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EnLink North Texas Gathering, LP.
Lobo Gathering System
Lea and Eddy Counties, New Mexico and Loving County, Texas

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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List of Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
AAQS	ambient air quality standards
ACEC	Area of Critical Environmental Concern
APE	area of potential effects
API	American Petroleum Institute
AQB	Air Quality Bureau
AQRV	air quality related value
ASME	American Society of Mechanical Engineers
ATWS	additional temporary workspace
AUM	animal unit month
BA	biological assessment
BISON-M	Biota Information System of New Mexico
BLM	Bureau of Land Management
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CIAA	cumulative impact analysis area
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DSL	dunes sagebrush lizard
EA	environmental assessment
EnLink	EnLink North Texas Gathering, LP.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
ESA	Endangered Species Act of 1973
FLPMA	Federal Land Policy and Management Act
GCP	General Construction Permit
GHG	greenhouse gas
GIS	geographic information system
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HPD	New Mexico Historic Preservation Division
HUC	Hydrologic Unit Code
IMP	Integrity Management Plan
IMPROVE	Interagency Monitoring of Protected Visual Environments
IPA	Isolated Population Area
LPC	lesser prairie-chicken
MBTA	Migratory Bird Treaty Act of 1918
MLA	Mineral Leasing Act of 1920
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NATA	National Scale Air Toxics Assessment
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NMAC	New Mexico Administrative Code
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMOSE	New Mexico Office of the State Engineer

NMPIF	New Mexico Partners in Flight
NNSR	Non-attainment New Source Review
NO_2	nitrogen dioxide
NO_x	nitrogen oxide(s)
NPR	No Permit Required
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
O_3	ozone
OHWM	ordinary high-water mark
OSHA	U.S. Department of Labor, Occupational Health and Safety Administration
Oxy	Oxy U.S.A. Inc.
Pb	lead
PL	Public Law
PM	particulate matter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
POD	Plan of Development
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RFFA	Reasonably Foreseeable Future Action
RMP	Carlsbad Resource Management Plan
RMPA	Carlsbad Approved Resource Management Plan Amendment
RNA	Resource Natural Area
ROD	Record of Decision
ROW	right-of-way
SLO	New Mexico State Land Office
SO_2	sulfur dioxide
SWCA	SWCA Environmental Consultants
TAC	Texas Administrative Code
TCEQ	Texas Council on Environmental Quality
TCP	Traditional Cultural Property
TRS	total reduced sulfur
TSP	total suspended particulate
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VRM	Visual Resource Management
WRAP	Western Regional Air Partnership
WRCC	Western Regional Climate Center

1 PURPOSE AND NEED FOR ACTION

1.1 Background

EnLink North Texas Gathering, LP. (EnLink) has submitted a Standard Form 299 Right-of-Way (ROW) application to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for the construction, operation, and maintenance of the Lobo Gathering System (herein referred to as the project or Proposed Action), 93 miles of natural gas buried pipeline and associated aboveground appurtenant facilities. The system would consist of a range of gathering pipelines from 3 to 20 inches in outside diameter. Some would be low-pressure polyethylene and others would be high-pressure carbon steel pipelines. The proposed project would be located in Loving County, Texas, and Lea and Eddy Counties, New Mexico, originating at several central tank battery sites in New Mexico, and terminating at the State Line Trap Junction Station in Loving County, Texas (Figure 1.1).

The BLM CFO has assigned this project the ROW case file number NM-135028. The proposed project would cross BLM-administered land for approximately 51% of the total length (47 miles). The remainder of the lands crossed by the proposed pipeline are privately owned in Texas and New Mexico (27 and 12 miles, respectively) or managed by the New Mexico State Land Office (SLO) (7 miles). EnLink is requesting a 50-foot-wide ROW from the BLM CFO and SLO, which includes a 30-foot-wide permanent ROW and a 20-foot-wide temporary work area. In addition to the permanent ROW and temporary work area, additional temporary workspace (ATWS) is requested in areas with rugged terrain, water body crossings, road crossings, and utility crossings. The BLM CFO would serve as the lead federal agency for the undertaking. The legal descriptions for the gathering system are shown in Table 1.1 through Table 1.4.

Table 1.1. Legal Description of Proposed ROW

Land Ownership	Legal Description
BLM	New Mexico Principal Meridian, New Mexico T. 24 S., R. 32 E., **sec. 9,** SE¼ SW¼; **sec. 16,** SW¼ NE¼, NE¼ NW¼, SE¼ NW¼, NE¼ SE¼, NW¼ SE¼, and SE¼ SE¼; **sec. 18,** SE¼ SW¼; **sec. 19,** SW¼ NE¼, NE¼ NW¼, SE¼ NW¼, NE¼ SE¼, and NW¼ SE¼; **sec. 20,** NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, NE¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 21,** NE¼ NE¼, SE¼ NE¼, NE¼ SW¼, NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, NE¼ SE¼, NW¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 22,** NE¼ SW¼, NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, NE¼ SE¼, NW¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 23,** NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, SW¼ SE¼ and SE¼ SE¼; **sec. 24,** SW¼ SW¼, SE¼ SW¼, SW¼ SE¼, and SE¼ SE¼; **sec. 28,** NW¼ NE¼, SW¼ NE¼, NE¼ NW¼, SE¼ NW¼, NE¼ SW¼, SE¼ SW¼, NW¼ SE¼, and SW¼ SE¼.

Land Ownership	Legal Description
	T. 25 S., R. 29 E., NMPM **sec. 5,** SW¼ SW¼, SE¼ SW¼, and SE¼ SE¼; **sec. 6,** SE¼ SE¼; **sec. 8,** NE¼ NE¼, NW¼ NE¼, NE¼ NW¼, and NW¼ NW¼; **sec. 9,** NW¼ NW¼, SW¼ NW¼, SE¼ NW¼, NE¼ SW¼, NW¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 10,** SW¼ SW¼; **sec. 14,** NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, and SW¼ SE¼; **sec. 15,** SW¼ NE¼, NE¼ NW¼, NW¼ NW¼, SE¼ NW¼, NE¼ SE¼, and NW¼ SE¼; **sec. 23,** NE¼ NE¼, NW¼ NE¼, and SE¼ NE¼; **sec. 24,** SW¼ NW¼, NW¼ SW¼, SW¼ SW¼, SE¼ SW¼, **sec. 25,** NW¼ NE¼, SW¼ NE¼, SE¼ NE¼, NE¼ NW¼, SW¼ NW¼, SE¼ NW¼, NE¼ SE¼, and SE¼ SE¼; **sec. 26,** SE¼ NE¼, NE¼ SE¼, NW¼ SE¼, and SW¼ SE¼; **sec. 35,** NW¼ NE¼, and SW¼ NE¼.
	T. 25 S., R. 32 E., NMPM **sec. 4,** L2, L3, SW¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 9,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 15,** NW¼ SW¼, and SW¼ SW¼; **sec. 21,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 28,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 33,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼.
	T. 25 S, R. 33 E., NMPM **sec. 20,** NE¼ NE¼; **sec. 29,** NE¼ SE¼, and SE¼ SE¼; **sec. 33,** NW¼ NW¼, and SW¼ NW¼.
	T. 26 S., R. 29 E., NMPM **sec. 1,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 12,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 13,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 24,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 25,** NE¼ NE¼, and SE¼ NE¼.
	T. 26 S., R. 30 E., NMPM **sec. 30,** L 2, L3, and L4; **sec. 31,** L1, and L2.
	T. 26 S., R. 31 E., NMPM **sec. 8,** SW¼ NE¼, SE¼ NW¼, SE¼ SW¼, NW¼ SE¼, and SW¼ SE¼; **sec. 17,** NE¼ NW¼, NW¼ NW¼, SW¼ NW¼, SE¼ NW¼, NE¼ SW¼, NW¼ SW¼, SW¼ SW¼, and SE¼ SW¼; **sec. 20,** NE¼ NW¼, NW¼ NW¼, SW¼ NW¼, SE¼ NW¼, NE¼ SW¼, NW¼ SW¼, SW¼ SW¼, and SE¼ SW¼; **sec. 29,** NE¼ NW¼, NW¼ NW¼, SW¼ NW¼, SE¼ NW¼, NE¼ SW¼, NW¼ SW¼, SW¼ SW¼, and SE¼ SW¼;

Land Ownership	Legal Description
	T. 26 S., R. 32 E., NMPM **sec. 3,** NW¼ SW¼, and SW¼ SW¼; **sec. 4,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 9,** NE¼ NE¼, SW¼ NE¼, SE¼ NE¼, SE ¼ SW ¼, NE¼ SE¼, NW¼ SE¼, and SW¼ SE¼; **sec. 21,** NW¼ NE¼, SW¼ NE¼, NW¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 27,** NW¼ NW¼, SW¼ NW¼, NW¼ SW¼, and SW¼ SW¼; **sec. 28,** NE¼ NE¼; **sec. 34,** L 4, and NW¼ NW¼.
	T. 26 S., R. 33 E., NMPM **sec. 8,** SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 9,** NE¼ NE¼, NW¼ NE¼, NE¼ NW¼, and NW¼ NW¼; **sec. 11,** NE¼ NE¼, NW¼ NE¼; **sec. 12,** NE¼ NE¼, NW¼ NE¼, NE¼ NW¼, and NW¼ NW¼.
	T. 26 S., R. 34 E., NMPM **sec. 5,** SE¼ SE¼; **sec. 7,** L1**,** NE¼ NE¼, NW¼ NE¼, and NE¼ NW¼; **sec. 8,** NE¼ NE¼, NW¼ NE¼, NE¼ NW¼, and NW¼ NW¼.
Private	New Mexico Principal Meridian, New Mexico T. 24 S., R. 32 E., **sec. 33,** NE¼ NW¼, SE¼ NW¼, NE¼ SW¼, and SE¼ SW¼.
	T. 25 S., R. 33 E., **sec. 20,** SW¼ NE¼, SE¼ NE¼, NE¼ SE¼, NW ¼ SE¼, SW¼ SE¼, and SE¼ SE¼; **sec. 29,** NE¼ NE¼, NW¼ NE¼, and SE¼ NE¼.
	T. 26 S., R. 31 E., **sec. 8,** NE¼ SW¼; **sec. 32,** L3, L4, NE¼ NW¼, and NW¼ NW¼.
	T. 26 S., R. 33 E., s**ec. 5,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼; **sec. 8,** NE¼ NE¼; **sec. 10,** NE¼ NE¼, NW¼ NE¼, NE¼ NW¼, and NW¼ NW¼; **sec. 11,** NE¼ NW¼, NW¼ NW¼, SE¼ NW¼, NE¼ SW¼, and SE¼ SW¼; **sec. 14,** NE¼ NW¼, SE¼ NW¼, NE¼ SW¼, and SE¼ SW¼; **sec. 23,** NW¼ NE¼, SW¼ NE¼, NE¼ NW¼, NE¼ SW¼, SW¼ SW¼, SE¼ SW¼, and NW¼ SE¼; **sec. 26,** NW¼ NW¼, SW¼ NW¼, NW¼ SW¼, and SW¼ SW¼; **sec. 35,** L3, L4, and NW¼ NW¼.
	New Mexico Principal Meridian, New Mexico T. 24 S., R. 33 E., **sec. 19,** L3, L4, SW¼ NE¼, SE¼ NE¼, NE¼ SW¼, and NW¼ SE¼; **sec. 20,** NW¼ NE¼, NE¼ NW¼, SW¼ NW¼, and SE¼ NW¼.
	T. 25 S., R. 29 E., **sec. 6,** SE¼ SE¼; **sec. 36,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼.
	T. 25 S., R. 32 E.; **sec. 16,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼.
	T. 25 S., R. 33 E., **sec. 32,** NE¼ NE¼, SE¼ NE¼, NE¼ SE¼, and SE¼ SE¼.

Land Ownership	Legal Description
	T. 26 S., R. 32 E., **sec. 16,** NW¼ NE¼, NE¼ NW¼, SE¼ NW¼, NE¼ SW¼, NW¼ SE¼, and SW¼ SE¼.
	T. 26 S., R. 33 E., **sec. 2,** NE¼ NE¼, NW¼ NE¼, SW¼ NE¼, NW¼ SE¼, SE¼ SW¼, and SW¼ SE¼; **sec. 17,** NE¼ NE¼, and SE¼ NE¼.
Texas	
Private	T&P RR Co., Block 54, T. 1, **sec. 1**, Abstract 44; **sec. 2**, Abstract 1260; **sec. 3**, Abstract 45; **sec. 4**, Abstract 936; **sec. 5**, Abstract 46; **sec. 7**, Abstract 47; **sec. 8**, Abstract 1420; **sec. 11**, Abstract 49.
	T&P RR Co., Block 55, T. 1, **sec. 1**, Abstract 92; **sec. 2**, Abstract 1151; **sec. 3**, Abstract 93; **sec. 4**, Abstract 1152; **sec. 5**, Abstract 94; **sec. 6**, Abstract 1153; **sec. 12**, Abstract 1273.
	T&P RR Co., Block 56, T. 1, **sec. 1**, Abstract 140; **sec. 2**, Abstract 1124; **sec 3**, Abstract 141; **sec. 4**, Abstract 1125; **sec. 5**, Abstract 142; **sec. 6**, Abstract 1126; **sec. 9**, Abstract 144; **sec. 16**, Abstract 1131.
	T&P RR Co., Block 57, T. 1, **sec. 1**, Abstract 164, **sec. 2**, Abstract 1144, Abstract 1330.
	Whiteside, J.E., Block 76, Abstract 1335.

Table 1.2. Legal Description of ATWS

Name	Land Ownership	Legal Description
New Mexico		
Battle Axe Rd ATWS 25 × 100 feet	Private	T. 26 S., R. 33 E., **sec. 10,** NE¼ NE¼, and NW¼ NE¼.
Battle Axe Rd Bore 175 feet	Private	T. 26 S., R. 33 E., **sec. 10,** NE¼ NE¼, and NW¼ NE¼.
Battle Axe Rd Bore 250 feet	BLM	T. 26 S., R. 32 E., **sec. 27,** NW¼ NW¼.
Buck Jackson Rd Bore 75 feet	BLM	T. 26 S., R. 31 E., **sec. 8,** SW¼ SE¼.
Corral Canyon ATWS #1	BLM	T. 25 S., R. 29 E., **sec. 9,** SW¼ SE¼, and SE¼ SE¼.
Corral Canyon ATWS #2	BLM	T. 26 S., R. 29 E., **sec. 12,** SE¼ NE¼, and NE¼ SE¼.
Golden Child ATWS #1	BLM	T. 25 S., R. 29 E., **sec. 5,** SW¼ SW¼.
Golden Child ATWS #2	BLM	T. 25 S., R. 29 E., **sec. 8,** NE¼ NW¼
Golden Child ATWS #3	BLM	T. 25 S., R. 29 E., **sec. 8,** NW¼ NE¼, and NE¼ NW¼.
HWY 128 ATWS 25 × 400 feet	BLM	T. 24 S., R. 32 E., **sec. 16,** NE¼ SE¼.
HWY 128 Rd Bore 350 feet	BLM	T. 24 S., R. 32 E., **sec. 16,** NE¼ SE¼.
JCT 1 ATWS 25 × 100 feet	BLM	T. 24 S, R. 32 E., **sec. 22:** SW¼ SW¼.
JCT 1 Rd Bore 125 feet	BLM	T. 24 S, R. 32 E., **sec. 21:** SE¼ SE¼. **sec. 22:** SW¼ SW¼.
JCT 1/HWY652 ATWS 15 × 200 feet	BLM	T. 26 S, R. 32 E., **sec. 3,** NW¼ SW¼. **sec. 4,** NE¼ SE¼.
JCT1/HWY652 Rd Bore 200 feet	BLM	T. 2 6S, R. 32 E., **sec. 3:** NW¼ SW¼. **sec. 4:** NE¼ SE¼.
Longhorn Rd Bore 100 feet	BLM	T. 26 S, R. 29 E., **sec. 24:** SE¼ NE¼.
Pipeline Rd Bore 450 feet	BLM	T. 26 S, R. 29 E., **sec. 1:** SE¼ SE¼. **sec. 12:** NE¼ NE¼.
Ross Draw Rd ATWS 25 × 100 feet	Private	T. 26 S, R. 33 E., **sec. 5:** SE¼ SE¼. **sec. 8:** NE¼ NE¼.

Name	Land Ownership	Legal Description
Ross Draw Rd Bore 175 feet	State	T. 26 S, R. 33 E., **sec. 2:** SE¼ SW¼.
	Private	T. 26 S, R. 33 E., **sec. 11:** NE¼ NW¼.
Ross Draw Rd Bore 250 feet	BLM	**T. 26 S, R. 32 E.,** **sec. 4:** SE¼ SE¼. **sec. 9:** NE¼ NE¼.
Ross Draw Rd Bore 300 feet	BLM	**T. 26 S, R. 34 E.,** **sec. 5:** SE¼ SE¼. **sec. 8:** NE¼ NE¼.
Stateline Rd Bore 150 feet Ross Draw	BLM	**T. 26 S, R. 31 E.,** **sec. 29:** SE¼ SW¼.
Stateline Rd Bore 175feet Corral Canyon	BLM	**T. 26 S, R. 30 E.,** **sec. 30:** L4. **sec. 31:** L1.
Twin Wells Bore ATWS 15 × 150 feet	BLM	**T. 25 S, R. 29 E.,** **sec. 25:** NE¼ NW¼.
Twin Wells Rd Bore 250 feet	BLM	**T. 25 S, R. 29 E.,** **sec. 25:** NW¼ NE¼, and NE¼ NW¼.

Table 1.3. Legal Description of Proposed Aboveground Facilities

Name	Land Ownership	Legal Description
New Mexico		
Oxy Meter Station Section 9	BLM	**T. 24 S., R. 32 E.,** **sec. 9,** SW¼ SW¼, and SE¼ SW¼.
Oxy Meter Station Section 18	BLM	**T. 24 S., 32 E.,** **sec. 18,** SE¼ SW¼.
Charro Compressor Station	BLM	**T. 24 S., R. 32 E.,** **sec. 21,** NE¼ SE¼, and SE¼ SE¼.
XTO Meter Station Cazador	BLM	**T. 24 S., R. 32 E.,** **sec. 21,** NE¼ SW¼.
XTO Meter Station Charro	BLM	**T. 24 S., R. 32 E.,** **sec. 23,** NW¼SW¼.
XTO Meter Station Outrider	BLM	**T. 24 S., R. 32 E.,** **sec. 28,** NE¼ SW¼.
Transwestern Meter Station (Charro)	State	T. 24 S., R. 33 E., **sec. 20,** NW¼ NE¼.
XTO Meter Station Golden Child	State	T. 25 S., R. 29 E., **sec. 6,** SE¼ SE¼.
XTO Meter Station Corral Canyon	BLM	**T. 25 S., R. 29 E.,** **sec. 8,** NE¼ NE¼.

Name	Land Ownership	Legal Description
Corral Canyon Compressor Station	BLM	**T. 25 S., R. 29 E.,** **sec. 9,** NW¼ NW¼.
El Paso Fuel Gas Meter Valve Station	BLM	**T. 25 S., R. 29 E.,** **sec. 25,** NW¼ NE¼, and NE¼ NW¼.
Oxy Meter Station Red Hills A	BLM	**T. 25 S., R. 33 E.,** **sec. 20,** NE¼ NE¼.
EOG Meter/Receiver Station Ross Draw	Private	T. 26 S., R. 31 E., **sec. 8,** NE¼ SW¼.
EOG Meter Station Jafar	State	T. 26 S., R. 33 E., **sec. 2,** NE¼ NE¼.
Red Hills Compressor Station	Private	T. 26 S., R., 33 E., **sec. 8,** NE¼ NE¼.
Jafar Valve Station	Private	T. 26 S., R. 33 E., **sec. 11,** NE¼ NW¼.
Oxy Meter Station Red Hills B	State	T. 26 S., R. 33 E., **sec. 17,** SE¼ NE¼.
Transwestern Meter Station (Red Hills)	BLM	**T. 26 S., R. 34 E.,** **sec. 5,** SE¼ SE¼.
Transwestern Meter Station (Red Hills)	BLM	**T. 26 S., R. 34 E.,** **sec. 8**, NE¼ NE¼.
Texas		
Conan Valve Station	Private	T&P RR Co., Block 54, T. 1, **sec. 2**, Abstract 1260.
State Line Junction Launcher/Receiver Station	Private	T&P RR Co., Block 54, T. 1, **sec. 5**, Abstract 46.
Ross Draw Valve Station/Receiver	Private	T&P RR Co., Block 56, T. 1, **sec. 1**, Abstract 140.
State Line Valve Station/Receiver	Private	T&P RR Co., Block 56, T. 1, **sec. 4**, Abstract 1125.
RKI Meter Station State Line	Private	T&P RR Co., Block 56, T. 1, **sec. 16**, Abstract 1131.

Table 1.4. Legal Description of Proposed Access Road ROW

Land Ownership	Legal Description
Texas	
Private	T&P RR Co., Block 55, T. 1, Sec. 5, Abstract 94; Sec. 4, Abstract 1152; Sec. 9, Abstract 96; Sec. 10, Abstract 1155.

As part of the application process, a Plan of Development (POD) has been prepared. The project description, design features, and construction methods from the POD have been incorporated into the Proposed Action of this environmental assessment (EA).

SWCA Environmental Consultants (SWCA) conducted general biological surveys of the proposed disturbance area in October through December 2015, to evaluate the potential for special status species to occur and to identify habitat communities regulated by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act of 1973 (ESA), jurisdictional drainages or sensitive aquatic habitats regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act of 1972, and active and inactive migratory bird nests protected by the Migratory Bird Treaty Act of 1918 (MBTA). The survey results are included in the biological assessment (BA), which is included as Appendix A to this EA (SWCA 2016a). Additionally, SWCA prepared cultural resources inventory reports for the proposed project (Sisneros et al. 2016; Larsen et al. 2016). SWCA conducted an archaeological survey of the project areas that are not within the Permian Basin Programmatic Agreement Area from October to December, 2015, to aid in complying with Section 106 of the National Historic Preservation Act of 1966 (NHPA). The cultural resources survey reports are on file with the BLM CFO.

This EA complies with the requirements of the National Environmental Policy Act of 1969 (NEPA) and federal regulations found in 40 Code of Federal Regulations (CFR) Chapter V. This EA analyzes the site-specific impacts associated with the Proposed Action and its alternatives, identifies mitigation measures to potentially reduce or eliminate those impacts, and provides agency decision makers with detailed information with which to approve or deny the Proposed Action or an alternative.

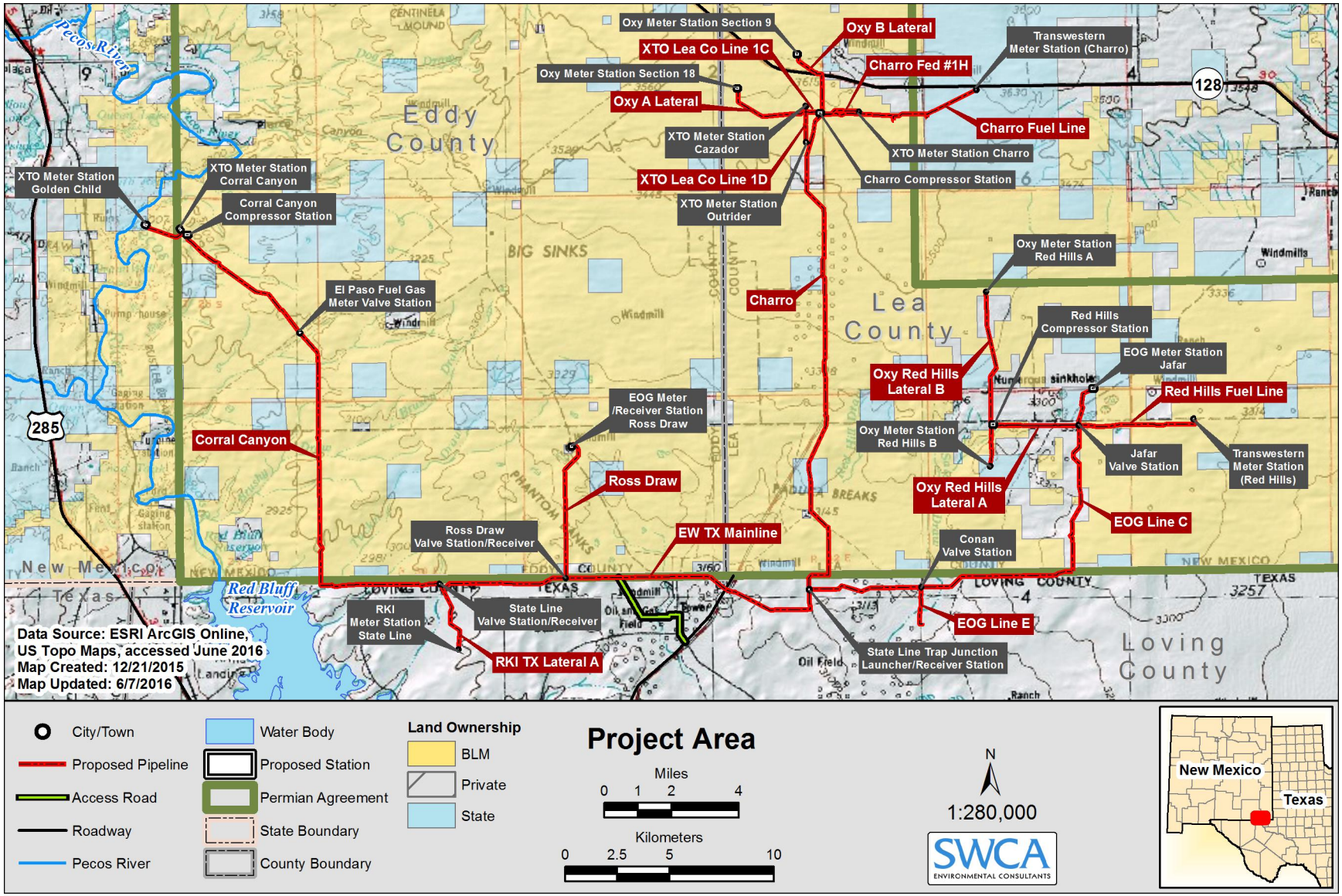

Figure 1.1. Project area map of the proposed Lobo Gathering System project.

1.2 Purpose and Need for Action

The BLM's purpose is to respond to EnLink's request for legal use of, and access across, public lands managed by the BLM by granting a 30-foot-wide permanent ROW, the temporary workspace necessary for construction (20-foot wide ROW), and associated aboveground appurtenances. The BLM's mandate for multiple uses of public lands includes development of energy resources in a manner that conserves the multitude of other resources found on public lands. The need for the action is established by the BLM's responsibility under the Federal Land Policy and Management Act (FLPMA) and the Mineral Leasing Act of 1920 (MLA), as amended (30 United States Code [USC] 185) to respond to the applications for ROW grant for use of federal land. Under the MLA, the BLM is authorized to issue ROW grants on public lands for the conveyance and distribution of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product produced from them. It is the policy of the BLM, mandated by several laws including the MLA, to manage public land for multiple uses and to respond to an application for a ROW grant for use of federal land.

The applicant's purpose is to safely and efficiently gather natural gas from the project area to a gas processing facility. There is a need for natural gas gathering and distribution infrastructure in the region and the ROW grant would allow for construction and operation of the pipeline.

1.3 Conformance with Applicable Land Use Plan(s)

The Proposed Action is in conformance with the 1988 Carlsbad Resource Management Plan (RMP) (BLM 1988). The 1988 RMP has been amended twice—once in 1997 and again in 2008. The 1997 Carlsbad Approved Resource Management Plan Amendment (RMPA) and Record of Decision (ROD) (BLM 1997) was developed to address management of oil and gas resources. The 2008 Special Status Species ROD and RMPA (BLM 2008a) was developed to address management of the lesser prairie-chicken (*Tympanuchus pallidicinctus*; LPC) and the dunes sagebrush lizard (*Sceloporus arenicolus*; DSL). The 1988 RMP, as amended, provides for the integrated multiple use and sustained yield of resources for the planning area.

The 1988 RMP complies with the multiple use mandates established by FLPMA and the 43 CFR 1600 regulations governing multiple use planning. It allows the oil and gas industries reasonable opportunities to lease and explore, while protecting sensitive areas and other resources. Continuing management guidance states, "Public lands would remain open and available for mineral exploration and development unless withdrawal or other administrative action is necessary to protect other resource values" (BLM 1988:13).

The Pecos District Office, which includes the CFO and the Roswell Field Office, uses the "BLM General Requirements for Oil and Gas Operations on Federal Lands" as a Condition of Approval that describes general requirements and standard plan operations for oil and gas operations and ROWs as outlined in Appendix 2 of the Carlsbad Approved RMPA and ROD (BLM 1997:Appendix 2:1–21) and the 2008 RMPA and ROD (BLM 2008a:2–3).

ROWs would be granted only after site-specific analysis (BLM 2008b:6). Site-specific impacts from the Proposed Action are analyzed and disclosed in this EA. The Proposed Action crosses the southwestern corner of the Pecos River/Canyons Complex Area of Critical Environmental Concern (ACEC) and Resource Natural Area (RNA), a ROW avoidance area (see Section 3.8). The 1988 RMP describes the conditions of the ROW avoidance areas and potential exceptions (BLM 1988:11). The RMP refers to BLM Manual 1623.51, which describes the circumstances for which an exception may be granted in right-of-way avoidance areas: "…areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available." (BLM Manual 1623.51). As part of the Proposed Action, the BLM has considered an exception to the ROW avoidance management objective. If the exception is granted, the Proposed Action would be in conformance with the RMP, as amended. If the exception is not granted, EnLink would be required to analyze a different alternative, outside of the ACEC.

1.4 Relationship to Statutes, Regulations, or Other Plans

Various federal and state agencies regulate different aspects of oil and gas infrastructure development. Table 1.5 lists the environmental permits and approvals that could be required for the proposed project.

Table 1.5. Potential Permits, Approvals, and Clearances Needed for Construction, Operation, and Maintenance of the Proposed Project

Permit/Notification	Issuing Agency	Status
Federal Permit, Approval, or Clearance		
ROW grant	BLM	Subject of this application.
Clearance under Section 7 of the ESA	USFWS	Any consultation with the USFWS would be managed by the BLM. The analysis of impacts to listed species is provided in Section 3.5.
Clean Water Act Section 404 Permit	USACE	Jurisdictional water bodies may be crossed either by trenching or boring underneath the drainage. Nationwide Permit 12 would apply. See Section 3.2.
State Permit, Approval, or Clearance		
State of New Mexico ROW grant	SLO	Subject of this application.
Clean Water Act Section 401 certification	- New Mexico Environment Department - Texas Commission on Environmental Quality	The Section 401 permit, if applicable, would be issued as part of USACE Nationwide Permit 12.
Clean Water Act Section 402 General Construction (Stormwater) Permit	- New Mexico Environment Department - Texas Commission on Environmental Quality	Exempt based on the 1987 Water Quality Act and Section 323 of the Energy Policy Act of 2005.
Clean Air Act New Mexico Air Quality Control Act Construction Permit	New Mexico Environment Department	The proponent may need to obtain a construction permit for the proposed project, namely the compressor station sites.
Section 106 of the NHPA	- New Mexico State Historic Preservation Office - Texas Historical Commission	Any consultation with the State Historic Preservation Office or Texas Historical Commission would be managed by the BLM.
Tribal communications: consultation to determine if the proposed project would impact receptors of cultural importance	Native American tribes	Any consultation with Native American tribes would be managed by the BLM.
Road crossing and railway permits	- New Mexico Department of Transportation - Texas Department of Transportation	EnLink is coordinating state highway crossings with the departments of transportation.

1.4.1 Council on Environmental Quality Regulations

Parts 1500 through 1508 of the Council on Environmental Quality (CEQ) regulations (40 CFR 1500.3) provide stipulations applicable to and binding for all federal agencies for implementing the procedural provisions of NEPA, "except where compliance would be inconsistent with other statutory requirements."

Additionally, the ROW grant holder is required to:

- comply with all applicable federal, state, and local laws and regulations; and
- implement the Proposed Action in a way that is as consistent as possible with local, county, or state plans.

1.4.2 Endangered Species Act of 1973

The ESA requires all federal departments and agencies to conserve threatened, endangered, and critical and sensitive species and the habitats on which they depend. Federal agencies must consult with the USFWS on all actions authorized, funded, or carried out by the agency to ensure that the action would not likely jeopardize the continued existence of any threatened and endangered species or adversely modify critical habitat. Consultation with the USFWS, as required by Section 7 of the ESA, was conducted as part of the Special Status Species RMPA (Consultation No. 22420-2007TA-0033) to address cumulative effects of RMP implementation (BLM 2008a). The consultation is summarized in Appendix 10 of the RMP. In the event further evaluation under Section 7 is necessary, the BLM CFO would conduct consultation with the USFWS for this Proposed Action.

1.4.3 Clean Air Act

The Clean Air Act of 1970 (CAA), as amended, establishes National Ambient Air Quality Standards (NAAQS) to control air pollution. The New Mexico Environment Department (NMED) Air Quality Bureau (AQB) and Texas Commission on Environmental Quality (TCEQ) oversee air quality regulations and standards for stationary sources of air pollution. Impacts to air quality from oil and gas exploration and development are controlled by mitigation measures developed on a case-by-case basis. As part of the planning and decision-making process, the BLM must consider and analyze the potential effects of its activities on air resources. The Proposed Action would be in compliance with the NAAQS for potential air pollution from the proposed project activities. This EA discusses the recommended mitigation measures during construction that would minimize the potential for adverse impacts to air quality in Section 2.1.5, Design Features.

1.4.4 National Historic Preservation Act

Heritage resources are protected by the NHPA (Public Law [PL] 89-665), as amended, and its implementing regulations (36 CFR 800) and other legislation, including NEPA (PL 91-852) and its implementing regulations (40 CFR 1500–1508). Other relevant laws include the following:

- Antiquities Act of 1906 (PL 52-209);
- Archaeological and Historical Conservation Act of 1974 (PL 93-291);
- Archaeological Resources Protection Act of 1979 (PL 96-95) and its regulations (36 CFR 296);
- American Indian Religious Freedom Act (42 USC 1996);
- Native American Graves Protection and Repatriation Act of 1990 (PL 101-601); and
- Executive Order (EO) 11593 of 1971.

Compliance with Section 106 responsibilities of the NHPA is achieved by following the BLM–New Mexico State Historic Preservation Office protocol agreement, which is authorized by the National Programmatic Agreement between the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. In Texas, compliance with Section 106 is completed via consultation between the BLM and the Texas Historical Commission as the Programmatic Agreement area does not extend into Texas. The BLM would conduct any consultation with the State Historic Preservation Office and Texas Historical Commission regarding this Proposed Action.

1.4.5 Clean Water Act

The Federal Water Pollution Control Act, commonly known as the Clean Water Act (codified at 40 CFR 112), protects surface water resources from pollution. The USACE has jurisdiction of navigable waters of the U.S. Section 401 of the federal Clean Water Act, through state certification by the NMED and TCEQ, requires the USACE to meet state water quality regulations prior to granting a Section 404 permit for work

in creeks or rivers. All federal consultations, including those regarding the ESA, must be completed prior to USACE issuance of Section 404 authorizations.

Forty-seven potentially jurisdictional, ephemeral waterways were identified during fall 2015 biological surveys (SWCA 2016b). Nationwide Permit 12 would be required in association with this project. Refer to Section 3.2 for more information about water resources. Due to Section 323 of the Energy Policy Action of 2005 and the 1987 Water Quality Act, the proposed project is exempt from Section 402 of the Clean Water Act because the stormwater generated from the proposed project would be uncontaminated and result from a "field activity or operation associated with exploration, production, processing, or treatment operations, or transmission facilities" (33 USC 1362(24)).

1.5 Scoping, Public Involvement, and Issues

Scoping helps to identify issues, resources, and resource uses that could be impacted and reduces the chance of overlooking a potentially significant issue or reasonable alternative. Scoping takes place both internally within the BLM via meetings with resource specialists, as well as externally where the public is invited to comment.

