditions); and 3. final restoration procedures (e.g., subsidence and compaction repair, topsoil replacement, seeding).

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

11	IV.A.2	IV.A.2	Insertion	<p>The construction right-of-way width for the Project shall not exceed that described in the FERC application unless otherwise modified by a Certificate condition.</p> <p>Segment 1 will use a 125-foot-wide construction right-of-way consisting of 50 feet of permanent right-of-way with an additional 25 feet of TWS on the north side and 50 feet of TWS on the south side of the permanent right-of-way to accommodate construction on steep slopes. The 50 feet of TWS in addition to the typical 75-foot-wide construction right-of-way is necessary in order to provide a safe work environment and promote effective implementation of various industry-standard construction techniques due to the steep grade. The proposed increase in the nominal construction right-of-way will not impact or prevent the implementation of other measures to provide for upland erosion control and protection of waterbodies. The proposed construction right-of-way will allow Paiute to implement the construction measures as identified in the Project Plan and Procedures while addressing site conditions and meeting OSHA regulations (29 CFR Part 1926.650-.652, Subpart P).</p> <p>At Segment 2, the total width of the construction right-of-way along Fairview Drive varies, but will use up to a width of 111-feet, consisting entirely of permanent right-of-way. The construction right-of-way along South Edmonds Drive is typically under 50-foot wide, consisting of on average a 25-foot-wide permanent right-of-way and a 15-foot-wide TWS. The TWS is needed due to the restricted workspace along South Edmonds Drive.</p> <p>Segment 3 will use a 50-foot to 158-foot-wide construction right-of-way consisting of 50 feet of</p>	<p>The construction right-of-way width for a project shall not exceed 75 feet or that described in the FERC application unless otherwise modified by a FERC Order. However, in limited, non-wetland areas, this construction right-of-way width may be expanded by up to 25 feet without Director approval to accommodate full construction right-of-way topsoil segregation and to ensure safe construction where topographic conditions (e.g., side-slopes) or soil limitations require it. Twenty-five feet of extra construction right-of-way width may also be used in limited, non-wetland or non-forested areas for truck turn-arounds where no reasonable alternative access exists.</p>
----	--------	--------	-----------	--	--

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				permanent right-of-way with up to an additional 108 feet of TWS. The TWS will facilitate safe construction and installation within NDOT right-of-way.	
12	IV.B.1	IV.B.1	Modification	Unless the landowner or land management agency specifically approves otherwise, Paiute will prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) except in the following areas: a. steep slopes greater than 30% or where shallow bedrock makes topsoil segregation not technically feasible and/or creates unsafe working conditions; b. paved areas, road shoulders, and areas previously graded and/or void of vegetation; and c. other areas at the landowner's or land managing agency's request.	Unless the landowner or land management agency specifically approves otherwise, prevent the mixing of topsoil with subsoil by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method) in: a. cultivated or rotated croplands, and managed pastures; b. residential areas; c. hayfields; and d. other areas at the landowner's or land managing agency's request.
13	IV.C	NA	Removed	Removed, Not Applicable <i>No drain tiles identified within the Project area.</i>	Drain Tiles 1. Mark locations of drain tiles damaged during construction. 2. Probe all drainage tile systems within the area of disturbance to check for damage. 3. Repair damaged drain tiles to their original or better condition. Do not use filter-covered drain tiles unless the local soil conservation authorities and the landowner agree. Use qualified specialists for testing and repairs. 4. For new pipelines in areas where drain tiles exist or are planned, ensure that the depth of cover over the pipeline is sufficient to avoid interference with drain tile systems. For adjacent pipeline loops in agricultural areas, install the new pipeline with at least the same depth of cover as the existing pipeline(s).
14	IV.D	NA	Removed	Removed, Not Applicable <i>No irrigation systems within Project area.</i>	Irrigation

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					Maintain water flow in crop irrigation systems, unless shutoff is coordinated with affected parties.
15	IV.F.4.h	NA	Removed	Removed, Not Applicable <i>No sensitive wildlife habitat identified within Project area.</i>	Do not use synthetic monofilament mesh/netted erosion control materials in areas designated as sensitive wildlife habitat, unless the product is specifically designed to minimize harm to wildlife. Anchor erosion control fabric with staples or other appropriate devices.
16	NA	IV.F.4.h	Inserted	Install erosion control fabric on waterbody banks at the time of final bank recontouring. Anchor the erosion control fabric with staples or other appropriate devices.	NA
17	V.A.1	V.A.1	Inserted	Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) until conditions allow completion of cleanup. Paiute shall file with the Secretary for the review and written approval of the Director, a Project specific Winterization Plan if construction will continue into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring. A travel lane may be left open temporarily to allow access by construction traffic if the temporary erosion control structures are installed as specified in section IV.D. and inspected and maintained as specified in sections II.B.12 through 14. When access is no longer required the travel lane must be removed and the right-of-way restored.	Commence cleanup operations immediately following backfill operations. Complete final grading, topsoil replacement, and installation of permanent erosion control structures within 20 days after backfilling the trench (10 days in residential areas). If seasonal or other weather conditions prevent compliance with these time frames, maintain temporary erosion controls (i.e., temporary slope breakers, sediment barriers, and mulch) until conditions allow completion of cleanup. If construction or restoration unexpectedly continues into the winter season when conditions could delay successful decompaction, topsoil replacement, or seeding until the following spring, file with the Secretary for the review and written approval of the Director, a winter construction plan (as specified in section III.I). This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.
18	V.A.3	V.A.3	Inserted	Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench will be distributed across the right-of-way in a	Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. Rock that is not returned to the trench shall be considered construction debris, unless approved for use

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				manner similar to adjacent areas not disturbed by construction. The remaining rock may be used as barriers to recreational vehicles, buried within the construction work space with approval from the landowner or land managing agency, or disposed of at a commercially operated facility.	as mulch or for some other use on the construction work areas by the landowner or land managing agency.
19	V.B.1.d	V.B.1.d	Modified	d. At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody and where needed to avoid draining a waterbody. <i>No wetlands within Project area.</i>	At a minimum, install a trench breaker at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from a waterbody or wetland and where needed to avoid draining a waterbody or wetland. Install trench breakers at wetland boundaries, as specified in the Procedures. Do not install trench breakers within a wetland.
20	V.C.2	NA	Removed	Removed, Not Applicable <i>No agricultural areas within Project area.</i>	Plow severely compacted agricultural areas with a paraplow or other deep tillage implement. In areas where topsoil has been segregated, plow the subsoil before replacing the segregated topsoil. If subsequent construction and cleanup activities result in further compaction, conduct additional tilling.
21	V.D.2	NA	Removed	Removed, Not Applicable <i>No soil additives were recommended by NRCS, other land management agencies, or landowners.</i>	Soil Additives Fertilize and add soil pH modifiers in accordance with written recommendations obtained from the local soil conservation authority, land management agencies, or landowner. Incorporate recommended soil pH modifier and fertilizer into the top 2 inches of soil as soon as practicable after application.
22	V.D.3.f	NA	Removed	Removed, Not Applicable <i>No legume seed proposed.</i>	Treat legume seed with an inoculant specific to the species using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydro).
23	VI	NA	Removed	Removed, Not Applicable <i>No forested lands would be crossed. However, Paiute proposes to implement measures that would discourage unnecessary traffic on the restored right-of way (i.e., signage, temporary fencing, large rocks).</i>	OFF-ROAD VEHICLE CONTROL To each owner or manager of forested lands, offer to install and maintain measures to control unauthorized vehicle access to the right-of-way. These measures may include: A. Signs B. Fences with Locking Gates

