



**Office of  
Energy Projects**

**January 2019**

---

**Sendero Carlsbad Gateway, LLC**

**Docket No. CP18-538-000**

# **Gateway Project**

## **Environmental Assessment**

**Washington, DC 20426**

## **A. PROPOSED ACTION**

### **1. Introduction**

The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this environmental assessment (EA) to address the environmental impacts of the construction and operation of the proposed Gateway Project (Project). On August 9, 2018, Sendero Carlsbad Gateway, LLC (Gateway) filed an application with the Commission in Docket No. CP18-538-000 under Section 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission’s regulations. Gateway seeks to obtain a Certificate of Public Convenience and Necessity (Certificate) to construct and operate certain natural gas pipeline facilities in in Eddy County, New Mexico and Culberson County, Texas. The proposed Project would provide about 400 million standard cubic feet of natural gas per day from Gateway’s newly expanded Carlsbad cryogenic gas processing plant (Carlsbad Plant) to the Agua Blanca intrastate pipeline owned by White Water Midstream, LLC (White Water).

We<sup>1</sup> prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality’s regulations for implementing NEPA (Title 40 Code of Federal Regulations, Parts 1500-1508 [40 CFR 1500-1508]); and the Commission’s regulations at 18 CFR 380. The EA is an integral part of the Commission’s decision-making process on whether to issue Gateway a Certificate to construct and operate the proposed facilities. Our principal purposes in preparing this EA are to:

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

### **2. Project Purpose and Need**

Under Section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on technical competence, financing, rates, market demand, natural gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed Project.

Gateway states that the proposed Project would help alleviate natural gas supply delivery constraints in southeast New Mexico and satisfy overall demand in the western region of the United States.

---

<sup>1</sup> “We,” “us,” and “our” refer to the environmental staff of the FERC’s Office of Energy Projects (OEP).

### 3. Scope of this Environmental Assessment

The resources and topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, fisheries, wildlife, vegetation, species of special concern, land use, recreation, visual impacts, socioeconomics, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the anticipated environmental consequences of the Project, and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with Section 7 of the Endangered Species Act, as amended (ESA) and Section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing any permits necessary for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10, below.

### 4. Proposed Facilities

Gateway's proposed Project would consist of the following:

- approximately 23 miles of 24-inch-diameter natural gas transmission pipeline in Eddy County, New Mexico and Culberson County, Texas;
- a new meter station, a mainline block valve, and a pig<sup>2</sup> launcher within the existing Carlsbad Plant in Eddy County;
- a mainline block valve at milepost (MP) 15.0 in Eddy County; and
- a pig receiver and mainline block valve at MP 23.3 near a White Water meter station in Culberson County.