The BLM CFO published a NEPA log for public inspection. This log contains a list of proposed and approved actions within the BLM CFO planning area. The log is available on the BLM New Mexico website (BLM 2015). Resource issues identified for the proposed project are listed in Table 1.6. The issues presented here are fully analyzed in the corresponding resource sections in Chapter 3.

Table 1.6. Resource Issues Identified for the Proposed Project

Resource	Issue
Air Resources	How would the proposed project impact air quality, especially during construction of the proposed project?
Water Resources	How would the proposed project affect water resources, both surface water and groundwater?
Cave/Karst Resources	How would the surface disturbance affect subsurface karst features and groundwater?
Soils	How would the surface disturbance associated with the proposed project affect soils?
Wildlife and Special Status Species	How would the proposed project and associated noise impacts affect habitat for wildlife and migratory birds? How would the proposed project and associated noise impacts affect special status species with the potential to occur in the project area, including habitat for the LPC and DSL?
Vegetation and Invasive Non-native Species	How would the proposed project affect vegetation? How would the proposed project minimize the spread of invasive non-native species?
Cultural Resources	How would surface-disturbing activities affect cultural resources? Is there potential for impacts to known archaeological sites?
Livestock Grazing	How would the proposed project impact livestock grazing in the vicinity of the proposed pipeline, specifically fence crossings and water line crossings?
Special Management Areas (SMAs)	The proposed project crosses portions of three SMAs: the Phantom Bank Heronries SMA, and the Pecos River/Canyons Complex ACEC and RNA. How would these areas be impacted?
Visual Resources	The proposed project crosses areas designated as Visual Resource Management (VRM) Classes II, and IV. How would the scenic quality in these areas be impacted?
Public Health and Safety	How would proposed project construction and ongoing activities impact public health and safety?

1.5.1 Issues Considered but Not Analyzed in Detail

The following issues were considered but not analyzed in detail in this EA.

Recreation

Dispersed recreation could occur in the vicinity of the proposed project. However, the project area is not a destination for recreation and the proposed route parallels existing roads and ROWs. A small number of seasonal recreation users (e.g., hunters and off-highway vehicle riders) may occasionally be in the vicinity of the project area. Recreational users may avoid the project area in the short term during construction, although recreation access would not be closed. The proposed project is not expected to change the recreation features of the general area after construction is complete. No impacts to recreation have been identified; therefore, the issue is not analyzed in this EA.

Native American Religious Concerns

For the Proposed Action, identification efforts for Native American religious concerns were limited to reviewing existing published and unpublished literature, the site-specific Class III survey reports prepared for the Proposed Action (Sisneros et al. 2016; Larsen et al. 2016), and the BLM's cultural resources program regarding the presence of traditional cultural properties (TCPs) identified through ongoing BLM tribal consultation efforts. The Proposed Action would not impact any known TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere with or hinder the performance of traditional ceremonies and rituals pursuant to the American Indian Religious Freedom Act of 1978 (42 USC 1996) or EO 13007.

Paleontological Resources

The proposed project is located within areas mapped as Potential Fossil Yield Classification 1, 2, and 3, (New Mexico Tech 2003) indicating the geologic units have low potential to contain recognizable fossil remains, or there is not sufficient resource data to determine the level of management concern. Management concern for paleontological resources within these classes is usually low and assessment or mitigation is usually unnecessary (BLM 2007a). Section 2.1.5 includes a design feature for paleontological resources, if conditions arise. The proposed project is not expected to impact paleontological resources; therefore, this issue is not analyzed in this EA.

Socioeconomics

EnLink estimates that approximately 200 workers would be employed to construct the project and 10 workers would be employed during the operational phase. The project would enable EnLink to continue to make capital investments within the states of Texas and New Mexico to support the growth of natural gas transportation for Texas, New Mexico, and surrounding areas. These investments would yield additional job opportunities within these states. However, the number of jobs created and the temporary status of those jobs does not warrant detailed analysis in this EA.

Environmental Justice

The U.S. Environmental Protection Agency's (EPA's) Office of Environmental Justice defines environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (EPA 2015a). Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group(s), should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. No area communities meet the CEQ definition of a low-income population (50% or higher) or would be classified as a minority population. The Proposed Action would not disproportionately impact any low-income population or minority population area. Therefore, environmental justice does not warrant detailed analysis in this EA.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

EnLink is seeking authorization from the BLM to use federal land for permanent easement and temporary workspace to construct and operate the Lobo Gathering System natural gas pipeline project, herein referred to as the project or Proposed Action. EnLink is proposing to install approximately 93 miles of buried pipeline with 23 associated aboveground facilities including 3 compressor stations, and one access road, on public lands managed by the BLM, New Mexico state lands, and private lands located in Loving County, Texas, and Lea County and Eddy County, New Mexico (47 miles on BLM lands, 7 miles on SLO lands, 39 miles on private lands in New Mexico and Texas). The natural gas gathering system would consist of four origination areas with multiple central tank battery origination points, all in Lea and Eddy Counties, New Mexico, that travel southerly to an east-west lateral in Loving County, Texas, and would terminate at the State Line Trap Junction Station (see Figure 1.1). The pipelines would be constructed with both polyethylene and carbon steel, ranging from 3-inch to 20-inch outside diameter size and would be engineered according to 49 CFR Department of Transportation (DOT) 192 regulations. Steel pipelines would be constructed to accommodate 1,480 pounds per square inch and polyethylene pipelines would be constructed to accommodate 150 pounds per square inch. The proposed project would provide takeaway capacity of up to 200 million standard cubic feet per day.

The 7 miles of the project that would be located on State of New Mexico surface would be permitted under an approved SLO ROW Easement. The 47 miles of the project that would be located on BLM CFO-managed surface would be permitted under an approved BLM ROW grant. The remainder of the proposed project would be approved via a Surface Owner Agreement between EnLink and the private landowner(s). This EA includes discussion of resource impacts to the entire route. Acreage impacts for each surface type are presented below in Table 2.1.

EnLink has requested from the BLM a 50-foot-wide ROW grant to include 30 feet of permanent ROW and 20 feet of temporary workspace ROW. A 50-foot width makes it possible to excavate for a 12-inch pipe in primarily loamy and sandy soils and keep the subsoil and topsoil from mixing. The 50-foot ROW also allows for the equipment to operate safely without impacting soil stockpiles or creating unnecessary congestion. Ground disturbance associated with the 50-foot pipeline ROW would be temporary because the entire ROW would be reclaimed and re-seeded after construction. Table 2.1 provides a detailed breakdown of acreages of surface disturbance from the Proposed Action per land ownership type.

Table 2.1. Acreages of Disturbance by Land Ownership Type

Project Element	Land Ownership	Permanent Pipeline Easement (acres)	Temporary Workspace (acres)	Total Proposed ROW (acres) Short-term disturbance	Long-term disturbance	Total Disturbance
Gathering System Pipeline Corridor	BLM (47 miles)	166 (30-foot width)	108 (20-foot width)	274	0	274
	SLO (7 miles)	26 (30-foot width)	17 (20-foot width)	43	0	41
	Private (39 miles)	137 (30-foot width)	165 (20-foot width)	302	0	302
Aboveground Permanent Facilities	BLM	19	0		19	19
	SLO	9	0		9	9
	Private	8	0		8	8
Access Road	Private	12	0		12	12
ATWS	BLM	0	2	2	0	2
	SLO	0	0	0	0	0
	Private	0	1	1	0	1
Total Acreage of ROW		***330***	***293***	***622***	***48***	***670****
Total BLM Acreage		***185***	***110***	***295***	***19***	***314****

Some numbers have been rounded for ease of narrative review.

Additional Temporary Workspace

Additional temporary workspace would be needed to accommodate construction in some areas along the pipeline route. The ATWS would include materials staging areas, extra space around bore locations, or other areas. The locations and size of the ATWS would be minimized as much as possible and ground disturbance would be temporary in nature because the areas would be stabilized and rehabilitated after construction is complete. In total, 3.61 acres of ATWS would be needed to construct the proposed project. Table 2.2 provides a detailed breakdown of acreages of ATWS.

Table 2.2. Size and Land Status of ATWS for Construction

ATWS Name	Area (acres)			Dimension (feet)
	BLM	SLO	Private	
Battle Axe Rd ATWS			0.11	25 × 100
Battle Axe Rd Bore			0.11	15 × 175
Battle Axe Rd Bore	0.09			15 × 250
Buck Jackson Rd Bore	0.03			15 × 75
Corral Canyon ATWS #1	0.28			15 × 775
Corral Canyon ATWS #2	0.43			15 × 1,260
Golden Child ATWS #1	0.11			15 × 325
Golden Child ATWS #2	0.12			15 × 360
Golden Child ATWS #3	0.55			15 × 1,600
HWY 128 ATWS	0.28			25 × 400
HWY 128 Rd Bore	0.13			15 × 350
JCT 1 ATWS (north)	0.10			25 × 100
JCT 1 ATWS (south)	0.10			25 × 100
JCT 1 Rd Bore (north)	0.04			15 × 125
JCT 1 Rd Bore (south)	0.04			15 × 125
JCT 1/HWY 652 ATWS & Rd Bore	0.09			15 × 200
Longhorn Rd Bore	0.03			15 × 100
Pipeline Rd Bore	0.16			17 × 450
Ross Draw Rd ATWS			0.10	25 × 100
Ross Draw Rd Bore		0.001	0.05	15 × 175
Ross Draw Rd Bore	0.09		0	15 × 250
Ross Draw Rd Bore	0.10		0	15 × 300
Stateline Rd Bore Ross Draw	0.05		0	15 × 150
Stateline Rd Bore Corral Canyon	0.06		0	15 × 175
Twin Wells Bore ATWS	0.10		0	15 × 150
Twin Wells Rd Bore	0.10		0	15 × 250
TX HWY 652 ATWS (east)			0.05	25 × 100
TX HWY 652 ATWS (west)			0.05	25 × 100
TX Stateline Rd ATWS			0.05	25 × 100
Subtotal	3.08	0.01	0.52	
Total	***3.61***			

Aboveground Permanent Facilities

In addition to the pipeline system, EnLink would construct or install 23 aboveground appurtenant facilities such as compressor stations, meter stations, valve stations, and a receiver station as shown on Figure 1.1. Nine of these proposed facilities are new, and 16 involve installing new equipment at an existing facility. After clearing and grading the facility site, excavations would be performed as necessary to accommodate the reinforced concrete foundations required for the new equipment. Forms would be set, rebar installed, and the concrete poured and cured in accordance with applicable standards. Concrete pours would be randomly sampled to verify compliance with minimum strength requirements. Backfill would be compacted in place, and excess soil would be used elsewhere or distributed around the site. In total, approximately 35.9 acres of ROW would be required for the Proposed Action's aboveground appurtenant facilities. New ground disturbance associated with constructing these features would be less than the ROW acreage as many of the facilities would be constructed on existing facilities that were previously disturbed. Disturbance associated with new facilities (approximately 15.07 acres) would be long- term because the areas would not be fully reclaimed after construction. Table 2.3 provides a detailed breakdown of acreages of ROW proposed to accomodate the aboveground appurtenant facilities.

Table 2.3. Size and Land Status of Aboveground Facilities

Facility Name	Area (acres)			Dimension (feet)	Existing or New Facility
	BLM	SLO	Private		
Charro Compressor Station	4.90			361 × 590	New
Conan Valve Station			0.03	30 × 50	Existing
Corral Canyon Compressor Station	4.51			332 × 592	New
El Paso Fuel Gas Meter Valve Station	0.23			100 × 100	New
EOG Meter Station Jafar		4.90		361 × 590	Existing
EOG Meter/Receiver Station Ross Draw			2.64	325 × 345	Existing
Jafar Valve Station			0.17	75 × 100	Existing
Oxy Meter Station Red Hills A	0.05			30 × 70	Existing
Oxy Meter Station Red Hills B		0.05		30 × 70	Existing
Oxy Meter Station Section 18	3.33			330 × 440	Existing
Oxy Meter Station Section 9	3.56			330 × 470	Existing
Red Hills Compressor Station			4.64	385 × 525	New
RKI Meter Station State Line			0.03	30 × 50	Existing
Ross Draw Valve Station/Receiver			0.05	30 × 75	New
State Line Trap Junction Launcher/Receiver Station			0.23	100 × 100	New
State Line Valve Station/Receiver			0.05	30 × 75	New
Transwestern Meter Station (Charro)		0.23		100 × 100	New
Transwestern Meter Station (Red Hills)	0.23			100 × 100	New
XTO Meter Station Cazador	0.05			30 × 70	Existing
XTO Meter Station Charro	0.05			30 × 70	Existing
XTO Meter Station Corral Canyon	2.31			225 × 445	Existing
XTO Meter Station Golden Child		3.88		375 × 600	Existing
XTO Meter Station Outrider	0.05			30 × 70	Existing
Subtotal	**19.27**	**9.06**	**7.84**		
Total ROW	***35.9***				
Total New Facility Disturbance	***15.07***				

Road Crossings

Constructing the Proposed Action would include 93 road crossings. Some of these road crossings include boring under adjacent existing pipelines (Table 2.4 and Table 2.5). See detail on crossing methods below in Section 2.1.1.

Table 2.4. Road Crossings in New Mexico

Pipeline Segment	Road Name	Crossing Method	Legal Description
Charro	Battle Axe Rd	Bore 250 feet	Township 26S, Range 32E, Section 27
Charro	JCT 1 (*Orla Rd*)	Bore 125 feet	Township 24S, Range 32E, Section 22
Charro	JCT 1 (*Orla Rd*)	Bore 125 feet	Township 24S, Range 32E, Section 22
Charro	JCT 1/HWY 652	Bore 200 feet	Township 26S, Range 32E, Section 4
Charro	Ross Draw Rd	Bore 250 feet	Township 26S, Range 32E, Section 4
Charro	Ross Draw Rd	Bore 250 feet	Township 26S, Range 32E, Section 9
Charro	Unnamed	Open cut	Township 24S, Range 33E, Section 19
Charro	Unnamed	Open cut	Township 24S, Range 32E, Section 28
Charro	Unnamed	Open cut	Township 24S, Range 32E, Section 28
Charro	unnamed (*110763843592*)	Open cut	Township 25S, Range 32E, Section 16
Charro	unnamed (*110763849705*)	Open cut	Township 25S, Range 32E, Section 9
Charro	Unnamed	Open cut	Township 25S, Range 32E, Section 28
Charro	Unnamed	Open cut	Township 25S, Range 32E, Section 33
Charro	Unnamed	Open cut	Township 26S, Range 32E, Section 4
Charro	Unnamed	Open cut	Township 26S, Range 32E, Section 16
Charro	Unnamed	Open cut	Township 26S, Range 32E, Section 16
Charro	Unnamed	Open cut	Township 26S, Range 32E, Section 21
Charro	Unnamed	Open cut	Township 26S, Range 32E, Section 21
Charro Fed #1H	Unnamed	Open cut	Township 24S, Range 32E, Section 22
Charro Fed #1H	Unnamed	Open cut	Township 24S, Range 32E, Section 22
Charro Fuel Line	Unnamed (*110763849451*)	Open cut	Township 24S, Range 33E, Section 20
Charro Fuel Line	Unnamed	Open cut	Township 24S, Range 32E, Section 22
Charro Fuel Line	Unnamed	Open cut	Township 24S, Range 32E, Section 22
Charro Fuel Line	Unnamed	Open cut	Township 24S, Range 33E, Section 19
Charro Fuel Line	Unnamed	Open cut	Township 24S, Range 33E, Section 19
Corral Canyon	Longhorn Rd (*Whitehorn Rd*)	Bore 100 feet	Township 26S, Range 29E, Section 24
Corral Canyon	Pipeline Rd	Bore 450 feet	Township 26S, Range 29E, Section 1
Corral Canyon	Stateline Rd	Bore 175 feet	Township 26S, Range 30E, Section 30
Corral Canyon	Twin Wells Rd	Bore 250 feet	Township 25S, Range 29E, Section 25
Corral Canyon	Unnamed (*1101050506799*)	Open cut	Township 25S, Range 29E, Section 10
Corral Canyon	Unnamed (*1101050502643*)	Open cut	Township 25S, Range 29E, Section 14
Corral Canyon	Unnamed (*1101050502161*)	Open cut	Township 25S, Range 29E, Section 9
Corral Canyon	Unnamed (*1101050502160*)	Open cut	Township 25S, Range 29E, Section 9

Pipeline Segment	Road Name	Crossing Method	Legal Description
Corral Canyon	Unnamed (*1101050506803*)	Open cut	Township 25S, Range 29E, Section 8
Corral Canyon	Unnamed (*1101050505191*)	Open cut	Township 25S, Range 29E, Section 25
Corral Canyon	Unnamed	Open cut	Township 25S, Range 29E, Section 5
Corral Canyon	Unnamed (*1101050493777*)	Open cut	Township 26S, Range 29E, Section 13
EOG Line C	Dinwiddie Rd	Open cut	Township 26S, Range 33E, Section 11
EOG Line C	Ross Draw Rd	Bore	Township 26S, Range 33E, Section 11
EOG Line C	Unnamed	Open cut	Township 26S, Range 33E, Section 11
Oxy B Lateral	Hwy 128	Bore 350 feet	Township 24S, Range 32E, Section 16
Oxy B Lateral	Unnamed	Open cut	Township 24S, Range 32E, Section 16
Oxy B Lateral	Unnamed	Open cut	Township 24S, Range 32E, Section 21
Oxy B Lateral	Unnamed	Open cut	Township 24S, Range 32E, Section 21
Oxy Red Hills Lateral A	Battle Axe Rd (*Co Rd 2*)	Bore 225 feet	Township 26S, Range 33E, Section 2
Oxy Red Hills Lateral A	Battle Axe Rd (*J-2*)	Bore 175 feet	Township 26S, Range 33E, Section 10
Oxy Red Hills Lateral A	Dinwiddie Rd	Open cut	Township 26S, Range 33E, Section 11
Oxy Red Hills Lateral A	Unnamed (*110763839846*)	Open cut	Township 26S, Range 33E, Section 26
Oxy Red Hills Lateral B	Ross Draw Rd	Bore 175 feet	Township 26S, Range 33E, Section 8
Oxy Red Hills Lateral B	Unnamed (*110763840247)*	Open cut	Township 25S, Range 33E, Section 29
Oxy Red Hills Lateral B	Unnamed	Open cut	Township 25S, Range 33E, Section 33
Oxy Red Hills Lateral B	Unnamed (*110763839873*)	Open cut	Township 26S, Range 33E, Section 17
Red Hills Fuel Line	Battle Axe Rd (*Co Rd 2*)	Bore 175 feet	Township 26S, Range 33E, Section 10
Red Hills Fuel Line	Dinwiddie Rd	Open cut	Township 26S, Range 33E, Section 11
Red Hills Fuel Line	Ross Draw Rd	Bore 300feet	Township 26S, Range 34E, Section 8
Red Hills Fuel Line	Unnamed (*110763849552*)	Open cut	Township 26S, Range 34E, Section 8
Red Hills Fuel Line	Unnamed (*110763839900*)	Open cut	Township 26S, Range 34E, Section 7
Red Hills Fuel Line	Unnamed	Open cut	Township 26S, Range 34E, Section 7
Ross Draw	Buck Jackson Rd (*Buck Jackson Rd*)	Bore 75 feet	Township 26S, Range 31E, Section 8
Ross Draw	Stateline Rd	Bore 150 feet	Township 26S, Range 31E, Section 29
Ross Draw	Unnamed (*1101050493396*)	Open cut	Township 26S, Range 31E, Section 20
XTO Lea Co Line 1D	Unnamed	Open cut	Township 24S, Range 32E, Section 21

Table 2.5. Road Crossings in Texas

Pipeline Segment	Road Name	Crossing Method	Legal Description
Charro	Unnamed	Open cut	Section 5, Abstract 46, T&P RR Co.
EOG Line E	Unnamed	Open cut	Section 2, Abstract 1260, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Abstract 1335, Whiteside, J. E.
EW TX Mainline	Unnamed	Open cut	Abstract 1335, Whiteside, J. E.
EW TX Mainline	Unnamed	Open cut	Abstract 1335, Whiteside, J. E.
EW TX Mainline	Unnamed	Open cut	Abstract 1335, Whiteside, J. E.
EW TX Mainline	Unnamed	Open cut	Section 1, Abstract 140, T&P RR Co.
EW TX Mainline	Unnamed (*110764080283*)	Open cut	Section 1, Abstract 164, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 12, Abstract 1273, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 2, Abstract 1124, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 2, Abstract 1124, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 2, Abstract 1124, T&P RR Co.
EW TX Mainline	Hwy 652	Bore 200 feet	Section 2, Abstract 1151, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 2, Abstract 1260, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 3, Abstract 45, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 3, Abstract 45, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 4, Abstract 1125, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 4, Abstract 1125, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 4, Abstract 1152, T&P RR Co.
EW TX Mainline	Unnamed (*110764081655*)	Open cut	Section 4, Abstract 936, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 5, Abstract 142, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 5, Abstract 142, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 5, Abstract 142, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 5, Abstract 142, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 5, Abstract 142, T&P RR Co.
EW TX Mainline	Unnamed	Open cut	Section 6, Abstract 1126, T&P RR Co.
RKI State Lateral	Unnamed	Open cut	Section 4, Abstract 1125, T&P RR Co.
RKI State Lateral	Unnamed	Open cut	Section 9, Abstract 144, T&P RR Co.
RKI State Lateral	Unnamed	Open cut	Section 9, Abstract 144, T&P RR Co.
RKI State Lateral	Unnamed	Open cut	Section 9, Abstract 144, T&P RR Co.

2.1.1 Construction of the Proposed Project

Construction Schedule and Project Workforce

Construction of the project would be implemented in phases and be completed within the period allowed by the grant. Construction would begin as soon as the ROW grants are issued from the BLM and SLO and the Surface Owner Agreements secured for the portions of the project on private lands. As many as

200 workers would be employed during the peak construction phase of the project. They are expected to find housing in Hobbs and Carlsbad, New Mexico. The expected work schedule during construction is 6 to 7 days per week, with 60+ hours per week per worker. Approximately 10 workers would be employed during the operational phase of the project.

Traffic

The majority of the workers would commute to the construction ROW early in the morning (between 7:00 and 8:00 a.m.) and would return in the evening (between 5:30 and 6:30 p.m.). Heavy equipment vehicles would be transported to the site and left within the ROW until construction is complete. All construction activities in the LPC zones would be prohibited from 3:00 to 9:00 a.m. during March 1 to June 15, should construction be necessary during that time.

Pipeline Construction Procedures

Standard pipeline construction techniques would be used along the pipeline route, which typically involve the following: survey and staking, clearing and grading, trenching, pipe stringing, bending and welding, lowering in and backfilling, road crossings, and cleanup and restoration. The construction techniques described below would be used unless site-specific conditions warrant special construction methods. Construction of the pipeline would begin after all required federal, state, and local approvals are obtained.

- **Survey and Staking**: Before the start of construction, EnLink would complete land or easement acquisition. EnLink would then mark the limits of the approved work area (i.e., the construction ROW boundaries and temporary extra workspaces, and the pipeline centerline) and flag the location of approved access roads. Affected landowners would be notified prior to surveying and staking activities. Environmentally sensitive areas would be marked or fenced for protection. Prior to construction, EnLink contractors would contact the "811-Call before Dig" system to verify and mark all underground utilities (i.e., cables, conduits, and pipelines) to prevent accidental damage during construction. To access the pipeline construction corridor, EnLink would use existing roads. All access roads would be clearly identified on the pipeline aerial alignment sheets and would be posted at the access point. The majority of heavy equipment and personnel vehicles would remain on the construction ROW, minimizing activity on public roads. Prior to construction, if any loads are oversized or overweight, the appropriate permits would be obtained by the contractor.
- **Clearing and Grading:** The construction work area would be cleared and graded where necessary to provide a smooth and even work area to facilitate the safe movement of equipment and personnel. The total 50-foot ROW width would be bladed where steel pipeline is proposed. For polyethylene pipe construction, only the 30-foot permanent ROW would be bladed, the 20-foot temporary ROW would be brush-hogged but topsoil left in place. Stumps, brush, and tree limbs would be removed from the ROW to approved disposal locations or made available to landowners upon request. Up to 6 inches of topsoil would be stripped from the trench and subsoil storage area. Topsoil would be stockpiled separately from the trench spoil along the edge of the construction ROW for respreading during restoration.
  Trenching: The trench would be excavated with a backhoe or ditching machine to a depth sufficient to provide the minimum cover required by EnLink specifications. Typically, the trench would be approximately 5 to 6 feet deep to allow for at least 3 feet of cover. In areas with consolidated rock, the minimum cover would be at least 18 inches. In certain areas, deeper burial would be required resulting in an increased trench depth. Any trench left open for 8 hours or more would use wildlife/livestock escape ramps every 300 feet as described in the project design features below in Section 2.1.5.
- **Pipe Stringing, Bending, and Welding:** Steel pipe would be procured in 40- and 60-foot lengths (referred to as joints), protected with an epoxy coating applied at the factory, and shipped to the project area. The individual joints would be transported to the ROW by stringing trucks and placed on temporary supports along the excavated trench in a single, continuous line or "string." Some bending of the pipe would be required to enable the pipeline to follow natural grade changes and direction changes of the ROW. Following stringing and bending, the joints of pipe would be aligned and welded according to applicable industry standards and EnLink specifications.

- **Lowering-in and Backfilling:** Before the pipeline is lowered in, the trench would be inspected to be sure it is free of rocks and other debris that could damage the pipe or protective coating. If water is present in the trench, dewatering may be necessary to allow for inspection of the trench. Any trench dewatering would be accomplished in a manner designed to prevent heavily silt-laden water from flowing off the ROW. After the pipe is lowered into the trench, final tie-in welds would be made and inspected, and the trench would be backfilled. In rocky soils, padding or other protective coating would be used to prevent damage to the pipe coating. Previously excavated materials would be pushed back into the trench maintaining a similar soil profile. Segregated topsoil would be replaced last and the area graded to pre-disturbance contours.
- **Road Crossings:** Constructing the Proposed Action would include 93 road crossings. Some of these road crossings include boring under adjacent existing pipelines (see Table 2.4 and Table 2.5, above). Pipeline construction at these road crossings would be accomplished by either boring (for more major or paved roads) and by the open-cut method (for more minor unpaved roads), requiring temporary closure of the road to traffic and establishment of detours. If no reasonable detour is feasible, at least one lane of the road being crossed would be kept open to traffic, except during brief periods when it is essential to close the road to install the pipeline. The trench would be excavated and the pipe installed using the standard cross-country construction methods described above. The pipeline would be buried to the depth required by applicable road crossing permit/approvals and would be designed to withstand anticipated external loadings.
- **Cleanup and Restoration:** Cleanup and restoration would occur after the pipeline is installed and backfill activities are completed. Cleanup of the surface along the construction ROW would consist of the removal of construction debris and final grading to the finished contours. Permanent erosion-control measures would be installed and seeding would occur in accordance with BLM requirements.

Construction of the Compressor Stations and other Aboveground Facilities

The limits of disturbance for the compressor station sites and other aboveground facilities would be clearly marked or staked prior to construction. Utility lines would be located and marked to prevent accidental damage during construction. The location of access road entry points would be properly marked. Many of the above-ground proposed meter and valve sites would be constructed on existing pads (see Table 2.3 above).

Construction equipment would be transported to the construction ROW for the aboveground facilities via tractor trailer. Existing roads would be used to access the construction ROW. Transportation equipment would be removed from the site or parked within a staging area once off-loading is complete.

Vegetation would be cleared and the construction ROW graded to provide for safe and efficient operation of construction equipment and vehicles. Foundations would be installed in the areas designated for new equipment. The equipment would be positioned on the foundations, leveled, grouted, and secured. Pipes would be installed to tie-in the new equipment. Instrumentation and electrical connections would be installed. Equipment testing would occur prior to initiating operations. The compressor sites would be surfaced with gravel and fenced around the perimeter of the site. Lighting would be installed as necessary for safety purposes though all lighting would face downward and inward.

2.1.2 Stabilization and Rehabilitation Phase

EnLink would incorporate measures to minimize areas that are disturbed during construction and would return any disturbed acreage to its pre-disturbed state as quickly as feasible upon conclusion of the construction of the project. EnLink would conduct stabilization and rehabilitation activities in accordance with the BLM and landowner agreements, permit requirements, and written recommendations from the local soil conservation authority or other duly authorized agency. Final stabilization and rehabilitation measures for pipeline ROWs, in general, involve regrading the disturbed area to near pre-disturbance contour, respreading topsoil, applying soil amendments if necessary, applying a prescribed seed mixture per BLM and/or landowner recommendation, mulching, and placing runoff and erosion-control structures such as water bars, erosion-control mats, and wattles (slope interruption devices). The goal of final

reclamation is to 1) restore primary productivity of the site and establish vegetation that would provide for natural plant and community succession, and 2) establish a vigorous stand of desirable plant species that would limit or preclude invasion of undesirable species, including invasive, non-native species.

To assist with the stabilization and rehabilitation of the pipeline ROWs during construction, topsoil would be handled separately from subsoil materials. At all construction sites, topsoil would be stripped to provide sufficient quantities to be respread to a depth of at least 4 to 6 inches over the disturbed areas to be reclaimed. Where soils are shallow or where subsoil is stony, as much topsoil would be salvaged as possible. Topsoil would be stockpiled separately from subsoil materials and marked with signs or identified on alignments sheets. Runoff would be diverted around topsoil stockpiles to minimize erosion of topsoil materials.

As soon as practicable after backfilling the trench, all work areas would be graded and restored to pre-construction contours and natural drainage patterns as closely as possible. Non-cultivated lands would be reseeded as soon as possible to minimize erosion following BLM and/or landowner recommendations for seed mixture, fertilizer, and other amendments. Per communication with the BLM CFO and comparison with similar projects in the region, it is reasonable to expect vegetation to be reestablished along the pipeline corridor 2 years after reseeding. This assumes the project area would receive sufficient rainfall, proper seed-bed preparation, appropriate seeding techniques such as drill seeding, and a BLM-prescribed seed mix.

If seasonal or weather conditions are not favorable, temporary erosion controls would be maintained until the area is revegetated. Surplus construction material and debris would be removed from the ROW unless otherwise approved. Fences and other existing infrastructure would also be returned to their pre-construction condition as approved by the BLM, the SLO, and/or landowners.

2.1.3 Operations and Maintenance

The project would operate 24 hours a day, 7 days a week, 365 days a year. Operations personnel receive training in the proper operation of all equipment. All operators participate in the training for normal operating procedures, emergency procedures, and emergency response. EnLink also maintains a drug and alcohol testing program. Operators receive extensive U.S. Department of Labor, Occupational Health and Safety Administration (OSHA) training in a number of subjects, such as lockout/tagout, confined space, emergency response, and hazardous material handling.

EnLink maintains environmental specialists on staff to ensure routine operations and maintenance activities are in compliance with all federal, state, and local regulations. EnLink also has an extensive environmental training program, including training in spill prevention, waste management, and stormwater management. Operators are required to understand each of these subjects, how their activities may impact the environment, and how and when to install pollution-control devices.

The proposed project would be operated in a manner designed to protect the public and to prevent natural gas pipeline accidents and failures. The maximum allowable operating pressure of the gathering pipelines would be above 1,000 pounds per square inch gauge (psig). The pipe wall thickness would range from 0.375 to 0.500 inch, with the thicker-walled pipe being used at road crossings. If a subsequent increase in population density adjacent to the ROW indicates a change in class location for the pipeline, EnLink would reduce the maximum allowable operating pressure or replace the segment with pipe of sufficient grade and wall thickness.

EnLink has minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. EnLink must establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan would include procedures for:

- Receiving, identifying, and classifying emergency events, such as gas leakage, fires, explosions, and natural disorders.
- Establishing and maintaining communication with local fire, police, and public officials and coordinating emergency response.

- Implementing emergency shutdown of system and safe restoration of services.
- Making personnel, equipment, tools, and materials available at the scene of an emergency.
- Protecting lives first and then property, making them safe from any actual or potential hazards.

EnLink establishes and maintains liaisons 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. EnLink participates in 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. EnLink would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies.

To further reduce the likelihood of pipeline accident, EnLink has developed a companywide comprehensive operations and maintenance program for pipelines. The purpose of this program is to prevent operational incidents and to effectively respond to any incident that may occur. Part of the program includes a written Integrity Management Plan (IMP) to maintain the integrity of the company's pipelines and to protect the public. The IMP has been reviewed by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration and several state pipeline safety regulators in states where EnLink operates. All changes recommended by the agencies have been incorporated into the IMP.

Pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative could be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party.

EnLink participates in all existing "811-Call before Dig" systems. EnLink uses "Irth" electronic excavation notice tracking software to manage one-call notifications. The Irth system logs all one-calls received by the company and assigns notifications to field personnel. The Irth system provides a positive feedback to the excavator as to the status of the locate request and the need to mark the pipeline.

EnLink's pipeline systems are equipped with block valves. In the event of an emergency, usually evidenced by a sudden loss of pressure, the block valves allow for a section of pipeline to be isolated from the rest of the system. Data acquisition systems are also present at all of EnLink's meter stations; if system pressures fall outside a predetermined range, an alarm is activated.

Routine inspections are conducted by pipeline personnel to identify soil erosion that may expose the pipe, dead vegetation that may indicate a leak in the line, conditions of the vegetative cover and erosion control measures, unauthorized encroachment on the ROW such as buildings and other substantial structures, and other conditions that could present a safety hazard or require preventive maintenance or repairs. The pipeline would be operated in a manner designed to protect the public and prevent accidents and failures.

Operation of the Compressor Stations

The compressor stations would be designed for 50 million standard cubic feet per day of natural gas processing. Table 2.6 provides a list of major equipment to be operated within the compressor station. No acid gas injection wells would be installed as part of the Proposed Action. Utilities and outdoor lighting would be installed. Noise during operations of the compressor station would be generated from equipment components such as compressors, cooling fans, heaters, and pumps.

Table 2.6. Primary Equipment to Be Installed at the Compressor Stations

Compressors (3-4)	Coalescer	Slug catcher
Glycol regeneration skid	Scrubber	Inlet separator
Inlet filter	Slop tank (2)	Coolant storage
Communication tower	Lube oil storage	TEG make-up tank
Power building	Satellite dish	Gas chromatograph

As detailed below in Section 2.1.5, the compressor stations would continue to be monitored 24 hours a day, 7 days a week, 365 days a year. Emergency shutdown devices are strategically placed throughout the compressor station. In the event of an emergency, staff from other nearby plants can be called upon to provide additional support and direct safety operations, as necessary.

The compressor stations would have a Hydrogen Sulfide Contingency Plan with due consideration of paragraph 7.6 of the guidelines in the American Petroleum Institute (API) publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition, or with due consideration to another division-approved standard. The Hydrogen Sulfide Contingency Plan would contain information on the following subjects, as appropriate to the facility or operation to which it applies: 1) emergency procedures, 2) characteristics of hydrogen sulfide (H_2S) and sulfur dioxide (SO_2), 3) maps and drawings, 4) training and drills, 5) coordination with state emergency plans, and 6) activation levels.

2.1.4 Termination and Restoration

EnLink is making a significant investment in this pipeline and currently has no plans to abandon any portion of the proposed pipeline. If for some unforeseen reason this changes, EnLink has internal policies and procedures that would include:

- The buried pipe would either be removed or properly abandoned in place depending on the agency's and landowner's preference.
- All waste, including demolition debris, would be disposed of properly.
- Concrete slabs would be removed and the site regraded to pre-disturbance conditions.
- To achieve final stabilization of the site, the areas would be seeded with a BLM-approved seed mixture.

The necessary authorizations would be obtained from the landowners (BLM, SLO, and private) and would be in accordance with the policies and standards employed by the applicable landowners at the time of termination. The terminated and restored ROW would revert to the control of the landowners.