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Upland Erosion Control, Revegetation and Maintenance Plan**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					C. Slash and Timber Barriers, Pipe Barriers, or a Line of Boulders across the Right-of-Way D. Conifers or Other Appropriate Trees or Shrubs across the Right-of-Way
24	VI.A.2	VI.A.2	Modified	Revegetation shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. <i>No agricultural areas would be crossed by the Project.</i>	Revegetation in non-agricultural areas shall be considered successful if upon visual survey the density and cover of non-nuisance vegetation are similar in density and cover to adjacent undisturbed lands. In agricultural areas, revegetation shall be considered successful when upon visual survey, crop growth and vigor are similar to adjacent undisturbed portions of the same field, unless the easement agreement specifies otherwise.
25	VI.B.1	VI.B.1	Modified	Paiute shall maintain records that identify by milepost: a. method of application, application rate, and type of seed, and mulch used; b. acreage treated; c. dates of backfilling and seeding; d. names of landowners requesting special seeding treatment and a description of the follow-up actions; and e. any problem areas and how they were addressed. <i>No subsurface drainage systems were identified within the Project area.</i>	The project sponsor shall maintain records that identify by milepost: a. method of application, application rate, and type of fertilizer, pH modifying agent, seed, and mulch used; b. acreage treated; c. dates of backfilling and seeding; d. names of landowners requesting special seeding treatment and a description of the follow-up actions; e. the location of any subsurface drainage repairs or improvements made during restoration; and f. any problem areas and how they were addressed.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
1	General	General	Minor formatting changes	Project sponsor to Paiute, should to will, etc.	NA
2	I.A	I.A	Insertion	Where the 2018 Project Procedures departs substantially from the FERC Procedures, the Project specific text is highlighted by bold text. Other changes throughout the Project Procedures are noted in italics. Very minor formatting changes (Project sponsor to Paiute, should to will, etc.) are not specifically called out in the Paiute Project Procedures text.	NA
3	I.B.1	I.B.1	Insertion	No intermediate or major waterbodies have been identified in or near the Project area and no construction within larger waterbodies is anticipated.	
4	I.B.2	I.B.2	Insertion	No wetlands have been identified in or near the Project area and no construction within wetlands is anticipated. The term wetland has been removed from the Project Procedures. If construction is required within wetlands Paiute shall revise the Project Procedures to incorporate considerations for the protection of wetlands.	NA
5	II.B	NA	Insertion, Deletion	The following information must be filed with the Secretary prior to the beginning of construction. These filing requirements do not apply to projects constructed under the automatic authorization provisions in the FERC's regulations: 1. Spill Prevention and Response Procedures specified in section IV.A; a schedule identifying when trenching or blasting will occur within each waterbody greater than 10 feet wide. Paiute will revise the schedule as necessary to provide FERC staff at least 14 days advance notice. Changes within this last	The following information must be filed with the Secretary prior to the beginning of construction. These filing requirements do not apply to projects constructed under the automatic authorization provisions in the FERC's regulations: 1. Spill Prevention and Response Procedures specified in section IV.A; 2. a schedule identifying when trenching or blasting will occur within each waterbody greater than 10 feet wide, within any designated coldwater fishery, and within any waterbody identified as habitat for federally-listed threatened or endangered species. The project sponsor will revise the schedule as

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				<p>14-day period must provide for at least 48 hours advance notice; (no blasting proposed)</p> <p>2. a wetland delineation report as described in section VI.A.1, if applicable; and</p> <p>3. the hydrostatic testing information specified in section VII.B.3.</p> <p>Extra workspace will be required within 50 feet of State of Nevada Waters due to existing land use or topographic limitations at the locations indicated in table 11.</p>	<p>necessary to provide FERC staff at least 14 days advance notice. Changes within this last 14-day period must provide for at least 48 hours advance notice;</p> <p>3. plans for horizontal directional drills (HDD) under wetlands or waterbodies, specified in section V.B.6.d;</p> <p>4. site-specific plans for major waterbody crossings, described in section V.B.9;</p> <p>5. a wetland delineation report as described in section VI.A.1, if applicable; and</p> <p>6. the hydrostatic testing information specified in section VII.B.3.</p>
6	V.A.1	V.A.1	Modification	Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate waterbody crossing permits, if applicable.	Apply to the U.S. Army Corps of Engineers (COE), or its delegated agency, for the appropriate waterbody crossing permits.
7	V.B.1	V.B.1	Modification	No instream work will occur within any coldwater, coolwater or warmwater fishery. If construction is required within any coldwater, coolwater or warmwater fishery, Paiute shall revise the Project Procedures to incorporate considerations for the timing of construction activities.	Unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis, instream work, except that required to install or remove equipment bridges, must occur during the following time windows: a. coldwater fisheries - June 1 through September 30; and b. coolwater and warmwater fisheries - June 1 through November 30.
8	V.B.2.b	V.B.2.b	Insertion	Extra workspace will be required within 50 feet of State of Nevada Waters due to existing land use or topographic limitations at the locations indicated in table 11.	NA
9	V.B.3.c	V.B.3.c	Modification	Paiute is required to install the pipeline parallel to the following ephemeral drainages designated as State of Nevada Waters and will be unable to maintain a 15-foot vegetated buffer between the ephemeral drainage and the construction right-of-way.	Where pipelines parallel a waterbody, maintain at least 15 feet of undisturbed vegetation between the waterbody (and any adjacent wetland) and the construction right-of-way, except where maintaining this offset will result in greater environmental impact.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				(1) U-03, U-04, U-06, and U-08 on Segment 2; and (2) U-12, U-13, U-14, and U-22 on Segment 3. <i>See Change Number 16 for further justification.</i>	
10	V.B.4.a	V.B.4.a	Modification	All spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings , must be placed in the construction right-of-way at least 10 feet from the water's edge or in additional extra work areas as described in section V.B.2.	NA
11	V.B.5	NA	Removed	Removed, Not Applicable <i>No equipment bridges are proposed.</i>	Equipment Bridges a. Only clearing equipment and equipment necessary for installation of equipment bridges may cross waterbodies prior to bridge installation. Limit the number of such crossings of each waterbody to one per piece of clearing equipment. b. Construct and maintain equipment bridges to allow unrestricted flow and to prevent soil from entering the waterbody. Examples of such bridges include: i. equipment pads and culvert(s); ii. equipment pads or railroad car bridges without culverts; iii. clean rock fill and culvert(s); and iv. flexi-float or portable bridges. v. Additional options for equipment bridges may be utilized that achieve the performance objectives noted above. Do not use soil to construct or stabilize equipment bridges. c. Design and maintain each equipment bridge to withstand and pass the highest flow expected to occur while the bridge is in place. Align culverts to prevent bank erosion or streambed scour. If necessary, install energy dissipating devices downstream of the culverts.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<ul style="list-style-type: none"> d. Design and maintain equipment bridges to prevent soil from entering the waterbody. e. Remove temporary equipment bridges as soon as practicable after permanent seeding. f. If there will be more than 1 month between final cleanup and the beginning of permanent seeding and reasonable alternative access to the right-of-way is available, remove temporary equipment bridges as soon as practicable after final cleanup. g. Obtain any necessary approval from the COE, or the appropriate state agency for permanent bridges.
12	V.B.6	NA	Removed	<p>Removed, Not Applicable <i>The Project would not cross waterbodies that support fisheries.</i></p>	<p>Dry-Ditch Crossing Methods</p> <ul style="list-style-type: none"> a. Unless approved otherwise by the appropriate federal or state agency, install the pipeline using one of the dry-ditch methods outlined below for crossings of waterbodies up to 30 feet wide (at the water's edge at the time of construction) that are state-designated as either coldwater or significant coolwater or warmwater fisheries, or federally- designated as critical habitat. b. Dam and Pump <ul style="list-style-type: none"> i. The dam-and-pump method may be used without prior approval for crossings of waterbodies where pumps can adequately transfer streamflow volumes around the work area, and there are no concerns about sensitive species passage. ii. Implementation of the dam-and-pump crossing method must meet the following performance criteria: <ul style="list-style-type: none"> (1) use sufficient pumps, including on-site backup pumps, to maintain downstream flows; (2) construct dams with materials that prevent sediment and other pollutants from entering the waterbody (e.g., sandbags or clean gravel with plastic liner);

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>(3) screen pump intakes to minimize entrainment of fish;</p> <p>(4) prevent streambed scour at pump discharge; and</p> <p>(5) continuously monitor the dam and pumps to ensure proper operation throughout the waterbody crossing.</p> <p>c. Flume Crossing The flume crossing method requires implementation of the following steps:</p> <p>i. install flume pipe after blasting (if necessary), but before any trenching;</p> <p>ii. use sand bag or sand bag and plastic sheeting diversion structure or equivalent to develop an effective seal and to divert stream flow through the flume pipe (some modifications to the stream bottom may be required to achieve an effective seal);</p> <p>iii. properly align flume pipe(s) to prevent bank erosion and streambed scour;</p> <p>iv. do not remove flume pipe during trenching, pipelaying, or backfilling activities, or initial streambed restoration efforts; and</p> <p>v. remove all flume pipes and dams that are not also part of the equipment bridge as soon as final cleanup of the stream bed and bank is complete.</p> <p>d. Horizontal Directional Drill For each waterbody or wetland that would be crossed using the HDD method, file with the Secretary for the review and written approval by the Director, a plan that includes:</p> <p>i. site-specific construction diagrams that show the location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction;</p> <p>ii. justification that disturbed areas are limited to the minimum needed to construct the crossing;</p>