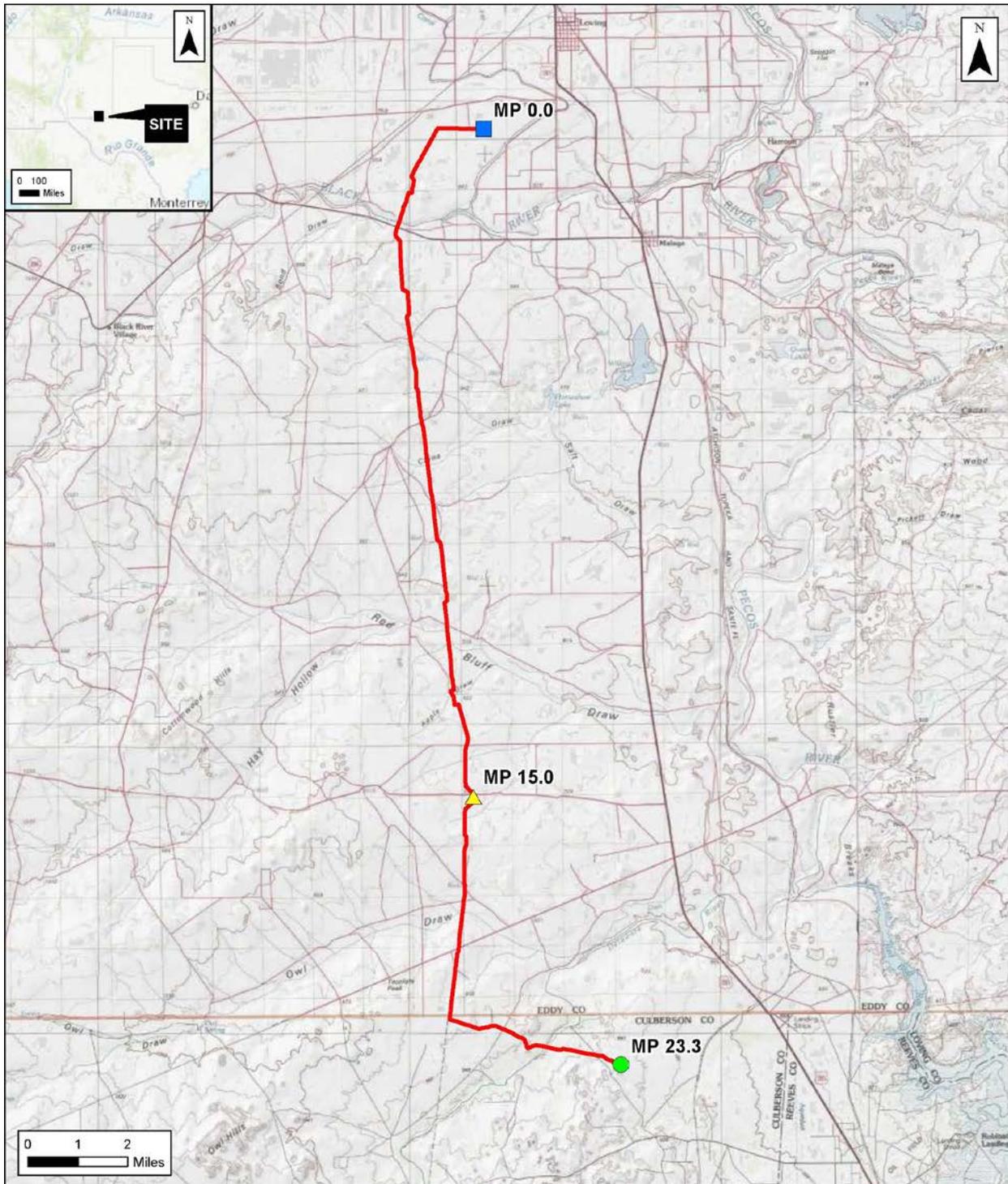
Figure 1 illustrates the general Project location.

---

<sup>2</sup> A "pig" is a tool that the pipeline company inserts into and pushes through the pipeline for cleaning the pipeline, conducting internal inspections, or other purposes.

A. PROPOSED ACTION

Figure 1: Project Location Map



**Legend**

- Proposed Pipeline Route
- Proposed Meter Station
- ▲ Proposed Location for Mainline Block Valve
- Proposed Interconnect

**Basemap:**

Topographic Imagery: USGS  
 1:24,000 Topographic Maps -  
 New Mexico: Bond Draw,  
 Cottonwood Hills, Otis; Texas: Owl  
 Hills, Screw Bean Draw NE-  
 as provided by ESRI USA Topo  
 Maps layer

NOTE: MP = Milepost

**Figure 1**  
**Location of Project Facilities**  
 Gateway Project  
 Eddy County, New Mexico  
 and Culberson County, Texas

## 5. Construction and Operation Procedures

The new Project facilities would be designed, constructed, tested, operated, and maintained to conform with or exceed federal, state, and local requirements, including the U.S. Department of Transportation's (DOT) regulations in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; FERC's *Siting and Maintenance Requirements* in 18 CFR 380.15; and other applicable federal and state safety regulations.