2.1.5 Project Construction and Operation Design Features

The following applicant-committed environmental protection measures have been incorporated into the project design of the Proposed Action for the construction and operations phases to lessen or avoid impacts to resources. Throughout this document these are referred to as the Proposed Action's design features. These features are organized below under the resource they are designed to protect, although some of these measures are designed to protect or mitigate impacts to multiple resources. This document also refers to best management practices (BMPs), which are industry- or agency-recommended construction methods that are routinely implemented to minimize impacts to resources. Where practical, these BMPs have been incorporated into the project's design features.

General

The project would be designed and built in accordance with all applicable state and federal codes and regulations, many of which have been developed over the years by numerous organizations, such as:

- American National Standards Institute
- American Society of Mechanical Engineers (ASME)
- American Society for Testing Materials
- American Petroleum Institute (API)

Many of the design codes are developed by consensus through technical committees and have been adopted worldwide. EnLink incorporates the design codes along with the appropriate regulations into the following:

- EnLink Engineering Standards: These documents primarily reference laws and regulations but also contain specific prohibitions against certain piping items, such as all thread nipples, one-size reduction bushings, and street elbows, and also against the use of polychlorinated biphenyls (PCBs) in transformers and the use of asbestos insulation.
- EnLink Required Practice Specifications: The required practices incorporate by reference various industry codes and standards (e.g., ASME B31.3, API 521, etc.) and incorporate by reference certain other company specifications, such as the Preferred Manufacturers List and Welding Procedures.
- The project would be designed and constructed to meet 49 CFR 192 as a minimum standard. These design standards specify pipeline material and qualification, minimum design requirements, and protection from internal and external atmospheric corrosion. Other applicable federal and state regulations, including OSHA requirements and EPA regulations, would be followed during the construction of the project.
- The guidelines set forth in the aforementioned regulations, standards, and practices have been issued to all EnLink employees engaged in the planning, construction, operation, and maintenance of the project and would be issued to all of EnLink's construction contractors. Employees and contractors have been or would be instructed to follow these guidelines. EnLink maintains a rigorous inspection program that monitors all aspects of construction, including welding, environmental, safety, etc.

Air Quality

- Reasonable precautions would be used to prevent fugitive dust from becoming airborne, including 1) using water to control dust where possible, 2) covering open-bodied trucks at all times while transporting materials likely to produce airborne dusts, 3) promptly removing earth or material from paved surfaces, and 4) reestablishing vegetation in temporary work areas as quickly as possible.
- Dust suppression techniques may be used in construction zones to mitigate the impacts of fugitive dust emissions. It is estimated that up to three water trucks could be required for dust control during construction. Water for dust control would be obtained from either a private or municipal source.
- Magnesium chloride would not be used for dust control.

Soils and Vegetation

- EnLink would restrict construction activities and the storage of construction materials and equipment to the temporary workspace described in Table 2.2, above.
- To minimize sedimentation and erosion during construction of the project, EnLink is committed to following BMPs, including installing erosion and sediment control devices, using proper grading techniques, conducting periodic inspections, and stabilizing disturbed areas in a timely manner. Following construction, BMPs would be implemented throughout the life of the project to prevent sedimentation and erosion.
- EnLink would follow the BLM's Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (Gold Book) (BLM 2007b).
- EnLink would only use public and existing roads to lessen new surface disturbance and habitat fragmentation.
- The construction ROW would be delineated and clearly marked to prevent accidental disturbance of any unnecessary acreage.
- Temporary erosion controls would be installed immediately after initial disturbance (clearing) and would be properly maintained throughout construction and reinstalled as necessary, until

replaced by permanent erosion controls or restoration is complete. These measures may include but are not limited to sediment barriers, slope breakers, mulch, and erosion-control fabric.

- Noxious weed-free straw or hay bales would be required to be used on the site for erosion control, including any mulch obtained off-site. Seed applied in reclamation would be required to be weed free. Only clean fill materials would be imported onto the site for use during construction.
- EnLink would conduct pre-construction noxious weed control by herbicide spraying to kill and weaken weeds and prevent seed formation. All herbicide spraying would be completed by a state-approved and licensed applicator.
- Upon grant issuance, EnLink would enroll in the Lea and Eddy County Weed Programs for pre-construction and long-term weed control of the ROW.
- EnLink would conduct stabilization and rehabilitation activities in accordance with landowner agreements, permit requirements, and written recommendations from the local soil conservation authority or other duly authorized agency.
- Final stabilization and rehabilitation measures for pipeline and aboveground facility ROWs, in general, involve regrading the disturbed area to near pre-disturbance contour, respreading topsoil, applying soil amendments if necessary, applying a prescribed seed mixture per BLM guidelines, mulching, and placing runoff and erosion-control structures such as water bars, erosion-control mats, and wattles (slope interruption devices). The goal of final reclamation is to 1) restore primary productivity of the site and establish vegetation that would provide for natural plant and community succession, and 2) establish a vigorous stand of desirable plant species that would limit or preclude invasion of undesirable species, including invasive, non-native species. EnLink would follow the Gold Book (BLM 2007b) or EnLink's internal standards, depending on whichever is more stringent.
- To assist with the stabilization and rehabilitation of the pipeline ROWs during construction, topsoil would be handled separately from subsoil materials. At all construction sites, topsoil would be stripped to provide sufficient quantities to be respread to a depth of at least 4 to 6 inches over the disturbed areas to be reclaimed. Where soils are shallow or where subsoil is stony, as much topsoil would be salvaged as possible. Topsoil would be stockpiled separately from subsoil materials and marked with signs or identified on alignments sheets. Runoff would be diverted around topsoil stockpiles to minimize erosion of topsoil materials.
- As soon as practicable after backfilling the trench, all work areas would be final graded and restored to pre-construction contours and natural drainage patterns as closely as possible. Non-cultivated lands would be reseeded as soon as possible to minimize erosion. The seeding procedure would be the same as described above.
- Topsoil would be placed as a final step on top of the compacted subsoil and left crowned to facilitate natural settling. This reduces the risk of sunken ditch over the pipeline. Exceptions to this are described below under Water Resources.
- If seasonal or weather conditions are not favorable, temporary erosion controls would be maintained until the area is revegetated. Surplus construction material and debris would be removed from the ROW unless otherwise approved. Fences and other existing infrastructure would also be returned to their pre-construction condition as approved by landowners and/or land management agencies.
- All survey monuments, witness corners, reference monuments, and bearing trees within the construction ROW would be protected against disturbance during construction, operation, maintenance, and restoration. If any monument, corner, or accessory is destroyed, obliterated, or damaged, a registered land surveyor would restore the disturbed monument, corner, or accessory. The survey would be recorded in the appropriate county and a copy would be sent to the CFO.

Water Resources

- After construction, the entire system would be hydrostatically tested to ensure that the system is capable of withstanding the operating pressure for which it was designed. Water would be purchased from a nearby municipal water source and hauled to the project location. Once all sections are tested, the water would be discharged onto the surface of the ground within an

approved upland area, yet to be determined. Prior to the discharge, a permit would be obtained either from the State of New Mexico Energy, Minerals, and Natural Resources Department, Oil Conservation Division (EMNRD) or the Texas Railroad Commission. Energy dissipation and filtration devices (e.g., certified weed-free hay/straw bales and silt fences) would be used to reduce the velocity of the discharged water and thereby reducing potential for erosion.

- Fuels and hazardous materials would not be stored within ephemeral drainages or other water bodies along the construction ROW. EnLink would take measures to minimize the occurrence of contaminants from construction equipment, welding, and refueling from entering surface water.
- In order to maintain natural water flow within the playas, berms, water bars, and other elevated earthen features would not be constructed within the playas identified in Section 3.2.
- Topsoil berming or crowning when backfilling the trench would not occur in the areas identified in Figure 2.1 and Figure 2.2 below. In these locations, subsoil and topsoil would be compacted when filling the pipeline trench to avoid crowning of backfill. This method would maintain pipeline integrity and restore pre-construction drainage conditions.

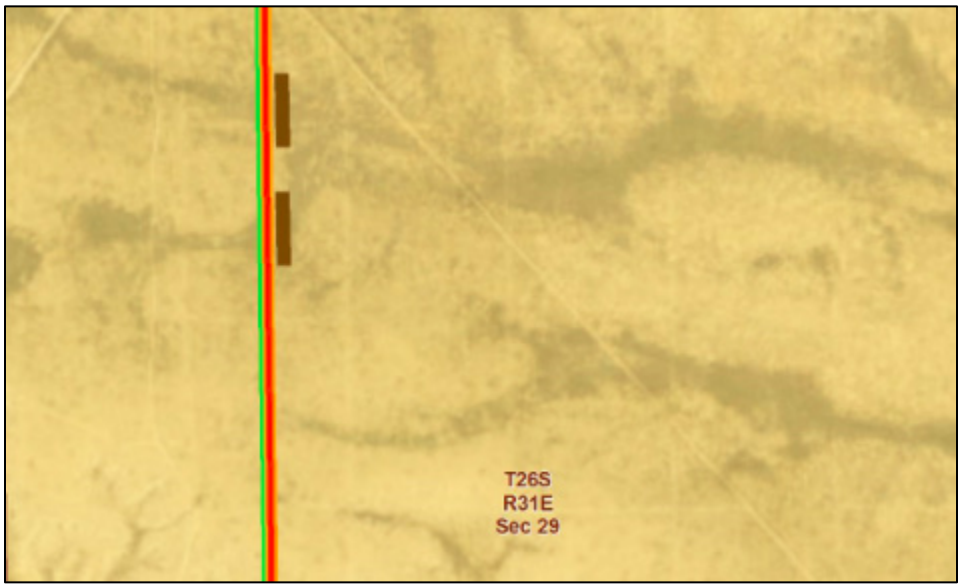

Figure 2.1. Proposed no berm and no crowning areas for protection of surface water features on the Ross Draw Line.

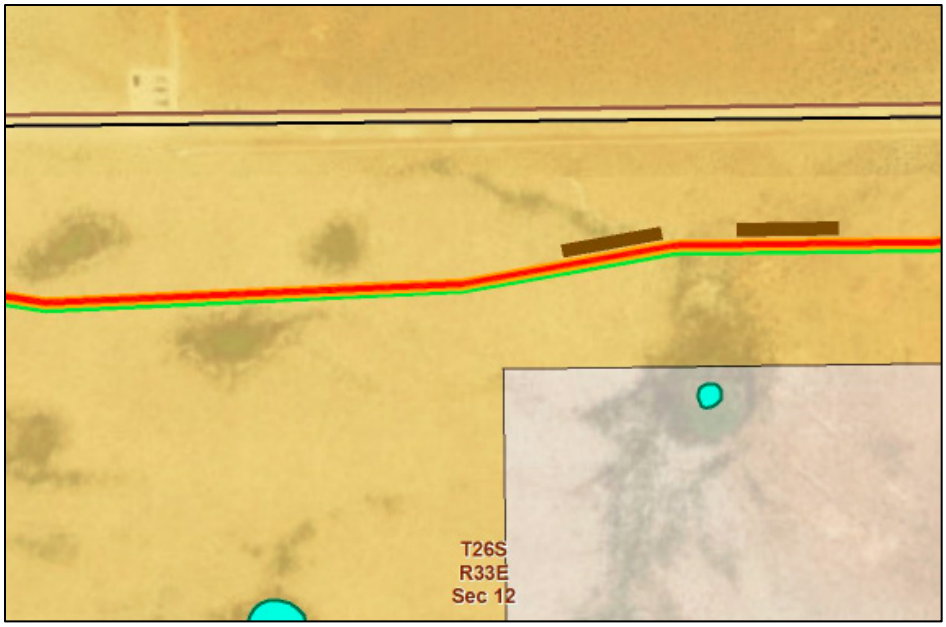

Figure 2.2. Proposed no berm and no crowning areas for protection of surface water features on the Red Hills Fuel Line.

Cave/Karst Resources

- In the event that any underground voids are encountered during construction activities, construction would be halted and the BLM would be notified immediately.
- To avoid or lessen the potential of subsidence or collapse of karst features, toxic or combustible gas buildup, or other possible impacts to cave and karst resources from buried pipelines or cables, alignments may be rerouted to avoid karst features. The BLM CFO would be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe would be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required at such intersections, if any. Leak detection systems, back flow eliminators, and differential pressure shutoff valves may be required to minimize the impacts of leaking or ruptured pipelines. To eliminate these extreme possibilities, good recordkeeping is needed to quickly identify leaks for their immediate and proper treatment.

Wildlife and Special Status Species

- During operations the decibel levels at all three compressor stations would be kept to 75 A-weighted decibels at 30 feet from the fence line surrounding the compressor stations.
- Vegetation and abandoned passerine nest removal would occur outside the migratory bird breeding season (March–August).
- Workers would be instructed not to park off the roads to protect any threatened or endangered species.
- EnLink would instruct personnel working on the construction of the project to avoid intentionally harassing all animals.
- BMPs outlined in the New Mexico Department of Game and Fish (NMDGF) Habitat Handbook trenching guidelines (NMDGF 2003) would be followed to minimize the potential for accidental mortality of trapped wildlife.
- Trenches would be backfilled as soon as feasible to minimize the amount of open trench. EnLink would avoid leaving trenches open overnight to the extent possible. Open trenches that cannot be

backfilled immediately would have escape ramps (wooden) placed every 90 meters and sloped no more than 45 degrees, and earthen plugs would be installed every 0.25 mile or at any well-defined wildlife or livestock trails. Before any trench is backfilled, a monitor would walk the entire length of the open trench and remove all trapped wildlife.

Burrowing Owl and Loggerhead Shrike

- No occupied burrows were observed during field survey, however, individual burrowing owls and loggerhead shrikes were observed during the field surveys. Any vegetation removal during the breeding bird season (March–August) would be preceded by pre-removal nesting surveys to identify any occupied nests and establish avoidance buffers until the young have fledged.
- The BLM may require pre-construction surveys of suitable burrowing owl burrows to identify occupied colonies and establish a 200-meter avoidance buffer until the young have fledged. The BLM may require a biological monitor during construction near occupied burrows. To lessen the likelihood of burrow occupation, EnLink will work with a biologist to collapse suitable burrows outside the breeding season.

Lesser Prairie-Chicken Protective Design Features

- In consideration of conservation measures and other protective criteria outlined in the 2008 RMPA for projects within LPC management areas (see the BA in Appendix A), EnLink has coordinated with the BLM to ensure minimum surface disturbance in LPC habitat by:
    1. Confining the proposed facilities to existing alignments to the extent feasible;
    2. Minimizing width of construction disturbance;
    3. Placing proposed alignment outside ROW avoidance areas and other sensitive areas; and
    4. Preparing a POD outlining EnLink's strategies for minimizing impacts associated with new development.

- Additional mitigation measures for activities in LPC management areas outlined in the 2008 RMPA include the following:
    1. Timing and noise restrictions would be applied to prevent disruption of mating and nesting activities. All energy exploration and development activities would be prohibited from 3:00 to 9:00 a.m. during March 1 to June 15 in those areas identified in Section 2.1.5.
    2. Exceptions to these timing requirements would be considered in emergency situations such as mechanical failures. Potential drill rig loss, drill rig scheduling, or the potential loss of a lease are not emergency situations. Exceptions would not be granted after March 15 or during the March 1 to June 15 period if the BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt LPC booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered for the period of March 1 to June 15, but these exceptions would not be granted if the BLM determines that there is LPC habitat, LPC sightings, historical leks, and/or active leks within 1.5 miles of the proposed location or any combination of the above-mentioned criteria.
    3. If new LPC leks are discovered in the future within the LPC management area, a 1.5-mile radius around the lek would be considered occupied habitat and the prescriptions of this alternative would apply to proposed actions in and around that habitat.
    4. Lights at the Charro Compressor Station would be directed downward and inward to minimize any disturbance to the LPC inhabiting areas outside the project area.
    5. Any new fence constructed at the Charro Compressor Station would be four-strand wire, with the top three wires being barbed and the bottommost wire being smooth. Wires on the fence would have the following spacing intervals starting from the ground to the bottom wire and proceeding from wire to wire: 16 inches, 6 inches, 8 inches, and 12 inches, for a total height of 42 inches from the ground to the topmost wire strand.

Cultural Resources

- The proposed alignment was rerouted to avoid impacting National Register of Historic Places (NRHP)-eligible cultural resource sites identified during the cultural resource survey for the initial alignment.
- In the event of an unanticipated discovery of cultural material during construction, all work at that location would be stopped immediately and the area fenced off. The appropriate agency would be notified. Work would not begin again in the area until clearance is obtained from the agency.

Paleontological Resources

- In the event of an unanticipated discovery of paleontological resources, such as fossils, during construction, all work in the immediate area (100-foot buffer) would be stopped immediately. The BLM, or relevant landowner, would be notified and work would not begin again in the area until clearance is obtained.

Visual Resources

- For the pipeline, all disturbed areas would be revegetated and the CFO buried pipeline stipulations would be followed.
- Reclamation would be implemented to disguise disturbance.
- The aboveground facilities would be painted the appropriate color to blend with the landscape, as prescribed by the BLM.
- Vegetation, soil, and rocks left as a result of construction would be randomly scattered over the project area and would not be left in rows, piles, or berms unless requested by the BLM.

Livestock Grazing

- All fences and other existing infrastructure would be returned to their pre-construction condition as approved by the BLM and allotment permit holders.
- Prior to construction, the conditions of the water lines crossed by the proposed project would be evaluated and appropriate protections would be put in place to maintain their function during the construction of the proposed project. If necessary, waterlines would be protected either by burying or pushing adjacent soil over the lines within the construction area to shield the lines from damage.
- Pipeline areas impacted during construction would be returned to their pre-disturbance state as soon as final construction is completed. Topsoil from the disturbed areas would not be stockpiled for more than 60 days and would be redistributed over the surface. Disturbed soil in construction areas along the pipeline route would be prepared and amended as necessary in preparation for seeding with a native grass seed mix approved by the BLM and allotment permit holders. Weed-free straw or other suitable mulching material would be used during revegetation.
- Trenches would be backfilled as soon as feasible to minimize the amount of open trench. EnLink would avoid leaving trenches open overnight to the extent possible. Open trenches that cannot be backfilled immediately would have escape ramps (wooden) placed every 90 meters and sloped no more than 45 degrees, and earthen plugs would be installed every 0.25 mile or at any well-defined livestock trails. Before any trench is backfilled, a monitor would walk the entire length of the open trench and remove all trapped wildlife.
- The goal of the final reclamation is to 1) restore primary productivity of the site and establish vegetation that would provide for natural plant and community succession, and 2) establish a vigorous stand of desirable plant species that would limit or preclude the invasion of undesirable species including non-native and noxious weeds.
- All construction areas would be graded to original contours following the construction period, thereby mitigating potential injuries to livestock from holes, ditches, and trenches. Surplus materials and debris from construction would be removed from the ROW.
- Topsoil would be placed as a final step on top of the compacted subsoil and left crowned to facilitate natural settling. This reduces the risk of a sunken ditch over the pipeline.
- See design features under Soils and Vegetation above that relate to livestock grazing.

Public Health and Safety

Pipeline Construction

- The pipeline is being designed and would be built in accordance with all applicable state and federal codes and regulations.
- The pipeline would be designed and constructed to meet 49 CFR 192. These design standards specify pipeline material and qualification, minimum design requirements, and protection from internal and external atmospheric corrosion. Other applicable federal and state regulations, including OSHA requirements and EPA regulations, would be followed during the construction of the pipeline.
- All solid waste associated with the construction of the project would be managed in accordance with all federal, state, and local regulations. Construction debris would be containerized and disposed of at appropriate facilities in a timely manner. Temporary sewage disposal units would be provided by the contractor in areas of active construction and would be maintained regularly to prevent water or soil contamination. Spill kits would be available at all active construction areas. Any leaks from equipment or vehicles would be cleaned up in accordance with all applicable regulations and contaminated material disposed of at appropriate facilities.
- EnLink would notify the BLM Authorized Officer of any fires during construction and would comply with all rules and regulations administered by the BLM Authorized Officer concerning the use, prevention, and suppression of fires on federal lands.
- In the event of a fire, EnLink or its contractors would initiate fire suppression actions in the work area. Suppression would continue until the fire is out or until the crew is relieved by an authorized representative of the agency on whose land the fire occurred. Heavy equipment would not be used for fire suppression outside the construction ROW without prior approval of the BLM Authorized Officer unless there is imminent danger to life or property. EnLink or its contractors would be responsible for all costs associated with the suppression of fires and the rehabilitation of fire damage resulting from their operations, employees, or contractors.
- EnLink or its contractors would designate a representative to be in charge of fire control during pipeline construction. The fire representative would ensure that each construction crew has firefighting tools and equipment, such as extinguishers, shovels, and axes, available at all times. The number of tools would depend on the number of persons working in the area.

Spill Prevention and Response Plan

Spill Prevention

EnLink and its contractors would structure their operations in a manner that reduces the risk of spills or the accidental exposure of fuels or hazardous materials to water or the ground. At a minimum, the following good housekeeping practices listed below would be followed on-site during construction and operation:

- All liquid material delivered to the site would be inventoried and stored at least 100 feet from a wetland or water body and at least 200 feet from any livestock or domestic water well.
- All equipment would be maintained in good operating order and inspected on a regular basis.
- Fuel trucks transporting fuel to on-site equipment would only travel on approved access roads.
- All equipment would be parked overnight and/or fueled at least 100 feet from a water body or in an upland area at least 100 feet from a wetland boundary and at least 200 feet from any livestock or domestic water well.
- To avoid or minimize the potential for harmful spills and leaks during construction, EnLink would ensure implementation of its Safety Manual.
- There would be no concrete work done within 100 feet of a wetland or water body and at least 200 feet from any livestock or domestic water well.
- Employees trained in emergency spill cleanup procedures should be present when dangerous materials or liquid chemicals are unloaded.
- Off-site stormwater flows would be directed away from the loading/unloading area by grading, berming, or curbing the area.

- An effort would be made to store only enough product required for task completion.
- All materials stored on-site would be stored in a neat and orderly manner in appropriate containers and, where possible, under a roof or other enclosure, and/or within secondary containment areas to avoid contact with stormwater.
- Products would be kept in their original containers with the original manufacturer's label.
- Substances would not be mixed with one another unless recommended by the manufacturer.
- Storage containers would be regularly inspected for leaks and repaired or replaced as necessary. Workers would be trained in proper storage and handling of fuels and other hazardous materials.
- Whenever possible, all of the product would be used before disposing of the container.
- Manufacturer's recommendations for proper use and disposal would be followed.
- Employees and contractors would be made aware of these requirements and would receive proper training in spill prevention and response.

Spill Response

All spills would be cleaned up immediately after discovery and reported to the appropriate agencies, in accordance with applicable regulations. To reduce the likelihood of oil released by container or equipment failures from reaching navigable waters, a spill response procedure is in place. The following is a narrative with spill response and post-spill response procedures.

Upon discovery of a spill, the first on-site responder would contact the EnLink Project Manager and/or Environmental Inspector. The EnLink Project Manager and/or Environmental Inspector would initiate, support, or completely implement the spill response activities. To ensure spills are cleaned up promptly and effectively:

- Spill response materials, such as absorbent materials, shovels, booms, and a tractor are maintained in all areas of active construction to control and contain releases.
- Site personnel are trained in spill response procedures.
- Additional information on spill response procedures can be found at any EnLink gas plant in its Spill Prevention Control and Countermeasure Plan.
- Off-site disposal would be in accordance with all applicable regulations.

The EnLink Project Manager with assistance from Environmental Support would maintain records and make appropriate notifications within and outside EnLink as outlined below.

If necessary, the EnLink Project Manager would notify public safety personnel. Emergency (fire and police) and medical (hospital and transportation) contacts are listed below. The assistance of these personnel can be used to minimize public exposure to the hazard, evacuate the public, control traffic, assist in fire control, and provide emergency medical care. The EnLink Project Manager is also responsible for notifying Environmental Support. Environmental Support would be responsible for notifying the appropriate federal, state, and local government agencies of the release.

Once the release is contained, the situation would be evaluated to establish the personnel, materials, and equipment required for making repairs and cleaning the release area. The media impacted by the release and other related factors would be evaluated to determine the appropriate method of disposal of recovered materials in accordance with applicable federal, state, and local regulations. EnLink typically uses the following disposal methods for recovered materials:

- Off-site recycling or disposal for recovered liquids;
- On-site bioremediation, off-site bioremediation, or off-site disposal for contaminated soils; and
- Off-site disposal for liquids and surface water recovered from impacted surface waters.

Pipeline Operations and Maintenance

- A leak detection system would provide an early alert to operators when a leak has occurred. Automatic shut-off, check valves, or similar systems would be installed for pipelines to minimize the effects of line failures in production.

- Constant monitoring of the pipeline, aboveground facilities, and all associated equipment would occur throughout the length of the pipeline. EnLink maintains a rigorous inspection program that monitors all aspects of construction and operation, including welding, environmental, safety, etc. The pipeline would be instrumented and monitored continuously for potential leaks. If a leak is determined or reported during operation, the pipeline would be shut down and the source of the leak would be determined.
- The pipeline and aboveground facilities would be operated in a manner designed to protect the public and prevent accidents and failures.
- Other applicable federal and state regulations, including OSHA requirements and EPA regulations, would also be followed during the operation and maintenance of the pipeline. These regulations are intended to ensure adequate protection to the public and the environment.
- EnLink has minimum standards for operating and maintaining pipeline facilities, which can be found within its Operations and Maintenance Manual.
- Pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative could be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party.
- EnLink's pipeline systems are equipped with block valves. In the event of an emergency, usually evidenced by a sudden loss of pressure, the block valves allow for a section of pipeline to be isolated from the rest of the system. Data acquisition systems are also present at all of EnLink's meter stations.
- Routine inspections would be conducted by pipeline personnel to identify soil erosion that may expose the pipe, dead vegetation that may indicate a leak in the line, conditions of the vegetative cover and erosion-control measures, unauthorized encroachment on the ROW such as buildings and other substantial structures, and other conditions that could present a safety hazard or require preventive maintenance or repairs.

Compressor Station Operations and Maintenance

- The compressor station would continue to be staffed 24 hours a day, 7 days a week, 365 days a year. Emergency shutdown devices are strategically placed throughout the compressor station. In the event of an emergency, staff from other nearby plants can be called upon to provide additional support and direct safety operations, as necessary.
- The compressor stations would be operated in a manner designed to protect the public and prevent accidents and failures.
- The compressor station would have a Hydrogen Sulfide Contingency Plan with due consideration of paragraph 7.6 of the guidelines in the API publication Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide, RP-55, most recent edition, or with due consideration to another division-approved standard. The Hydrogen Sulfide Contingency Plan would contain information on the following subjects, as appropriate to the facility or operation to which it applies: 1) emergency procedures, 2) characteristics of H_2S and SO_2, 3) maps and drawings, 4) training and drills, 5) coordination with state emergency plans, and 6) activation levels.

2.2 No Action

BLM NEPA Handbook H-1790-1 states that for EAs on externally generated applications, the No Action alternative generally means the request for the proposed activity would be denied (BLM 2008b:52). This option is provided in 43 CFR 3162.3-1(h)(2). Under this alternative, the BLM would not grant the ROW to the applicant, the proposed pipeline and aboveground facilities would not be built, and the associated surface disturbance would not occur. The No Action alternative is presented for baseline analysis of resource impacts in Section 3, Affected Environment and Environmental Consequences.

2.3 Alternatives Considered but Eliminated from Detailed Study

Alternatives to the Proposed Action are developed to explore different ways to accomplish the purpose and need while minimizing environmental impacts and resource conflicts and meeting other objectives of the RMP. Consistent with BLM NEPA Handbook H-1790-1, the agency "need only analyze alternatives that would have a lesser effect than the proposed action" (BLM 2008b:80). Those with greater adverse resource impacts or those that are not feasible because of existing physical constraints or infrastructure are not brought forward for detailed analysis in this EA.

Prior to siting the preliminary routes for the pipeline system, a desktop analysis was conducted by the BLM to identify sensitive areas to avoid. Once the preliminary route was identified, cultural resource and biological resource surveys were conducted, as necessary. The route was then adjusted or realigned in several segments in order to avoid impacts to cultural or biological resources where possible.

The proposed pipeline route and design would meet the BLM's purpose and need while minimizing environmental impacts to the greatest extent possible. The route was ultimately planned to minimize impacts to habitat for LPC. Cultural and historic sites were also avoided where applicable (see Section 3.6 for details regarding avoidance of cultural sites).

The proposed project affects the far southeastern corner of the Pecos River/Canyons Complex ACEC and RNA, which is designated as a ROW avoidance area in the 1988 RMP (see Section 3.8). The proposed pipeline route would be located adjacent to an existing road, and would cross the ACEC/RNA for 0.33 mile. An alternative was considered which would route the pipeline segment outside of the ACEC to the south to stay outside of the ROW avoidance area. However, this alternative route would require a cross-country path which results in greater impacts to soil, vegetation, wildlife habitat, and visual resources by creating a new ROW corridor. While the ACEC/RNA is a ROW avoidance area, the BLM is considering granting an exception for the Proposed Action in order to minimize the impacts to soils, vegetation, wildlife, and visual resources by confining the disturbance to existing corridors.

Any other proposed pipeline routing would likely result in greater surface impacts and environmental impacts. Internal scoping did not identify an additional unforeseen alternative; therefore, only the No Action and Proposed Action alternatives were brought forward for detailed analysis in this EA.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter is organized by relevant major resources or issues/concerns as presented in Section 1.5. On the basis of CEQ guidance and BLM NEPA Handbook H-1790-1, the following discussion is limited to those resources that could be impacted to a degree that warrants detailed analysis (40 CFR 1502.15) (BLM 2008b:96) as determined by the BLM CFO interdisciplinary team. Each resource section includes the following subsections:

Affected Environment:
This section succinctly describes the existing condition and trend of issue-related elements of the human environment that would be affected by implementing the Proposed Action or an alternative, as described in Chapter 2, and limits the description of the affected environment to be commensurate with the potential impacts: "1500.4 (c) impacts shall be discussed in proportion to their significance." For the purposes of providing baseline data for the affected environment, a project area for each resource was delineated, as appropriate.

Impacts from the No Action Alternative and Proposed Action:
Direct and Indirect Impacts: This EA addresses the resources and impacts on a site-specific basis as required by NEPA. Pursuant to 40 CFR 1508.28 and 1502.21, this site-specific EA tiers to the information and analysis contained in the CFO's RMP, as amended (BLM 1988, 1997, 2008a). The No Action alternative reflects the current situation within the project area and serves as the baseline for comparing the environmental impacts of the Proposed Action. For each resource analyzed, the impacts discussion identifies:

- Direct impacts – impacts that are caused by the action and occur at the same time and in the same general location as the action.
- Indirect impacts – impacts that occur at a different time or in a different location than the action to which the impacts are related.
- Short- or long-term impacts – the duration of impacts are described as short or long term. For the purposes of this EA, short-term impacts occur during or immediately after the construction phase (approximately 3 months for construction and an additional 1 year and 9 months following construction, for a total of 2 years). Long-term impacts occur beyond the first 2 years and apply to the production and the overall life of the project through eventual decommissioning.

Table 3.1 summarizes the impact indicators used to analyze impacts to the resources and resource uses considered in this EA.

Table 3.1. Impact Indicators Used to Analyze Impacts from the Proposed Action

Resource or Resource Use	Impact Indicator
Air Resources	Emission estimates for regulated pollutants, exceedance of NAAQS or New Mexico Ambient Air Quality Standards
Water Resources	Number of potential jurisdictional waterways to be crossed by the proposed project; acres of disturbance within potential jurisdictional drainages and playas; qualitative description of potential impacts to groundwater resources
Cave/Karst Resources	Acres of high, medium, and low mapped potential areas impacted
Soils	Acres of soil to be disturbed by construction and maintenance, by soil type
Wildlife and Special Status Species	Acres of habitat to be disturbed by construction and maintenance activities; qualitative description of direct and indirect impacts to individuals
Vegetation	Acres of surface disturbance from construction and maintenance activities
Cultural Resources	Number of NRHP-eligible cultural resource sites to be disturbed within the project area

Resource or Resource Use	Impact Indicator
Livestock Grazing	Acres and number of grazing allotments to incur surface disturbance from the proposed project; number of range improvements to be affected by construction
Special Management Areas (SMAs) • Pecos River/Canyons Complex ACEC and RNA • Phantom Banks Heronries SMA	Acres of SMAs to be disturbed by construction and maintenance activities; qualitative description of impacts to relevant and important values or to sensitive species.
Visual Resources	Acres of disturbance by Visual Resource Management Class within the project area
Public Health and Safety	Qualitative description of short- and long-term impacts to transportation routes; discussion of rules and regulations for natural gas pipelines and facilities

Cumulative Impacts: Cumulative impact analysis methodology is described in detail in the next section (below).

Mitigation Measures and Residual Impacts: As directed by 40 CFR 1508.20, mitigation measures are those measures that could reduce or avoid adverse impacts and have not already been incorporated into the Proposed Action (as listed in the project design features; see Section 2.1.5). These measures may:

- Avoid the impact altogether by not taking a certain action or parts of an action;
- Minimize the impact by limiting the degree of magnitude of the action and its implementation;
- Rectify the impact by repairing, rehabilitating, or restoring the affected environment;
- Reduce or eliminate the impact over time by implementing preservation and maintenance operations during the life of the action; and
- Compensate for the impact by replacing or providing substitute resources or environments.

Residual impacts are those remaining after implementation of mitigation measures. These impacts may be to the subject resource or a different resource.

Cumulative Impact Analysis Methodology for Proposed Action

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other action.

The geographic extent of the cumulative impact analysis area (CIAA) varies by the type of resource and impact. Three spatial CIAAs have been developed and are listed with their total acreage in Table 3.2. The time frames, or temporal boundaries, for those impacts may also vary by resource. In some areas, restoration may potentially include plant species that are not locally native or are not present within the adjacent, native plant communities. Although the replanting of disturbed soils may successfully establish vegetation in some locations, the success of project area rehabilitation is dependent on many factors, including rainfall, seed mix, and appropriate seedbed preparation. For this reason, the temporal boundary for cumulative resource analysis is 3 years, allowing 2 years after construction for vegetative regrowth within the project area.