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<ul style="list-style-type: none"> iii. identification of any aboveground disturbance or clearing between the HDD entry and exit workspaces during construction; iv. a description of how an inadvertent release of drilling mud would be contained and cleaned up; and v. a contingency plan for crossing the waterbody or wetland in the event the HDD is unsuccessful and how the abandoned drill hole would be sealed, if necessary. <p>The requirement to file HDD plans does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.</p>
13	V.B.8	NA	Removed	Removed, Not Applicable	<p>Crossings of Intermediate Waterbodies Where a dry-ditch crossing is not required, intermediate waterbodies may be crossed using the open-cut crossing method, with the following restrictions:</p> <ul style="list-style-type: none"> a. complete instream construction activities (not including blasting and other rock breaking measures) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible; b. limit use of equipment operating in the waterbody to that needed to construct the crossing; and c. all other construction equipment must cross on an equipment bridge as specified in section V.B.5.
14	V.B.9	NA	Removed	Removed, Not Applicable	<p>Crossings of Major Waterbodies Before construction, the project sponsor shall file with the Secretary for the review and written approval by the Director a detailed, site-specific construction plan and scaled drawings identifying all areas to be disturbed by construction for each major waterbody crossing (the scaled drawings are not required for any offshore portions of pipeline projects). This plan must be developed in consultation with the appropriate state and federal agencies and shall include extra</p>

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					work areas, spoil storage areas, sediment control structures, etc., as well as mitigation for navigational issues. The requirement to file major waterbody crossing plans does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations. The Environmental Inspector may adjust the final placement of the erosion and sediment control structures in the field to maximize effectiveness.
15	V.C.1	NA	Removed	Removed, Not Applicable <i>The Project does not cross waterbodies that support fisheries.</i>	Use clean gravel or native cobbles for the upper 1 foot of trench backfill in all waterbodies that contain coldwater fisheries.
16	V.D.1	NA	Modified	Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points. <i>An ephemeral drainage parallels Segment 1 and is within 25 feet of the construction right-of-way. However, due to the steep grade of the right-of-way, it does not support vehicular travel and no routine vegetation clearing would occur along Segment 1.</i>	Limit routine vegetation mowing or clearing adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire construction right-of-way. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees that are located within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating may be cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in riparian areas that are between HDD entry and exit points.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				<p><i>There are twelve ephemeral drainages that parallel Segments 2 and 3 that are within 25 feet of the construction right-of-way. Due to the location of these pipeline segments within Carson City and the NDOT rights-of-way, Paiute would not conduct routine vegetation mowing. Any routine vegetation mowing would be conducted by either Carson City or NDOT. In addition, these ephemeral drainages run parallel to roadways, have been heavily reinforced with rip-rap, and there is little to no vegetation buffering the waterbody.</i></p> <p><i>One ephemeral drainage, U42, parallels Segment 4 and is within 25 feet of the construction right-of-way. This drainage is outside of the construction right-of-way and the proposed permanent right-of-way. Paiute would not mow the vegetation buffering this drainage during construction or during operations.</i></p>	
17	VI.A	VI.A	Modified	<p>Paiute has conducted a wetland delineation using the current federal methodology and filed a wetland delineation report with the Secretary. No wetlands have been identified in or near the Project area and no construction within wetlands is anticipated. The term wetland has been removed from the Project Procedures. If construction is required within wetlands Paiute shall revise the Project Procedures to incorporate considerations for the protection of wetlands.</p>	<p>The project sponsor shall conduct a wetland delineation using the current federal methodology and file a wetland delineation report with the Secretary before construction. The requirement to file a wetland delineation report does not apply to projects constructed under the automatic authorization provisions in the FERC's regulations.</p> <p>This report shall identify:</p> <ul style="list-style-type: none"> a. by milepost all wetlands that would be affected; b. the National Wetlands Inventory (NWI) classification for each wetland; c. the crossing length of each wetland in feet; and d. the area of permanent and temporary disturbance that would occur in each wetland by NWI classification type. <p>The requirements outlined in this section do not apply to wetlands in actively cultivated or rotated cropland. Standard upland protective measures, including</p>

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>workspace and topsoiling requirements, apply to these agricultural wetlands.</p> <ol style="list-style-type: none"> 2. Route the pipeline to avoid wetland areas to the maximum extent possible. If a wetland cannot be avoided or crossed by following an existing right-of-way, route the new pipeline in a manner that minimizes disturbance to wetlands. Where looping an existing pipeline, overlap the existing pipeline right-of-way with the new construction right-of-way. In addition, locate the loop line no more than 25 feet away from the existing pipeline unless site-specific constraints would adversely affect the stability of the existing pipeline. 3. Limit the width of the construction right-of-way to 75 feet or less. Prior written approval of the Director is required where topographic conditions or soil limitations require that the construction right-of-way width within the boundaries of a federally delineated wetland be expanded beyond 75 feet. Early in the planning process the project sponsor is encouraged to identify site-specific areas where excessively wide trenches could occur and/or where spoil piles could be difficult to maintain because existing soils lack adequate unconfined compressive strength. 4. Wetland boundaries and buffers must be clearly marked in the field with signs and/or highly visible flagging until construction-related ground disturbing activities are complete. 5. Implement the measures of sections V and VI in the event a waterbody crossing is located within or adjacent to a wetland crossing. If all measures of sections V and VI cannot be met, the project sponsor must file with the Secretary a site-specific crossing plan for review and written approval by the Director before construction. This crossing plan shall address at a minimum:

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<ul style="list-style-type: none"> a. spoil control; b. equipment bridges; c. restoration of waterbody banks and wetland hydrology; d. timing of the waterbody crossing; e. method of crossing; and f. size and location of all extra work areas. <p>6. Do not locate aboveground facilities in any wetland, except where the location of such facilities outside of wetlands would prohibit compliance with U.S. Department of Transportation regulations.</p>
18	VI.B	NA	Removed	Removed, Not Applicable	<p>1. Extra Work Areas and Access Roads</p> <ul style="list-style-type: none"> a. Locate all extra work areas (such as staging areas and additional spoil storage areas) at least 50 feet away from wetland boundaries, except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. b. The project sponsor shall file with the Secretary for review and written approval by the Director, site-specific justification for each extra work area with a less than 50-foot setback from wetland boundaries, except where adjacent upland consists of cultivated or rotated cropland or other disturbed land. The justification must specify the site-specific conditions that will not permit a 50-foot setback and measures to ensure the wetland is adequately protected. c. The construction right-of-way may be used for access when the wetland soil is firm enough to avoid rutting or the construction right-of-way has been appropriately stabilized to avoid rutting (e.g., with timber riprap, prefabricated equipment mats, or terra mats). d. In wetlands that cannot be appropriately stabilized, all construction equipment other than that needed to install the wetland crossing shall use access roads located in upland areas. Where

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>access roads in upland areas do not provide reasonable access, limit all other construction equipment to one pass through the wetland using the construction right-of-way.</p> <p>e. The only access roads, other than the construction right-of-way, that can be used in wetlands are those existing roads that can be used with no modifications or improvements, other than routine repair, and no impact on the wetland.</p> <p>2. Crossing Procedures</p> <p>a. Comply with COE, or its delegated agency, permit terms and conditions.</p> <p>b. Assemble the pipeline in an upland area unless the wetland is dry enough to adequately support skids and pipe.</p> <p>c. Use “push-pull” or “float” techniques to place the pipe in the trench where water and other site conditions allow.</p> <p>d. Minimize the length of time that topsoil is segregated and the trench is open. Do not trench the wetland until the pipeline is assembled and ready for lowering in.</p> <p>e. Limit construction equipment operating in wetland areas to that needed to clear the construction right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench, and restore the construction right-of-way.</p> <p>f. Cut vegetation just above ground level, leaving existing root systems in place, and remove it from the wetland for disposal.</p> <p>g. The project sponsor can burn woody debris in wetlands, if approved by the COE and in accordance with state and local regulations, ensuring that all remaining woody debris is removed for disposal.</p> <p>h. Limit pulling of tree stumps and grading activities to directly over the trenchline. Do not grade or</p>