During construction and restoration of the Project, Gateway would implement the measures contained in the following plans, in addition to other federal, state, and local permit requirements:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan)* and *Wetland and Waterbody Construction and Mitigation Procedures (Procedures)*;<sup>3</sup>
- Fugitive Dust Control Plan;
- Karst Monitoring and Mitigation Plan (Karst Plan);
- Horizontal Directional Drilling Inadvertent Release Control Plan (HDD Plan);
- Spill Prevention, Control, and Countermeasure Plan (SPCC Plan);
- Noxious Weeds Management Plan; and
- Unanticipated Discovery Plan for Cultural Resources or Human Remains, during Construction in New Mexico and Texas (Unanticipated Discovery Plan).

Gateway anticipates beginning the contractor mobilization in the first quarter of 2019, in order to have all facilities in service by June 30, 2019. One construction spread with a temporary workforce of 400 workers is anticipated. No new permanent employees would be required for operation or maintenance of the Project. Gateway states that the typical construction schedule would be limited to only daylight hours or 7:00 am to 9:00 pm Monday through Saturday.

In order to monitor environmental compliance during construction, Gateway would employ at least one environmental inspector (EI). All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to commencement of work on the Project. The EI would be responsible for ensuring that construction activities are in compliance with the environmental requirements from construction through restoration. This includes the requirements of the FERC Plan and Procedures; environmental conditions of any

---

<sup>3</sup> The FERC Plan and Procedures are a set of baseline construction and mitigation measures developed to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. The Plan and Procedures can be viewed on the FERC website at: [www.ferc.gov/industries/gas/enviro/plan.pdf](http://www.ferc.gov/industries/gas/enviro/plan.pdf) and [www.ferc.gov/industries/gas/enviro/procedures.pdf](http://www.ferc.gov/industries/gas/enviro/procedures.pdf).

## A. PROPOSED ACTION

---

Certificate; mitigation measures proposed by Gateway; and the requirements of any other environmental permits and approvals. The EI would be responsible for identifying, documenting, and overseeing any corrective actions to bring any non-conforming activity back into compliance. The EI would also have authority to stop activities that violate the environmental conditions of a Certificate or other applicable permits. In addition, the Commission staff would conduct its own independent compliance inspections during construction and restoration of the Project to confirm compliance with the Commission's orders.

### Upland Construction

Gateway would install the new pipeline using conventional pipeline construction methods, which are illustrated in figure 2. Construction of the pipeline typically begins with the marking or staking of the construction work area. Once marking is completed, it is followed by these activities: clearing, fencing, grading, trenching, pipe laying, stringing, bending, welding, coating, lowering-in, backfilling, hydrostatic testing, and cleanup and restoration. In addition to the standard construction techniques, Gateway would use specialized techniques where certain features such as wetlands, waterbodies, and roads are crossed.

### Trenchless Crossing Methods

Horizontal directional drilling (HDD) is a trenchless crossing method involving drilling a hole beneath the waterbody and installing a pre-fabricated pipe segment through the hole. The first step in an HDD is to directionally drill a small-diameter pilot hole from one side of the crossing to the other. The pilot hole is then enlarged by several reaming passes using successively larger reaming tools until the borehole is of sufficient diameter to allow for pull back of the pre-fabricated pipe. Throughout the drilling process, a slurry of non-toxic, bentonite clay and water is pressurized and pumped through the drilling head to lubricate the drill bit, remove drill cuttings, and hold the hole open. Although requiring overall greater land disturbance on either side of a feature to accommodate the drilling and receiving equipment, the method reduces impacts on the feature (e.g., stream and riparian areas). This method is proposed for the Black River, China Draw, Red Bluff Draw, Owl Draw, Delaware River, and a historic irrigation channel. About 1,341,000 gallons of water would be required to complete the HDD crossings. This water would be purchased from two commercial wells and trucked in to the Project site for use.