Table 3.2. Cumulative Impact Analysis Areas by Resource

Resource	CIAA	Total CIAA Acreage	Temporal Boundary
Air Quality and Climate	31-mile buffer around the proposed ROW. This area was chosen to capture air quality data points across the Permian Basin.	3,061,534	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Cave/Karst Resources Water Soils Wildlife Vegetation Wildlife and Special Status Species (except for LPC) Livestock Grazing Visual Resources	The total area of the 16 Hydrologic Unit Code (HUC) 10-digit watersheds intersected by the project area. This area was chosen because it is an area with clear natural topographical boundaries with vegetative connectivity, similar soil types, and hydrological functionality. This area also includes available grazing lands on all land jurisdictions considered in the EA. The names and acreage for each of the 16 watersheds are provided in Section 3.2 and in Figure 3.1.	440,541	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Special Management Areas (SMAs)	The total area of the SMAs impacted by the project as depicted in Figure 3.2 and Figure 3.3.	5,190 (ACEC) 26,880 (SMA)	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)
Special Status Species: LPC	Total area of LPC Isolated Population Area (IPA) (Figure 3.4) as delineated in the RMPA, intersected by the proposed project.	794,683	3 years (1 year for construction and rehabilitation, plus 2 years for vegetative cover regrowth)

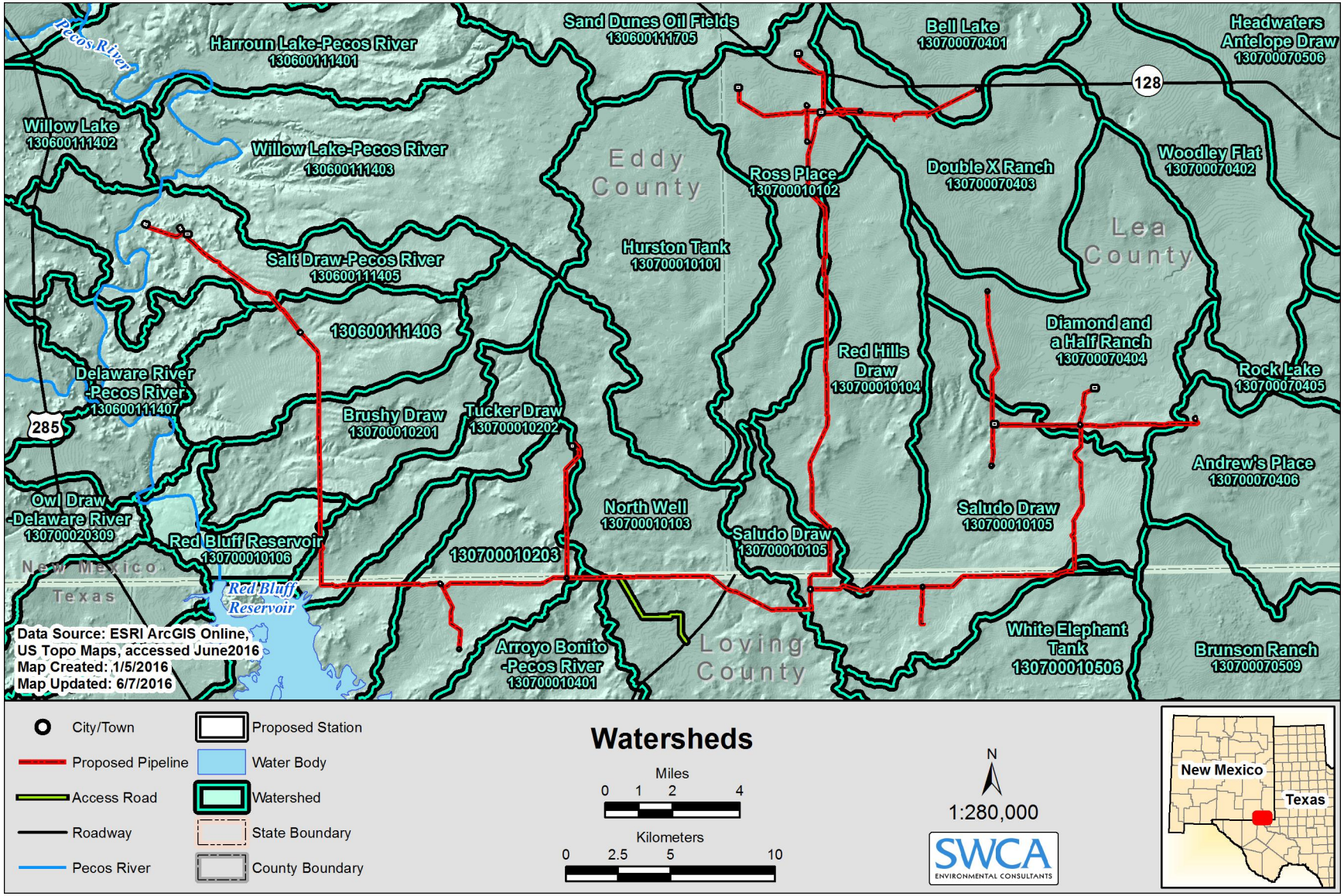

Figure 3.1. Watersheds crossed by proposed project used to define the CIAA.

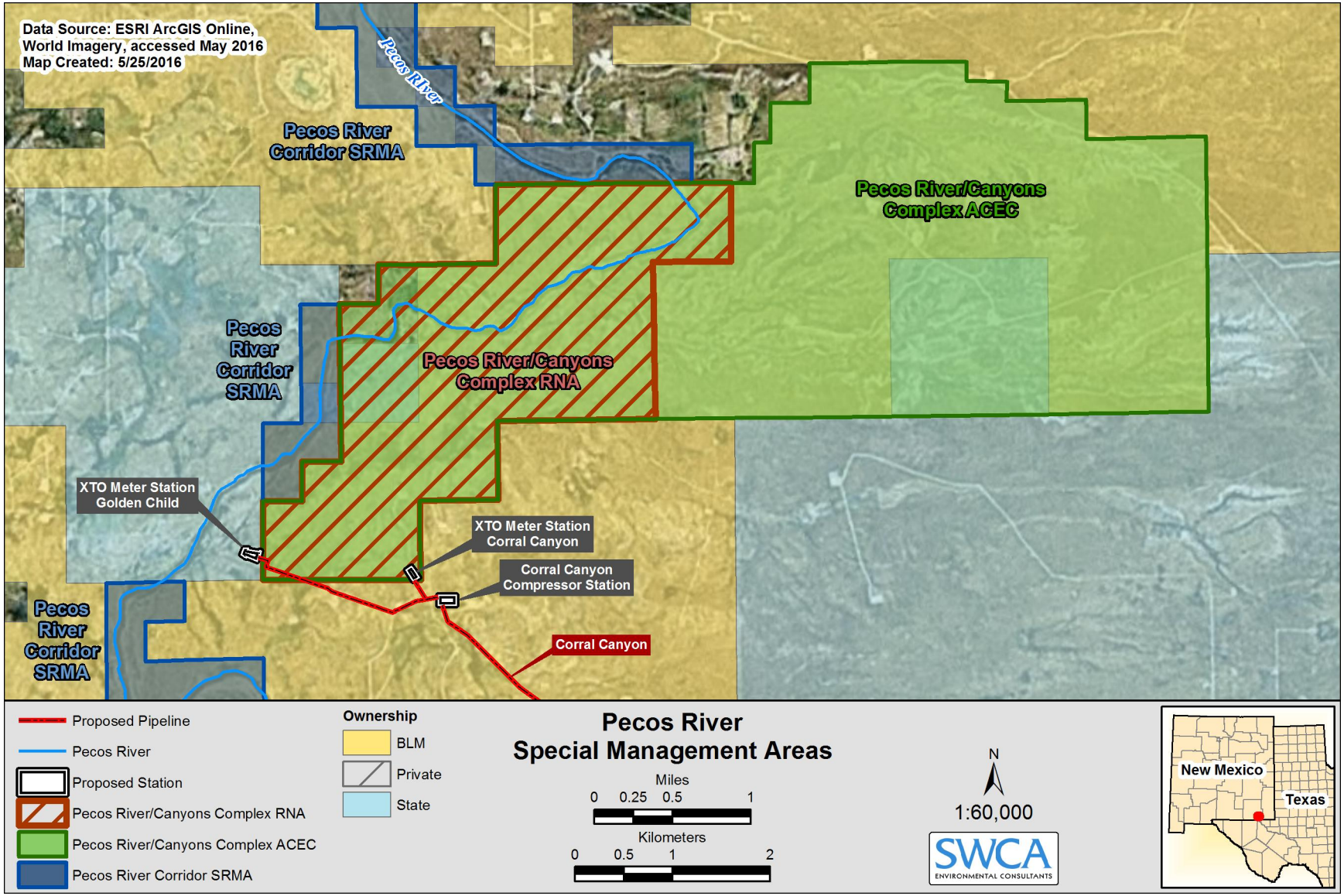

Figure 3.2. ACEC/RNA area crossed by proposed project used to define the CIAA.

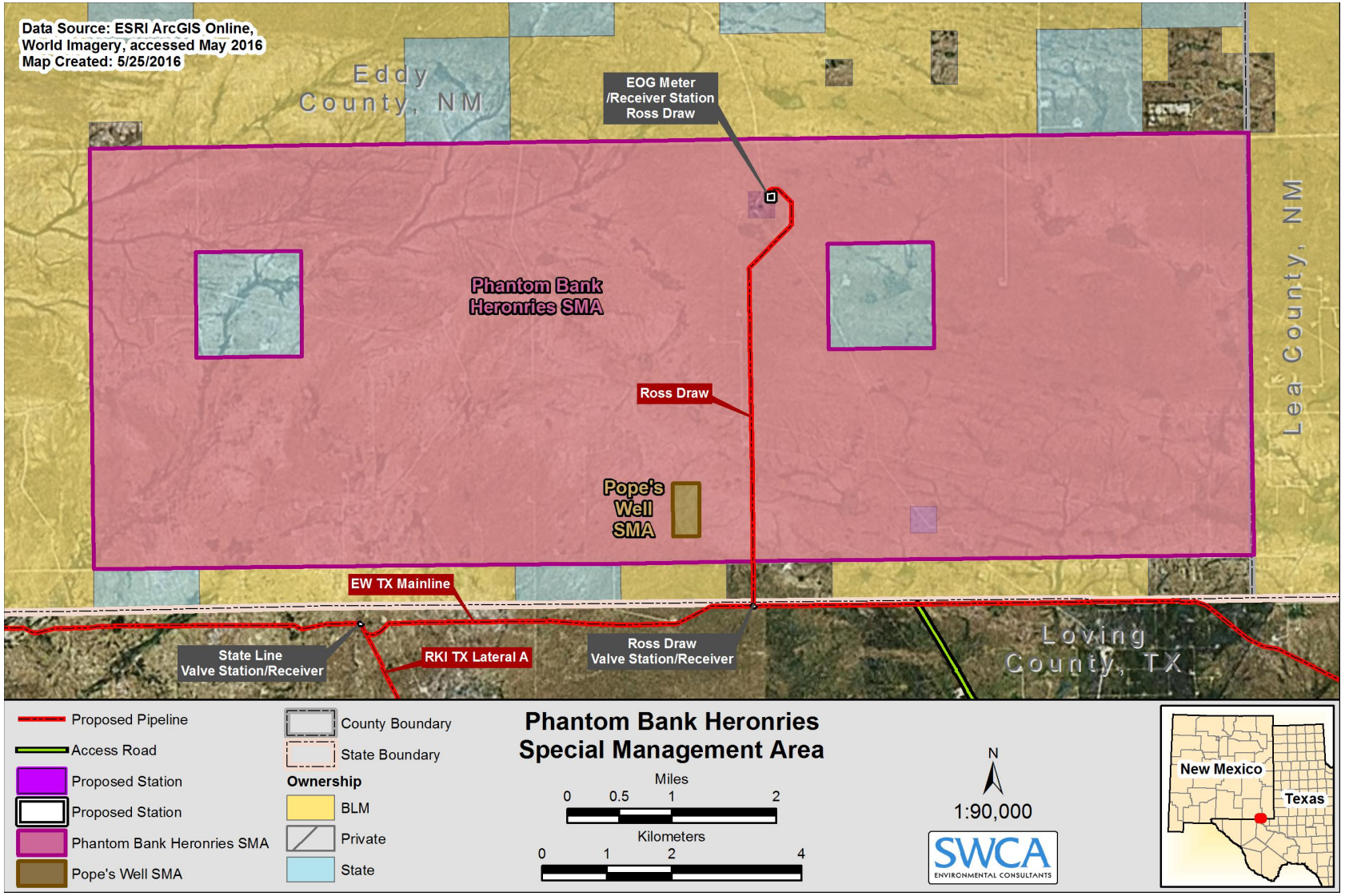

Figure 3.3. SMA area crossed by proposed project used to define the CIAA.

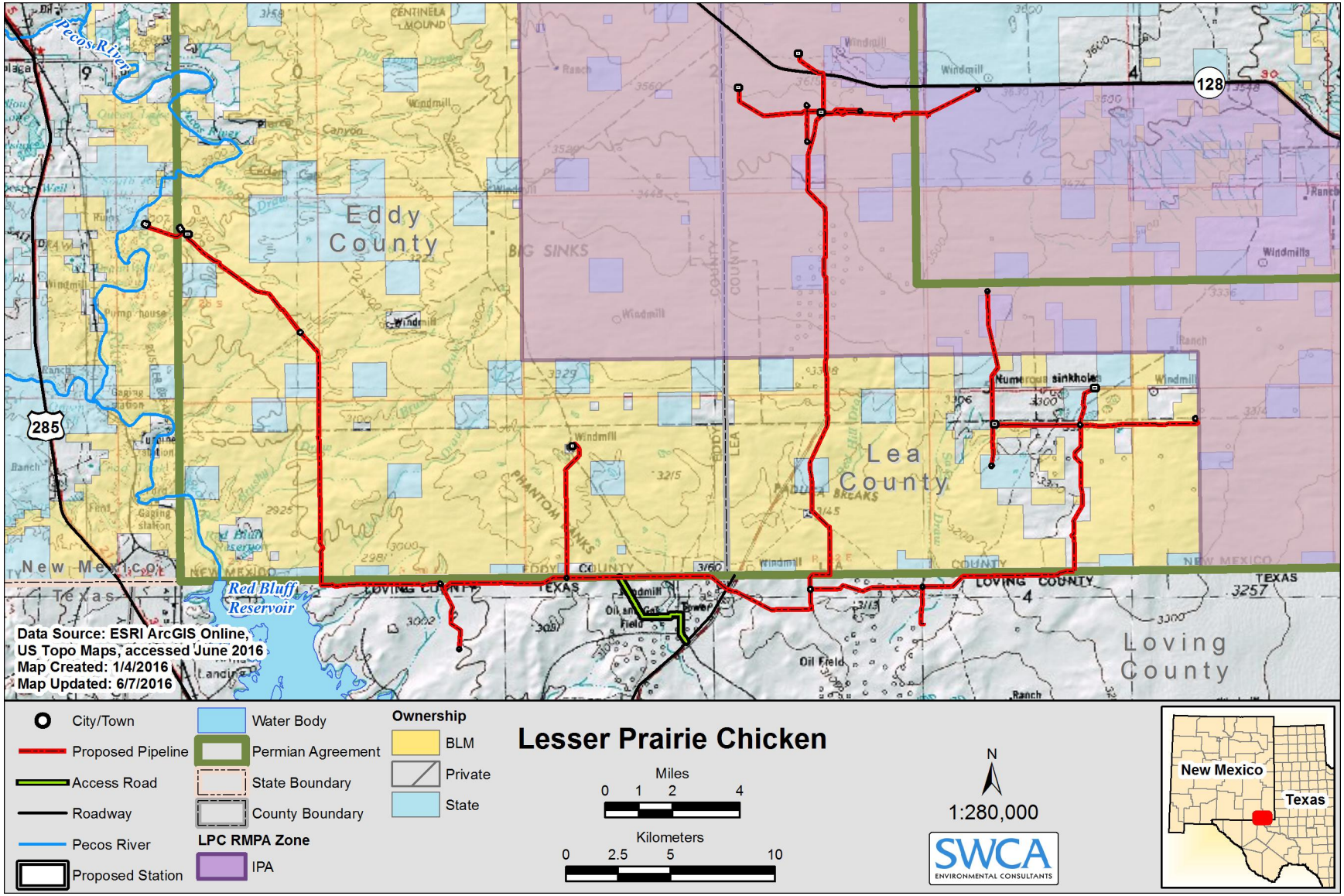

Figure 3.4. LPC IPA crossed by proposed project used to define the CIAA.

Past and Present Actions

The past and present actions can be defined as all actions contributing to the current condition of resources found in the project area, as described in the affected environment sections below. Past and present actions that have contributed to the current condition of resources include heavy oil and gas development, land use authorizations that require ROW grants, livestock grazing, and dispersed recreational use of public lands. No data are available to estimate the acreage of impacts of past or present livestock grazing and recreation.

Estimates were obtained from the CFO (BLM 2014) to calculate area of disturbance resulting from past actions. A factor of 3.0 acres of disturbance was applied to each existing well on federal and non-federal lands within the 6,257,412-acre CFO planning area (Table 3.3). Surface disturbance associated with all existing land use authorizations, including roads, pipelines, sites, power lines, and other easements, on both federal and non-federal lands, were also included in the past disturbance calculations (see Table 3.3). In total, the past actions account for approximately 5% of the planning area. This percentage was then applied to the acreage of each CIAA identified above to estimate the past disturbance within each CIAA. Table 3.4 below summarizes past actions by CIAA.

Table 3.3. Summary of Past Disturbance within CFO Planning Area

Past Action	Quantity	Acres
Oil and gas wells	25,751	77,253
Roads	1,159	15,700
Pipelines/sites	6,626	50,985
Power lines/sites	2,117	12,473
Telephone/fiber-optic cables	94	1,580
Water facilities, ditches, reservoirs	196	146,898
U.S. Forest Service easements/grants	1	2
Other	8	12,239
Total	***35,952***	***317,130***

Source: BLM (2014).

Present Actions and Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions (RFFAs) are those for which there are existing decisions, formal proposals, or which are highly probable, based on known opportunities or trends. Present actions are those RFFAs that are currently under construction or recently began operations. The BLM has identified the following present actions and RFFAs occurring within the CIAAs identified above. It is likely several other oil and gas well and road activities would also occur within these areas.

- **Enterprise Gaucho-Thistle Crude Oil Pipeline Project:** The pipeline project is 26.1 miles of 10-inch-diameter pipeline and four aboveground facilities. The pipeline would transport crude oil from the Thistle 44 Truck Station and Central Delivery Point, the Thistle Central Delivery Point, and the Gaucho Central Delivery Point to the Lynch Station. From the Lynch Station, crude oil would be injected into the existing C88 pipeline to be transported to the Hobbs Station and ultimately moved towards Midland, Texas. The total project area is 174 acres. Approximately 44 acres are within the watershed CIAA.
- **Enterprise Lateral 1, 2, and 4 Pipelines:** Enterprise is proposing to build several lateral pipelines to move natural gas from existing wells to gathering lines and processing facilities in an action that would disturb approximately 172 acres within the CIAAs for watersheds and LPC habitat.
- **Enterprise South Eddy Interconnects and Cryogenic Gas Plant:** Enterprise is planning to build the South Eddy Cryogenic Gas Plant on a 40-acre parcel in eastern Eddy County. The gas processing capacity of the plant is estimated at 200 million cubic feet per day. The proposed plant would also require several pipeline interconnects, access roads, and electric easements that would result in approximately 40 acres of disturbance on BLM and SLO lands. The 80 acres of disturbance is within the watershed CIAA and approximately 15 acres are within potential LPC habitat.

- **Enterprise Rattlesnake Pipeline and Compressor Station and Cotton Draw Pipeline and Access Road:** Enterprise is requesting the long-term use of public lands for the purpose of installing a 5-mile, 12.75-inch-diameter natural gas steel pipeline, associated aboveground facilities, and permanent access roads in Lea County, New Mexico. The project area is 35 acres in size and within the watershed CIAA. A portion of the project crosses the LPC Isolated Population Area (IPA) and would disturb an estimated 11 acres of potential LPC habitat. This project is also applicable to the 31-mile air CIAA.
- **Mid-America Y-Grade Pipeline Project:** The pipeline project is approximately 35.8 miles of 12-inch-diameter pipeline to transport natural gas liquids from the South Eddy Cryogenic Gas Plant on the south end of the pipeline and would terminate at a mainline valve on the north end of the pipeline. The project area is estimated to be 220 acres. Approximately 110 acres are within the CIAAs for watershed and LPC habitat.
- **Potash Junction to Roadrunner 345-kilovolt Transmission Line Project**: This project is a proposed overhead power line with an estimated 132 to 223 acres of surface disturbance for the transmission line, expansion of the existing Potash Junction Substation, and new construction of the Roadrunner Substation. Approximately 100 acres are estimated to fall within the watershed CIAA.
- **Chevron Rustler Bluff:** DCP Midstream, L.P. (DCP) has requested the long-term use of public lands for the purpose of construction and operation of a 16-inch outside diameter steel natural gas pipeline in Eddy County, New Mexico, approximately 30 miles southeast of Carlsbad. The proposed pipeline would originate at the Pecos Treater and proceed north-northeast to Rustler Bluff No. 2 and would be located on approximately 21 acres of federal and state lands within the watershed CIAA. The project would not affect any potential LPC habitat.
- **DCP Midstream, Zia II Natural Gas Processing Plant and Pipeline Project**: This project is an approved natural gas processing plant and series of gathering pipelines with an estimated 694 acres of surface disturbance including 621 acres on BLM lands, 60 acres on state lands, and 13 acres on private lands. The portion of the project proposed on BLM lands is within potential LPC habitat. This project is applicable to the CIAAs for air and LPC analysis.
- **DCP Midstream, Red Hills North, Central, and South Pipeline Projects:** DCP is proposing to construct three pipelines in close proximity to each other in Lea County, New Mexico. Combined, the three pipelines would disturb approximately 52.4 acres, including 28.3 acres on private lands, 3.4 acres on state land, and 20.7 acres on BLM lands. All acres of disturbance are within the watershed CIAA. Of the 20.7 acres of disturbance on BLM lands, an estimated 1.2 acres of disturbance is within the LPC IPA managed by the BLM.
- **Lea 4772 EOG Excelsior to Rattlesnake:** DCP is requesting the long-term use of public lands for the purpose of construction and operation of a 12-inch outside-diameter steel natural gas pipeline in Lea County, New Mexico, and Loving County, Texas, approximately 70 miles southeast of Carlsbad. The proposed project is located on 2.0 miles of private land, 0.7 mile of State of New Mexico surface, and 0.8 mile of land managed by the BLM CFO. There would be approximately 20.9 acres of disturbance associated with the project, all of which are within the watershed CIAA. The project would not affect any potential LPC habitat.
- **DCP Midstream Ross Draw Pipeline:** DCP is proposing to build a 20-inch natural gas pipeline that would be 10 miles long, with a 50-foot ROW. The proposed project is located on 9.6 miles of land managed by the BLM CFO and on 16 feet of private lands. There would be 58.5 acres of disturbance associated with the Proposed Action, all of which are within potential LPC habitat and within the watershed CIAA.
- **Western Refining Southwest, Inc., 70-12 Pipeline Project:** Western Refining Southwest, Inc. (Western), has requested the long-term use of public lands for the purpose of installing a 76-mile, 12-inch pipeline to transport crude oil for private use in El Paso, Texas. The majority of the project is proposed on BLM-managed lands located in Chaves and Eddy Counties, along with 10 acres on SLO land in Eddy County and 10 acres on private land located in Chaves County, New Mexico. There would be approximately 306 acres of long-term disturbance associated with the project. Approximately 77 acres are within the watershed CIAA and approximately 78 acres would affect potential LPC habitat.

- **Sunoco Delaware Basin Gathering System:** Sunoco Pipeline L.P. is requesting long-term use of public lands for the purpose of constructing, operating, and maintaining 29 miles of 12-inch-diameter crude oil buried pipeline and associated aboveground facilities. The proposed project would temporarily disturb a total of 252.8 acres, which would include 59.48 acres of short-term disturbance on BLM lands and approximately 8.2 acres of permanent surface disturbance on private lands in Texas for the long-term use of the Mcloving Station and access road, as well as the valve location access road. The project would affect approximately 5 acres of potential LPC habitat. Approximately 84 acres are within the watershed CIAAs.
- **Oxy Cedar Canyon Boring:** Oxy U.S.A. Inc. (Oxy) has submitted an application for a ROW grant to install approximately 4,906 feet (2,486 feet on BLM; 2,420 feet on private land) of polyethylene pipeline. The proposed project area is approximately 0.9 mile long and 50 feet wide and would consist of the construction and operation of 4,906 feet of new pipelines (one buried 8-inch polyethylene gas pipeline and four aboveground 4-inch polyethylene oil/gas/water pipelines). There would be approximately 3.3 acres of disturbance associated with the buried portion of the project.
- **Navitas Midstream New Mexico Delaware Basin Natural Gas Cryogenic Processing Plant and Pipeline Project:** This project is a proposed natural gas processing plant, associated gathering pipelines, natural gas liquid pipeline, lateral pipeline, gathering compression stations, and downstream interconnect points. This RFFA is only applicable to the 31-mile air CIAA.
- **Intercontinental Potash Corporation Ochoa Mine Project:** This project is an approved new potash mine with an estimated 3,932 acres of surface disturbance for the processing plant, water well field, pipeline, and loadout facility. Approximately 1,966 acres of the disturbance is within the watershed CIAAs. The entire project is also applicable to the 31-mile air CIAA.
- **Other oil and gas proposed well pad and access road activity:** According to the BLM CFO's NEPA log published on May 4, 2015, there were 672 Applications for Permit to Drill in Eddy and Lea Counties listed as pending or approved within the first 4 months of 2015 (BLM 2015). This analysis assumes each of these projects represents an average disturbance of approximately 3 acres. While exact location data for these pending actions were not available, this analysis assumes that the projects would be located evenly across Lea and Eddy Counties and, as a result, approximately 8%, or 54 projects, would fall within the Lea and Eddy County portions of the watershed CIAAs.

Table 3.4 summarizes known past, present, and reasonably foreseeable disturbance impacts by CIAA. See resource-specific sections below for full cumulative analysis.

Table 3.4. Past, Present, and Reasonably Foreseeable Disturbance Impacts by CIAA

CIAA	Past Actions (acres)	Present Actions and RFFAs (acres within CIAA)	Total Past, Present and RFFAs by CIAA (acres)
31-mile buffer around the proposed ROW	Data not available	Data not available	Data not available
Sixteen Hydrologic Unit Code (HUC) 10-digit watersheds crossed by project	22,028	2,986	25,014
LPC IPA	39,734	1,071	40,805
SMAs	See Section 3.8.3	See Section 3.8.3	See Section 3.8.3

Note: See resource-specific sections below for full cumulative analysis.

3.1 Air Resources

3.1.1 Affected Environment

Air quality and climate are components of air resources which may be affected by the Proposed Action. Emissions of air pollutants would occur during construction and operation of the Proposed Action. Emissions from construction activities include: fugitive dust from general construction activity, commuting, and earthmoving; exhaust emissions from construction equipment and worker commuting; and pipeline coating. Emissions during the construction phase would be temporary and advance along the pipeline as construction progresses. During the operational phase, emissions would occur annually from the equipment and processes at the compressor stations, as well as from routine inspections and maintenance activities.

Air resource impacts associated with the Proposed Action were evaluated within a designated analysis area, extending 31 miles beyond each compressor station (which includes all proposed pipeline construction). This analysis area was chosen to remain consistent with common air quality modeling guidelines. The analysis area includes portions of Lea and Eddy Counties in New Mexico, and Culberson, Reeves, Ward, Loving, Winkler, and Andrews Counties in Texas. The analysis area is presented in Figure 3.5. Climate, air quality standards, existing air quality, county emissions inventories, air quality permitting programs, hazardous air pollutants, and air quality-related values are discussed in this section.

Climate

The climate of the analysis area is generally categorized as semiarid. The area receives low annual precipitation, has low annual humidity, and has an evaporation rate among the highest in the state. During summer months, individual daytime temperatures can exceed 100 degrees Fahrenheit. The warmest days often occur in June just before the monsoon season begins (monsoon season in the southwestern United States typically occurs from June to September). Precipitation in semiarid regions typically varies markedly between seasons, with intense precipitation events in the summer providing the majority of the annual precipitation. May through October are the warmest 6 months of the year and provide an average of 80% of the annual total precipitation for the state's eastern plains, where the Proposed Action site is located (Western Regional Climate Center [WRCC] 2015a). A wind measurement station near the Proposed Action (Paduca) indicates the prevailing winds most frequently arrive from the southeast (WRCC 2015b).

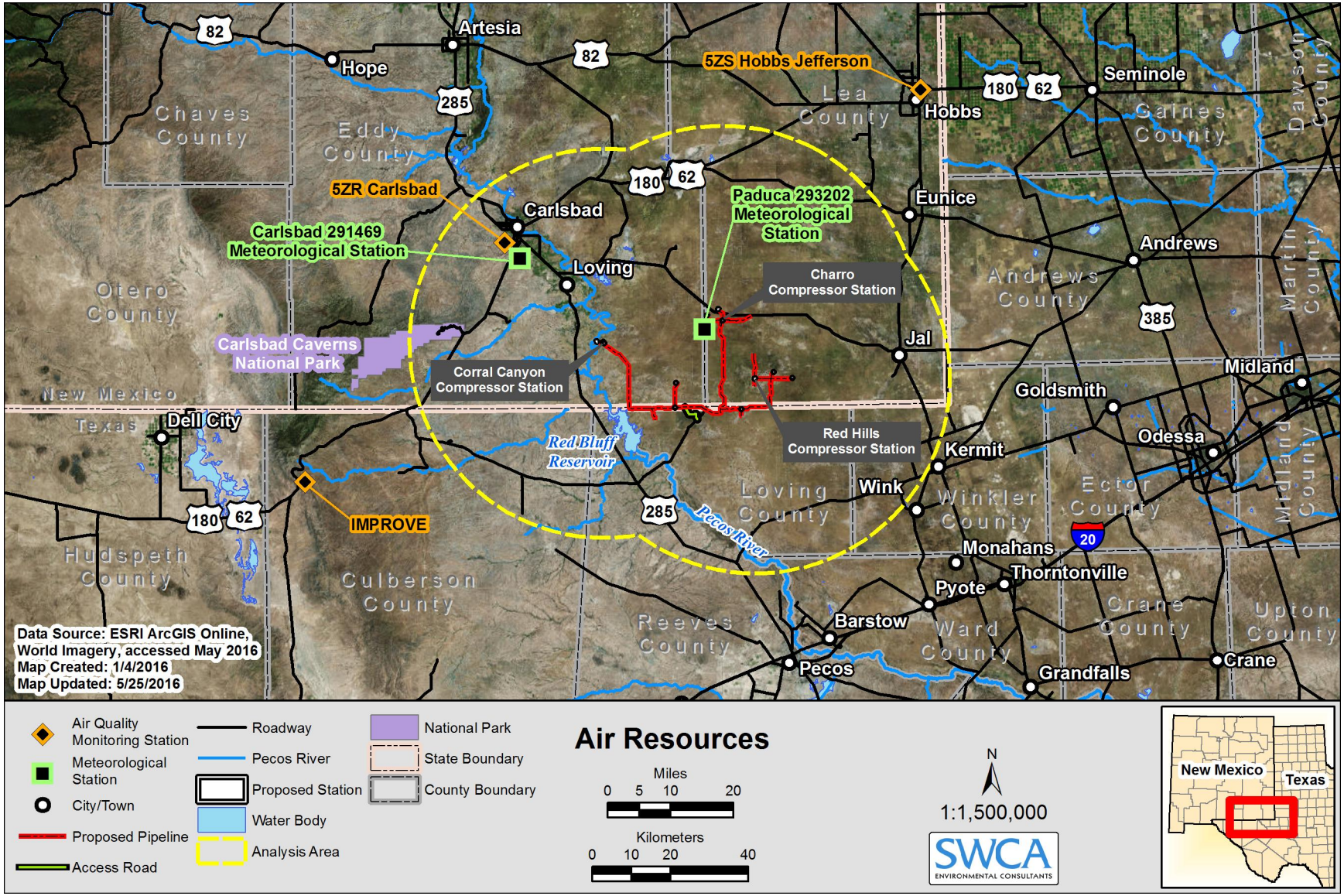

Figure 3.5. Analysis area for air resources.

Air Quality Standards

Under the Clean Air Act, the EPA has the authority to regulate emissions from both stationary and mobile sources. The CAA requires the EPA to establish National Ambient Air Quality Standards for pollutants considered harmful to public health and the environment. Per the requirement, the EPA has created national standards for six common air pollutants, also known as criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), SO_2, ozone (O_3), lead (Pb), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

The NAAQS include primary standards that provide for the protection of human health and secondary standards that provide for the protection of public welfare (e.g., visibility, the health of vegetation and animals). The NAAQS are defined in terms of threshold ambient concentrations measured as an average over specified periods of time. Pollutants with acute health effects are assigned short-term standards and those with chronic health effects are assigned long-term standards.

The NAAQS undergo periodic revisions to ensure that emerging science and technology result in the most up-to-date and protective standards achievable. On October 1, 2015, the EPA strengthened the NAAQS for O_3. Based on its review of the air quality criteria for O_3 and related precursors, the EPA revised the primary and secondary O_3 NAAQS to 0.070 parts per million (ppm) for an 8-hour averaging time (from 0.075 ppm). The final rule was effective December 28, 2015.

Under the provisions of the CAA, states can elect to develop their own ambient air quality standards (AAQS) that are more stringent than the NAAQS and apply to additional pollutants. Both New Mexico and Texas have adopted additional AAQS. The New Mexico AAQS adds total suspended particulates (TSPs), SO_2 (for 24-hour and annual averaging times), H_2S, and total reduced sulfur (TRS) standards. Sulfur compounds (i.e., SO_2, H_2S, and TRS) have differing AAQS depending on location within New Mexico. Additionally, the New Mexico AAQS strengthens the standards for CO (both the 1-hour and 8-hour averaging times) and NO_2 (annual). The Texas AAQS adds SO_2 (30-minute averaging time), H_2S, and sulfuric acid standards. The New Mexico and Texas AAQS are presented in Table 3.5.

Table 3.5. Ambient Air Quality Standards

Pollutant	New Mexico Standards	Texas Standards	National Standards	
			Primary	Secondary
CO				
1-hour average	13.1 ppm	-	35 ppm	-
8-hour average	8.7 ppm	-	9 ppm	-
Pb				
Rolling 3-month average	-	-	0.15 µg/m^3	Same as Primary
NO_2				
1-hour average	-	-		
24-hour average	0.05 ppm	-	100 ppb	-
Annual average	0.10 ppm	-	53 ppb	Same as Primary
O_3				
8-hour average	-	-	0.070 ppm	Same as Primary
TSP				
24-hour average	150 µg/m^3	-	-	-
7-day average	110 µg/m^3	-	-	-
30-day average	90 µg/m^3	-	-	-
Annual geometric mean	60 µg/m^3	-	-	-
PM_{10}				
24-hour average	-	-	150 µg/m^3	Same as Primary
$PM_{2.5}$				
24-hour average	-	-	35 µg/m^3	Same as Primary
Annual average	-	-	12 µg/m^3	15 µg/m^3

Pollutant	New Mexico Standards	Texas Standards	National Standards	
			Primary	Secondary
SO_2				
30-minute average	-	0.4 ppm	-	-
1-hour average	-	-	75 ppb	-
3-hour average	-	-	-	0.5 ppm
24-hour average	0.10 ppm	-	-	-
Annual average	0.02 ppm	-	-	-
H_2S				
½-hour average [a]	0.100 ppm	0.08 ppm	-	-
TRS				
½-hour average [a]	0.010 ppm	-	-	-
Sulfuric Acid				
1-hour	-	50 µg/m^3	-	-
24-hour	-	15 µg/m^3	-	-
Maximum concentration	-	100 µg/m^3	-	-

[a] H_2S and TRS ½-hour average for the Pecos-Permian Basin Intrastate Air Quality Control Region.
µg/m^3: microgram per cubic meter.
ppb: parts per billion.
Source: NMAC 20.2.3, 30 TAC 112, EPA (2015b).

Section 111 of the Clean Air Act authorizes the EPA to develop technology-based standards which apply to specific categories of stationary sources. These standards are referred to as New Source Performance Standards (NSPS) and are found in 40 CFR 60. The NSPS apply to new, modified, and reconstructed facilities in specific source categories. NSPS OOOO provides standards of performance for crude oil and natural gas production, transmission, and distribution. NSPS OOOO may be applicable to the Proposed Action.

Existing Air Quality and Emissions Inventory

In accordance with the CAA, the EPA must review air quality conditions reported by states to determine whether states are meeting the national standards for air quality. Areas with ambient concentrations of criteria pollutants within the NAAQS are deemed to be "attainment" areas; conversely, those that do not meet the standards are referred to as "non-attainment" areas. Areas that cannot be classified on the basis of insufficient data are designated as "unclassifiable." The designation "attainment/unclassifiable" may be assigned to areas that are lacking sufficient monitoring data but meet the standards or will soon meet the standards.

The EPA designates Lea and Eddy Counties in New Mexico, and Culberson, Reeves, Ward, Loving, Winkler, and Andrews Counties in Texas as being in attainment/unclassifiable with respect to the NAAQS for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb (EPA 2015c). The NMED designates Lea and Eddy Counties as being in attainment/unclassifiable with respect to the New Mexico AAQS for CO, NO_2, SO_2, TSP, H_2S, and TRS. Culberson, Reeves, Ward, Loving, Winkler, and Andrews Counties in Texas are in attainment/unclassifiable by the TCEQ with respect to the Texas AAQS for SO_2, H_2S, and sulfuric acid.