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>remove stumps or root systems from the rest of the construction right-of-way in wetlands unless the Chief Inspector and Environmental Inspector determine that safety-related construction constraints require grading or the removal of tree stumps from under the working side of the construction right-of-way.</p> <ul style="list-style-type: none"> i. Segregate the top 1 foot of topsoil from the area disturbed by trenching, except in areas where standing water is present or soils are saturated. Immediately after backfilling is complete, restore the segregated topsoil to its original location. j. Do not use rock, soil imported from outside the wetland, tree stumps, or brush riprap to support equipment on the construction right-of-way. k. If standing water or saturated soils are present, or if construction equipment causes ruts or mixing of the topsoil and subsoil in wetlands, use low-ground-weight construction equipment, or operate normal equipment on timber riprap, prefabricated equipment mats, or terra mats. l. Remove all project-related material used to support equipment on the construction right-of-way upon completion of construction. <p>3. Temporary Sediment Control Install sediment barriers (as defined in section IV.F.3.a of the Plan) immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers must be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Except as noted below in section VI.B.3.c, maintain sediment barriers until replaced by permanent erosion controls or restoration of adjacent upland areas is complete. Temporary erosion and sediment control measures are addressed in more detail in the Plan.</p> <ul style="list-style-type: none"> a. Install sediment barriers across the entire

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>construction right-of-way immediately upslope of the wetland boundary at all wetland crossings where necessary to prevent sediment flow into the wetland.</p> <p>b. Where wetlands are adjacent to the construction right-of-way and the right-of-way slopes toward the wetland, install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil within the construction right-of-way and prevent sediment flow into the wetland.</p> <p>c. Install sediment barriers along the edge of the construction right-of-way as necessary to contain spoil and sediment within the construction right-of-way through wetlands. Remove these sediment barriers during right-of-way cleanup.</p> <p>4. Trench Dewatering Dewater the trench (either on or off the construction right-of-way) in a manner that does not cause erosion and does not result in silt-laden water flowing into any wetland. Remove the dewatering structures as soon as practicable after the completion of dewatering activities.</p>
19	VI.C	NA	Removed	Removed, Not Applicable	<ol style="list-style-type: none"> 1. Where the pipeline trench may drain a wetland, construct trench breakers at the wetland boundaries and/or seal the trench bottom as necessary to maintain the original wetland hydrology. 2. Restore pre-construction wetland contours to maintain the original wetland hydrology. 3. For each wetland crossed, install a trench breaker at the base of slopes near the boundary between the wetland and adjacent upland areas. Install a permanent slope breaker across the construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from the wetland, or as needed to prevent sediment transport into the

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>wetland. In addition, install sediment barriers as outlined in the Plan. In some areas, with the approval of the Environmental Inspector, an earthen berm may be suitable as a sediment barrier adjacent to the wetland.</p> <ol style="list-style-type: none"> 4. Do not use fertilizer, lime, or mulch unless required in writing by the appropriate federal or state agency. 5. Consult with the appropriate federal or state agencies to develop a project- specific wetland restoration plan. The restoration plan shall include measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of invasive species and noxious weeds (e.g., purple loosestrife and phragmites), and monitoring the success of the revegetation and weed control efforts. Provide this plan to the FERC staff upon request. 6. Until a project-specific wetland restoration plan is developed and/or implemented, temporarily revegetate the construction right-of-way with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present). 7. Ensure that all disturbed areas successfully revegetate with wetland herbaceous and/or woody plant species. 8. Remove temporary sediment barriers located at the boundary between wetland and adjacent upland areas after revegetation and stabilization of adjacent upland areas are judged to be successful as specified in section VII.A.4 of the Plan.
20	VI.D	NA	Removed	Removed, Not Applicable	<ol style="list-style-type: none"> 1. Do not conduct routine vegetation mowing or clearing over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic corrosion/leak surveys, a corridor centered on the pipeline and up to 10 feet wide

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>may be cleared at a frequency necessary to maintain the 10-foot corridor in an herbaceous state. In addition, trees within 15 feet of the pipeline with roots that could compromise the integrity of pipeline coating may be selectively cut and removed from the permanent right-of-way. Do not conduct any routine vegetation mowing or clearing in wetlands that are between HDD entry and exit points.</p> <ol style="list-style-type: none"> 2. Do not use herbicides or pesticides in or within 100 feet of a wetland, except as allowed by the appropriate federal or state agency. 3. Time of year restrictions specified in section VII.A.5 of the Plan (April 15 – August 1 of any year) apply to routine mowing and clearing of wetland areas. 4. Monitor and record the success of wetland revegetation annually until wetland revegetation is successful. 5. Wetland revegetation shall be considered successful if all of the following criteria are satisfied: <ol style="list-style-type: none"> a. the affected wetland satisfies the current federal definition for a wetland (i.e., soils, hydrology, and vegetation); b. vegetation is at least 80 percent of either the cover documented for the wetland prior to construction, or at least 80 percent of the cover in adjacent wetland areas that were not disturbed by construction; c. if natural rather than active revegetation was used, the plant species composition is consistent with early successional wetland plant communities in the affected ecoregion; and d. invasive species and noxious weeds are absent, unless they are abundant in adjacent areas that were not disturbed by construction.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
					<p>6. Within 3 years after construction, file a report with the Secretary identifying the status of the wetland revegetation efforts and documenting success as defined in section VI.D.5, above. The requirement to file wetland restoration reports with the Secretary does not apply to projects constructed under the automatic authorization, prior notice, or advance notice provisions in the FERC's regulations.</p> <p>For any wetland where revegetation is not successful at the end of 3 years after construction, develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate wetlands. Continue revegetation efforts and file a report annually documenting progress in these wetlands until wetland revegetation is successful.</p>
21	VII.B	VII.B	Modified	<ol style="list-style-type: none"> 1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies. 2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, Paiute will address secondary containment and refueling of these pumps in the Project's Spill Prevention and Response Procedures. 3. Paiute will use municipal and county sources for hydrostatic testing and other construction uses. 	<ol style="list-style-type: none"> 1. Perform 100 percent radiographic inspection of all pipeline section welds or hydrotest the pipeline sections, before installation under waterbodies or wetlands. 2. If pumps used for hydrostatic testing are within 100 feet of any waterbody or wetland, address secondary containment and refueling of these pumps in the project's Spill Prevention and Response Procedures. 3. The project sponsor shall file with the Secretary before construction a list identifying the location of all waterbodies proposed for use as a hydrostatic test water source or discharge location. This filing requirement does not apply to projects constructed under the automatic authorization provisions of the FERC's regulations.
22	VII.C	NA	Removed	Removed, Not Applicable	<ol style="list-style-type: none"> 1. Screen the intake hose to minimize the potential for entrainment of fish.

**Paiute Pipeline Company
2018 Expansion Project
Proposed Modifications to the Wetland and Waterbody Construction and Mitigation Procedures**

Change Number	Original Location	Revised Location	Type of Change	Change/Justification	Original Text
				<i>Hydrostatic test water is not proposed to be withdrawn or discharged into waterbodies or wetlands.</i>	<ol style="list-style-type: none"> <li data-bbox="1323 332 1963 544">2. Do not use state-designated exceptional value waters, waterbodies which provide habitat for federally listed threatened or endangered species, or waterbodies designated as public water supplies, unless appropriate federal, state, and/or local permitting agencies grant written permission. <li data-bbox="1323 547 1963 662">3. Maintain adequate flow rates to protect aquatic life, provide for all waterbody uses, and provide for downstream withdrawals of water by existing users. <li data-bbox="1323 665 1963 751">4. Locate hydrostatic test manifolds outside wetlands and riparian areas to the maximum extent practicable.