The conventional bore crossing method is similar to an HDD in that it is a trenchless construction technique; however, conventional bores are not directionally drilled and do not typically go as deep as an HDD. The conventional bore method involves excavating large bell holes on each side of the waterbody that are deep enough for the bore equipment to auger a hole horizontally from one bell hole to the other a minimum of 5 feet below the crossing. Once the bell hole has been created, the pipeline

## **A. PROPOSED ACTION**

---

is then pushed or pulled through the hole. This method is proposed for the majority of paved roads, highways, and county gravel roads along the Project pipeline alignment.

### **Side Slope Construction**

Special construction techniques would be required in areas of rolling terrain and/or where the pipeline crosses side slopes. Pipe installation and construction activities across side slopes would be similar to standard upland construction methods, but cut-and-fill grading (the process of moving earth from one place to another to make a level construction surface) would be implemented in order to provide a safe working surface for travel lanes and equipment operation. Erosion controls including temporary slope breakers would be installed in accordance with the Plan. Additional types of temporary erosion controls including anchored erosion control matting and reinforced silt fence may be required. Permanent slope breakers would be installed during final cleanup, and restoration would be completed in accordance with the Plan.

## **6. Land Requirements**

Gateway has proposed to construct the Project generally with a new 80-foot-wide nominal construction right-of-way. About 82 percent of the right-of-way would be collocated along existing utilities, including natural gas and crude oil pipelines and electric transmission lines. Construction activities for the aboveground facilities would generally take place within this same right-of-way width. Gateway proposes to maintain a permanent 30-foot-wide right-of-way for pipeline operation.

The Project would disturb a total of about 334.3 acres of land during construction. Following construction, about 99.5 acres would be required for operation of the Project. The remaining 234.8 acres of temporary construction areas would consist of temporary construction right-of-way, additional temporary workspace, temporary access roads, contractor/pipeyards, and staging areas. All disturbed areas not used for operation of the Project facilities would be returned to pre-construction conditions.

Gateway would access the construction work areas primarily by existing roads (table 1). Access road AR-12 would require a new 230-foot extension from approximately MP 11.35 to the northernmost HDD temporary work area at the Red Bluff Draw crossing. The extension would only be used as an access road temporarily (during construction), and its location coincides with a part of the proposed right-of-way permanent easement. Impacts of the 230-foot extension are included in the temporary access road acreage. Gateway would not widen or otherwise modify the majority of the public roads used to access the work areas. However, some minimal maintenance of public roads and private roads may require minor improvements and/or modifications (i.e., grading, placement of gravel for stability, replacing or installing culverts, minor widening, or clearing of overhead vegetation). Such areas are noted in table 1.