Emission inventories are useful in comparing emission source categories to determine which industries or practices are contributing to the general level of pollution in an area. Emission inventories provide an overview of the type and amount of pollution emitted on an annual basis from sources in the area. For the purposes of this assessment, the most recent National Emissions Inventory, conducted in 2011, was summarized for Lea and Eddy Counties in New Mexico and Loving County in Texas. The emission inventory data are presented in Table 3.6.

Table 3.6. Emissions Inventory in Tons per Year for Lea and Eddy Counties, New Mexico, and Loving County, Texas

Source	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC	HAPs
Lea County, New Mexico							
Agriculture	-	-	-	2,031	406	-	-
Biogenics	14,220	1,619	-	-	-	63,497	14,360
Dust	-	-	-	23,685	2,407	-	-
Fires	4,919	152	63	591	473	1,067	195
Fuel Combustion	3,598	11,782	56	318	310	777	301
Industrial Processes	9,431	7,185	10,247	259	242	39,140	870
Miscellaneous [1]	9	0	0	23	22	875	139
Mobile	9,555	1,726	7	92	59	929	241
Waste Disposal	1,098	35	1	130	104	78	7
Lea County Total:	***42,830***	***22,499***	***10,374***	***27,129***	***4,023***	***106,363***	***16,113***
Eddy County, New Mexico							
Agriculture	-	-	-	656	131	-	-
Biogenics	16,729	438	-	-	-	85,527	16,787
Dust	-	-	-	18,905	1,928	-	-
Fires	13,153	268	127	1,424	1,198	3,100	385
Fuel Combustion	943	1,377	48	87	72	199	27
Industrial Processes	9,593	8,234	2,289	1,919	708	41,972	1,008
Miscellaneous [1]	9	0	0	23	21	864	124
Mobile	10,388	1,964	9	112	75	1,332	330
Waste Disposal	632	21	1	82	66	48	5
Eddy County Total:	***51,447***	***12,302***	***2,474***	***23,208***	***4,199***	***133,042***	***18,666***
Loving County, Texas							
Agriculture	-	-	-	0	0	-	-
Biogenics	3,855	56	-	-	-	19,589	3,757
Dust	-	-	-	72	11	-	-
Fires	415	12	5	48	40	100	15
Fuel Combustion	0	0	0	0	0	0	0
Industrial Processes	1,161	1,868	206	19	19	4,457	77
Miscellaneous [1]	0	0	0	0	0	2	0
Mobile	725	30	0	5	4	223	61
Waste Disposal	0	0	0	0	0	0	0
Loving County Total:	***6,156***	***1,966***	***211***	***144***	***74***	***24,371***	***3,910***
Total for All Counties:	***100,433***	***36,767***	***13,059***	***50,481***	***8,296***	***263,776***	***38,689***

Note: "-" denotes no information available. Due to an incomplete data set, greenhouse gas emissions are not presented. Biogenic emissions are those emissions derived from natural processes (such as vegetation and soil).

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

HAPs = Hazardous Air Pollutants; VOC = Volatile Organic Compound.

Source: EPA (2015c).

According to the 2011 National Emissions Inventory, the major pollutants emitted in the counties are volatile organic compounds (VOCs) and CO. The major sources contributing to VOC emissions are biogenics and industrial processes. The major sources contributing to CO emissions are biogenics, mobile sources, industrial processes, and fires. PM_{10} and $PM_{2.5}$ emissions are principally generated from

dust and fires. Industrial processes and fuel combustion are the major contributors to nitrogen oxides (NO_X) emissions in the counties. SO_2 emissions are almost entirely generated in Lea and Eddy Counties through industrial processes, while fire contributes the majority of SO_2 emissions in Loving County. Industrial facilities near the Proposed Action area include compressor stations, storage facilities, gas processing plants, and potash mining (NMED 2015a).

The 2011 National Emissions Inventory does not include a full data set for greenhouse gas (GHG) emissions. However, according to the NMED, emissions of GHGs in New Mexico remained essentially level from 2000 to 2007 (the most recent information available), despite a 6.7% growth in New Mexico's population over that period. The largest sources of GHG emissions in New Mexico in 2007 were electricity production (41%), the fossil fuel industry (22%), and transportation fuel use (20%). Estimated total gross GHG emissions in 2007 for New Mexico were 76.2 million metric tons (NMED 2010a).

New Mexico Air Quality Permitting Program

The NMED's Air Quality Bureau has jurisdiction over air quality in all counties within New Mexico except for Bernalillo County and facilities located on tribal lands. NMED is responsible for processing permit applications and issuing construction permits, technical and administrative revisions or modifications to existing permits, notices of intent for smaller industrial operations, and No Permit Required (NPR) determinations. The NMED air quality regulations are provided in Title 20, Chapter 2 of the New Mexico Administrative Code (NMAC). These regulations establish ambient air quality standards for the state and authority under the CAA to regulate air quality and issue air quality permits. The NMED issues permits to ensure facilities are legally constructed and operated so that discharges to the ambient air are within the health standards and do not harm public health or cause significant deterioration in areas that presently have clean air.

The current construction permit program is codified in the NMAC, at Title 20, Chapter 2, Part 72 (20.2.72 NMAC). The construction permit program specifies that any source with "a potential emission rate greater than 10 pounds per hour [lb/hr] or 25 tons per year [tpy] of any regulated air contaminant [with the exception of lead] for which there is a National or New Mexico Ambient Air Quality Standard" must obtain a construction permit (20.2.72.200(A) (1) NMAC) before construction. A facility may be eligible for an NPR determination if emissions are less than 10 pounds per hour of any criteria pollutant and 10 tons per year of any regulated air contaminate, or 1 ton per year of lead (NMED 2010b). Facilities that emit more than 10 tons per year of any regulated air contaminant, but less than 25 tons per year are eligible for a Notice of Intent. Operating permits are required for major sources that have a potential to emit more than 100 tons per year of criteria pollutants, 10 tons per year of an individual hazardous air pollutant (HAP), or 25 tons per year of combined HAPs.

There are several permitting paths for the oil and gas industry. The source may obtain a regular permit under 20.2.72.200 NMAC, register under an existing General Construction Permit under 20.2.72.220 NMAC, or obtain a streamline permit under 20.2.72.300 NMAC. A regular permit requires full public notice, ambient air quality modeling, and up to a 120-day timeline to permit issuance. A General Construction Permit requires newspaper and posting a public notice only, does not require ambient air quality modeling, and up to a 30-day timeline to permit issuance; however, a facility must meet all the requirements of the existing General Construction Permit to register. A streamline permit only requires filling out a subset of a regular permit application, requires newspaper and posting a public notice only, does not require ambient air quality modeling, and up to a 60-day timeline to permit issuance (NMED 2015b).

Texas Air Quality Permitting Program

The TCEQ's Office of Air has jurisdiction over air quality in all Texas counties. The current construction permit program is codified in the Texas Administrative Code (TAC), at Title 30, Part 1, Chapter 116. Rule 116.110(a) of the code requires that a facility with the potential to emit air contaminants must obtain a permit or satisfy the criteria for a de minimis source before beginning construction. The TAC does not proscribe a minimum emission rate; instead the TCEQ maintains a list of types of facilities that qualify as de minimis (TCEQ 2015). For example, natural-gas pipeline isolation valve sites are considered de

minimis if the site 1) has a maximum of three valves, 2) is not otherwise authorized for air emissions, 3) is located more than 50 feet from any other stationary VOC source of the de minimis pollutant, and 4) does not contain a pollutant specified in an area on the TCEQ air pollutant watch list.

The TCEQ issues several types of permits for facilities with the potential to release air contaminants: permits-by-rule, standard permits, New Source Review (NSR) permits, Prevention of Significant Deterioration (PSD) permits, Non-attainment New Source Review (NNSR) permits, and/or operating permits. A permit-by-rule, standard permit, or minor NSR permit is required for all minor sources. PSD permits are required for new or modified sources with emissions of any regulated pollutant greater than 250 tons per year if the source is not one of the 28 listed sources in 40 CFR 51.166(b)(1)(i)(a), or 100 tons per year if the source is one of the 28 listed sources. Operating permits are required for major sources that have a potential to emit more than 100 tons per year of criteria pollutants, 10 tons per year of an individual HAP, or 25 tons per year of combined HAPs.

Hazardous Air Pollutants

Hazardous air pollutants, also known as air toxics, are pollutants that are produced primarily by human-made sources. These pollutants are known or suspected to cause adverse human health effects, including cancer, as well as negative effects to ecosystems. Humans can come into contact with these toxics through several exposure pathways, including inhalation, ingesting of contaminated food, water, and soil, and dermal contact.

To date, the EPA has identified 187 different HAPs. The EPA operates the National Air Toxics Trends Station Network, which monitors air toxics at 27 sites throughout the United States. In 2015, the EPA released the 2011 National-Scale Air Toxics Assessment (NATA) analysis, which estimated cancer and respiratory hazard risks from breathing air toxics. The 2011 NATA analysis (the most recent year available) estimated tract level total cancer risk for the analysis area as 31 to 40 per 1 million, and the estimated tract-level total respiratory hazard index was 0.96 to 1.52 per 1 million (EPA 2015d). For comparison, the NATA analysis estimates the average national cancer risk for 2011 was 40 per 1 million, meaning 1 person out of every 25,000 had an increased likelihood of contracting cancer from breathing air toxics from outdoor sources if exposed to 2011 emission levels over their lifetime. A respiratory hazard index below 1 indicates that exposures in the area do not exceed reference levels that would have adverse effects for human health.

3.1.2 Impacts from the No Action Alternative

The following section presents the impacts of the No Action alternative to air resources.

Direct and Indirect Impacts

Under the No Action alternative, the Proposed Action would not be granted. As a result of the No Action alternative, emissions due to the construction and operation of the pipeline and aboveground appurtenant facilities (including compressor stations) would not occur.

Cumulative Impacts

No cumulative impact would occur as a result of the No Action alternative because the proposed project would not be approved and would not incrementally add to air quality impacts in the area. Impacts to air resources may continue at current levels and trends. Present and reasonably foreseeable future actions and climate change are discussed more fully in the Proposed Action cumulative impacts section.

3.1.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Criteria for assessing air quality impacts are based on existing regulatory requirements across all applicable jurisdictions. Therefore, significant direct and indirect impacts from the Proposed Action can be assumed to result if it is demonstrated that the NAAQS, New Mexico AAQS, or Texas AAQS would be exceeded. However, it is difficult to quantitatively determine whether ambient air quality standards would be exceeded or impacted beyond acceptable levels during the construction and operation of the Proposed Action due to the uncertainty of knowing the exact locations of the emission units and the complexity of modeling.

Nevertheless, the quantity of emissions from the construction and operation of the Proposed Action can be estimated. Where possible, potential emissions from the anticipated activities were calculated for the Proposed Action. Impacts are evaluated separately as construction emissions (emissions that are expected to be temporary) and operational emissions (emissions that are expected to occur annually during the operation of the Proposed Action). Construction-related emissions include: exhaust from construction equipment, material transport and construction worker commuting; fugitive dust from general construction activities, commuting, and earthmoving; and pipeline coating. Operational-related emissions include: emissions due to the operation of the equipment at the compressor stations, emissions from operational worker commuting, and emissions from inspection and maintenance of the pipeline (which includes exhaust from inspection vehicles and fugitive dust from unpaved roads).

While these emissions estimates are not directly comparable to any AAQS, the estimated mass of pollutants can be compared to county emissions inventories. Construction and operational emissions from the Proposed Action are presented as a percentage of the emissions from Lea and Eddy Counties, New Mexico, and Loving County, Texas, as reported in the 2011 National Emissions Inventory. The emissions inventories of these counties were used because the Proposed Action is entirely located within these counties. Including only three of the eight counties within the analysis area will provide a conservative comparison. The comparison offers an estimate to the scope of impacts to air resources from the Proposed Action for informational purposes and carries no regulatory significance.

Construction-Related Emissions

Estimated construction-related emissions include exhaust from construction vehicles, material transport, and construction worker commuting; fugitive dust from general construction activities, commuting, and earthmoving; and pipeline coating.

Exhaust emissions from off-road construction equipment and on-road commute and delivery vehicles were calculated using the EPA's Motor Vehicle Emission Simulator (MOVES2014) using data specific to the Proposed Action area for the 2016 vehicle fleet. Estimates of equipment type, quantity, and duration of use were used in the calculations. Construction workers were assumed to commute from Carlsbad, New Mexico to the site of the Proposed Action. Delivery vehicles were assumed to originate from Odessa, Texas. Estimates of fugitive dust due to unpaved roads were estimated using the EPA's AP-42 Compilation of Emission Factors (EPA 1995). Fugitive dust emissions due to general construction and earthmoving activities were estimated using the Western Regional Air Partnership's Fugitive Dust Handbook (WRAP 2006). Pipeline coating emissions were estimated based on a representative pipeline coating. Construction-related emissions resulting from the Proposed Action are presented in Table 3.7.

Table 3.7. Construction-Related Emissions in Tons Resulting from the Proposed Action

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOC	HAPs	GHG [2]
Construction Equipment Exhaust	31.68	59.17	0.07	4.95	4.80	0.72	0.07	11,635
Commuting and Material Delivery	8.38	1.69	< 0.01	18.15	1.83	0.28	0.08	908
Fugitive Emissions from General Construction and Earthmoving	-	-	-	59.20	5.92	-	-	-
Pipeline Coating	-	-	-	-	-	84.20	8.42	-
Total	***40.06***	***60.86***	***0.07***	***82.29***	***12.55***	***85.20***	***8.57***	***12,543***
Percent of Total Counties' Emissions	***0.04%***	***0.17%***	***< 0.01%***	***0.16%***	***0.15%***	***0.03%***	***0.02%***	***N/A [3]***

[1] All oxides of sulfur (including SO_2). For purposes of comparison, SO_2 emissions reported in the county inventory are assumed to be equal to SO_X.
[2] GHG emissions are reported in metric tons of carbon dioxide equivalent (CO_2e). For any quantity and type of GHG, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.
[3] GHG emissions are not reported for all sources in the county inventory. Therefore, GHG emissions are not compared to the county inventory.

The most abundant pollutants estimated to be produced during the construction phase of the Proposed Action, in total tons, are GHG, PM_{10}, NO_X, and CO. The greatest contributors to these pollutants are construction equipment exhaust, construction worker commuting and material delivery, and fugitive dust emissions from general construction and earthmoving. The total mass of each pollutant is equal to or less than 0.17% of the counties' emission inventories for 2011.

Construction-related emissions for the pipeline and the aboveground appurtenant facilities (including compressor stations) will typically be temporary and intermittent. During pipeline construction, activities would advance down the line as construction progresses. Therefore, impacts to air resources are likely to be insignificant from the construction of the Proposed Action.

Operational-Related Emissions

Estimated operational-related emissions include emissions due to the operation of the equipment at the compressor station, emissions from operational worker commuting, and emissions from inspection and maintenance of the pipeline (which includes exhaust from inspection vehicles and aerial inspections, fugitive dust from unpaved roads, and pipeline maintenance equipment exhaust).

All proposed compressor stations are to be located in New Mexico. Emissions from the operation of the equipment proposed at each compressor station could not be reliably quantified at this time. However, each compressor station is anticipated to qualify for and will be proposed to be permitted under NMED's General Construction Permit 4 (GCP-4) (NMED 2003). Each compressor station would be subject to the terms and conditions of GCP-4. Associated meter and valve stations in New Mexico are expected to be eligible for a NPR determination. Associated meter and valve stations in Texas are expected to qualify as de minimis.

There are two operating scenarios under GCP-4. It is not known at this time which operating scenario each compressor station would apply for. The scenario with the highest allowable facility emissions (Scenario 1) is presented in an effort to characterize the potential emissions from each compressor station. Annual emissions from each compressor station permitted under GCP-4 Scenario 1 would be required to not exceed:

- 95 tons per year of NO_X;
- 95 tons per year of CO;
- 25 tons per year of PM_{10};

- 95 tons per year of VOCs;
- 30 tons per year of SO_2;
- 20 tons per year of total HAPs; and
- 8 tons per year of any individual HAP.

In addition to these emission limits, both scenarios under GCP-4 have additional limitations to consider (NMED 2003).

Ten workers are assumed to commute from Carlsbad, New Mexico, every day of the year during the operation of the Proposed Action. Inspection and maintenance activities are assumed to occur four times per year. Operational-related emissions resulting from the Proposed Action are presented in Table 3.8.

Table 3.8. Operational-Related Emissions in Tons per Year Resulting from the Proposed Action

Source	CO	NO_X	SO_X [1]	PM_{10}	$PM_{2.5}$	VOC	HAPs	GHG [2]
Compressor Station Equipment	≤ 285	≤ 285	≤ 90	≤ 75	≤ 75	≤ 285	≤ 60	N/A [3]
Operational Worker Commute	1.77	0.32	< 0.01	6.21	0.62	0.05	0.02	199
Pipeline Inspection and Maintenance Activities	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	0.36
Total	***≤ 286.77***	***≤ 285.32***	***≤ 90***	***≤ 81.22***	***≤ 75.62***	***≤ 285.05***	***≤ 60.02***	***199***
Percent of Total Counties' Emissions	***0.29%***	***0.78%***	***0.69%***	***0.16%***	***0.91%***	***0.11%***	***0.16%***	***N/A [4]***

[1] All oxides of sulfur (including SO_2). For purposes of comparison, SO_2 emissions reported in the county inventory are assumed to be equal to SO_X.
[2] GHG emissions are reported in metric tons of carbon dioxide equivalent (CO_2e). For any quantity and type of GHG, CO_2e signifies the amount of CO_2 which would have the equivalent global warming impact.
[3] GHG emissions are not reported for the compressor stations as there is no GCP-4 emission limitation on GHGs.
[4] GHG emissions are not reported for all sources in the county inventory. Therefore, GHG emissions are not compared to the county inventory.

The most abundant pollutants emitted during the operation of the Proposed Action according to the methodology described above are CO, VOC, and NO_X. All emissions from the operation of the Proposed Action are less than 0.91% of the county's emissions inventory. While emissions from the equipment at the compressor stations could not be quantified at this time, all compressor stations would be required to follow all conditions of each GCP-4 permit, as well as all applicable NMED and federal air quality regulations. Therefore, significant impacts to air resources are not likely to occur from the operation of the Proposed Action.

Cumulative Impacts

Cumulative impacts are discussed in relation to RFFAs and climate change.

Present and Reasonably Foreseeable Future Actions

Present actions within the analysis area include existing oil and gas production facilities and supporting infrastructure. RFFAs in the area are generally those serving the oil and gas industry. Project types generally include transmission lines, pipelines, and potash mines.

Transmission line and pipeline projects emit pollutants over a wide area during construction, but typically emit small amounts of pollutants during operation. RFFAs include the DCP Midstream Zia II Pipeline Project, Enterprise Gaucho-Thistle Pipeline Project, Mid-America Y-Grade Pipeline Project, Potash Junction to Roadrunner 345-kilovolt Transmission Line Project, Enterprise Lateral 1/Lateral 2 Pipeline Project, Enterprise Lateral 4 Pipeline Project, and Sunoco Delaware Basin gathering system. Similar to

the Proposed Action, construction emissions from these projects would include exhaust from construction vehicles and material transport; exhaust from construction worker commuting; and fugitive dust from general construction activity. Proposed projects with pipelines would require coating. Typically, these levels of emitted pollutants do not contribute largely to the overall cumulative impact to air resources. Operational emissions from transmission line projects would be negligible. Operational emissions from pipeline projects would typically be negligible unless the project includes compressor stations utilizing natural gas engines; however, those compressor stations would be regulated by the NMED and would be required to follow all applicable NMED and federal air quality regulations.

Potash mines, such as the Intercontinental Potash Corporation Ochoa Mine Project, would emit pollutants during construction but would also emit large amounts of pollutants during the operational lifetime of the facility. The potash mine would be regulated by NMED and would be required to follow all applicable NMED and federal air quality regulations.

However, sufficient data are not currently available to determine cumulative impacts from the RFFAs listed above. These projects could cumulatively impact air quality through emissions from surface disturbance, tailpipe and fugitive dust emissions from mobile sources, and point-source emissions from industrial activities. The emissions from these RFFAs, collectively, could result in degradation of air resources within the project analysis area. However, each facility emitting pollutants to the atmosphere in the analysis area would be regulated by the appropriate regulatory authority (i.e., NMED or TCEQ), ensuring that anthropogenic air quality impacts are minimized and all AAQS are not violated.

Climate Change

Climate change analyses consist of several factors, including GHGs, land use management practices, and the albedo effect. There are no sites within or near the Proposed Action area that are collecting ambient GHG data. The tools necessary to quantify incremental climatic impacts of specific activities associated with those factors are presently unavailable. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Ambient background data that exist are parametrically derived from fossil fuel combustion and other industrial sources. While the cumulative effect of climate change in the analysis area may be major and long term, it is difficult to state with certainty what amount the Proposed Action would contribute to those climate impacts.

CEQ draft guidance states that NEPA documents for proposed federal actions resulting in direct GHG emissions of 25,000 metric tons per year should include a GHG emissions analysis of alternatives. The reference point of 25,000 metric tons of direct GHG emissions is not an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, but serves as a minimum for conducting a quantitative analysis (CEQ 2014). While a quantitative analysis of alternatives was provided to the extent possible (emissions from the compressor stations are not quantifiable at this time), the Proposed Action is estimated to have GHG emissions less than the reference point. Furthermore, the compressor stations may have to report GHG emissions under 40 CFR 98 Subpart W if the total GHG emissions from all sources covered under Subpart W (i.e., oil and gas production and transmission) and operated by EnLink in the same geologic basin are greater than 25,000 metric tons per year.

Climate change impacts from the end-use of the natural gas (i.e., combustion of natural gas by the consumer) are not effects of the proposed planning decisions because they do not occur at the same time and place as the Proposed Action, and are not required to be analyzed under NEPA. Therefore, these impacts are not accounted for in the emissions calculations for the Proposed Action. The effects from consumption of the processed natural gas are beyond the scope of the agency's authority or control.

Mitigation Measures and Residual Impacts

Measures to minimize or eliminate impacts to air quality are described in the Proposed Action's project design features. No additional mitigation measures have been recommended.

3.2 Water Resources

3.2.1 Affected Environment

Surface Hydrology

The surface water supplies in southern Lea and Eddy Counties are transitory and limited to quantities of runoff impounded in short drainageways, shallow lakes, and small depressions, including various playas and lagunas (New Mexico Office of the State Engineer [NMOSE] 1999). The proposed project crosses 16 watersheds, as defined by the 10-digit Hydrologic Unit Codes (HUCs) (Table 3.9). The watersheds are contained within the Pecos River Basin, although there is no connecting drainage to the Pecos River in southern Lea County (NMOSE 1999:6-3).

Table 3.9. Watershed Crossed by the Proposed Project

Watershed Name	HUC-10 ID	Portion of Project Area within Each Watershed (acres)	Total Area of Watershed (acres)
[unnamed]	130600111406	20	16,329
Andrew's Place	130700070406	4	36,292
Arroyo Bonito-Pecos River	130700010401	74	35,576
Bell Lake	130700070401	9	29,873
Brushy Draw	130700010201	18	25,034
Diamond and a Half Ranch	130700070404	60	27,849
Double X Ranch	130700070403	22	22,225
NM/TX	130700010203 / 130700010105	81	17,762
North Well	130700010103	6	38,491
Red Bluff Reservoir	130700010106	20	35,704
Red Hills Draw	130700010104	55	26,155
Ross Place	130700010102	88	20,629
Salt Draw-Pecos River	130600111405	41	19,528
Saludo Draw	130700010105	151	37,531
Tucker Draw	130700010202	16	10,932
White Elephant Tank	130700010506	5	40,630
Total		**670**	**440,541**

A 100% pedestrian survey of the project area was conducted during multiple field sessions between October 5 and December 5, 2015, to determine the presence or absence of potential waters of the U.S., including wetlands and special aquatic sites. Defining elements of potential waters of the U.S. include ordinary high-water marks (OHWMs), defined bed and banks, or the three mandatory wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Additionally, the field survey identified the presence/absence of lotic systems (e.g., creeks, rivers, arroyos, human-made ditches; collectively "streams") and lentic systems or other open-water areas (e.g., ponds) based on the presence of OHWMs.

During the field survey, 47 potential jurisdictional waters of the U.S. were identified, including twenty-one drainages listed in the National Hydrologic Dataset and 26 other open-water areas/drainages that were found during the field surveys. All occurring drainages were determined to be ephemeral streams, i.e., streams that only flow when sufficient rain or snow events occur. No wetlands, as defined by the USACE, were identified during the field survey of the proposed project area (SWCA 2016b).

The presence of playas and vegetated depressions was investigated in the field and using aerial imagery according to the CFO's guidance (BLM 2014:6-10). The CFO defines a playa as a "shallow, nearly level, often saline, dry lake bed. Playas vary considerably in materials, salinity, and hydrologic regime. In general, playas: (1) collect surface runoff in closed basins; (2) are poorly vegetated; (3) are ephemerally

flooded; and (4) have a thin surface of non-gravelly, fine-textured sediment" (BLM 2014). These features are of interest to the BLM and are subject to protective measures due to their ability to serve as intermittent surface water sources for wildlife in otherwise arid habitats. Additionally, vegetated depressions supporting surface runoff sufficient to affect a type-change in vegetation toward more mesic species, plants adapted to moderate moisture, or toward more vigorous upland species, such as mesquite (*Prosopis* sp.), are also of importance due to their similar, although less significant, ability to support ephemeral surface waters and are therefore subject to identification during project surveys (personal communication, telephone conversation with Steve Daly, Soil Conservationist, BLM, to Greg Everett, SWCA, on November 7, 2014). Three total playas were identified in or near the project area. One large playa near the northern end of the Ross Draw gathering arm was identified during pre-field review and is being completely avoided by routing the project around the playa. Other drainage areas on the Ross Draw line have been identified as "no berm" areas, as depicted in Figure 2.1 (Section 2.1.5).

Two small playas (approximately 500 and 300 feet across, respectively) were investigated within the project area on the Red Hills Fuel Line. These are at Universal Transverse Mercator 13S 638494 E, 3548402 N shown on the Paduca Breaks, 1973 U.S. Geological Survey topographical map. Using the CFO's guidance for identifying playas, both were determined to be low productive playas due to the minimal change in vegetation, limited ability to hold water for more than a few days, and dense mesquite stands in the playas. The pipeline route has been altered slightly to the south to avoid these playas, and no berm areas have been identified (see Figure 2.2, Section 2.1.5).

Groundwater Hydrology

The project area occurs within the Carlsbad Underground Basin. The Carlsbad Underground Basin stretches from the Guadalupe Mountains, west of Carlsbad, New Mexico, south to the Texas border, and east into Lea County. Groundwater in this basin is derived from several geological formations, including the Delaware Mountain Group, the Carlsbad and Capitan Limestones, the Castile, the Rustler and Dockum Formations, and alluvium (water eroded) and river terrace deposits (Pecos Valley Water Users Organization 2001). The two major aquifers that yield large supplies of water are the Capitan Reef and the shallow water aquifer found in the alluvium and river terrace deposits. The city of Carlsbad, the village of Loving, and five other community water systems derive their water supplies from the two major aquifers in the basin. Mineral extraction industries (potash, oil, and gas) also use water from the basin. The groundwater quality within the Carlsbad Underground Basin can vary from good to poor. The major constituents affecting water quality are salts and sulfur (Pecos Valley Water Users Organization 2001).

Groundwater level data are limited for the project vicinity. Based on the New Mexico Water Rights Reporting System, groundwater levels in the Carlsbad Underground Basin average 192 feet below ground surface with a minimum depth of 60 feet below ground surface (NMOSE 2014).

3.2.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to water resources, because the ROW would not be granted and no surface disturbance would occur.

Cumulative Impacts

No cumulative impacts would be realized as a result of the No Action alternative.

3.2.3 Impacts from the Proposed Action

Direct and Indirect Impacts

No special aquatic sites or wetlands, as defined by the USACE, were identified during the field survey of the proposed project area (SWCA 2016b). The 47 ephemeral streams identified within the project area during the field survey are potential waters of the U.S. Impacts to these streams would be short term and occur during the construction phase of the project. The proposed project would cross these drainages

either by boring underneath, staying completely outside the OHWM, or by open-cut trenching across the drainage. All impacts associated with construction would be temporary. Proposed project impacts to the drainages would be permitted under Nationwide Permit No. 12 for Utility Line Activities. Following construction, these drainages will be reclaimed according to the Nationwide Permit Program general and regional conditions (see Appendix B Wetland Delineation).

Playas and vegetated depressions were avoided to the extent possible. Per the design feature identified in Section 2.1.5, subsoil and topsoil would be compacted in the areas identified in Figure 2.1 and Figure 2.2 when filling the pipeline trench to avoid crowning of backfill and the modification of drainage flow in these areas. This method would maintain pipeline integrity and restore pre-construction drainage conditions.

The potential to impact water resources primarily lies with the indirect impacts that could occur due to stormwater runoff from pipeline construction activities into downstream waters or the nearby playas. While indirect impacts from stormwater movement of contaminants or sediment due to ground disturbance is a possibility, the stabilization and rehabilitation procedures described in Section 2.1.5, including established BMPs, are likely to limit any movement of contaminants or sediment and limit any indirect impacts. This Proposed Action would have no impact on the Pecos River because the ephemeral drainages do not drain directly into the river.

Similar to potential impacts to surface water, the impacts to groundwater would occur if spills or leaks occurred during construction or operation of the pipeline, especially if a spill or leak occurs near a karst feature. Approximately 199 acres of the proposed project falls within the CFO-designated medium karst area and approximately 6 acres is within a designated high karst area. Direct contact with groundwater during construction is not likely, as trenching of the pipeline would penetrate to approximately 4 feet deep, up to a maximum of 10 feet, depending on field conditions. The minimum record groundwater depth is approximately 60 feet within the Carlsbad Underground Basin. The greatest risk is from accidental spillage or release of contaminants that could migrate to groundwater. The use of BMPs and spill prevention, control, and cleanup procedures would minimize the risk of any impact to shallow groundwater resources, if they exist.

After construction, the entire system would be hydrostatically tested to ensure that the system is capable of withstanding the operating pressure for which it was designed. Water would be purchased from a nearby municipal water source and hauled to the project location. Once all sections are tested, the water would be discharged onto the surface of the ground within an approved upland area. Energy dissipation and filtration devices (e.g., certified weed-free hay/straw bales and silt fences) would be used to reduce the velocity of the discharged water and thereby reducing potential for erosion. The exact location of the discharge has yet to be determined. Prior to the discharge, a permit would be obtained either from the State of New Mexico's EMNRD or the Texas Railroad Commission.

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs for erosion control and stormwater events has reduced impacts to water resources by limiting sedimentation and controlling runoff.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface disturbance within the CIAA, or 0.67% of the CIAA. Impacts to water resources would depend on the placement and type of surface disturbance, the type of soil and the hydrologic conditions within the individual project areas. Generally, soil erosion and sedimentation of local drainages would be expected to occur, especially when storm events occur during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable surface disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is an addition of 0.15% to the past, present, and reasonably foreseeable surface disturbance identified above, bringing the total to 5.82% of cumulative disturbance to the CIAA This contribution would be localized and minimized from implementation of project design features and BMPs. Cumulative impacts to groundwater are difficult to estimate because, as with the Proposed Action, impacts to groundwater would occur from accidental spills during construction or operation that would reach the water table. BMPs would be in place for all projects considered for the cumulative impacts analysis; therefore, spills would be rare. If a spill did occur, response would be immediate, thereby reducing the likelihood of groundwater contamination.

Mitigation Measures and Residual Impacts

Measures to minimize or eliminate impacts to water resources and karst features are described in the Proposed Action's project design features (see Section 2.1.5). No additional mitigation measures have been recommended.

3.3 Cave and Karst Resources

3.3.1 Affected Environment

The BLM categorizes all areas within the CFO planning area as having either low, medium, high, or critical cave or karst potential based on geology, occurrence of known caves, density of karst features, and potential impacts to fresh water aquifers. The proposed project is located within low and medium mapped cave-potential areas, and no surface geological features, such as caves or karst depressions, were observed during biological surveys. The project area is also mapped as low, medium, and high (less than 6 acres) for karst potential. Table 3.10 provides the breakdown of cave and karst mapped potential in the project area.

Table 3.10. Mapped Cave and Karst Potential

Karst Potential	Acres
Low	226
Medium	183
High	6
Unknown (Texas)	255
Cave Potential	**Acres**
Low	320
Medium	95
Unknown (Texas)	255

3.3.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to cave and karst resources, because the ROW would not be granted and no subsurface disturbance would occur.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.3.3 Impacts from the Proposed Action

Direct and Indirect Impacts

A possibility exists for slow subsidence or sudden collapse of a sinkhole, cave passage, or void during trenching operations, with associated safety hazards to the operator and potential for increased environmental impact. Slow subsidence or sudden collapse of sinkholes may also leave pipelines hanging and increase their possibility of leaking or failure. These subsidence processes can be triggered or enhanced by intense vibrations from construction or rerouting or focusing of surface drainages.

Buildup of toxic or combustible fumes in caves and cave entrances from leaking or ruptured pipelines may harm wildlife and cave visitors and, in extreme cases, lead to asphyxiation or rapid ignition in the rare event that the fumes are ignited by visitors.

Contaminates, such as salt water, oil, or other petroleum products, from spills can be transported directly into cave and karst systems causing a negative effect to the cave environment and ecosystem. Because cave ecosystems are extremely fragile and easily disturbed, the negative effects to the cave's biological components may include disruption of some of its species. Because karst terrains and cave systems are directly and integrally linked to groundwater recharge leaking or ruptured pipelines in karst areas may lead directly to groundwater contamination.

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance on approximately 5% of the CIAA.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface disturbance within the CIAA, or 0.67% of the CIAA. Impacts to karst resources would depend on the placement and type of surface disturbance, the proximity to karst features and the surface drainage patterns in the surrounding area. Generally, soil erosion and sedimentation of local drainages would be expected to occur, especially when storm events occur during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable surface disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is an addition of 0.15% to the past, present, and reasonably foreseeable surface disturbance identified above, bringing the total to 5.82% of cumulative disturbance to the CIAA This contribution would be localized and minimized from implementation of project design features and BMPs. Ground water degradation contribution would be localized and minimized from implementation of project design features and BMPs. Cumulative impacts to groundwater would occur from accidental spills during construction or operation that would reach the water table. BMPs would be in place for all projects considered for the cumulative impacts analysis; therefore, spills would be rare. If a spill did occur, response would be immediate, thereby reducing the likelihood of groundwater contamination and other impacts to karst resources.

Mitigation Measures and Residual Impacts

Measures to minimize or eliminate impacts to water resources and karst features are described in the Proposed Action's project design features (see Section 2.1.5). No additional mitigation measures have been recommended.

The BLM maintains up to date locations and surveys of known cave and karst features. Projects would be located away from these features whenever possible. Proposed roads and pipelines would be routed around cave and karst features at an adequate distance to mitigate adverse impacts.

3.4 Soil Resources

3.4.1 Affected Environment

According to the Natural Resources Conservation Service (NRCS 2015), 35 different soils are identified within the project area. The acreage of each soil type within the project area is provided in Table 3.11.