APPENDIX D

Soil Types and Limitations by Milepost

Soil Types and Limitations by Milepost

Soil Map Unit	Mileposts^a	Acres within Construction Areas^b	Prime Farmland	Drainage Class	Water Erosion Hazard	Wind Erosion Hazard^c	Restoration Potential	Resistance to Compaction	Depth to Bedrock	Severe Potential for Trench Caving^e
Name and Symbol										
Douglas County, Nevada										
Segment 1										
941: Toiyabe-Rock outcrop complex, 30 to 50 percent slopes	0.00 to 0.37	5.86	Not prime farmland	Excessively Drained	Severe	High	Moderate	Moderate	38	No
6452: Mottsville gravelly loamy coarse sand, 4 to 15 percent slopes	0.37 to 0.42	1.98	Not prime farmland	Excessively Drained	Slight	High	Moderate	High	>200	No
Carson City, Nevada										
Segment 2										
41: Koontz-Sutro complex, 30 to 50 percent slopes	0.06 to 0.17	1.42	Not prime farmland	Well drained	Severe	Low	Low	Low	23	No
25: Haybourne sandy loam, 0 to 2 percent slopes	0.40 to 1.58	10.56	Prime farmland if irrigated ^f	Well drained	Slight	Moderately High	Moderate	Moderate	>200	No
21: Greenbrae gravelly sandy loam, 4 to 8 percent slopes	0.00 to 0.06	0.88	Prime farmland if irrigated ^f	Well drained	Slight	Moderate	Moderate	Moderate	>200	No
35: Indiano variant gravelly fine sandy loam, 4 to 15 percent slopes	0.17 to 0.27	1.11	Not prime farmland	Well drained	Slight	Moderate	Moderate	Low	74	No
27: Haybourne gravelly sandy loam, 2 to 4 percent slopes	0.27 to 0.40	1.39	Prime farmland if irrigated ^f	Well drained	Slight	Moderate	Moderate	Moderate	>200	No

D-1

Soil Types and Limitations by Milepost

Soil Map Unit	Mileposts^a	Acres within Construction Areas^b	Prime Farmland	Drainage Class	Water Erosion Hazard	Wind Erosion Hazard^c	Restoration Potential	Resistance to Compaction	Depth to Bedrock	Severe Potential for Trench Caving^e
Segment 3										
99: Reno cobbly sandy loam, 4 to 15 percent slopes	0.57 to 1.16	8.94	Not prime farmland	Well drained	Slight	Moderate	Moderate	Low	81	Yes
84: Devada-Koontz association, moderately steep	NA	0.36	Not prime farmland	Well drained	Slight	Low	Moderate	Low	33	Yes
103: Ackley-Ackley variant complex	NA	3.35	Prime farmland if irrigated and reclaimed of excess salts	Well drained	Slight	Moderately High	Moderate	Low	>200	No
78: Xerta-Rock outcrop complex, 4 to 30 percent slopes	1.16 to 1.77	9.73	Not prime farmland	Well drained	Moderate	Low	High	Low	58	Yes
55: Reno gravelly clay loam, 0 to 4 percent slopes	1.77 to 2.27	8.38	Not prime farmland	Well drained	Slight	Low	High	Low	81	Yes
Lyon County										
572: Reno cobbly sandy loam, 4 to 15 percent slopes	0.40 to 0.57	1.29	Not prime farmland	Well drained	Slight	Moderate	Moderate	Low	81	Yes
731: Hunewill sandy loam, 4 to 8 percent slopes	0.13 to 0.40	3.67	Not prime farmland	Well drained	Slight	Moderately High	Moderate	Moderate	>200	No
823: Gypsum land	0.00 to 0.13	8.09	Not prime farmland	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated	Not rated
Segment 4										
491: Otomo gravelly sandy loam, 4 to 15 percent slopes	NA	0.04	Not prime farmland	Well drained	Moderate	Moderate	Low	Low	25	No

Soil Types and Limitations by Milepost

Soil Map Unit	Mileposts^a	Acres within Construction Areas^b	Prime Farmland	Drainage Class	Water Erosion Hazard	Wind Erosion Hazard^c	Restoration Potential	Resistance to Compaction	Depth to Bedrock	Severe Potential for Trench Caving^e
7032: Trocken very gravelly sandy loam, 2 to 8 percent slopes	NA	0.25	Not prime farmland	Well drained	Moderate	Low	Low	Moderate	>200	Yes
7004: Pirouette-Theon-Weena association	0.00 to 0.80, 1.57 to 1.82	13.36	Not prime farmland	Well drained	Moderate	Moderately Low	Low	Low	48	No
7018: Biddleman-Bluewing association	1.50 to 1.57, 1.82 to 1.93	3.18	Not prime farmland	Well drained	Slight	Moderately Low	Low	Moderate	>200	Yes
7035: Piroutte-Cleaver-Weena association	1.95 to 4.19	28.44	Not prime farmland	Well drained	Moderate	Moderately Low	Low	Moderate	48	No
7034: Cleaver-Genegraph association	0.80 to 1.50, 1.93 to 1.95	9.03	Not prime farmland	Well drained	Slight	Moderately Low	Low	Low	28	No

a Mileposts for pipeline only; Not Applicable (NA) are associated with portions of the right-of-way not directly crossed by the pipeline, access roads, workspaces, and staging areas.

b Acreages include permanent right-of-way, TWS, ATWS, access roads, and staging areas.

c High = Wind Erodibility Group (WEG) 1-2; Moderately High = WEG 3; Moderate = WEG 4-5; Moderately Low = WEG 6; Low = WEG 7-8 (NRCS 2017a).

d Depth to restrictive layer such as lithic or paralithic bedrock or duripan, if present (NRCS 2017a).

e Based on soil classification and NRCS 2017a interpretation of unstable excavation walls for shallow excavations (numeric rating 0.5 or greater).

f The Segment 2 Project area mapped as prime farmland is along a roadway and is not currently farmed.

APPENDIX E

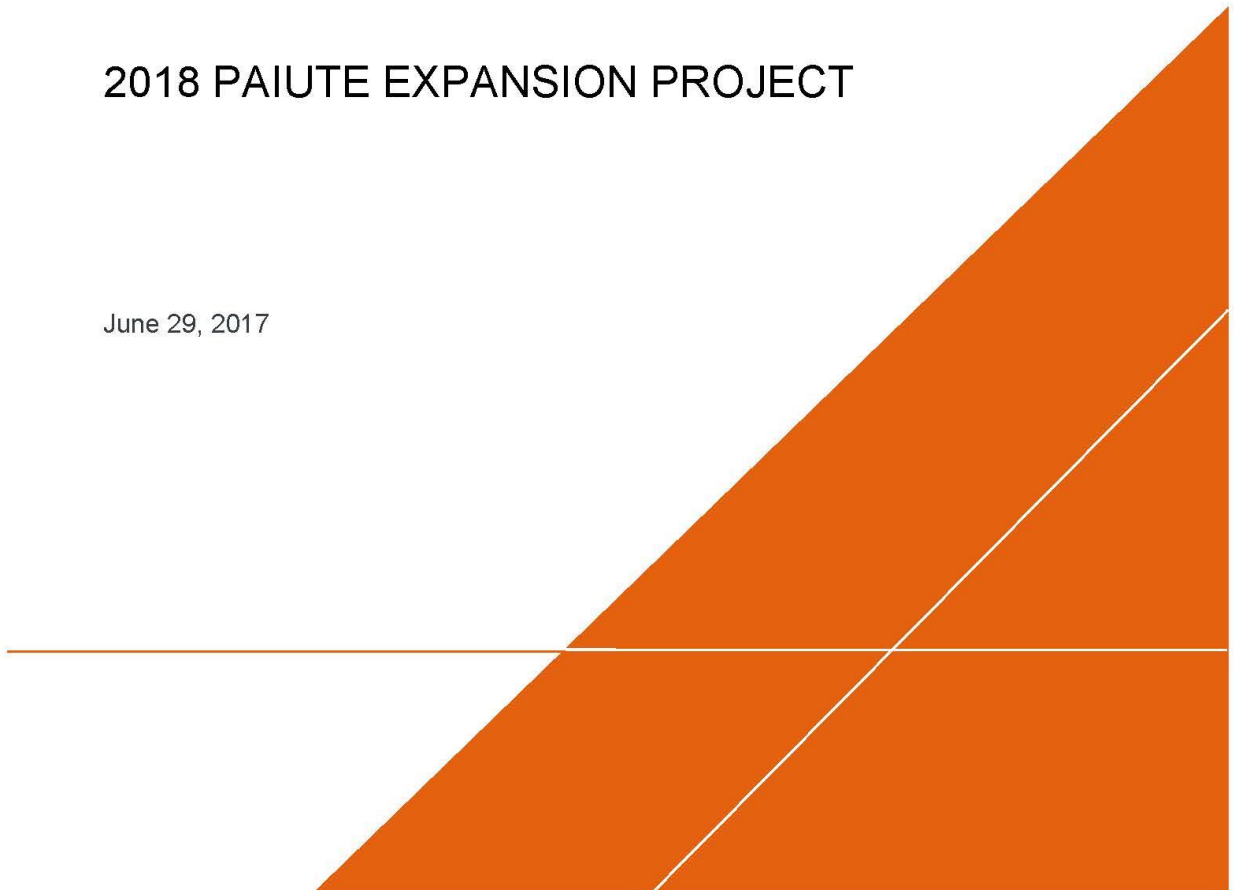
Residential and Commercial Construction Plan