**A. PROPOSED ACTION**

<b>Table 1 Temporary and Permanent Access Roads for the Project</b>							
Access Road Identifier	Approx. Milepost	Road Use	Existing Access Road	Approx. Length (feet)	Road Improvements	Road Width (feet, nominal)	Area of Impact (acres)
AR-01	0.0	Permanent	Yes	5,846	No	25	3.36
AR-02	0.4	Temporary	Yes	2,443	No	25	1.40
AR-03	2.5	Temporary	Yes	11,081	No	25	6.36
AR-04	1.2	Temporary	Yes	334	No	25	0.19
AR-05	1.7	Temporary	Yes	99	No	25	0.06
AR-06	4.5	Temporary	Yes	6,739	No	25	3.87
AR-07	3.4	Temporary	Yes	217	No	25	0.12
AR-08	3.8	Temporary	Yes	123	No	25	0.07
AR-09	5.5	Temporary	Yes	6,341	No	25	3.64
AR-10	8.4	Temporary	Yes	9,089	Yes <sup>b</sup>	25	5.22
AR-11	9.7	Temporary	Yes	23,300	Yes <sup>c</sup>	25	13.37
AR-12	11.3	Temporary	Yes <sup>g</sup>	24,240	Yes <sup>d</sup>	25	13.91
AR-13	11.9	Temporary	Yes	4,004	Yes <sup>e</sup>	25	2.30
AR-14	13.9	Temporary	Yes	5,706	No	25	3.27
AR-15	23.3	Temporary	Yes	38,254	No	25	21.95
AR-16	19.5	Temporary	Yes	6,923	No	25	3.97
AR-17	16.7	Temporary	Yes	5,182	Yes <sup>d</sup>	25	2.97
AR-18	18.1	Temporary	Yes	6,167	No	25	3.54
AR-19 <sup>f</sup>	23.3	Permanent	Yes	18,979	No	25	10.89
AR-20 <sup>a</sup>	15.0	Permanent	Yes	100	No	25	0.06
<b>Total impact for Permanent Access Roads</b>							<b>14.3</b>
<b>Total impact for Temporary Access Roads</b>							<b>86.2</b>
<p>a Access road overlaps with permanent easement. Impacts are captured in permanent workspace calculations.</p> <p>b About 2,640 feet on eastern end of access road requires blading of access road crown for Project.</p> <p>c About 2,400 feet on western end of access road requires blading of access road crown for Project.</p> <p>d Entire length of access road requires blading of access road crown for Project.</p> <p>e About 1,600 feet on western end of access road requires blading of access road crown for Project.</p> <p>f The 18,979 length includes 960 feet on the eastern end of the permanent access road located in Reeves County, Texas.</p> <p>g Access road AR-12 includes a new 230-foot temporary extension within the permanent easement from the intersection with the permanent easement to the southern boundary of the north most HDD ATWS at Red Bluff Draw. The 0.13-acre temporary construction impact of the 230 foot access road extension would be mitigated by placing mats along the length of the extension.</p>							

Although Gateway has identified areas where extra workspace would be required, additional or alternative areas could be identified in the future due to changes in site-specific construction requirements. Gateway would be required to file information on any such areas for our review and approval prior to use.

Further discussion of land requirements for the Project is provided in section B.5, below.

## 7. Non-Jurisdictional Facilities

Under Section 7 of the NGA, the Commission is required to consider, as part of its decision to authorize jurisdictional facilities, all factors bearing on the public convenience and necessity. The primary jurisdictional facilities for the Project are the proposed 23-mile pipeline, the two mainline block valves, pig launcher and receiver, and the new meter station.

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These non-jurisdictional facilities may be integral to the need for the proposed facilities (e.g., a gas-fueled power plant at the end of a jurisdictional pipeline) or they may be minor, non-integral components of the jurisdictional facilities that would be constructed and operated as a result of the proposed facilities.

Non-jurisdictional facilities associated with the Project include Sendero Midstream Partners' (Sendero's) new natural gas processing plant, a new meter station to be constructed by White Water, and electric utility connection associated with the Project's new meter station. Sendero's new natural gas processing plant is currently under construction, and will be entirely within the existing Carlsbad Plant. White Water's new meter station would be constructed at the terminus of the proposed pipeline. These non-jurisdictional facilities are further addressed in the cumulative impacts section of this EA (see section B.9).

## 8. Public Review and Comment

On August 29, 2018, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Gateway Project and Request for Comments on Environmental Issues* (NOI). The NOI was sent to affected landowners; federal, state, and local government agencies; elected officials; environmental and public interest groups; Native American tribes; other interested parties; and local libraries and newspapers.

In response to the NOI, the Commission received comments from the U.S. Department of Agriculture, Texas Commission on Environmental Quality, Texas Parks and Wildlife Department, New Mexico Department of Game and Fish, New Mexico State Historic Preservation Office, and one Native American tribe. The primary issues raised by commentors included concerns for appropriate best management practices for construction and restoration; special status species; surface water; and impacts on vegetation and wildlife. The environmental issues raised are discussed in the applicable sections of this EA.