Table 3.11. Soils in the Project Area

Soil Type	Acres	Percent of Project Area
BB: Berino complex, 0 to 3 percent slopes, eroded	7.23	1.08%
KM: Kermit-Berino fine sands, 0 to 3 percent slopes	0.03	0.00%
PA: Pajarito loamy fine sand, 0 to 3 percent slopes, eroded	12.20	1.82%
PD: Pajarito-Dune land complex, 0 to 3 percent slopes	31.33	4.67%
PS: Potter-Simona complex, 5 to 25 percent slopes	16.68	2.49%
RG: Reeves-Gypsum land complex, 0 to 3 percent slopes	4.10	0.61%
SA: Simona sandy loam, 0 to 3 percent slopes	11.49	1.71%
SG: Simona gravelly fine sandy loam, 0 to 3 percent slopes	3.26	0.49%
SM: Simona-Bippus complex, 0 to 5 percent slopes	2.69	0.40%
TC: Tonuco loamy sand, 0 to 3 percent slopes, eroded	5.86	0.87%
TF: Tonuco loamy fine sand, 0 to 3 percent slopes	1.31	0.20%
TN: Tonuco loamy fine sand, 0 to 3 percent slopes, eroded	15.30	2.28%
US: Upton-Simona complex, 1 to 15 percent slopes, eroded	9.50	1.42%
BE: Berino-Cacique loamy fine sands association	7.80	1.16%
BH: Berino-Cacique association, hummocky	6.86	1.02%
CLP: Caliche pit	0.50	0.07%
KD: Kermit-Palomas fine sands, 0 to 12 percent slopes	4.56	0.68%
KO: Kimbrough gravelly loam, 0 to 3 percent slopes	20.21	3.01%
MF: Maljamar and Palomas fine sands, 0 to 3 percent slopes	1.71	0.26%
MN: Midessa and wink fine sandy loams	6.76	1.01%
PT: Pyote loamy fine sand	45.52	6.79%
PU: Pyote and Maljamar fine sands	106.17	15.84%
PY: Pyote soils and dune land	27.82	4.15%
SE: Simona fine sandy loam, 0 to 3 percent slopes	7.82	1.17%
SR: Simona-Upton association	46.85	6.99%
SY: Stony rolling land	0.50	0.07%
TF: Tonuco loamy fine sand	11.03	1.65%
HMB: Holloman-Monahans complex, gently undulating	26.90	4.01%
HRA: Holloman-Reeves complex, nearly level	19.51	2.91%
MPA: Monahans-Pajarito complex, nearly level	52.47	7.83%
SMB: Splotter-Mentone complex, gently undulating	56.73	8.46%
TMB: Tencee-Mentone complex, gently undulating	3.48	0.52%
TOA: Toyah clay loam, occasionally flooded	3.89	0.58%

Soil Type	Acres	Percent of Project Area
WCB: Wickett-Pyote complex, gently undulating	54.69	8.16%
WKA: Wickett-Sharvana complex, gently undulating	37.69	5.62%
Total	**670.45**	**100.00%**

Source: NRCS (2015).

The major soil types found in the project area as summarized in Table 3.11 are sensitive soils, including dunes, sand hills, sand sheets, or soils developed from eolian (windblown) and alluvium parent material. They can be best characterized as loamy sands to sandy soils with coarse to moderately textured surface soils. Due to the texture of the soils and low organic matter within the project area, they are highly susceptible to erosion when vegetative cover is removed (NRCS 2015).

Biological soil crusts are important components of the loamy and sandy soils of southeast New Mexico. These crusts bind soil particles, thereby stabilizing surfaces and reducing erosion. Biological soil crusts in sandy soils are most commonly dominated by early succession cyanobacteria, which are adapted to disturbed conditions or very erodible soils. Loamy soils contain cyanobacteria but may also be colonized by algae, fungi, mosses, and squamulose, crustose, and gelatinous lichens. All soil crust organisms enhance soil stability, capture nutrient-rich dust, impact nutrient cycling, contribute organic matter, and influence soil moisture dynamics. In addition, cyanobacteria and cyano-lichens fix atmospheric nitrogen, potentially making this nutrient more available for vascular plants. All of these functions are utilized by and important for sustaining grasses, forbs, and other vascular plants in the project area. While these soil crusts are not always inventoried during biological surveys, as they are difficult to quantify, they have the potential to exist in most areas where soils are exposed (i.e., not covered by rocks or vegetation).

3.4.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to soil resources, because the ROW would not be granted and no soils would be disturbed.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.4.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Construction activities (e.g., clearing vegetation, grading, trenching) related to the installation of the pipeline and aboveground facility would directly impact 670 acres of soil resources. Approximately 622 acres would be temporarily impacted, with vegetation reclamation of the area by faster-growing plants expected within 2 years after construction, given sufficient rainfall and proper seeding techniques. The growth of mature native plant communities may require decades to become fully reestablished. Biological soil crusts are extremely fragile and may be disrupted or destroyed by compressional damage caused by vehicle traffic. Disruption of the biological soil crusts can result in decreased soil crust cover, soil stability, soil nutrient levels, and organic matter, as well as increased susceptibility to erosion and dust emissions. The degree and longevity of the impact of disturbance to crusts largely depends on the type of crusts and soil conditions, with early succession cyanobacteria crusts recovering more quickly from disturbance than late succession moss-lichen crusts. In most cases, disturbance impacts would be restricted to the areas of physical vehicle disruption; therefore, impacts are expected to be limited to new oil and gas roads, pipeline ROWs, and well pads.

Long-term, direct impacts would result from the construction and permanent operation of 48 acres for the aboveground facilities and permanent access roads. Direct impacts to soils include increased erosion from the removal of vegetative cover, contamination from accidental spills or leaks, and soil compaction from heavy equipment resulting in the loss of soil structure and porosity. These impacts can lead to increased rainfall runoff and susceptibility to high wind events and consequently increased erosion.

Indirect impacts to soil resources can include a change in soil productivity due to mixing of topsoil with subsoil during trenching and grading. This has the greatest chance of occurring on sensitive soils, which include soils that are easily eroded with shallow profiles, such as those found in the project area. Another indirect impact is the colonization of noxious weeds on disturbed soils. This can occur anywhere soil is disturbed. Weeds can outcompete native species due to their ability to thrive under conditions with low soil moisture content, poor nutrient availability, and coarse soil textures.

Per communication with the BLM CFO and comparison with similar projects in the region, it is reasonable to expect seeded vegetation to be reestablished within the project area 2 years after construction. This assumes the project area would receive sufficient rainfall, proper seed bed preparation, and appropriate seeding techniques, and that a BLM-prescribed seed mix would be used.

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for soil disturbance on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs for erosion control and stormwater events has reduced impacts to soil resources by improving vegetative cover from construction conditions and reducing soil loss.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of soil disturbance within the CIAA, or 0.67% of the CIAA. Impacts to soil resources would depend on the placement and type of surface disturbance, the type of soil and the topography within the individual project areas. Generally, soil erosion would be expected to occur, especially when there are storm events during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. Together, past, present, and reasonably foreseeable soil disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is a negligible addition (0.15%) to the past, present, and reasonably foreseeable surface disturbance identified above, bringing the total to 5.82% disturbance to the CIAA. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

Mitigation measures have been built in to the Proposed Action and are detailed in Section 2.1.5. No other mitigation has been recommended.

3.5 Vegetation and Invasive Non-native Species

3.5.1 Affected Environment

The project area is within one EPA Level IV ecoregion: Chihuahuan Basins and Playas (Griffith et al. 2006). Chihuahuan Basins and Playas include alluvial fans, internally drained basins, and river valleys mostly below 4,500 feet above mean sea level. The major Chihuahuan basins formed during tertiary basin and range tectonism when the Earth's crust stretched and fault collapse resulted in sediment-filled basins. These low-elevation areas are some of the hottest and most arid habitats in the region. The playas and basin floors have saline or alkaline soils and areas of salt flats, dunes, and windblown sand. The dominant vegetation in these ecoregion is creosote bush (*Larrea tridentata*), mesquite, tarbush (*Flourensia cernua*), fourwing saltbush (*Atriplex canescens*), acacias (*Acacia* sp.), blue grama (*Bouteloua gracilis*), and dropseeds (*Sporobolus* sp.) (Griffith et al. 2006).

The project area is primarily composed of honey mesquite (*Prosopis glandulosa*), creosote bush, plains yucca (*Yucca glauca*), blue and black grama (*Bouteloua eriopoda*), tobosagrass (*Pleuraphis mutica*), desert zinnia (*Zinnia acerosa*), sand sagebrush (*Artemisia filifolia*), and shinnery oak (*Quercus havardii*). Plant species recorded during the biological surveys are listed in Table 3.12. None of these species corresponds to a special status species. The only noxious weed encountered during the pedestrian survey was African rue (*Peganum harmala*), detailed below in the Noxious Weeds section. A full description of the biological surveys and effects analysis is found in the BA (see Appendix A).

Table 3.12. Plant Species Observed during Biological Surveys, October–December 2015

Common Name	Scientific Name
African rue	*Peganum harmala*
Annual buckwheat	*Eriogonum annuum*
Banana yucca	*Yucca baccata*
Bermudagrass	*Cynodon dactylon*
Blackfoot daisy	*Melampodium leucanthum*
Black grama	*Bouteloua eriopoda*
Bladderpod	*Lesquerella fendleri*
Blue grama	*Bouteloua gracilis*
Broom snakeweed	*Gutierrezia sarothrae*
Burrograss	*Scleropogon brevifolius*
Bush muhly	*Muhlenbergia porteri*
Canadian horseweed	*Conyza canadensis*
Catclaw acacia	*Senegalia greggii*
Christmas cholla cactus	*Cylindropuntia leptocaulis*
Claret cup hedgehog cactus	*Echinocereus triglochidiatus*
Common sunflower	*Helianthus annuus*
Creosote bush	*Larrea tridentata*
Croton	*Croton* sp.
Crown of thorns	*Koeberlinia spinosa*
Crinklemat	*Tiquilia* sp.
Day flower	*Commelina communis*
Desert mentzelia	*Mentzelia multiflora*
Desert zinnia	*Zinnia acerosa*
Devil's claw	*Proboscidea sabulosa*
Evening primrose	*Oenothera* sp.
Filaree	*Erodium cicutarium*
Fourwing saltbush	*Atriplex canescens*
Golden aster	*Heterotheca* sp.
Hackberry	*Celtis reticulata*
Havard (shinnery) oak	*Quercus havardii*
Hoarhound	*Marrubium vulgare*
Honey mesquite	*Prosopis glandulosa*
Hooded windmill grass	*Chloris cucullata*
Horse crippler	*Echinocactus texensis*
Indian blanket	*Gaillardia pulchella*
Javelina bush	*Condalia ericoides*
Lace hedgehog cactus	*Echinocereus reichenbachii*
Little bluestem	*Schizachyrium scoparium*
Little leaf sumac	*Rhus microphylla*
Lovegrass	*Eragrostis* sp.
Mesa dropseed	*Sporobolus flexuosus*
Mexican hat	*Ratibida columnifera*
Mormon tea	*Ephedra* sp.

Common Name	Scientific Name
Paperflower	*Psilostrophe* sp.
Pepperwort	*Lepidium* sp.
Plains bristlegrass	*Setaria vulpiseta*
Prickly pear	*Opuntia* sp.
Prickly poppy	*Argemone albiflora*
Prickly Russian thistle	*Salsola tragus*
Prostrate pigweed	*Amaranthus blitoides*
Purple aster	*Aster biglovii*
Purple groundcherry	*Quincula lobata*
Purple threeawn	*Aristida purpurea*
Sand bur	*Cenchrus* sp.
Sand dropseed	*Sporobolus cryptandrus*
Sand sagebrush	*Artemisia filifolia*
Scarlet globemallow	*Sphaeralcea coccinea*
Sideoats grama	*Bouteloua curtipendula*
Silverleaf nightshade	*Solanum elaeagnifolium*
Sixweeks threeawn	*Aristida adscensionis*
Soaptree yucca	*Yucca campestris*
Spanish bayonet yucca	*Yucca aloifolia*
Tobosagrass	*Pleuraphis mutica*
Tar bush	*Flourensia cernua*
Threadleaf groundsel	*Senecio douglasii*
Touristplant	*Dimorphocarpa wislizeni*
Turpentine bush	*Ericameria laricifolia*
Tree cholla	*Cylindropuntia imbricata*
Vine mesquite	*Panicum obtusum*
Wolfberry	*Lycium berlandieri*
Yellow flax	*Linum aristatum*

Noxious Weeds

The only noxious weed (New Mexico Department of Agriculture 2009) encountered during the pedestrian survey was African rue. African rue was most common along roads and well pads in Loving County, Texas. The only recorded incident of African rue occurring within the project area was along the proposed access road just south of the New Mexico/Texas state line (see Figure 4.3 in the BA, Appendix A). According to BLM CFO records, 54 noxious weed treatment areas are located within 0.5 mile of the proposed project area in New Mexico (Table 3.13). EnLink intends to enroll in the Lea and Eddy County Weed Programs for weed control for the life of the project.

Table 3.13. Noxious Weed Treatment Areas within 0.5 Mile of Proposed Project Area since 2009

Treatment Area ID Number	Weed Name	Treatment Year	Buffer (feet)
Weed treatment lines			
2384	African rue	2009	40
2388	African rue	2009	40
2414	*Tamarix* spp.	2009	300
2509	African rue	2009	40
2553	African rue	2009	40
2554	African rue	2009	40
2555	No data	2009	40
2639	African rue	2009	40
2645	African rue	2009	40

Treatment Area ID Number	Weed Name	Treatment Year	Buffer (feet)
2843	African rue	2010	40
2845	African rue	2012	40
2846	African rue	2010	40
3128	African rue	2011	40
3133	African rue	2011	40
3134	African rue	2011	40
3135	African rue	2011	40
3136	African rue	2011	40
3137	African rue	2011	40
3161	African rue	2011	40
3236	African rue	2011	40
3237	African rue	2011	40
8944	African rue	2012	0
8946	African rue	2012	0
8959	African rue	2012	40
9710	African rue	2012	40
16093	African rue	2015	40
16892	African rue	2015	32
16916	African rue	2015	32
Weed Treatment Polygons			
593	African rue	2009	40
638	African rue	2010	40
640	African rue	2010	40
643	African rue	2010	40
735	African rue	2011	40
756	African rue	2011	40
760	African rue	2011	40
761	African rue	2011	40
1572	*Tamarix* spp.	2012	300
3205	*Tamarix* spp.	2009	300
3211	*Tamarix* spp.	2008	300
3214	*Tamarix* spp.	2006	300
5194	African rue	2012	40
5195	African rue	2012	40
5198	African rue	2012	40
5203	African rue	2012	40
5204	African rue	2012	40
5206	African rue	2012	40
5207	African rue	2012	40
5209	African rue	2012	40
5615	African rue	2012	40
5616	African rue	2012	40
5618	African rue	2012	40
5626	African rue	2012	40
10838	*Tamarix* spp.	2014	300

3.5.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to vegetation because the ROW request would not be granted and no ground disturbance would occur.

Cumulative Impacts

No cumulative impacts would be realized as a result of the No Action alternative.

3.5.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Impacts to plant communities and habitats from the construction of the pipeline, aboveground facilities, and access roads would include 670 acres of temporary, direct impacts from vegetation removal. Short-term impacts would occur during site preparation and would continue until revegetation of the project area by faster-growing plants is achieved, which is estimated to be 2 years after construction. Long-term, permanent impacts from the construction of the aboveground facilities and permanent access roads would result in 48 acres of vegetation loss. These impacts are expected to change the vegetation species composition, abundance, and distribution in and adjacent to the project area.

Indirect impacts to vegetation would occur as a result of deposition of fugitive dust generated during clearing and grading activities, the use of access roads, and from wind erosion of exposed soils. This could reduce photosynthesis and productivity, increase water loss (Eveling and Bataille 1984) in plants near the project area, and result in injury to leaves. Localized fugitive dust could be generated from the large areas of disturbed soil from trenching and blading associated with construction. Plant community composition could subsequently be altered, resulting in habitat degradation. Localized impacts on plant populations and communities could occur if seed production in some plant species is reduced. BMPs to control fugitive dust are incorporated into the project design features found in Section 2.1.5.

Any surface disturbance can increase the possibility of establishment of new populations of invasive, non-native species. Noxious weed seed could be carried to and from the project area by construction equipment and transport vehicles. The spread of noxious weeds could occur during construction as one population of African rue was identified in the project area. It is expected that the African rue infestation located within the project area would be treated with herbicide prior to construction as EnLink has enrolled in the Eddy and Lea Counties noxious weed programs. Several previously treated noxious weed areas occur within 0.5 mile of the proposed ROW (see Table 3.4). African rue and saltcedar have been the targets of the ongoing weed treatments. BMPs to prevent the spread and new propagation of invasive, non-native species are incorporated into the project design are listed in Section 2.1.5.

After construction, the project area would be reclaimed with a BLM-prescribed seed mix. In some areas, restoration may potentially include species that are not locally native or plant communities different from local native communities. Although the replanting of disturbed soils may successfully establish vegetation in some locations (i.e., with a biomass and species richness similar to those of local native communities), the resulting plant community may be quite different from native communities in terms of species composition and representation of particular vegetation types, such as shrubs. The community composition of replanted areas would likely be greatly influenced by the species that are initially seeded, and colonization by species from nearby native communities may be slow. In addition, the planting of non-native species may result in the introduction of those species into nearby natural areas. The establishment of mature native plant communities may require decades, and some community types may never fully recover from disturbance. Successful reestablishment of some habitat types, such as shinnery oak and sand sagebrush communities, may be difficult and may require considerably greater periods of time. Restoration of plant communities in areas with arid climates (e.g., averaging less than 9 inches of annual precipitation) would be especially difficult (Monsen et al. 2004).

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to vegetation.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface and vegetation disturbance within the CIAA, or 0.67% of the CIAA. Impacts to vegetation would depend on the placement and type of surface disturbance and the plant species present within the individual project areas. Generally, native vegetation loss and the spread of noxious weeds would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is a negligible addition (0.15%) to the past, present, and reasonably foreseeable surface disturbance identified above, bringing the total to 5.82% of cumulative disturbance to the CIAA. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

Mitigation measures have been built in to the Proposed Action and are detailed in Section 2.1.5. No other mitigation has been recommended.

3.6 Wildlife and Special Status Species

3.6.1 Affected Environment

The project area falls within the Chihuahuan Basins and Playas ecoregion (Griffith et al. 2006), which provides habitat for a variety of wildlife species. The BLM CFO RMPA contains a description of wildlife species that are found within the planning area (BLM 2008a:3–9). One of the BLM CFO wildlife management objectives is to manage habitats on public land for the conservation and rehabilitation of fish, wildlife, and plant resources consistent with multiple use management principles (BLM 2008a).

SWCA biologists detected 48 bird species, eight mammals, and four reptiles during the October–December 2015 surveys of the project area (Table 3.14). Three special status species (denoted in bold type)—loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia hypugaea*), and Sprague's pipit (*Anthus spragueii*)—were observed in the project area. A full description of the biological survey and effects analysis is found in the BA (see Appendix A). The three special status species are also discussed in the Special Status Species subsection below.

Table 3.14. Wildlife Detected during Biological Surveys, October–December 2015

Common Name	Scientific Name
Birds	
American kestrel	*Falco sparverius*
American pipit	*Anthus rubescens*
Bewick's wren	*Thryomanes bewickii*
Black-tailed gnatcatcher	*Polioptila melanura*
Black-throated sparrow	*Amphispiza bilineata*
Brewer's sparrow	*Spizella breweri*
Burrowing owl	***Athene cunicularia hypugaea***

Common Name	Scientific Name
Chihuahuan raven	*Corvus cryptoleucus*
Chipping sparrow	*Spizella passerina*
Common raven	*Corvus*
Crissal thrasher	*Toxostoma crissale*
Curve-billed thrasher	*Toxostoma bendirei*
Dark-eyed junco	*Junco hyemalis*
Eastern meadowlark	*Sturnella magna*
Greater roadrunner	*Geococcyx californianus*
Greater yellowlegs	*Tringa melanoleuca*
Green-tailed towhee	*Pipilo chlorurus*
Green-winged teal	*Anas crecca*
Horned lark	*Eremophila alpestris*
House finch	*Carpodacus mexicanus*
House wren	*Troglodytes aedon*
Killdeer	*Charadrius vociferus*
Ladder-backed woodpecker	*Picoides scalaris*
Lark bunting	*Calamospiza melanocorys*
Lark sparrow	*Chondestes grammacus*
Loggerhead shrike	***Lanius ludovicianus***
McGillivray's warbler	*Geothlypis tolmiei*
Mourning dove	*Zenaida macroura*
Northern harrier	*Circus cyaneus*
Northern flicker	*Colaptes auratus*
Northern mockingbird	*Mimus polyglottos*
Pyrrhuloxia	*Cardinalis sinuatus*
Red-tailed hawk	*Buteo jamaicensis*
Rock wren	*Salpinctes obsoletus*
Sagebrush sparrow	*Artemisiospiza nevadensis*
Savannah sparrow	*Passerculus sandwichensis*
Scaled quail	*Callipepla squamata*
Scissor-tailed flycatcher	*Tyrannus forficatus*
Short-eared owl	*Asio flammeus*
Spotted towhee	*Pipilo maculatus*
Sprague's pipit	***Anthus spragueii***
Swainson's hawk	*Buteo swainsoni*
Turkey vulture	*Cathartes aura*
Verdin	*Auriparus flaviceps*
Vesper sparrow	*Pooecetes gramineus*
White-crowned sparrow	*Zonotrichia leucophrys*
Western meadowlark	*Sturnella neglecta*
Yellow-rumped warbler	*Setophaga coronata*
Mammals	
Bobcat[1]	*Lynx rufus*
Cottontail	*Sylvilagus audobonii*
Coyote[1]	*Canis latrans*
Domestic cattle[1]	*Bos taurus*

Common Name	Scientific Name
Gopher[2]	Family: Geomyidae
Jackrabbit	*Lepus californicus*
Javelina[1]	*Tayassu tajacu*
Mule deer[1]	*Odocoileus hemionus*
Reptiles	
Western diamond-backed rattlesnake	*Crotalus atrox*
Common side-blotched lizard	*Uta stansburiana*
Prairie rattlesnake	*Crotalus viridis*
Whiptail lizard	*Aspidoscelis* sp.

Note: All species were identified through direct observation unless noted otherwise; [1] = tracks and/or scats; [2] = mounds and/or nests.

The BLM CFO describes wildlife species that are found within the planning area (BLM 2008b). The BLM CFO wildlife management objective is to manage habitats on public land for the conservation and rehabilitation of fish, wildlife, and plant resources consistent with multiple use management principles (BLM 2008b).

Besides mule deer (*Odocoileus hemionus*) and scaled quail (*Callipepla squamata*) (see Table 3.14), other game species that have the potential to occur in and around the project area include pronghorn (*Antilocapra americana*), collared peccary (*Peccari tajacu*), and Montezuma quail (*Cyrtonyx montezumae*). Besides bobcat (*Lynx rufus*) (see Table 3.14), fur-bearer game species likely to occur in the project area include badger (*Taxidea taxus*), long-tailed weasel (*Mustela frenata*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), and ringtail (*Bassariscus astutus*) (Findley et al. 1975; Frey 2004).

An abundance of non-game species are also known to occur within the BLM CFO's jurisdiction, including mammals, reptiles, amphibians, raptors, and neotropical migrant bird species not discussed above. Due to the range of habitats present within the project area, such species are numerous and diverse. Besides coyote (*Canis latrans*), non-game mammals with the potential to occur in the project area include desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), striped skunk (*Mephitis mephitis*), and a variety of small mammals (Order Rodentia). Numerous bat species are also known to occur in the BLM CFO's management area, including big brown bat (*Eptesicus fuscus pallidus*), California myotis bat (*Myotis californicus*), western small-footed myotis bat (*M. ciliolabrum melanorhinus*), Mexican free-tailed bat (*Tadarida brasiliensis*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), hoary bat (*Lasiurus cinereus*), eastern red bat (*L. borealis*), pallid bat (*Antrozous pallidus*), and western pipistrelle bat (*Pipistrellus hesperus*) (Findley et al. 1975; Frey 2004).

Besides western diamondback rattlesnake (*Crotalus atrox*) and common side-blotched lizard (*Uta stansburiana*), reptiles and amphibians with the potential to occur in the project area include, but are not limited to, coachwhip (*Coluber flagellum*), desert kingsnake (*Lampropeltis getula*), bullsnake (*Pituophis catenifer*), Texas horned lizard (*Phrynosoma cornutum*), checkered whiptail (*Aspidoscelis tesselata*), collared lizard (*Crotaphytus collaris*), ornate box turtle (*Terrapene ornata*), Great Plains toad (*Anaxyrus cognatus*), Mexican spadefoot *(Spea multiplicata*), Couch's spadefoot (*Scaphiopus couchii*), and eastern tiger salamander (*Ambystoma tigrinum*) (Degenhardt et al. 1996; Stebbins 2003).

Migratory Birds

EO 13186, dated January 17, 2001, calls for increased efforts to more fully implement the MBTA. The federal MBTA prohibits the taking, hunting, killing, selling, purchasing, etc., of migratory birds, parts of migratory birds, or their eggs and nests. Most bird species native to North America are covered by the MBTA.

During SWCA's field surveys, 48 bird species (see Table 3.14), several inactive stick nests, and more than 100 inactive passerine nests were observed. In addition, suitable burrows for burrowing owls were

identified within the project area during SWCA's field surveys; however, no active nest sites were identified. Most of the species identified during SWCA's field surveys occur in southern New Mexico during the breeding season and may nest on the ground or in shrubs documented in the project area, such as mesquite.

Besides Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*B. jamaicensis*), northern harrier (*Circus cyaneus*), and American kestrel (*Falco sparverius*), a variety of raptor species have the potential to occur in the project area, including but not limited to golden eagle (*Aquila chrysaetos*), ferruginous hawk *(Buteo regalis*), rough-legged hawk (*B. lagopus*), Harris's hawk (*Parabuteo unicinctus*), Cooper's hawk (*Accipiter cooperii*), barn owl (*Tyto alba*), western burrowing owl (*Athene cunicularia hypugaea*), great horned owl (*Bubo virginianus*), western screech owl (*Otus kennicotti*), and prairie falcon (*Falco mexicanus*). A myriad of neotropical migrants may also be found in the project area, varying with vegetation community type (Cartron 2010).

Bald and Golden Eagles

Bald eagles (*Haliaeetus leucocephalus*) and golden eagles are protected under the Bald and Golden Eagle Protection Act and the MBTA. In New Mexico, the bald eagle is found typically in association with water and nests only at a few undisclosed locations along lakes or streams in the northern and western portions of the state (Stahlecker and Walker 2010). The golden eagle nests primarily on rock ledges or cliffs, less often in large trees at elevations ranging from 4,000 to 10,000 feet, and is typically found in mountainous regions of open country, prairies, arctic and alpine tundra, open wooded areas, and barren areas. Both bald and golden eagles are carnivores. In New Mexico, bald eagles prey on fish but also on mammals, especially prairie dogs (*Cynomys* sp.). Golden eagles feed mainly on small mammals, as well as invertebrates, carrion, and other wildlife (Biota Information System of New Mexico [BISON-M] 2015).

Bald eagles are unlikely to occur in the project area due to the lack of water, trees, and preferred prey. Golden eagles may occur in the project area, especially outside the breeding season when they can perch on utility poles far from cliffs and other rugged terrain. However, their presence would likely be of short duration and nesting within or adjacent to the project area would be unlikely.

Special Status Species

The special status species evaluated in this EA are described in the BA (see Appendix A) and consist of 1) all federally protected (i.e., endangered and threatened) species, 2) additional species listed by the USFWS as candidate and proposed and species under review (USFWS 2015), 3) state-listed endangered and threatened species (BISON-M 2015), and 4) BLM sensitive species, some of which are also listed as candidates or are under the review by the USFWS and/or are state listed. The BLM manages certain sensitive species that are not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. The authority for this policy and guidance is established by the ESA, as amended; Title II of the Sikes Act, as amended; FLPMA; and Department of the Interior Manual 235.1.1A.

Based on the biological survey conducted by SWCA in the project area and additional biological research, nine special status species have the potential to occur in the project area (Table 3.15). Of these special status species, burrowing owl, loggerhead shrike, and Sprague's pipit were observed during the field surveys of the project area.

Table 3.15. Special Status Species with the Potential to Occur in the Project Area

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Plants			
Scheer's beehive cactus (*Coryphantha robustispina* var. *scheeri*)	NM State T; BLM Sensitive	Typically associated with gravelly or silty soil in desert grassland and Chihuahuan desert scrub. May also be found on rocky benches or bajadas on limestone or gypsum; the elevational range of this cactus is 3,300–3,600 feet.	May occur in the project area. Although this cactus was not observed during surveys, there is suitable habitat in the project area.
Reptiles			
Texas horned lizard (*Phrynosoma cornutum*)	BLM Sensitive TX State T	Inhabits arid and semiarid areas in the southwestern United States, characterized by open country with little vegetation. These areas often consist of grasses interspersed with cacti, yucca, mesquite, and other assorted woody shrubs and trees. In New Mexico, the species is associated with *Yucca-Prosopis-Ephedra* and *Larrea-Acacia-Fouquieria* associations often in playas or on bajadas and mountain foothills.	May occur. Open mesquite associations represent suitable habitat for the species within the project area.
Birds			
Burrowing owl (*Athene cunicularia hypugaea*)	BLM Sensitive	Present mainly during the breeding season in the northern half of New Mexico and present year-round in the southern half. Found in grasslands especially in association with prairie dog colonies, in desert scrub, and in agricultural and semi-urban environments. Depends on prairie dogs, rock squirrels (*Otospermophilus variegatus*), and other fossorial mammals for the availability of burrows.	May occur due to grassland and desert scrub vegetation in the project area and presence of mammalian burrows that may provide suitable sites for nesting. Individual birds were detected during surveys in Texas and New Mexico. However, these birds were not nesting and were not near any nest structures.
Common ground-dove (*Columbina passerina pallescens*)	NM State E	Associated with shrubby riparian habitat or riparian woodland edges. Also occurs in desert scrub dominated by mesquite and pricklypear. Feeds exclusively on the ground, in sparsely vegetated areas.	May occur in the project area due to the presence of sparse vegetation including desert scrub.
Ferruginous hawk (*Buteo regalis*)	BLM Sensitive	Occurs year-round in New Mexico. During the breeding season it is present in grasslands, badlands, and along the ecotone between grasslands and pinion-juniper woodlands, especially in the vicinity of prairie dog towns. During the winter, ferruginous hawks are primarily associated with grasslands but may be found in other habitat types such as ponderosa pine (*Pinus ponderosa*) forest. Prairie dogs are important year-round in the diet of New Mexico's ferruginous hawks.	May occur due to presence of some areas with grassland habitat.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Lesser prairie-chicken (*Tympanuchus pallidicinctus*)	BLM Sensitive USFWS C	Occurs in southeastern New Mexico primarily in shinnery oak or sand sagebrush grasslands. Also occurs in shinnery oak-bluestem habitats dominated by sand bluestem (*Andropogon hallii*), little bluestem (*Schizachyrium scoparium*), sand dropseed (*Sporobolus cryptandrus*), threeawn (*Aristida* sp.), and blue grama.	May occur based on management unit boundary. The project area passes through an LPC IPA in southern Lea County.
Loggerhead shrike (*Lanius ludovicianus*)	BLM Sensitive	Year-round resident in New Mexico, and is found throughout the state primarily in open country, including grasslands, improved pastures, hayfields, shrub steppe, and desert scrub, as well as piñon-juniper woodland and woodland edges.	Known to occur due to open country and grasslands within the project area. The species was observed on several occasions during surveys.
Painted bunting (*Passerina ciris*)	BLM Sensitive	This colorful bird species breeds in semi-open habitats with scattered shrubs and trees. They can be found near strips of woodland, brushy roadsides, streamsides, and patches of grasses, weeds, and wildflowers. Breeding populations gravitate towards high grass, shrubby overgrown pasture, and thickets.	May occur in project area due to presence of shrubby pasture.
Sprague's pipit (*Anthus spragueii*)	BLM Sensitive USFWS C	Occurs in New Mexico only as a sporadic winter resident. Its distribution in the state is not well known, but includes the lower Pecos River valley, Otero Mesa, and the Animas Valley. It is associated with southern desert grasslands of the state. Species as a whole prefers dry, open grasslands.	May occur in winter in open grasslands found within the project area. The species was observed during surveys.

* Federal (USFWS) status definitions:

E = **Endangered.** Any species considered by the USFWS as being in danger of extinction throughout all or a significant portion of its range. The ESA specifically prohibits the take of a species listed as endangered. Take is defined by the ESA as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct.

T = **Threatened.** Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The ESA specifically prohibits the take (see definition above) of a species listed as threatened.

C = Candidate. Any species (taxon) for which the USFWS has sufficient information to propose that it be added to the list of endangered and threatened species, but the listing action has been precluded by other, higher-priority listing activities.

* State status definitions:

E = **Endangered.** Any species that is considered by the State of New Mexico (NMDGF for wildlife, Forestry and Resources Conservation Division for plants) as being in jeopardy of extinction or extirpation from the state.

T = **Threatened.** Any species that, in the view of the State of New Mexico, is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in New Mexico.

Except where otherwise noted, range or habitat information for wildlife species is taken from the BISON-M website (BISON-M 2015), the USFWS New Mexico Southwest Region Ecological Services Field Office (USFWS 2015), the New Mexico Forestry Division (2006), Cartron (2010), and the New Mexico Rare Plant Technical Council (1999).

Although several federally listed threatened, endangered, and proposed species occur in Eddy and Lea Counties, New Mexico, and Loving County, Texas, no federally listed threatened, endangered, or proposed species are likely to occur in the project area.

The proposed project overlaps with the BLM RMPA LPC Isolated Population Area (BLM 2008a) and habitat; approximately 1.4 miles of the project area passes through the BLM RMPA IPA (BLM 2008b). The nearest known LPC lek is 20 miles northeast of the project area. At the request of the BLM, SWCA conducted LPC lek surveys for portions of the proposed pipeline traversing through the LPC IPA (see Figure 3.2 above).

On September 2, 2015, a court decision was passed that removed the LPC from listing under the ESA; the USFWS has filed an appeal to reverse this court decision (U.S. District Court, Western District of Texas 2015). The court of appeals decision could reverse the District Court decision, whereby the LPC would remain listed under the ESA as a threatened species. This species is currently being treated as a candidate species by the USFWS and is included in Table 3.15 pending the court of appeals decision, and also because the LPC is a BLM sensitive species.

3.6.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to wildlife, migratory birds, or special status species because the ROW would not be granted and no ground disturbance or noise related to construction and operations would occur.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.6.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Impacts to wildlife would result from actions that alter wildlife habitats, including changes to habitat and disturbance. Altering wildlife habitat in ways that would be considered adverse may occur directly (through habitat loss from surface disturbance) or indirectly (through the reduction in habitat quality caused by increased noise levels and increased human activity).

Construction of the pipeline and aboveground appurtenant facilities would result in approximately 670 acres of temporary, direct surface disturbance and habitat removal. Construction of the pipeline would cause short-term impacts by temporarily removing vegetation from the 50-foot-wide ROW. Additional short-term impacts may include displacement of wildlife during construction activities or exposure of wildlife to hazards such as open trenches and project-related vehicle traffic. Construction noise would also indirectly impact wildlife. Infrequent, abrupt, and unpredictable noise could be perceived as threats and cause wildlife to flee or hide, which could impact individual survival and fitness (Francis and Barber 2013).

Long-term, direct impacts to wildlife include the permanent removal of approximately 48 acres of vegetated area to permanent aboveground facilities and access roads located on private land. After construction, operational noise from the three compressor stations may impact wildlife individuals. Frequent and chronic noise can overlap with biologically relevant sounds, thereby decreasing foraging efficiency, interfering with predatory detection, and masking acoustic signals such as mating calls (Francis and Barber 2013).

After construction, the project area would be reclaimed with a BLM-prescribed seed mix. Reclamation of the disturbed temporary pipeline construction areas is expected to return those affected areas to herbaceous production within 2 years after construction, depending on drought conditions. In some areas, restoration may potentially include plant species that are not locally native or plant communities different from local native communities. Although the replanting of disturbed soils may successfully establish vegetation in some locations (i.e., with a biomass and species richness similar to those of local native communities), the resulting plant community may be quite different from native communities in terms of species composition and representation of particular vegetation types, such as shrubs. In addition, the planting of non-native species may result in the introduction of those species into nearby natural areas. The establishment of mature native plant communities may require decades, and some community types may never fully recover from disturbance. Successful reestablishment of some habitat types, such as shinnery oak and sand sagebrush communities, may be difficult and may require considerably greater periods of time. As a result, reclamation of the project area could have a long-term impact to wildlife by modifying the habitat within and adjacent to the project area. The change in vegetative species composition may modify cover and foraging opportunities for wildlife.