Paiute Pipeline Company

RESIDENTIAL AND COMMERCIAL CONSTRUCTION PLAN

2018 PAIUTE EXPANSION PROJECT

June 29, 2017



2018 PAIUTE EXPANSION PROJECT RESIDENTIAL AND COMMERCIAL CONSTRUCTION PLAN
2018 PAIUTE EXPANSION PROJECT

RESIDENTIAL AND COMMERCIAL CONSTRUCTION PLAN

2018 Paiute Expansion Project

Prepared for:
Paiute Pipeline Company
P.O. Box 94197
Las Vegas, Nevada 89193-4197

Prepared by:
Arcadis U.S., Inc.
630 Plaza Drive
Suite 100
Highlands Ranch
Colorado 80129
Tel 720 344 3500
Fax 720 344 3535

Our Ref.:
CO002022.0001

Date:
June 29, 2017

CONTENTS

1	Introduction	1
1.1	Affected Residential and Commercial Concerns	1
1.2	Standard Conditions Designed to Minimize Impacts to Residences	1
1.3	Measures Designed to Minimize Impacts at 50 Feet.....	2
1.4	Measures Designed to Minimize Impacts at 25 Feet from Structures.....	4
1.4.1	Measures Common to All Site-Specific Plans.....	5

APPENDICES

A	List of Landowners within 50 Feet of Construction Areas
B	Site-specific Residential and Commercial Construction Plans

ACRONYMS AND ABBREVIATIONS

FERC	Federal Energy Regulatory Commission
NDOT	Nevada Department of Transportation
Paiute	Paiute Pipeline Company
Plan	Residential and Commercial Construction Plan
Project	2018 Paiute Expansion Project

1 INTRODUCTION

This Residential and Commercial Construction Plan (Plan) has been prepared for Paiute Pipeline Company's (Paiute) 2018 Paiute Expansion Project (Project) to address potential concerns of residential and commercial property owners, maximize safety measures, minimize disturbance, avoid or limit impact to trees and landscaping, ensure right-of-way restoration, and maintain landowner access. This Plan applies to those residences and commercial/industrial structures that are located within 50 feet of Project construction work areas. "Construction work areas" include the construction right-of-way, staging areas, and extra workspaces.

Appendix A provides a list of residences and commercial/industrial structures within 50 feet of Project construction work areas, the distance (feet) from the residential or commercial/industrial structures to the edge of the proposed construction work areas and the distance to the pipeline centerline. Outbuildings listed in **Appendix A**, include sheds and storage structures within 50 feet of construction work areas not considered residential or commercial/industrial buildings. Construction activities will be restricted to the proposed construction right-of-way in these locations and the following construction procedures will be implemented to reduce issues such as construction-related noise, dust, and increased traffic. All buildings included in **Appendix A** will be surveyed with respect to distance from construction work areas and the construction work area in the vicinity of the buildings will be staked prior to construction.

1.1 Affected Residential and Commercial Concerns

The primary impact to residential and commercial lands will be a temporary disruption to individual landowners and commercial employees during construction. Residents are typically concerned with safety, noise, visual, and landscaping impacts. Commercial property owners are typically concerned with these same impacts along with concern that construction may have a negative economic impact on their businesses. The permanent right-of-way will not interfere with the present uses of the residences or commercial properties.

1.2 Standard Conditions Designed to Minimize Impacts to Residences

The Federal Energy Regulatory Commission (FERC) identifies standard conditions for residential construction located within 50 feet and within 25 feet of construction work areas. For all residences located within 50 feet of construction work areas standard conditions are the following:

1. Mature trees and landscaping should not be removed from within the edge of the construction work area unless necessary for safe operation of construction equipment, or as specified in landowner agreements;
2. Restore all lawns and landscaping immediately following clean-up operations, or as specified in the landowner agreements;

3. Install safety fence along the edge of the construction work area adjacent to the residence for a distance of 100 feet on either side of the residence to ensure that construction equipment and materials, including the spoil pile, remain within the construction work area;
4. Maintain fencing, at a minimum, throughout active construction in the area;
5. Maintain a minimum of 25 feet between the residence and the construction work area for a distance of 100 feet on either side of the residence (i.e., reduce the construction work area as necessary to maintain the minimum distance);
6. If seasonal or other weather conditions prevent compliance with the aforementioned restoration time frames, maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration; and
7. Segregate topsoil for replacement after construction or import topsoil.

For all residences located within 25 feet of construction work areas, a site-specific plan for each residence will be filed with the FERC describing the construction techniques that will be used. The plan will include a dimensional site plan showing, at a minimum, the location and distance of the residence in relation to 1) the new pipeline and, where appropriate, the existing pipelines or other utilities; 2) the boundaries of the construction work areas; 3) the edge of both existing and/or proposed permanent right-of-way; and 4) other nearby residences, structures, roads, wetlands, waterbodies, or residential features.

Sections 1.3 and 1.4 detail the measures Paiute will undertake to minimize impacts to residential and commercial buildings located within 50 feet and within 25 feet, respectively. Prior to construction, Paiute will also develop site-specific plans for residential and commercial properties located within 25 feet of Project construction right-of-way areas (**Appendix B**). Site-specific drawings are only included for commercial properties where there is not a fence or other barrier between the commercial property and the construction work area.

The designs of both the general and site-specific plans avoid locating temporary workspaces within 50 feet of a residence or commercial building. This allows for additional separation between the actual pipeline placement and the existing structures. Site-specific plans account for crossing under or placement between other structures within these properties, including existing water lines, storm sewers, and existing pipelines.

1.3 Measures Designed to Minimize Impacts at 50 Feet

The following procedures are designed to minimize impacts to residences and commercial/industrial structures that are within 50 feet of the right-of-way. Paiute has committed to the following general measures to assure safe construction in the vicinity of all residences and commercial/industrial structures within 50 feet of the construction work area.

1. Existing right-of-way corridors will be utilized.
2. Paiute will notify residents and businesses prior to construction. This will be accomplished via newspaper articles and notices, local postings, and direct mailing to inform local residents and businesses of construction activities, schedules, and alternative access.

2018 PAIUTE EXPANSION PROJECT RESIDENTIAL AND COMMERCIAL CONSTRUCTION PLAN
2018 PAIUTE EXPANSION PROJECT

3. Paiute will coordinate with the following local authorities to maintain services: the Consolidated Municipality of Carson City, Lyon County, police departments, fire departments, sheriff offices, and other utilities.
4. Paiute will provide residents and businesses with 24-hour direct telephone contacts to company or contractor key personnel responsible for local liaison activities, maintenance of services, and access to make special arrangements or public needs.
5. Paiute will conduct vehicular and pedestrian traffic control according to the Federal Highway Administration Manual on Uniform Traffic Control Devices, Consolidated Municipality of Carson City and Nevada Department of Transportation (NDOT) requirements, including traffic control personnel, signage, cones, and temporary fencing. (Details on traffic control are available in the Project Traffic Control Plan and the site-specific traffic control documents included with the required permits.)
6. Paiute will place temporary fencing parallel to the existing right-of-way or construction temporary work areas in the vicinity of structures, if no existing fencing is present. This fencing would extend along the edge of the construction work area for a minimum of 100 feet in both directions from each residence or commercial workplace. The fencing will ensure that all construction equipment and materials will remain within the construction work area and also provide a safeguard for residents.
7. Paiute will use temporary steel plates, where necessary, across the trench to maintain traffic flow and allow access to driveways. Paiute will also clean up the construction area at the end of each workday so that local traffic is not hindered.
8. A street cleaner will routinely clean road surfaces near right-of-way access points.
9. Paiute will restore driving areas after construction, and make all necessary permanent repairs to the roadway, driveway, or parking lot.
10. Paiute will minimize open trenches by restricting excavation to the length of trench required to fit the amount of pipe that can be laid in one day. Paiute will ensure that the trench is not excavated until the pipe is ready for installation and that the trench will be backfilled immediately after pipe installation. The foreman will direct excavation and backfill. The foreman will ensure that pipe sections are staged parallel to the location where the trench will be excavated and that pipe sections are welded and inspected prior to trench excavation. When possible this will occur the day prior to trench excavation, so trench excavation, pipe installation and backfill can occur in one day. Paiute will remove all excavated materials to approved storage or disposal areas. The foreman will ensure that backfilling occurs as soon as possible after pipe installation. At the end of each workday, backfill will be covered with temporary steel plates or patching. These stipulations will be included in the contract documents for construction.
11. Paiute will not remove mature trees and landscaping within the edge of the construction work area unless it is necessary for safe operation of construction equipment;
12. Paiute will restore all lawns and landscaping immediately following clean-up operations, or as specified in the land owner agreements. If seasonal or other weather conditions prevent compliance with the restoration time frame, Paiute will maintain and monitor temporary erosion controls (sediment barriers and mulch) until conditions allow completion of restoration.