**A. PROPOSED ACTION**

**9. Permits**

A number of federal, state, and local regulatory agencies have permit requirements, approval authority, or consultations associated with the proposed Project. Table 2 provides a list of permits and consultations necessary for the Project, the applicable local, state, and federal agencies, as well as any responses received to date. Gateway would be responsible for obtaining all permits and approvals required for construction and operation of the Project, regardless of whether or not they appear in the table.

<b>Table 2 Environmental Permits, Approvals, and Consultations</b>		
<b>Agency</b>	<b>Permit/Approval/Consultation</b>	<b>Approval Date</b>
<b>FEDERAL</b>		
Federal Energy Regulatory Commission	Certificate of Public Convenience and Necessity under Section 7(c) of the Natural Gas Act.	Application filed August 8, 2018.
U.S. Army Corps of Engineers – Albuquerque District	Nationwide 12 permit for the discharge of dredge or fill material into waters of the United States under Section 404 of the Clean Water Act.	Consultation initiated August 2, 2018. Permit application filed November 30, 2018.
U.S. Fish and Wildlife Service – Region 2 – Ecological Services	Consultations for impacts on federally listed threatened and endangered species and critical habitat under Section 7 of the Endangered Species Act.	Consultation initiated July 31, 2018. Candidate Conservation Agreement with Assurances signed September 21, 2018. Concurrence received November 30, 2018.
U.S. Department of Agriculture, Natural Resources Conservation Service	Consultations regarding erosion and sedimentation controls and seed mixes, Farmland Protection Policy Act, and Wetland Reserve Program.	Consultation complete September 6, 2018.
U.S. Department of Agriculture, Farm Service Agency	Consultation on impacts on lands enrolled in the Conservation Reserve Program.	Project does not cross lands enrolled in the Conservation Reserve Program. Consultation complete November 2018.
U.S. Environmental Protection Agency	Hydrostatic Test Water Discharge Permit (Texas).	Consultation on-going.
<b>NEW MEXICO</b>		
State of New Mexico-Commissioner of Public Lands	Right-of-way entry permit for cultural and biological surveys on state land.	Permit application submitted July 16, 2018.
New Mexico State Lands Office	Authorization for right-of-way/crossing of State Lands.	Consultation initiated August 13, 2018. Consultation anticipated complete December 2018.
New Mexico Department of Game and Fish	Consultation for impacts on State Species of Conservation Concern.	Consultation initiated August 13, 2018. Consultation on-going.
New Mexico Preservation Division	Consultation under Archaeological and Historic (Section 106, National Historic Preservation Act) including Native American Tribes.	Consultation initiated August 13, 2018. Consultation on-going.
Eddy County, New Mexico	Building Permits for aboveground facilities.	Permit anticipated May 2019.

**A. PROPOSED ACTION**

<p align="center"><b>Table 2</b> <b>Environmental Permits, Approvals, and Consultations</b></p>		
Agency	Permit/Approval/Consultation	Approval Date
<b>TEXAS</b>		
Texas Commission on Environmental Quality	Temporary Water Use.	Consultation initiated August 2, 2018. Consultation on-going. Consultation anticipated complete June 2019.
Railroad Commission of Texas	Permit for Discharge of Hydrostatic Test Water.	Permit anticipated June 2019.
	Groundwater Protection Determination (Form GW-01) for Cathodic Protection Wells.	Permit anticipated April 2019.
Texas Parks and Wildlife Department	Consultation of state-listed species – wildlife habitat assessment. Marl, Sand, Gravel, Shell, or Mudshell Permit, if required.	Consultation initiated July 31, 2018. Consultation on-going.
	Scientific Collection Permit, if required.	Permit anticipated July 2019.
Texas General Land Office	Permit for crossing lands owned by or of interest to the State.	Letter of No Impact issued September 7, 2018. Consultation complete.
Texas Historic Commission	Consultation under Archaeological and Historic (Section 106, National Historic Preservation Act) including Native American Tribes.	Consultation initiated August 13, 2018. Consultation complete November 20, 2018.
	Texas Antiquities Permit.	Permit not anticipated to be required.
Culberson County, Texas	Building permit for aboveground facilities	Permit anticipated May 2019.