Migratory Birds

Short-term impacts to migratory birds include displacement from the project area until vegetation has become reestablished within the ROW. No long-term impacts to migratory birds are anticipated from the implementation of the proposed project. Construction is scheduled to begin as soon as the ROW grants are issued from the BLM and SLO, and the Surface Owner Agreements secured for the portions of the project on private lands**.** If possible, vegetation and abandoned passerine nest removal would be scheduled outside the migratory breeding bird season (March–August). Any vegetation removal during the breeding bird season would be preceded by pre-removal nesting surveys to identify occupied nests. Active nests would be avoided to prevent impacts to species protected under the MBTA. Plant communities present in the project area are widespread elsewhere and many birds occurring locally would likely move into adjacent habitats in response to temporary habitat loss from 622 acres of construction-related surface disturbance and 48 acres of permanent upland vegetation loss for the aboveground facilities and access roads.

Burrowing owls as well as suitable burrows were observed during the October–December 2015 field surveys; no active burrows were found. This species is protected by the MBTA and is designated sensitive by the BLM. Pre-construction surveys should establish the occupancy status of suitable burrows detected within the project area. A 200-meter buffer should be established around all occupied burrowing owl burrows.

Activities in the survey area are not expected to impact bald and golden eagles. No bald or golden eagles were observed during the October–December 2015 field surveys, and eagles that may occur in the survey area likely would not be disturbed. Active raptor nests would be subject to 200-meter construction setbacks during active nesting. Raptor nests (except for bald and golden eagle nests) within 200 meters of the construction ROW that are found to be inactive during pre-clearing nest surveys would be subject to removal.

Special Status Species

Special status species with the potential to occur in the project area were evaluated for possible impacts from the proposed project. However, effect determination categories are written differently based on the legal status of a species and the responsibilities of the agency tasked to manage or protect that species; effect determinations are provided below.

Impact determinations for all other species (USFWS candidate, BLM sensitive, species under federal review, and state-listed species that are not federally threatened or endangered) were evaluated for possible impacts as follows.

- *Beneficial impact*—the project is likely to benefit the species, whether it is currently present or not, by creating or enhancing habitat elements known to be used by the species.
- *May impact individuals or habitat, but is not likely to result in a trend toward federal listing or loss of viability*—the project is not likely to adversely impact a species if 1) the species may occur but its presence has not been documented, and 2) project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- *May impact individuals or habitat and is likely to result in a trend toward federal listing or loss of viability*—the project is likely to adversely impact a species if 1) the species is known to occur in the project area, and 2) project activities would disturb areas or habitat elements known to be used by the species or would directly affect an individual.

Scheer's Beehive Cactus (*Coryphantha robustispina* var. *scheeri*)

Scheer's beehive cactus is a state endangered plant and a BLM sensitive species. The cactus could potentially occur in the project area. This cactus occurs within the Pecos River drainage (New Mexico Rare Plant Technical Council 1999) and has also been observed in association with desert flats, playas, and lowlands in grasslands outside the Pecos River drainage area (Allred and Ivey 2012). No Scheer's beehive cacti were identified during field surveys, but very small, young cacti belonging to that species could have escaped detection. To limit any impacts, workers will be instructed not to park off the roads to protect any conservation sensitive species, including Scheer's beehive cactus.

The status of Scheer's beehive cactus in southern New Mexico is unlikely to be affected by any management practices in the project area. The proposed project may impact individuals or habitat, but likely will not contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Texas Horned Lizard (*Phrynosoma cornutum*)

The Texas horned lizard is listed by the State of Texas as a threatened species, as well as a BLM sensitive species. This species occurs from the south-central United States to northern Mexico. The distribution of this species encompasses most of Texas and Oklahoma, significant portions of Kansas and New Mexico, and southeastern Colorado and southeastern Arizona (Sherbrooke 2003; Stebbins 2003; Dixon 2013).

The Texas horned lizard likely occurs in the project area, as suitable habitat is present at the project site and in adjacent areas. The potential impacts of the proposed project are expected to be minimal and temporary because individual Texas horned lizards could easily avoid the disturbance by moving to adjacent habitat during the construction of the proposed project. Moreover, following best management practices on pipeline burial (NMDGF 2003) would prevent accidental Texas horned lizard mortality resulting from entrapment. The proposed project may impact individuals or habitat, but is not likely to result in a trend toward federal listing or loss of viability.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl is listed as endangered in Canada and threatened in Mexico. In the United States, it is protected under the MBTA and it is listed by the USFWS (2002) as a national bird of conservation concern. It is also a BLM sensitive species. Populations of burrowing owls are declining across much of North America, particularly in the north.

Individual burrowing owls were detected in both New Mexico and Texas, but no active nests were found and the observed owls were not nesting and were not associated with any nest site. However, suitable burrows for owls do occur in the project area. If construction activities are planned during the nesting season (March–August), the BLM may require pre-construction surveys to determine nesting status and establish a 200-meter (656-foot) avoidance zone around any active burrow complex. The BLM may also require a biological monitor during construction near occupied burrows identified during pre-construction surveys. Workers would be informed of sensitive areas and should also be advised to avoid parking in the vicinity of potentially suitable nesting burrows. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species. Overall, no long-term impacts are anticipated to the burrowing owl or its habitat.

Common Ground-Dove (*Columbina passerina*)

The common ground-dove is a New Mexico State endangered bird. The common ground-dove occurs from southeastern California east to southern Texas and the southeastern United States, southward into Latin America. It occurs year-round in New Mexico in the southernmost part of the state, including at San Simon Cienega (Hidalgo County) and sparingly in the lowermost Rio Grande and Pecos River valleys. It has also occurred irregularly northward to the lower Gila Valley and the Socorro area, and as a straggler elsewhere. Recently, this species has declined from being a sparse resident of the southern border region to a population consisting of a few birds in Hidalgo County, plus stragglers elsewhere in the state (NMDGF 1991).

Although the common ground-dove is now mainly restricted to Hidalgo County, New Mexico year-round, it is possible for this species to occur in the project area. Should construction activities be conducted outside the breeding season, any impact to common ground-doves present in the project area would consist of temporary noise disturbance. If vegetation removal activities occur during the breeding season, a pre-construction nest survey would be conducted to identify the possibility of common ground-doves nesting in the project area. Therefore, the proposed project may impact individuals or habitat, but likely would not contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Ferruginous Hawk (*Buteo regalis*)
The ferruginous hawk is designated as a BLM sensitive species and is protected under the MBTA. In southeastern New Mexico the species is primarily a winter resident but is otherwise found throughout New Mexico. Primary threats to the species consist primarily of loss of quality habitat (Cartron et al. 2010).

No ferruginous hawks were observed in the vicinity of the project area during the field surveys. The project area represents marginal habitat for the ferruginous hawk. Any impacts to ferruginous hawks would likely be in the form of noise disturbance only and ferruginous hawks present in or near the project area would simply relocate to a nearby area with similar habitat. Per Section 2.1.5, construction during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of ferruginous hawks nesting in the project area. No long-term impacts to the ferruginous hawk or its habitat are anticipated from the proposed project. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)
The LPC is listed as a BLM sensitive species. The range of the LPC has been reduced by about 92% over the past century (Crawford 1980; New Mexico Partners in Flight [NMPIF] 2015a). The primary populations occur in northern Lea and southern Roosevelt Counties. Sparse and scattered populations occur in portions of northeast Chaves, Curry, and northern Roosevelt Counties, and small portions of eastern De Baca and southern Quay Counties (NMPIF 2015a). In Eddy County, the species is considered nearly extirpated, and in 2005, a single known lek was reported in this area (NMPIF 2015a). Two leks were discovered in neighboring southern Lea County in 2009. Both of those leks are currently considered inactive since no activity has been recorded since their discovery in 2009 (Southern Great Plains Crucial Habitat Assessment Tool 2014).

No LPCs or indicators of this species (e.g., tracks, scat, feathers) were detected during biological surveys performed by SWCA in 2015. Approximately 22 miles (145 acres) of the proposed project passes through the BLM RMPA IPA (BLM 2008b). The nearest known LPC lek is 20 miles northeast of the project area in Lea County, New Mexico.

Sprague's Pipit (*Anthus spragueii*)
Sprague's pipit is federally listed as a candidate species as a result of range contraction and population decline since the late nineteenth century. The species is migratory, breeding on the Great Plains but wintering farther south, in Arizona, New Mexico, Texas, Oklahoma, Arkansas, Mississippi, Louisiana, and northern Mexico. Sprague's pipit leaves its wintering grounds in April, arriving on breeding grounds from late April to mid-May. It leaves its breeding grounds anywhere from September through November and will arrive on wintering grounds over the same period. A small wintering population occurs in grasslands in southern New Mexico (NMPIF 2015b) and an individual was observed during project surveys.

Two individuals of this species were detected during the October–December 2015 field surveys. Impacts to Sprague's pipit present in the general area of the project could be possible in the form of construction-related noise disturbance, but such impacts would only be temporary. Such temporary impacts to these individuals would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species, since suitable forage and shelter habitat is likely available in the vicinity, but outside the project area.

Loggerhead Shrike (*Lanius ludovicianus*)
The loggerhead shrike is designated as a BLM sensitive species and is protected under the MBTA. The loggerhead shrike is known to occur within the vicinity of the project area, and suitable thorny shrub habitat is present. The species was observed during the October–December 2015 field surveys. Per Section 2.1.5, construction during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of loggerhead shrikes nesting in the project area and establish avoidance buffers around any occupied nests. Disturbance of loggerhead shrikes or their habitat would be temporary. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Painted Bunting (*Passerina ciris*)

The painted bunting is designated as a BLM sensitive species and is protected under the MBTA. The bird can be found in the dry, hot, scrub-shrub habitat of the desert Southwest. No painted buntings were observed in the vicinity of the project area during the October–December 2015 field surveys. Impacts to painted buntings present in the general area of the project are possible in the form of noise disturbance, but such impacts would only be temporary, and any buntings present locally during construction activities would likely move to adjacent habitat dominated by shrubs. Per Section 2.1.5, construction during the migratory bird season (March–August) would be preceded by nesting bird surveys to identify the possibility of painted buntings nesting in the project area and establish avoidance buffers around any occupied nests. The proposed project may impact individuals or habitat, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

Cumulative Impacts

Cumulative Impacts to Wildlife and Special Status Species, except for LPC

Surface-disturbing activities affect wildlife, migratory birds, and special status species through decreasing available forage and habitat and causing habitat alteration and fragmentation. Well pad and road density break the available habitat into smaller and smaller pieces, which can lead to displacement and physiological stress in wildlife species. Fragmentation results in indirect habitat loss and degradation. Wildlife species would have to expend an increased amount of energy to avoid disturbed areas or when experiencing alarm due to human presence, traffic, and associated noise.

Watkins et al. (2007) describe quantitative thresholds of fragmentation impact as moderate, high, and extreme, based on the density of well pads per section and cumulative surface disturbance. Moderate impact is defined as one to four wells and less than 20 acres of disturbance per section. High impact is defined as five to 16 wells and 20 to 80 acres of disturbance per section. Extreme impact is defined as more than 16 wells and greater than 80 acres of disturbance per section. Based on the above-described definitions, the density of current oil and gas development is high within the project area. This indicates impacts to wildlife are increasingly difficult to mitigate and may not be completely offset by management or habitat treatments (Watkins et al. 2007).

Impacts from past and present actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and potential habitat removal on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to species and their habitat.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface and vegetation disturbance within the CIAA, or 0.67% of the CIAA. Impacts to wildlife, migratory birds, and special status species would depend on the placement and type of surface disturbance and the available habitat within the individual project areas. Generally, native vegetation loss, increased noise, and habitat degradation would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities. Some species would also adapt to noise associated with maintenance and operation of these actions. Together, past, present, and reasonably foreseeable soil disturbance would total 25,014 acres (5.6% of the CIAA). Based on the cumulative impacts, habitat fragmentation in the project area is expected to be maintained at high levels into the future.

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is an addition of 0.15% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Cumulative Impacts to LPC

The specific CIAA for the LPC is based on the habitat zones identified in the 2008 RMPA. The LPC IPA is used as the CIAA. For all other special status species with potential to occur in the project area, the cumulative effects analysis above for general wildlife would also apply.

Impacts to LPC from past actions within the 794,683-acre CIAA include surface-disturbing activities primarily from past construction of well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% or 39,734 acres of the CIAA. Reclamation of some disturbed areas has reduced impacts to LPC from some of this development.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 1,071 acres of surface and vegetation disturbance within the CIAA, or 0.13% of the CIAA. There are no specific data on when RFFA activities are scheduled to begin and when reclamation would be complete, but most of the soil types identified in the CIAA and in the project area have characteristics that could limit successful reclamation of LPC habitat. RFFAs would require BMPs or other mitigation measures to mitigate LPC habitat loss. Together, past, present, and reasonably foreseeable surface disturbance would total 40,805 acres (approximately 5.1% of the CIAA).

The Proposed Action would cross approximately 4,900 feet of the LPC IPA as defined by the 2008 RMPA (see Figure 3.2). The Proposed Action would disturb an estimated 145 acres of suitable LPC habitat, which is a negligible portion of the CIAA. The Proposed Action comprises a 0.4% addition to the past, present, and reasonably foreseeable surface disturbance identified above. This contribution would be minimized from implementation of project design features and BMPs presented in Section 2.1.5.

Mitigation Measures and Residual Impacts

Mitigation measures have been built in to the Proposed Action and are detailed in Section 2.1.5. No other mitigation has been recommended.

3.7 Cultural Resources

3.7.1 Affected Environment

Several federal laws and implementing regulations apply to the evaluation and protection of significant cultural resource properties and preservation of cultural standards. Among the most significant of these laws and regulations are:

- NHPA, Section 106, as amended (16 USC 470, EO 13007);
- National Register of Historic Places (NRHP) (36 CFR 60);
- Protection and Enhancement of the Cultural Environment, 1971 (EO 11593);
- American Indian Religious Freedom Act Amendments of 1978, as amended (42 USC 1996, 43 CFR 7);
- Archaeological Resources Protection Act of 1979 (16 USC 470aa-47011, 43 CFR 7); and
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001, 43 CFR 10).

Management of cultural resources on BLM lands is determined by policy directives contained in the CFO RMP (BLM 1988), as amended. The BLM makes land use decisions that could limit access or require alterations to the Proposed Action to minimize impacts to cultural resources.

SWCA conducted a Class I records search prior to fieldwork to identify any previously recorded cultural resources in the project area or cultural resource buffer area. In the New Mexico portion of the project area, a total of 79 previously recorded sites was identified within 0.25 mile of the Proposed Action. One previously recorded archaeological site (41LV8) was identified during the Texas Archaeological Records Log search as being located within 0.25 miles of the area of potential effects (APE) in the Texas portion of the project. The APE includes the ROW and a cultural resource buffer area up to 200 feet in total width.

The majority of the APE (approximately 61%) falls within the Permian Basin Programmatic Agreement area, and the BLM lands therein were therefore excused from pedestrian survey. SLO lands within the Permian Basin Programmatic Agreement area and all lands outside of that area in New Mexico were surveyed for cultural resources. In addition, all of the APE in Texas was surveyed for cultural resources. Surveys consisted of an intensive Class III inventory of the Proposed Action's APE, which includes the ROW and a cultural resource buffer area up to 200 feet in total width. SWCA conducted the cultural resources survey over six sessions between October and December 2015, in accordance with the *Procedures for Performing Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005) and *Standards for Survey Site Evaluation and Reporting for the CFO* (BLM 2012), as well as the *Archeological Survey Standards for Texas* (Texas Historical Commission 2012). The survey was conducted by a four-person crew by walking parallel transects spaced no more than 49 feet apart.

In total, 25 cultural properties were investigated—20 newly recorded archaeological sites (19 in Texas and one in New Mexico) and five previously recorded sites (all located in New Mexico).

There are six sites identified within the survey corridor that are recommended eligible to the NRHP (three in New Mexico, and three in Texas). In the Texas portion of the project, 41LV39, 41LV43, and 41LV45 have been recommended eligible to the NRHP. Concurrence was received from the Texas Historical Commission for all recommendations (Texas Historical Commission 2016). In New Mexico, LA 122841 was of undetermined eligibility following the original recording, but SWCA is recommending the site eligible based on a positive shovel test excavated at the site. LA 161009 was previously recommended eligible to the NRHP and SWCA concurs with this recommendation. The New Mexico Historic Preservation Division (HPD) concurred with these recommendations (HPD 2016). LA 68294 was determined not eligible to the NRHP by the BLM in 2004, but recent pipeline activities have revealed subsurface deposits; SWCA therefore recommended the site eligible to the NRHP. The HPD requested additional data prior to making a determination; therefore, the site remains undetermined in eligibility (HPD 2016).

Site summaries, NRHP eligibility, and land ownership are provided below in Table 3.16.

Table 3.16. Site Summary and NRHP Eligibility Recommendations

Site No.	Field/Agency No.	Site Type/Cultural Affiliation and Dates	NRHP Eligibility Recommendation	Land Ownership
New Mexico				
LA 68294	NM-06-4618	Artifact scatter with features; unknown aboriginal (pre-A.D. 1800)	Recommended eligible, Criterion D; undetermined (HPD May 2016)	BLM
LA 100999	NM-06-5621	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Undetermined (not relocated)	BLM
LA 122841	NM-08-8761	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Recommended eligible, Criterion D	BLM
LA 161009	SNMAS-08NM-3373-1	Multicomponent: artifact scatter with features; Late Archaic (2000–800 B.C.) and Jornada Mogollon, Formative tradition (A.D. 1200–1460)	Recommended eligible, Criterion D	SLO
LA 178390	1610-522	Artifact scatter; Anglo, NM Statehood/WWII to recent historic (A.D. 1920–1964)	Not eligible	Private
LA 184124	28598-KM-01	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Not eligible	BLM, SLO
Texas				
41LV34	28598-AL-1	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private

Site No.	Field/Agency No.	Site Type/Cultural Affiliation and Dates	NRHP Eligibility Recommendation	Land Ownership
41LV35	28598-AL-10	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV36	28598-AL-11	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV37	28598-AL-12	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV38	28598-AL-13	Artifact scatter with features/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV39	28598-AL-14	Artifact scatter with features/unspecified aboriginal (pre-A.D. 1800)	Eligible, Criterion D	Private
41LV40	28598-AL-15	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV41	28598-AL-16	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV42	28598-AL-17	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV43	28598-AL-18	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Eligible, Criterion D	Private
41LV44	28598-AL-19	Artifact scatter/Ceramic period (A.D. 1000–1250)	Not eligible	Private
41LV45	28598-AL-20	Artifact scatter with features/Ceramic period (A.D. 500–1450)	Eligible, Criterion D	Private
41LV46	28598-AL-21a	Artifact scatter/Ceramic period (A.D. 500–1450)	Not eligible	Private
41LV47	28598-AL-21b	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV48	28598-AL-22	Artifact scatter/Ceramic period (A.D. 500–1450)	Not eligible	Private
41LV49	28598-AL-23	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV50	28598-AL-24	Artifact scatter/Late Archaic (1500 B.C.–A.D. 300)	Not eligible	Private
41LV51	28598-AL-25	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private
41LV52	28598-AL-26	Artifact scatter/unspecified aboriginal (pre-A.D. 1800)	Not eligible	Private

Full site descriptions are provided in the cultural resource inventory reports developed for this project (Larsen et al. 2016; Sisneros et al. 2016).

3.7.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to cultural resources, because the ROW would not be granted and no ground disturbance would occur.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.7.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts to a cultural site, if disturbed by construction, would include alterations to the physical integrity of the site. Of the six eligible sites, three were revisited and three were newly recorded. Of the three located in New Mexico, two were within the survey corridor but outside of the APE (LA 161009 and LA 68294). One eligible site in New Mexico (LA 122841) was avoided by rerouting. Of the three eligible sites in Texas, two (41LV39 and 41LV43) are outside the proposed project corridor and would be avoided. One site, LA 41V45, was avoided by reroutes and would not be impacted.

One site is undetermined and was not located, and the remaining 18 sites and the 27 isolated manifestations are not eligible to the NRHP. No further management of these ineligible resources is required.

If a cultural site is significant for reasons other than its scientific information potential, direct impacts may also include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. A potential indirect impact from the Proposed Action is the increase in human activity that could contribute to unauthorized removal or other alteration to cultural sites in the area.

None of the sites identified during the field investigations would be directly impacted by the Proposed Action if the mitigation measures in Table 3.17 are followed and implemented.

Cumulative Impacts

Cultural resources tend to degrade over time from natural forces; however, many survive for hundreds or thousands of years. Any surface-disturbing activity can cause alterations to the physical integrity of cultural resources. Activities such as grazing, exploration, and road construction all have potential to disturb, damage, or cause changes to the setting of cultural resources. Past and present development activities have led to collection of information about previous cultural, but also to the loss of sites. Identification and avoidance of NRHP-eligible sites through cultural surveys have reduced these disturbances, but there may still be losses of cultural resources important to understanding the past. Recreation activities and wildfires may also cause damage or discovery of cultural resources. Cultural resources of concern within the CIAA consist of prehistoric and historic ranching and oil and gas related resources. Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for disturbance of approximately 5% of the CIAA.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of disturbance to the landscape within the CIAA, or 0.67% of the CIAA. All RFFAs are subject to a 100% Class III cultural resources pedestrian survey. All impacts to cultural resource have either been avoided altogether or acceptable mitigation is required by the BLM. Mitigation of impacts would occur through archaeological data recovery investigations and other measures such as boring beneath an eligible site. Livestock grazing, recreation, and wildfires are also likely to continue within the CIAA, which would continue to disturb or damage cultural resources. Together, past, present, and reasonably foreseeable soil disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is an addition of 0.15% to the past, present, and reasonably foreseeable surface disturbance identified above, bringing the total to 5.82% cumulative disturbance to the CIAA. This contribution would be minimized from implementation of the mitigation measures provided below.

Mitigation Measures and Residual Impacts

Mitigation measures would apply to cultural sites recommended eligible for listing in the NRHP that could potentially be adversely impacted by the Proposed Action. Eligibility recommendations and mitigation measures are provided in Table 3.17.

Table 3.17. Site Summary, NRHP Eligibility, and Mitigation Recommendations

Site No. / Land Ownership	Field/Agency No.	Site Type/Cultural Affiliation and Dates	NRHP Eligibility Recommendation	Recommended Mitigation
New Mexico				
LA 68294	NM-06-4618	Artifact scatter with features; unknown aboriginal (pre-A.D. 1800)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
LA 100999	NM-06-5621	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Undetermined (not relocated)	The site was not relocated; in addition, the pipeline route has been revised and is not located near the historic placement of the site
LA 122841/BLM	NM-08-8761	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
LA 161009/SLO	SNMAS-08NM-3373-1	Multicomponent: artifact scatter with features; Late Archaic (2000–800 B.C.) and Jornada Mogollon, late Formative tradition (A.D. 1100–1450)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
LA 178390	1610-522	Artifact scatter; Anglo, NM Statehood/WWII to recent historic (A.D. 1920–1964)	Not eligible	None
LA 184124/BLM, SLO	28598-KM-01	Artifact scatter; unknown aboriginal (pre-A.D. 1800)	Not eligible	None
Texas				
41LV34/private	28598-AL-1	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV35/private	28598-AL-10	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV36/private	28598-AL-11	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV37/private	28598-AL-12	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None

Site No. / Land Ownership	Field/Agency No.	Site Type/Cultural Affiliation and Dates	NRHP Eligibility Recommendation	Recommended Mitigation
41LV38/private	28598-AL-13	Artifact scatter with features/unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV39/private	28598-AL-14	Artifact scatter with features/unspecified aboriginal (pre-A.D. 1800)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
41LV40/private	28598-AL-15	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV41/private	28598-AL-16	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV42/private	28598-AL-17	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV43/private	28598-AL-18	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
41LV44/private	28598-AL-19	Artifact scatter/Ceramic period (A.D. 1000–1250)	Not eligible	None
41LV45/private	28598-AL-20	Artifact scatter with features/Ceramic period (A.D. 500–1450)	Eligible, Criterion D	The pipeline route has been adjusted around the site in order to avoid it; therefore, it would not be impacted by construction-related activities
41LV46/private	28598-AL-21a	Artifact scatter/Ceramic period (A.D. 500–1450)	Not eligible	None
41LV47/private	28598-AL-21b	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV48/private	28598-AL-22	Artifact scatter/Ceramic period (A.D. 500–1450)	Not eligible	None
41LV49/private	28598-AL-23	Artifact scatter with feature/unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV50/private	28598-AL-24	Artifact scatter/Late Archaic (1500 B.C.–A.D. 300)	Not eligible	None
41LV51/private	28598-AL-25	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None
41LV52/private	28598-AL-26	Artifact scatter/ unspecified aboriginal (pre-A.D. 1800)	Not eligible	None

3.8 Livestock Grazing

3.8.1 Affected Environment

The BLM is responsible for managing livestock grazing on 1,947,890 federal acres within the CFO, which includes approximately 367,656 active animal unit months (AUMs) of livestock forage in 265 grazing allotments. Livestock grazing includes the grazing of domestic cattle, sheep, goats, and horses (BLM 2014). Almost all livestock grazing within the CFO planning area is permitted for year-round. The most common livestock operations in the project area are cattle and calf operations.

Livestock grazing is common along the extent of the Proposed Action, which crosses 15 BLM allotments within the CFO (Table 3.18). Combined, these allotments total 298,965 public land acres that provide approximately 31,560 AUMs of forage for cattle and horse livestock operations (BLM 2014).

Table 3.18. Grazing Allotments, AUMs within the Project Area

Allotment Name	Allotment Number	Total Size of Allotment (acres)	Allotment Acres within Project Area	Cattle AUMs	Horse AUMs
Bobcat Draw	76039	13,786	44.35	1,112	69
Cotton Place	76045	6,702	15.79	426	8
East Rattlesnake Flat	76033	23,162	65.77	2,664	36
Fairview	76038	24,670	59.95	3,703	71
Goedeke Grazing Cell	76046	11,390	12.61	894	N/A
Lower Tucker Draw	77041	8,534	6.40	756	N/A
Mexico Wells	76052	16,913	35.47	1,766	110
Penn Tank	76040	7,504	9.77	883	N/A
Phantom Banks	77040	58,760	28.90	7,477	N/A
Red Tank	76037	38,350	19.63	3,685	N/A
Red Tank II	76137	25,564	11.17	348	N/A
Rustler Breaks	77037	22,753	41.17	3,102	N/A
Ruth Ross Place	76053	13,279	16.63	1,722	9
Sun Wells	77039	20,699	17.43	2,429	N/A
Willow Lake	78097	6,881	4.08	290	N/A
Total		***298,965***	***389.12***	***31,257***	***303***

Based on the July 2015 CFO geographic information system (GIS) shape files, the construction ROW and associated aboveground facilities would cross 54 fences and 12 waterlines within allotments (Table 3.19). Additionally, one stock pond was observed approximately 270 feet from the ROW on the portion of the line approaching the proposed Corral Canyon compressor station. The stock pond was showing to hold water on aerial imagery from fall 2015. Within 200 meters of the project area, there is additional range infrastructure, including 19 additional barbed-wire fences and eight water pipelines.

Table 3.19. Range Improvements within 200 Meters of the Proposed Project Area

Allotment Name	Number of Range Improvements Crossed by Proposed Project			Number of Range Improvements within 200 meters*		
	Fences	Water Lines	Water Troughs	Fences	Water Lines	Water Troughs
Bobcat Draw	8	1	–	10	1	–
Cotton Place	2	1	–	3	3	–
East Rattle-snake Flat	7	1	–	11	1	–
Fairview	4	4	–	7	5	–
Goedeke Grazing Cell	3	–	–	6	–	–
Lower Tucker Draw	4	–	–	5	–	–
Mexico Wells	3	1	–	3	1	–
Penn Tank	2	–	–	3	1	–
Phantom Banks	7	1	–	8	3	–
Red Tank	1	–	–	1	–	–
Red Tank II	1	–	–	1	–	–
Rustler Breaks	4	1	–	4	3	–
Ruth Ross Place	4	–	–	4	–	–
Sun Wells	3	2	–	5	2	–
Willow Lake	1	–	–	2	–	–
Total	**54**	**12**	**0**	***73***	***20***	***0***

* Includes range improvements crossed by the project.

3.8.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to livestock grazing, because the ROW would not be granted and no vegetation removal or fencing of available grazing areas would occur.

Cumulative Impacts

No cumulative impacts would be realized as a result of the No Action alternative.

3.8.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Forage removal from the grazing allotments crossed by the proposed project would be the primary impact to grazing resources. Construction of the Proposed Action would impact approximately 390 acres of allotted rangeland vegetation (see Table 3.19 above), which represents less than 0.1% of the total acreage of allotments intersected by the Proposed Action. In total, approximately 622 total acres of vegetation would be temporarily removed on BLM, SLO, and private lands. Approximately 48 acres of potential range vegetation would be removed in the long term on BLM, private, and SLO lands to accommodate the operational use of the aboveground facilities.

Range improvements would also be temporarily impacted by the proposed project. Twelve livestock watering lines and 54 fences would be crossed by the proposed project. There are no water troughs located within the proposed ROW, though one previously used (dry) stock pond was observed. Prior to

construction, the conditions of the water lines and fences would be evaluated and appropriate protections would be put in place to maintain its function during the construction of the proposed project. The project has the potential to temporarily create barriers to livestock movement during trenching activities. Restricted access to water lines on BLM-administered lands could occur. However, the design features for the proposed project (see Section 2.1.5) identify measures to prevent these types of impacts to grazing livestock after construction is complete.

Direct impacts to livestock occur when holes, ditches, or trenches are not excluded properly. Any type of hole or ditch is potentially a hazard to livestock while grazing. Cow or calf and horse and colt injuries may occur if they fall into a ditch or trench-type cavity or in the process of trying to get out. Livestock leg injuries also may occur when any hole is left uncovered. Livestock can step into the hole and break or injure a leg.

Surface disturbance resulting from construction and ongoing maintenance may facilitate the introduction and spread of noxious weeds throughout grazing allotments and could accelerate soil erosion, which would reduce site productivity and limit grazing opportunities through a reduction in available animal unit months. The design features for the proposed project (see Section 2.1.5) include measures to control the spread of noxious weeds, including pre-construction treatment of noxious weeds, cleaning equipment and materials, and participating in the Lea and Eddy County Weed Program

If the area continues to receive abundant precipitation, herbaceous production and forage levels may be restored within two to three growing seasons. Additional short-term impacts may include displacement of permitted livestock during construction activities or exposure of livestock to hazards. Movement of livestock may also be temporarily impeded in areas of active construction. After construction, livestock should become acclimated to the activity associated with operation of the aboveground facility. Vehicle traffic associated with the Proposed Action could pose impacts to livestock considering that the area is open range and livestock may be found on roads in the area.

Indirect impacts include extra time required by the permit holder to locate livestock or potential trespass issues for the livestock owner if the livestock cross allotment boundaries.

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. The loss of vegetation results in a loss of forage available to livestock within the grazing allotments located in the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to vegetation and livestock grazing conditions.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface and vegetation disturbance within the CIAA, or 0.67% of the CIAA. Impacts to vegetation and livestock grazing conditions would depend on the placement and type of surface disturbance and the plant species present within the individual project areas. Generally, native vegetation loss and the spread of noxious weeds would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities, thereby reclaiming the forage available to livestock. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 25,014 acres (5.67% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watersheds, which is an addition of 0.15% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. Total cumulative disturbance represents 5.82% of the total watershed. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

Mitigation measures have been built in to the Proposed Action and are detailed in Section 2.1.5. No other mitigation has been recommended.

3.9 Special Management Areas

3.9.1 Affected Environment

The proposed project crosses portions of three special management areas (Table 3.20) (see Figure A.3 in Appendix A)—the Pecos River Canyons Complex ACEC and RNA these are overlapping designations, and the Phantom Banks Heronries SMA. These areas are managed with special requirements because of one or a combination of unique resources or values.

Table 3.20. SMAs Crossed by the Proposed Project

Special Designation Area	Size of Project Area within Special Designation Area (acres)	Total Size of Special Management Area (acres)
Special Management Areas		
Pecos River/Canyons Complex ACEC and RNA	4.3	5,190 (ACEC) 2,230 (RNA)
Phantom Banks Heronries Special Management Area	26.2	26,880
Total	***30.5***	

The Pecos River/Canyons Complex ACEC encompasses approximately 5,190 acres. Two large distinctive canyons, Pierce and Cedar, converging with one of the remaining free-flowing sections of the Pecos River provide a unique landscape in southeastern New Mexico. The close association of the canyons and river display a combination of values, including unique riparian habitat not elsewhere evident in the desert grassland of southeastern New Mexico; the convergence of many diverse soil types such as deep sands, gypsum soils, gravelly loam, loamy bottomlands, and active sand dunes; distinctive and virtually unspoiled scenic values, particularly in the two canyons; large and culturally complex archaeological sites suggesting occupation over a long period of time (Archaic, Jornada, and Mogollon periods, 7,000 B.C.–A.D. 1350); and prime wildlife habitat for several endangered wildlife species. The canyons could provide vegetative habitats with high potential for supporting state-listed endangered plant species. Management objectives for this ACEC will emphasize protection of the sensitive and unique natural and cultural resources, as well as scenic qualities. These include:

- Apply no surface occupancy (NSO) stipulation to 4,100 acres of future oil and gas leases.
- Avoid future right-of-way actions through 4,100 acres.
- Restrict surface disturbance throughout the ACEC to minimize environmental impacts and mitigate adverse effects to cultural resources through extensive excavation (BLM 1988:Appendix C, pg. C-18).

As noted, this is a ROW avoidance area. BLM Manual 1623.51 describes the circumstances for which an exception may be granted in right-of-way avoidance areas: "…areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available" (BLM Manual 1623.51). EnLink is endeavoring to reach an existing lease adjacent to the ACEC on the west (Figure 3.6). In order to avoid the ACEC, the route would have to swing south, creating a new ROW rather than paralleling the existing road. The impacts of that alternative would be less preferable based on impacts from a new linear feature being introduced to the landscape. Therefore, EnLink seeks an exception to the ROW avoidance management objective.

The Pecos River/Canyons Complex RNA encompasses approximately 2,230 acres. Two large distinctive canyons, Pierce and Cedar, converging with one of the remaining free-flowing sections of the Pecos River provide a unique landscape in southeastern New Mexico. The RNA would be managed for the primary purpose of conducting research and studies of natural ecological functions along and adjacent to the Pecos River.