13. Paiute will control dust from construction activities by water spray, as necessary. A water truck will be staged on site.
14. Paiute will install silt fence along the edge of the right-of-way nearest to residential and commercial properties to control water and sediment runoff and erosion.
15. Paiute will limit construction activities to daylight hours, unless required by a permit to work at night.
16. Paiute will limit the number of construction vehicles operating in any one location.
17. Paiute will complete construction in a timely manner.
18. Paiute will restore the right-of-way to the original grade and revegetate with native grasses as specified in the Project Revegetation and Restoration Plan.
19. Where possible, the construction right-of-way will be narrowed in order to reduce potential impacts to residences and businesses.
20. Where possible, the centerline of the pipe will be adjusted away from residences and businesses.
21. Where appropriate, stove-piping and drag-section techniques¹ will be utilized.

Current construction plans do not include removal of any vegetation from any construction work areas in the vicinity of residences or commercial properties. Any unanticipated vegetation removal will be subject to the above guidelines. Replacement of vegetation will meet all landowner requirements and will comply with the 2018 Paiute Expansion Project Upland Erosion Control, Revegetation and Maintenance Plan which meet or exceeds the best management practices and mitigation measures included in the FERC Upland Erosion Control, Revegetation and Maintenance Plan (FERC Plan). Vegetation will be replanted within five days of completion of construction activities in the area.

1.4 Measures Designed to Minimize Impacts at 25 Feet from Structures

For residential and commercial properties located within 25-feet of the construction work area, in addition to the measures described above, a site-specific plan has been prepared for the FERC review and approval. Site-specific plans are included in this document as **Appendix B**. Only one commercial building was identified within 25-feet of the construction work area. No residences were identified within 25-feet of the construction work area. The dimensioned drawing for the commercial building within 25-feet of the construction work area shows new and existing pipelines and utilities, commercial building structures and landscaping, the edge of the construction work area, the edge of the permanent right-of-way, landscape protection measures, and location of construction fencing. The distances from the edge of the construction work area to commercial building is noted on the drawing.

¹ The stove pipe technique involves installing one joint at a time. The welding, weld inspection, and coating activities are all performed in the open trench. At the end of each day, after the pipe is installed, the trench is backfilled and/or covered with steel plates. The drag technique involves trenching, installing, and backfilling a prefabricated length of pipe containing several long pipe joints pulled into the trench all in one day. At the end of each day, after the pipe is installed, the trench is backfilled and/or covered with steel plates.

The site-specific plan includes a description of the construction techniques to be employed. Construction techniques include practices such as reduced pipeline preparation, centerline adjustment, stove-piping or drag section techniques, and working over existing pipelines and utilities.

Landowner written approval will be obtained prior to construction for any site-specific plan where the construction work area is within 10 feet of a residence or business.

The procedures for landowner or occupant notification are:

1. Paiute will notify residents or occupants two months prior to construction. This will be accomplished via newspaper articles and notices, local postings, and direct mailing to inform local residents and businesses of construction activities, schedules, and alternative access.
2. A letter will be sent to each resident/occupant or landowner one month prior to construction. The letter will provide an estimated date for when construction will be within 25 feet of the residence.
3. Another letter will be sent when construction is within one week of approaching a residential or commercial area that will be impacted.
4. Paiute will provide residents/occupants and businesses with 24-hour direct telephone contacts to company or contractor key personnel responsible for local liaison activities, maintenance of services, and access to make special arrangements or public needs.

1.4.1 Measures Common to All Site-Specific Plans

In addition to the measures outlined above and indicated in each of the site-specific drawings the following measures will be implemented during construction.

1. Additional temporary workspace and staging areas will not be permitted within 25 feet of residential and commercial structures and all activities will be conducted within Paiute's permanent rights-of-way and temporary workspaces that define the construction work area.
2. Where possible, Paiute will remove spoils to the nearest construction workspace to reduce congestion.
3. Where possible, Paiute will assemble pipe away from residential and commercial properties to reduce noise and dust.
4. In order to appropriately protect vegetation within 25 feet of residential and commercial areas the site-specific plans will include the following:²
 - Excavations, grading, and spoil storage must be limited to established construction work area boundaries.
 - Particular attention must be paid to avoid damage to vegetation in and around excavations.
 - When practical, tunnel or bore under vegetation in the path of the excavation. Removing vegetation should only be considered when completely necessary.

² Currently no work is anticipated within landscaped areas on private lands within 25' of the construction work areas.

2018 PAIUTE EXPANSION PROJECT RESIDENTIAL AND COMMERCIAL CONSTRUCTION PLAN
2018 PAIUTE EXPANSION PROJECT

- When vegetation is removed, the crew leader must make prior arrangements with the property owner and manage the replacement.
- If vegetation can be replanted, the root system must be kept moist until replanted.
- Lawn or sod should be cut and placed directly opposite the point of removal to facilitate proper replacement.

Use protective material when construction activities are performed on improved lands. Protective materials help avoid damage to adjacent plantings, which could occur from walking on them or placing excavation materials over them.

APPENDIX A

List of Landowners within 50 Feet of Construction Work Areas

(Public Version)



Residences and Buildings within 50 Feet of the Construction Work Area and Proposed Mitigation

MP	Assessor's PN	Residences or Buildings	Distance From Construction Work Area (feet)	Distance From Pipeline Centerline (feet)	Proposed Mitigation
Segment 1:					
None**					
Segment 2: Structures from < 25 feet to 10 feet from nearest edge of Construction Right of Way					
None**					
Segment 2: Structures from 50 feet to 25 feet from nearest edge of Construction Right of Way					
1.04	010-062-39	Private Residence	26	37	a, b, c
1.19	010-062-61	Private Residence	49	55	a, b
1.39	010-062-06	Private Residence	39	51	a, b, c
1.55	010-342-01	Private Residence	32	55	a, b
Segment 3: Structures Less than 10 feet from nearest edge of Construction Right of Way					
0.36	016-081-002	Modular Home Model	2	33	a, b, c
0.42	016-081-004	Storage Container		25	a, b, c
1.89	008-391-02	Storage Unit	2	27	a, b, c
1.89	008-391-02	Storage Unit		7	a, b, c
Segment 3: Structures from < 25 feet to 10 feet from nearest edge of Construction Right of Way					
0.30	016-081-002	Modular Home Model	24	56	a, b, c
0.27	016-081-002	Modular Home Model	22	55	a, b, c
0.30	016-081-002	Modular Home Model	21	53	a, b, c
0.33	016-081-002	Modular Home Model	23	49	a, b, c
0.34	016-081-002	Modular Home Model	21	46	a, b, c
0.50	016-081-008	Carson Highlands Storage	23	50	a, b, c
0.51	016-081-008	Carson Highlands Storage	24	52	a, b, c
Segment 3: Structures from 50 feet to 25 feet from nearest edge of Construction Right of Way					
0.09	016-231-007	All American Auto Body	42	72	a, b
0.14	016-231-008	Church	30	66	a, b
0.21	016-235-012	Red Rock Liquor	34	62	a, b
0.42	016-081-004	Storage Container	27	55	a, b, c

Residences and Buildings within 50 Feet of the Construction Work Area and Proposed Mitigation