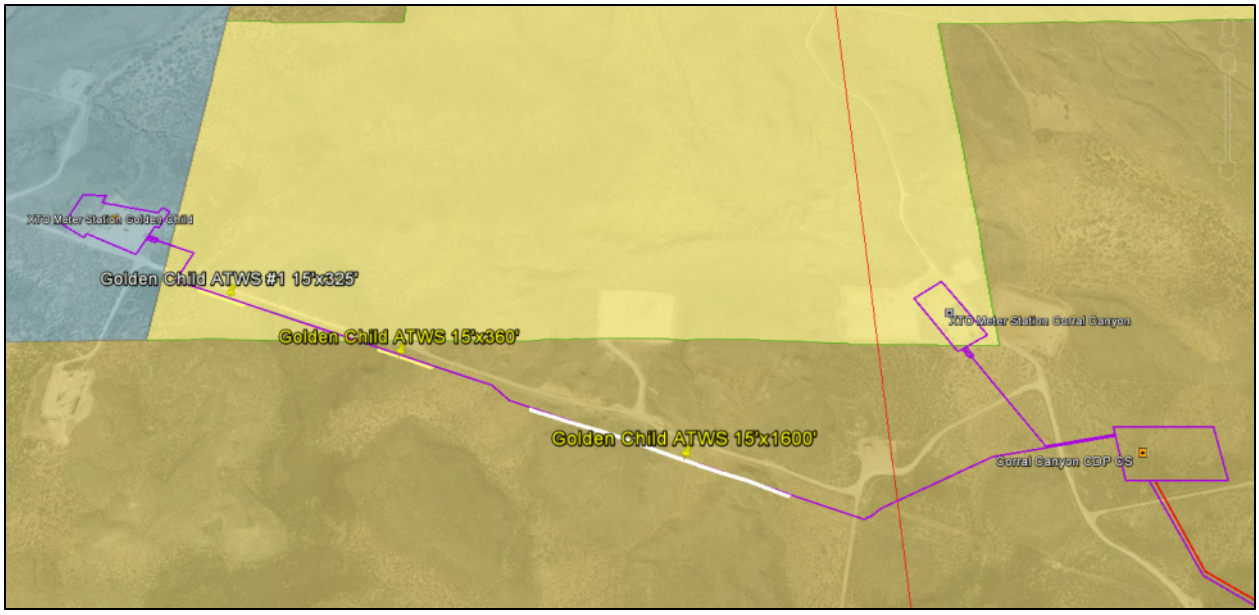

Figure 3.6. **Image showing ACEC/RNA area (light yellow shaded area) and proposed project.**

The Phantom Banks Heronries SMA consists of habitat areas for colonial birds and varies in description from salt lakes to wooded draws (Figure 3.7). There are currently seven known heronries supporting nesting habitat for great blue herons (*Ardea herodias*), black-crowned night-herons (*Nycticorax nycticorax*), little herons (*Egretta caerulea*), tricolored herons (*Egretta tricolor*), snowy egrets (*Egretta thula*), and cattle egrets (*Bubulcus ibis*). Maps and legal locations will not be provided for these areas since colony locations change and these species are very susceptible to human disturbance. Management objectives for these habitat areas are to protect and enhance habitat for colonial birds in southeast New Mexico (BLM 2014:2-155).

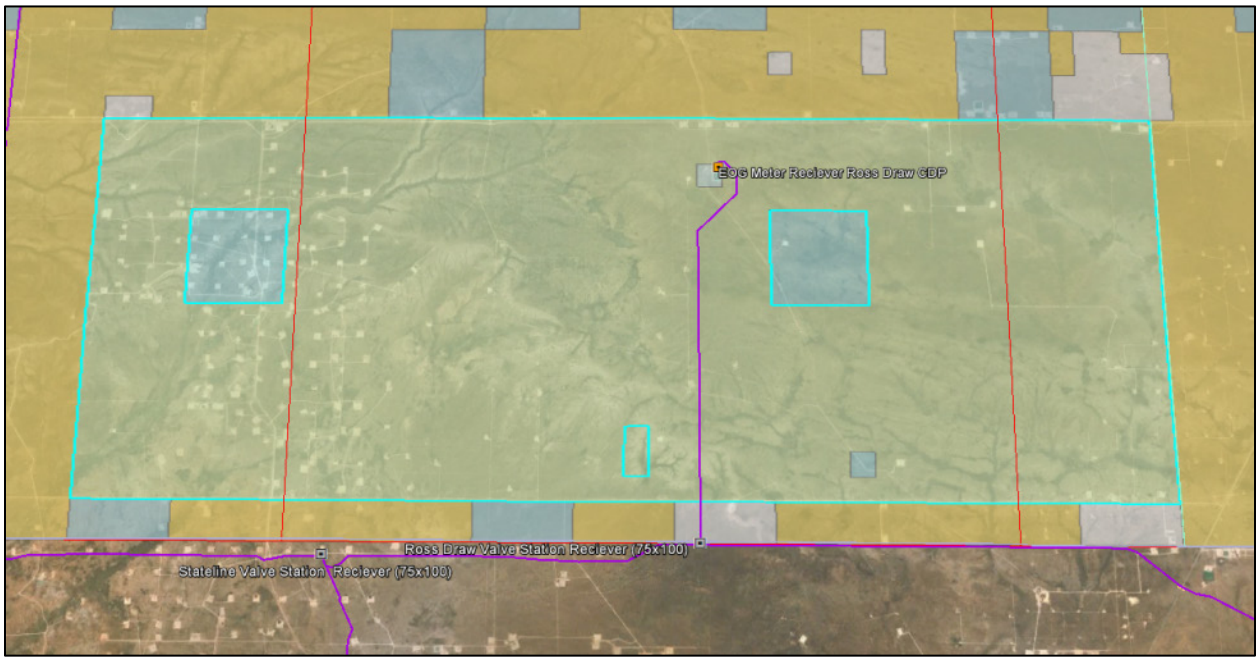

Figure 3.7. **Image showing Phantom Banks Heronries SMA (turquoise outline and shading) and proposed project alignment (purple line).**

3.9.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action Alternative, there would be no new surface disturbance within the SMAs, because the project would not be approved or constructed and operated. Baseline conditions for this resource would continue as described under the Affected Environment section above.

3.9.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Surface disturbance within the Pecos River/Canyons Complex ACEC and RNA and the Phantom Banks Heronries SMA by the proposed project would be the primary impact to special designations. Construction of the gathering system would temporarily remove approximately 4.3 acres of vegetation within the ACEC/RNA, which represents 0.08% of the ACEC and 0.2% of the RNA. The proposed ROW is collocated along an existing road, and the majority of the pipeline segment is located to the south of the existing road. Periodic operation and maintenance activities for the proposed meter station and pipeline would occur using the existing access road. The project would not impact the canyons protected within the RNA as the proposed project disturbance would be located to the far southwestern corner of the RNA. Due to the location of the proposed project within existing disturbance and paralleling an existing road, the project may be considered for an exception to the ROW avoidance management objectives.

The proposed project would remove approximately 26.2 acres of vegetation within the Phantom Banks Heronries SMA, which represents 0.9% of the special designation. The proposed project would cross the SMA parallel to an existing oil and gas field access road, thereby minimizing the impacts to the special designation. The proposed project would not affect any known heronries within the SMA, and is not in conflict with the management objectives for the SMA.

Portions of the project area not required for long-term maintenance or access would be reclaimed with a BLM-approved seed mix at the end of the construction phase. This design feature would minimize impacts to the SMAs by supporting regrowth of vegetation within the disturbed areas.

Cumulative Impacts

Impacts from past actions within the 5,190-acre Pecos River/Canyons Complex ACEC/RNA CIAA, have resulted in approximately 50 acres of surface-disturbing activities, including past construction of approximately 13 oil and gas well pads, and a few access roads. Since the 1988 RMP, few actions have been authorized in this area, unless the action is subject to leases which pre-existed the 1988 RMP. These well pads and roads are all located towards the edges of the ACEC boundary, similar to the Proposed Action. Past actions are estimated to have disturbed approximately 0.9% of the CIAA. No present actions or RFFAs are known to be proposed in this area. The Proposed Action would disturb 4.3 acres of vegetation, this comprises an additional 0.01% to the past, present, and reasonably foreseeable surface disturbance of the total ACEC.

Impacts from past actions within the 26,880-acre Phantom Banks Heronries CIAA have resulted in approximately 1,344 acres of existing surface disturbance from oil and gas activity. This represents approximately 5% of the CIAA. Present and future actions would disturb approximately 180 additional acres (0.67%). Cumulative impacts to this SMA can lead to increased soil erosion and vegetation loss through surface-disturbing activities. The Proposed Action would disturb an additional 26.2 acres within the CIAA. This comprises an additional 0.09% to the past, present, and reasonably foreseeable surface and vegetation disturbance identified above. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

No additional mitigation measures are recommended.

3.10 Visual Resources

3.10.1 Affected Environment

The BLM is responsible for managing public lands for multiple uses while ensuring that the scenic values of public lands are considered before authorizing actions on public lands. The BLM accomplishes this through the Visual Resource Management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or observation points. The system is based on the premise that public lands have a variety of visual values, and these values mandate different levels of management. Visual values are identified through the VRM inventory (BLM 1986) process that consists of scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes. The visual resource inventory classes are then evaluated with other management considerations and a VRM class is assigned to identify the degree of acceptable visual change (contrast to form, line, color, and texture) within a landscape based on the physical and sociological characteristics: Classes I and II are the most restrictive to potential change, Class III and Class IV are lands where greater modifications may be considered.

The proposed gathering system and aboveground facilities are within the VRM Classes presented in Table 3.21.

Table 3.21. VRM Classes within the Project Area

VRM Class		
Class II	3.1	A 0.25-mile length of buried pipeline is proposed in the VRM Class II area. The VRM classification is based on viewshed from the Pecos River which is 0.33 mile to the west of the proposed Golden Child meter facility.
	4.3	The Proposed Action in this area includes 0.33 mile of buried pipeline, and a proposed meter station on an existing well pad (Corral Canyon Meter Station). This area is the Pecos River/Canyons Complex ACEC and RNA. Impacts to these SMAs are discussed in Section 3.8.3.
Class IV	663.1	The remainder of the project areas including the gathering system and three proposed compressor stations fall within VRM Class IV.

The BLM's objectives for each relevant class are:

- **Class II Objective:** To retain the existing character of the landscape. The level of change to the characteristic landscape should be low.
- **Class IV Objective:** To provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high.

The project area occurs within the Chihuahuan Basins and Playas Level IV EPA Ecoregion (Griffith et al. 2006). The dominant vegetation in these ecoregion is creosote bush, mesquite, tarbush, fourwing saltbush, acacias, blue grama, and dropseeds. The project area is primarily composed of honey mesquite, creosote bush, plains yucca, blue and black grama, tobosagrass, desert zinnia, sand sagebrush, and shinnery oak. The landform topography is flat with some ridges and hilltops visible in the distance. Vertical elements in the surrounding landscape include pumpjacks and aboveground tanks associated with the surrounding oil and gas production facilities. Linear features are present in the form of oil and gas access roads and overhead power lines. Colors are tans and browns from the sandy soils, and light greens from the vegetation. The following photographs Figure 3.8 and Figure 3.9) provide a visual depiction of the representative landscape at the existing Golden Child well pad and within the ACEC/RNA, which are identified as VRM Class II areas.

Figure 3.8. **View of the existing Golden Child XTO well pad and proposed site of an EnLink Meter station, facing west (taken December 5, 2015).**

Figure 3.9. **View of the proposed pipeline route across the southern edge of the ACEC/RNA heading west, showing the existing access road on the right (north). The pipeline would parallel this road on the south side. In the distance the XTO Golden Child well pad is visible, facing west (taken December 5, 2015).**

3.10.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no impacts to visual resources, because the ROW would not be granted and the proposed gathering system and aboveground facilities would not be built.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.10.3 Impacts from the Proposed Action

Direct and Indirect Impacts

The most frequent viewers would be employees actively working in area oil and gas activities. The VRM Class II area is not a destination for recreationists, and the existing road is not an access route for recreational areas. The principal impacts to the VRM Class II areas are the addition of the two meter stations on existing well pads, and the construction of the buried pipeline parallel to the existing access road. These activities would not draw the attention of viewers and would be consistent with other infrastructure. These users of nearby roads would not be considered to have a high sensitivity to development as the roads are not considered scenic and the proposed activities would be consistent with existing landscape developments.

Overall the project would create some contrasts to form, line, color, and texture, primarily because of change in vegetative composition from the removal of vegetation for the pipeline segments. Form contrasts would result from the new aboveground facilities creating a visual impact for the life of operations. Line contrasts would result from cleared vegetation on the linear pipeline ROW, until reclamation is complete and successful to the point of blending with the surrounding landscape. The pipeline ROW would disturb primarily shrubland vegetation. In some areas, this type of vegetation can recover quickly with successful revegetation treatments. Color contrasts would come from the removal of vegetation, leaving bare soil color until after the ROW is reclaimed and revegetated, but the contrasts caused by the difference in vegetation types between the ROW and the surrounding landscape would be a long-term effect until the disturbed area is revegetated to pre-construction conditions. Textural contrast would come at the proposed new facility sites from the reflective quality of metallic surfaces on the largely vegetative landscape. Fugitive dust dispersion during construction and reclamation would create a short-term impact to visibility.

During the operational life of the compressor stations and other new facilities, the visual impact would include the aboveground equipment, fencing, and nighttime lighting (see Proposed Action description for details). To mitigate impacts, the facilities would be painted according to BLM specifications to blend as much as possible with the predominant colors of the existing landscape. Lights would be pointed inward and downward and would primarily be for safety and not to illuminate any unnecessary areas.

The Proposed Action is in compliance with VRM Class II management because the disturbance proposed within VRM Class II is parallel to an existing road and utilizing existing well pads, and is not introducing a major contrast to the landscape. Therefore the modification to the landscape is low. The Proposed Action is in compliance with Class IV management objectives as proposed activities would represent a modification to the landscape but would be consistent with existing infrastructure.

Cumulative Impacts

Impacts from past actions within the 440,541-acre CIAA include approximately 22,028 acres of surface-disturbing activities, including past construction of oil and gas well pads, access roads, transmission lines, and other linear features. Past actions account for surface disturbance and vegetation removal on approximately 5% of the CIAA. Reclamation of some disturbed areas and use of BMPs, such as reseeding construction areas, has reduced impacts to visual resources.

Present actions and RFFAs, not including the Proposed Action, are estimated to create an additional 2,986 acres of surface and vegetation disturbance within the CIAA, or 0.67% of the CIAA. Impacts to visual resources would depend on the placement and type of surface disturbance and the success of revegetation to blend the landscape within the individual project areas. Generally, change in vegetative and soil composition would be expected to occur, especially during construction of the future actions. The subject projects would require BMPs and other mitigation to reduce these impacts. In time, the reclaimed and seeded areas would minimize impacts to visual resources. Together, past, present, and reasonably foreseeable surface and vegetation disturbance would total 25,014 acres (5.6% of the CIAA).

The Proposed Action would disturb an additional 670 acres across the 16 watershed, which is an addition of 0.15%, bringing the cumulative total to 5.82% of the CIAA. This contribution would be localized and minimized from implementation of project design features and BMPs.

Mitigation Measures and Residual Impacts

Measures to minimize impacts to visual resources, as well as revegetation measures, are described in the Proposed Action's project design features (see Section 2.1.5). Areas impacted during construction would be returned to their pre-disturbance condition as soon as possible after final construction is completed. No additional mitigation measures have been recommended.

3.11 Public Health and Safety

3.11.1 Affected Environment

A major priority in land management for the CFO is ensuring health and human safety on its public lands. The BLM's goals are to effectively manage safety hazards and hazardous materials, protect the health and safety of public land uses, protect the natural and environmental resources, minimize future hazardous risks including costs and liabilities, and mitigate physical hazards in compliance with all applicable laws, regulations, and policies. The BLM follows its national, state, and local contingency plans as they apply to emergency responses. These plans are also consistent with federal and state laws and regulations.

The proposed project is located in an area with established oil and gas exploration, development, transportation, and processing operations with the accompanying pipelines, drilling rigs, pumpjacks, traffic, and other related activities. During construction of the pipeline, aboveground facilities, and access roads, physical hazards such as welding equipment, heavy machinery, and deep trenches would be present.

No residential dwellings are located in the immediate vicinity of the proposed project. The closest community or population center to the project area is the town of Malaga, New Mexico, which is approximately 5.9 miles to the northwest of the proposed project.

A small number of seasonal recreation users (e.g., hunters and off-highway vehicle riders) may occasionally be in the vicinity of the project area. However, these users are warned about possible hazardous conditions in the project area through posted signs and would have limited access to the project area during construction.

OSHA regulates worker safety under the Occupational Safety and Health Act of 1970. This act requires employers and operators to provide a safe and healthy workplace for employees, and the agency must track and monitor reportable incidents of accidents and injury.

OSHA requires that all chemicals stored within the project area during construction and operations be handled according to label directions for each chemical. All chemicals present within the project area must also have a Material Safety Data Sheet (MSDS) located in a specified central location where it could be accessed during an emergency situation. These MSDSs must be kept up to date and any new chemical added to the project area must have an MSDS added to the existing catalog. All lists of hazardous substances that may be stored within the project area must be updated at a minimum of once per month or more frequently if chemicals are added more often.

The EPA also regulates public health and safety through its Risk Management Program. This program requires facilities using extremely hazardous substances in excess of specified threshold quantities to evaluate typical and worst-case scenarios and have emergency response procedures in place to protect the public and the environment.

EnLink is committed to operating its facilities in a safe and environmentally sound manner. To achieve this goal, the company has systems and procedures in place ranging from written operating procedures, required internal policies and standards, and compliance audits/inspections and accountability for correcting findings.

Hazardous Materials

The EPA, along with state and local government agencies, has numerous laws and policies designed to protect the public including the following:

- The Resource Conservation and Recovery Act (RCRA), passed in 1976, establishes a comprehensive program for managing hazardous wastes from the time they are produced until their disposal. The EPA regulations define solid wastes as any "discarded materials" subject to a number of exclusions. A "hazardous waste" is a solid waste that 1) is listed by the EPA as a hazardous waste, 2) exhibits any of the characteristics of hazardous wastes (ignitability, corrosivity, reactivity, or toxicity), or 3) is a mixture of solid and hazardous waste. On July 6, 1988, the EPA determined that oil and gas exploration, development, and production wastes would not be regulated as hazardous wastes under the RCRA. A simple rule of thumb was developed to determine whether exploration, development, and production waste is likely to be considered exempt or non-exempt from RCRA regulations. If 1) the waste came from downhole or if 2) the waste was generated by contact with the oil and gas production stream during removal of produced water or other contaminants, the waste is most likely to be considered exempt by the EPA. Typical wastes associated with the Proposed Action include trash, sanitary wastes, produced water, and produced hydrocarbons. Based on the discussion above, these are generally exempt from the RCRA.
- The Comprehensive Environmental Response Compensation and Liability Act (CERCLA), passed in 1980, deals with the release (spillage, leaking, dumping, accumulation, etc.) or threat of a release of hazardous substances into the environment. Despite many oil and gas constituent wastes being exempt from hazardous waste regulations, certain RCRA-exempt contaminants could be subject to regulations as hazardous substances under CERCLA. The Oil Conservation Division of the New Mexico Energy, Minerals, and Natural Resources Department administers hazardous waste regulations for oil and gas activities in New Mexico.
- All hazardous chemicals, as defined by the EPA Hazardous Substances Reportable Quantities and the Emergency Planning and Community Right to Know Act (EPCRA) list within 40 CFR 302–312 (EPA 2010), stored at quantities greater than the reportable quantities must be reported as required by the EPCRA regulations. Any release of a hazardous substance above a specified reportable quantity for the hazardous substance must be reported to the EPA.

Any spill must be cleaned up immediately based on information that is available in the MSDS. If any spill is of a sufficient quantity to require notification and possible emergency response, the emergency response agency within Lea County and the New Mexico Oil Conservation Division must be notified immediately upon discovery of the release. All hazardous substances that are recovered during the cleanup must be handled and disposed of in accordance with available information.

Any emergency response necessary would be based upon information available regarding the specific hazardous materials associated with the substance and after consultation of EnLink Operations Manager and the proper emergency response officials.

3.11.2 Impacts from the No Action Alternative

Direct and Indirect Impacts

Under the No Action alternative, there would be no short or long-term risk of impacts to public health and safety. The ROW would not be granted, and the pipeline and aboveground facility would not be built.

Cumulative Impacts

No cumulative impact would be realized as a result of the No Action alternative.

3.11.3 Impacts from the Proposed Action

Direct and Indirect Impacts

Numerous laws and safeguards are detailed in the Proposed Action design features to protect both workers and the public (see Section 2.1.5). Some potential risk is inherent in any construction project and this could include the potential risk of contamination to soil through improper disposal of waste, leaks from equipment, or accidental releases. There is also potential for releases of hazardous materials from the pipeline and aboveground facilities during operation.

Exposure to H_2S could occur during the construction and operation of the proposed project. The design features (see Section 2.1.5) include the development of a Hydrogen Sulfide Contingency Plan for the proposed project. No impacts to humans from H_2S exposure are expected as a result of the proposed project.

When significant amounts of chemicals are stored on-site, governmental agencies would be notified as required under the EPCRA. The notification of hazardous substance releases outside the facility site is required under CERCLA and NMAC 19.15.29. All facilities must have informational signs, as directed under 43 CFR 3160.

The increase in traffic to area roads during construction could pose a hazard to other vehicles and road users. However, area roads are already used by oil and gas traffic and users would be accustomed to the type of vehicles necessary for construction. The increase in vehicles would be spread across the project area and drivers would be warned of possible hazards by appropriate signage and would be expected to follow all rules of the road. This impact to area roads would be short term for construction of the pipeline and would lessen considerably during the operations phase.

Cumulative Impacts

No measurable impacts to public health and safety are expected provided the management cited above is followed; therefore, no cumulative impact to public health and safety is expected. Operators of other nearby oil and gas facilities would be made aware of the construction and location of the proposed pipeline.

Mitigation Measures and Residual Impacts

Measures to protect the public's health and safety would be implemented as described in the Proposed Action's project design features (see Section 2.1.5). No additional mitigation measures have been identified.

4 SUPPORTING INFORMATION

4.1 List of Preparers

The following individuals contributed to or reviewed portions of this EA.

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4.2 References Cited

Allred, K.W., and R.D. Ivey. 2012. *Flora Neomexicana III: An Illustrated Identification Manual*. Published by the author at http://lulu.com.

Biota Information System of New Mexico (BISON-M). 2015. BISON-M home page. Available at: http://www.bison-m.org. Accessed August 2015.

Bureau of Land Management (BLM). 1986. Manual H-8410-1, *Visual Resource Inventory.* Available at: http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.31679.File.dat/H-8410.pdf. Accessed January 2015.

———. 1988. *Carlsbad Resource Management Plan.* Roswell, New Mexico: U.S. Department of the Interior, Bureau of Land Management, Roswell District.

———. 1997. *Carlsbad Approved Resource Management Plan Amendment and Record of Decision*. Roswell, New Mexico: U.S. Department of the Interior, Bureau of Land Management, Roswell District.

———. 2005. *Procedures for Performing Cultural Resource Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities—New Mexico, Oklahoma and Texas*. BLM Manual Supplement H-8100-1. Santa Fe: U.S. Department of the Interior, Bureau of Land Management, New Mexico State Office.

———. 2007a. *Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands*. Instruction Memorandum No. 2008-009.

———. 2007b. *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, The Gold Book*. Fourth Edition—Revised 2007. Available at: http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html. Accessed September 2015.

———. 2008a. *Special Status Species Record of Decision and Approved Resource Management Plan Amendment*. Roswell, New Mexico: U.S. Department of the Interior, Bureau of Land Management, Pecos District Office.

———. 2008b. *BLM National Environmental Policy Act Handbook H-1790-1.* Office of the Assistant Director. Washington, D.C.: Renewable Resources and Planning (WA-200).

———. 2012. *Standards for Survey Site Evaluation and Reporting for the CFO*. Carlsbad, New Mexico: U.S. Department of the Interior, Bureau of Land Management.

———. 2014. Analysis of the Management Situation for the BLM Carlsbad Field Office. Carlsbad, New Mexico: U.S. Department of the Interior, Bureau of Land Management, Carlsbad Field Office. Available at: http://www.blm.gov/nm/st/en/fo/Carlsbad_Field_Office/carlsbad_rmp/about_the_cfo_rmp.html. Accessed March 2, 2015.

———. 2015. BLM Carlsbad Field Office NEPA Log Dated 5-4-2015. Available at: http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html. Accessed January 4, 2016.

Cartron, J-L.E. (ed.). 2010. *Raptors of New Mexico*. Albuquerque: University of New Mexico Press.

Cartron, J.-L.E., J.M. Ramakka, and H.R. Schwarz. 2010. Ferruginous hawk (*Buteo regalis*). In *Raptors of New Mexico*, edited by J.-L. E. Cartron, pp. 337–357. Albuquerque: University of New Mexico Press.

Council on Environmental Quality (CEQ). 2014. *Revised Draft Guidance on Consideration of Greenhouse Gas Emissions and Climate Change in NEPA Reviews*. Available at: https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf. Accessed July 7, 2015.

Crawford, J.A. 1980. Status, problems and research needs of the Lesser Prairie-Chicken. In Proceedings of the Prairie Grouse Symposium, edited by P.A. Vohs, Jr. and F. L. Knopf, pp. 1–7. Stillwater, Oklahoma: Oklahoma State University.

Daly, S. 2014. Soil Conservationist, Carlsbad Field Office. The definition of playas and vegetated depressions for biological field surveys within the CFO. Personal communication with Greg Everett, SWCA Natural Resources Project Manager, November 7, 2014.

Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. *The Amphibians and Reptiles of New Mexico*. Albuquerque: University of New Mexico Press.

Eveling, D.W., and D.W. Bataille. 1984. The effect of deposits of small particles on the resistance of leaves and petals to water loss. *Environmental Pollution* 36:229–238.

Federal Land Manager Environmental Database. 2015. AQRV Summaries, Guadalupe Mountains National Park. Available at: http://views.cira.colostate.edu/fed/SiteBrowser/Default.aspx. Accessed September 11, 2015.

Findley, J.S., A.H. Harris, D.E. Wilson, and C. Jones. 1975. *Mammals of New Mexico*. Albuquerque: University of New Mexico Press.

Francis, C.D., and J.R. Barber. 2013. A framework for understanding noise impacts on wildlife: an urgent conservation priority. *Frontiers in Ecology and the Environment* 11:305–313.

Frey, J.K. 2004. Taxonomy and distribution of the mammals of New Mexico: an annotated checklist. *Occasional Papers, Museum of Texas Tech University* 240:1–32.

Griffith, G.E., J.M. Omernik, M.M. McGraw, G.Z. Jacobi, C.M. Canavan, T.S. Schrader, D. Mercer, R. Hill, and B.C. Moran. 2006. Ecoregions of New Mexico (two-sided color poster with map, descriptive text, summary tables, and photographs). Scale 1:1,400,000. Reston, Virginia: U.S. Geological Survey.

Larsen, A., B. Sisneros, and A. Cohen. 2016. *Cultural Resources Survey for the EnLink Proposed Lobo Gathering System Project in Loving County, Texas*. SWCA Report No. 16-17. Albuquerque, New Mexico: SWCA Environmental Consultants.

Monsen, S.B., R. Stevens, and N.L. Shaw (compilers). 2004. *Restoring Western Ranges and Wildlands*. General Technical Report RMRS-GTR-136, vols. 1, 2. Fort Collins, Colorado: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.

Natural Resources Conservation Service (NRCS). 2015. Soil Survey Geographic (SSURGO) Database. Natural Resources Conservation Service soils website. Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed October 2015.

New Mexico Department of Agriculture. 2009. New Mexico Noxious Weed List. Office of the Director/Secretary of New Mexico State University.

New Mexico Department of Game and Fish (NMDGF). 1991. Checklist of the Extinct, Extirpated, and Vanishing Wildlife of New Mexico. March 11, 1991. Santa Fe: New Mexico Department of Game and Fish, Endangered Species Program.

———. 2003. *Trenching Guidelines*. Available at: http://wildlife.state.nm.us/conservation/habitat_handbook/documents/TrenchingGuidelines.pdf. Accessed September 2015.

New Mexico Environment Department (NMED). 2003. General Construction Permit GCP-4. Available at: https://www.env.nm.gov/aqb/permit/documents/GCP-4_20Oct03_signed.pdf. Accessed September 14, 2015.

———. 2010a. *Inventory of New Mexico Greenhouse Gas Emissions: 2000-2007*. Available at: http://www.nmenv.state.nm.us/cc/documents/GHGInventoryUpdate3_15_10.pdf. Accessed September 14, 2015.

———. 2010b. No Permit Required (NPR) – Guidance and FAQ. Available at: http://www.nmenv.state.nm.us/aqb/permit/documents/NPR_Guidance_Memo_External_21Mar11.pdf. Accessed April 13, 2015.

———. 2015a. Emissions Analysis Tool. Available at: https://eatool.air.net.env.nm.gov/aqbeatool/. Accessed July 7, 2015.

———. 2015b. Oil and Gas Permitting Guidance. Available at: https://www.env.nm.gov/aqb/permit/Permitting_Guidance/Permitting_Guidance_11_OG_Guidance.html. Accessed September 11, 2015.

New Mexico Forestry Division. 2006. Endangered Plant Species List and Collection Permits. Available at: http://www.emnrd.state.nm.us/SFD/ForestMgt/documents/19212NMAC-EndangeredPlants.pdf. Accessed September 2015.

New Mexico Historic Preservation Division (HPD). 2016. Letter of concurrence on effects to cultural resources. Re: Out of compliance undertaking done under the Permian Basin Programmatic Agreement: A Class III Archaeological Investigation for EnLink's Proposed Lobo Gathering System project in Eddy and Lea Counties, New Mexico. Andrew Zink, New Mexico Historic Preservation Division Archaeologist, Department of Cultural Affairs. Log 103526, dated May 23, 2016.

New Mexico Office of the State Engineer (NMOSE). 1999. *Region 16 - Lea County Regional Water Plan*. Available at: http://www.ose.state.nm.us/Planning/RWP/region_16.php. Accessed September 2015.

———. 2014. New Mexico Water Rights Reporting System, Carlsbad Underground Basin, Water Column Query. Available at: http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html. Accessed December 2, 2014.

New Mexico Partners in Flight (NMPIF). 2015a. Lesser Prairie Chicken Species Account. Available at: http://nmpartnersinflight.org/lesserprairiechicken.html. Accessed October 2015.

———. 2015b. Sprague's Pipit Species Account. Available at: http://www.nmpartnersinflight.org/spraguespipit.html. Accessed October 2015

———. 2015c. Common Ground-Dove Species Account. Available at: http://www.nmpartnersinflight.org/commongrounddove.html. Accessed October 2015.

———. 2015d. Loggerhead Shrike Species Account. Available at: http://www.nmpartnersinflight.org/loggerheadshrike.html. Accessed October 2015.New Mexico Rare Plant Technical Council. 1999. *New Mexico Rare Plants.* Albuquerque: New Mexico Rare Plant Rare Plant Technical Council. Available at: http://nmrareplants.unm.edu. Accessed March 2015.

New Mexico Tech. 2003.New Mexico Bureau of Geology and Mineral Resources. Geologic Map of New Mexico. 1:500,000.

Pecos Valley Water Users Organization. 2001. *Lower Pecos Valley Regional Water Plan*. Available at: http://www.ose.state.nm.us/isc_regional_plans10.html. Accessed September 2015.

Sisneros, B., K. Mead, A. Larsen, and A. Cohen. 2016. *A Class III Cultural Resources Investigation for EnLink's Proposed Lobo Gathering System Project in Eddy and Lea Counties, New Mexico*. SWCA Report No. 16-16. Albuquerque, New Mexico: SWCA Environmental Consultants.

Southern Great Plains Crucial Habitat Assessment Tool (SGP CHAT). 2014. Interactive spatial model website. Available at: http://kars.ku.edu/maps/sgpchat/. Accessed October 2015.

Stahlecker, D.W., and H.A. Walker. 2010. Bald eagle. In *Raptors of New Mexico*, edited by J.-L. E. Cartron, pp. 131–149. Albuquerque: University of New Mexico Press.

Stebbins, R.C. 2003. *A Field Guide to Western Reptiles and Amphibians*. 3rd ed. Boston, Massachusetts: Houghton Mifflin Company.

SWCA Environmental Consultants (SWCA). 2016a. *Biological Assessment for the Lobo Gathering System, Eddy and Lea Counties, New Mexico and Loving County, Texas*. Albuquerque, New Mexico: SWCA Environmental Consultants. Project number 28598.

———. 2016b. *Wetland Delineation for the Lobo Gathering System, Eddy and Lea Counties, New Mexico and Loving County, Texas*. Albuquerque, New Mexico: SWCA Environmental Consultants. Project number 28598.

Texas Commission on Environmental Quality (TCEQ). 2015. De Minimis Facilities or Sources. Available at: https://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/de_minimis/deminimis-facilities.pdf. Accessed January 6, 2016.

Texas Historical Commission. 2012. Archeological Survey Standards for Texas. Texas Historical Commission, Archeology Division, Austin, Texas.

———. 2016. Letter of concurrence on effect to cultural resources. Re: project review under Section 106 or the National Historic Preservation Act: Draft report: Cultural Resource Survey for the Proposed EnLink Lobo Gathering System Project, Loving County, Texas (BLM; Tracking 201605039). Mark Wolfe, State Historic Preservation Officer. March 29, 2016.

U.S. District Court, Western District of Texas. 2015. Permian Basin Petroleum Association, Chaves County, New Mexico, Roosevelt County, New Mexico, Eddy County, New Mexico, and Lea County, New Mexico, Plaintiffs, v. Department of the Interior, U.S. Fish and Wildlife Service, Sally Jewel, and Daniel M. Ashe, Defendants. Order Granting Plaintiffs' Motion for Summary Judgment & Order Granting in Part and Denying in Part Defendants' Motion for Summary Judgment. MO-14-C V-SO, filed September 1, 2015.

U.S. Environmental Protection Agency (EPA). 1995. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*. 5th ed. Available at: http://www3.epa.gov/ttnchie1/ap42/. Accessed January 13, 2016.

———. 2010. Consolidated List of Chemical Subject to the Emergency Planning and Community Right-to-Know Act (EPCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 112(r) of the Clean Air Act. Office of Solid Waste and Emergency Response. EPA 550-B-10-001. Available at: http://nepis.epa.gov/Exe/ZyPDF.cgi/P1007520.PDF?Dockey=P1007520.PDF. Accessed December 5, 2014.

———. 2015a. Environmental justice information and resources. Washington, D.C.: EPA Compliance and Enforcement. Available at: http://www.epa.gov/compliance/environmentaljustice/index.html. Accessed November 20, 2015.

———. 2015b. National Ambient Air Quality Standards (NAAQS). Available at: http://www3.epa.gov/ttn/naaqs/criteria.html. Accessed January 6, 2016.

———. 2015c. Green Book Criteria Pollutant Nonattainment Summary Report. Available at: http://www.epa.gov/airquality/greenbook/ancl3.html. Accessed September 14, 2015.

———. 2015d. 2011 National Emissions Inventory, version 2. Washington, D.C.: U.S. Environmental Protection Agency. Available at: http://www.epa.gov/ttnchie1/net/2011inventory.html. Accessed September 14, 2015.

———. 2015e. 2011 National-Scale Air Toxics Assessment Results. Available at: http://www.epa.gov/national-air-toxics-assessment/2011-nata-assessment-results. Accessed January 6, 2016.U.S. Fish and Wildlife Service (USFWS). 2002. *Birds of Conservation Concern*. Administrative Report. Arlington, Virginia: U.S. Fish and Wildlife Service.

———. 2015. Endangered, Threatened, Proposed and Candidate Species of Lea County, New Mexico. Information for Planning and Conservation (IPaC) website. Environmental Conservation Online System. Available at: http://ecos.fws.gov/ipac/. Accessed August and September 2015.

Watkins, B.E., C.J. Bishop, E.J. Bergman, B. Hale, B.F. Wakeling, L.H. Carpenter, and D.W. Lutz. 2007. *Habitat Guidelines for Mule Deer: Colorado Plateau Shrubland and Forest Ecoregion*. Mule Deer Working Group, Western Association of Fish and Wildlife Agencies.

Western Regional Air Partnership (WRAP). 2006. *WRAP Fugitive Dust Handbook*. Available at: http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf. Accessed July 7, 2015.

Western Regional Climate Center (WRCC). 2015a. Climate of New Mexico. Available at: http://www.wrcc.dri.edu/narratives/newmexico/. Accessed July 7, 2015.

———. 2015b. Paduca, New Mexico Wind Frequency Table. Mean wind speed from January 1, 2005 to December 31, 2014. Available at: http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?nmXPAD. Accessed July 7, 2015.

APPENDIX A. BIOLOGICAL ASSESSMENT

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APPENDIX B. WETLANDS DELINEATION

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