MP	Assessor's PN	Residences or Buildings	Distance From Construction Work Area (feet)	Distance From Pipeline Centerline (feet)	Proposed Mitigation
0.42	016-081-004	Storage Container	32	60	a, b, c
0.64	016-081-007	Carson Highlands Storage	26	60	a, b, c
0.53	016-081-008	Carson Highlands Storage	26	51	a, b, c
0.54	016-081-008	Carson Highlands Storage	33	51	a, b, c
1.88	008-391-02	Storage Unit	30	55	a, b, c
1.90	008-391-02	Storage Unit	35	60	a, b, c
1.92	008-391-02	Storage Unit	35	60	a, b, c
1.94	008-391-02	Storage Unit	31	56	a, b, c
Segment 4: Structures Less than 10 feet from nearest edge of Construction Right of Way					
3.41	021-551-003	Race Track building *	0	32	a, b
Segment 4: Structures from < 25 feet to 10 feet from nearest edge of Construction Right of Way					
None**					
Segment 4: Structures from 50 feet to 25 feet from nearest edge of Construction Right of Way					
None**					

Notes:

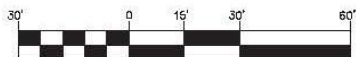
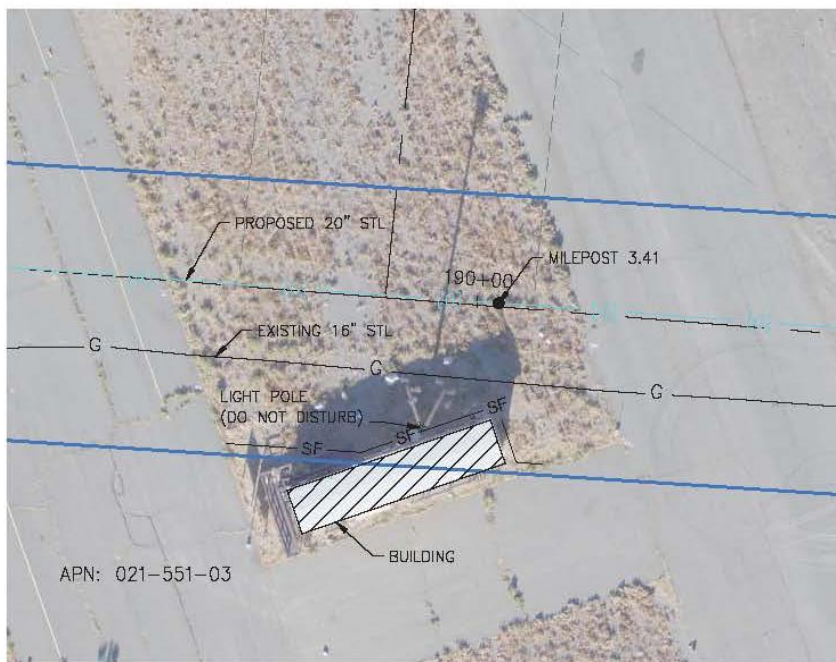
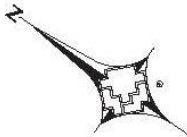
- a Avoid removal of mature trees; immediately restore all lawn areas after backfilling the trench; and fence the construction work throughout the open-trench phase of construction.
- b Use only existing or newly acquired 50-foot permanent ROW, no construction ROW.
- c Existing fence between construction ROW and building, protect fence.
- PN Parcel Number
- CL Centerline
- * Indicates an apparently vacant structure.
- ** Indicates there are no existing residential, industrial, or commercial buildings within identified area.

APPENDIX B

Site-specific Residential and Commercial Construction Plans

(Public Version)





NOTES:

1. PAUTE WILL NOTIFY RESIDENTS TWO MONTHS PRIOR TO CONSTRUCTION. THIS WILL BE ACCOMPLISHED VIA NEWSPAPER ARTICLES AND NOTICES, LOCAL POSTINGS AND DIRECT MAILING TO INFORM LOCAL RESIDENTS AND BUSINESSES OF CONSTRUCTION ACTIVITIES, SCHEDULES, AND ALTERNATIVE ACCESS.
2. A LETTER WILL BE SENT TO EACH RESIDENT OR LANDOWNER ONE MONTH PRIOR TO CONSTRUCTION. THE LETTER WILL PROVIDE AN ESTIMATED DATE FOR WHEN CONSTRUCTION WILL BE WITHIN 25 FEET OF THE RESIDENCE.
3. A SECOND LETTER WILL BE SENT WHEN CONSTRUCTION IS WITHIN ONE WEEK OF APPROACHING A RESIDENTIAL AREA THAT WILL BE IMPACTED.
4. IF CONSTRUCTION WORK AREA IS WITHIN 10 FEET OF RESIDENCE, LANDOWNER WRITTEN APPROVAL WILL BE OBTAINED PRIOR TO CONSTRUCTION.
5. PAUTE WILL PROVIDE RESIDENTS AND BUSINESSES WITH 24-HOUR DIRECT TELEPHONE CONTACTS TO COMPANY OR CONTRACTOR KEY PERSONNEL RESPONSIBLE FOR LOCAL LIAISON ACTIVITIES, MAINTENANCE OF SERVICES, AND ACCESS TO MAKE SPECIAL ARRANGEMENTS OR PUBLIC NEEDS.
6. ADDITIONAL TEMPORARY WORKSPACE WILL NOT BE PERMITTED WITHIN 25 FEET OF RESIDENTIAL AND COMMERCIAL PROPERTIES AND ALL ACTIVITIES WILL BE CONDUCTED WITHIN THE EXISTING RIGHT OF WAY AND PAUTE'S ROW.
7. PAUTE WILL PLACE ENVIRONMENTAL FENCING AT THE EDGE OF THE PERMANENT RIGHT-OF-WAY TO DEFINE THE AREA OF MAXIMUM DISTURBANCE.
8. WHERE POSSIBLE, PAUTE WILL REMOVE SPOILS TO THE NEAREST EXTRA WORKSPACE AREA TO REDUCE CONGESTION.
9. WHERE POSSIBLE, PAUTE WILL ASSEMBLE PIPE AWAY FROM RESIDENTIAL AND COMMERCIAL PROPERTIES TO REDUCE NOISE AND DUST.
10. LANDOWNER AGREEMENTS WILL BE REVIEWED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
11. TRAFFIC LANES AND ACCESS TO HOMES OR BUILDINGS WILL BE MAINTAINED EXCEPT FOR THE BRIEF PERIODS ESSENTIAL FOR LAYING THE NEW PIPELINE.
12. CONSTRUCTION SAFETY PERIMETER FENCING SHALL BE INSTALLED AND MAINTAINED ALONG THE WORK AREA. PAUTE WILL MAINTAIN SAFETY FENCING AT LEAST 15- FEET FROM THE BUILDING AT A DISTANCE OF 100- FEET ON EITHER SIDE OF THE BUILDING.
13. REPRESENTATIVES OF THE LOCAL UTILITY COMPANIES WILL BE ON-SITE DURING CONSTRUCTION WHEN NECESSARY.
14. DUST CONTROL MEASURES WILL BE IMPLEMENTED AS NECESSARY.
15. AREA WILL BE RESTORED AND CONSTRUCTION DEBRIS WILL BE REMOVED AS SOON AS PRACTICAL OR WITHIN 10 DAYS AFTER BACKFILLING THE TRENCH.
16. EXCAVATION OF THE PIPELINE TRENCH WILL NOT BE INITIATED UNTIL THE PIPE IS READY FOR INSTALLATION. THE PIPELINE TRENCH SHALL BE BACK FILLED IMMEDIATELY UPON COMPLETION OF THE PIPELINE INSTALLATION.
17. CONSTRUCTION TECHNIQUE WILL BE STOVE PIPE OR DRAG SECTION AND ROAD BORE.

LEGEND

- PROPOSED 20" PIPELINE [G]
- EXISTING GAS G
- CENTER LINE _____
- SUB-SECTION LINE _____
- EXISTING ACCESS EASEMENT _____
- SAFETY FENCE SF SF
- LIGHT POLE *
- PERMANENT RIGHT-OF-WAY []

REVISIONS <small>DATE</small> <small>BY</small> <small>DESCRIPTION</small>							
RESIDENTIAL CONSTRUCTION PLANS 2018 EXPANSION PROJECT SEGMENT 4							
<small>DATE</small> <small>BY</small> <small>SCALE</small> <small>1" = 60'</small>							
<small>1 OF 1</small>							
PAUTE PIPELINE <small>A Subsidiary of Enbridge Gas Company</small>							