## **B. ENVIRONMENTAL ANALYSIS**

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the proposed Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

### **1. Geology**

#### **1.1 Physiographic Setting and Geologic Conditions**

The Project is within the Pecos Valley section of the Great Plains physiographic province in Eddy County, New Mexico and Culberson County, Texas. The Pecos Valley section is a long, eroded trough bordered by the Llano Estacado and Mescalero escarpment to the east and the steep slopes of the Glorietta Mesa and Sacramento Mountains to the west. The Pecos Valley section is bordered to the east by the High Plains section and to the west by the Basin and Range physiographic province. The Pecos Valley section is characterized by flat plains and rocky canyon-lands that have been filled with eolian deposits and pediments that form at the toe of the steep flanks of the surrounding landscapes. The Pecos River flows through the valley and has cut into the underlying marine sedimentary rock, generally comprised of Paleozoic-era limestone. The soluble nature of limestone has led to the development of extensive karst topography through the section, most prominently collapsed solution caverns around Vaughn, New Mexico; the Bottomless Lakes State Park east of Roswell, New Mexico; and Carlsbad Caverns, a national park west of Whites City. The Project would cross three geologic formations: the Rustler (siltstone, gypsum sandstone, and dolomite); Salado (evaporite sequence of salts, anhydrite, and mixed-clastic redbeds or shaly sandstone); and Castile (marine evaporite, gypsum, anhydrite with calcite, and limestone); as well as unconsolidated Piedmont alluvial deposits.

As indicated by U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) soils data, approximately 4.6 miles (about 20 percent) of the proposed pipeline is characterized as having shallow bedrock at a depth of 5 feet or less. If shallow bedrock is encountered, Gateway would first attempt to use hydraulic hammers to break the rock. If blasting is found to be necessary, Gateway would develop a Project-specific

blasting plan in coordination with the appropriate agencies that address pre- and post-blast inspections and monitoring; advanced public notification; and mitigation measures for building foundations, groundwater wells, and springs.

## **1.2 Mineral and Non-Mineral Resources**

New Mexico contains the nation's largest known concentration of potash reserves. Potash is a salt that contains water soluble potassium and is most commonly used in the production of fertilizer. Potash mines are generally concentrated to an area east of Carlsbad known as the Carlsbad mining district. The nearest district boundary is over 5 miles northeast of the Project, with the nearest mine over 10 miles northeast.

Based on a literature review, one active surface aggregate and stone mine was identified approximately 100 feet southwest from the intersection of existing access roads AR-15 and AR-17 in Eddy County (approximately 1 mile east of MP 16.5). Twenty-one active and fourteen plugged and abandoned oil and gas wells are within 0.25 mile of the Project. Twelve additional wells were identified as new but not yet completed. All of the identified wells are over 100 feet from the pipeline centerline. Gateway would coordinate with the well owners to avoid adverse impacts on production and transportation of oil and gas. We conclude there would not be a significant impact on mineral and non-mineral resources.

## **1.3 Geologic Hazards**

Geologic hazards are natural physical conditions that can, when present, result in damage to land and structures or injury to people. Potential geologic hazards in the Project area were determined through database searches and literature and topographic map reviews, and include seismicity (earthquakes and faults), slope stability and landslides, subsidence and karst conditions, flooding/scour, soil liquefaction, soil expansion, and volcanism. The review of available data showed that the proposed Project sites are not characterized by volcanic conditions, surface faults, or susceptible to landslides; thus, the Project would not be affected by these hazards. Seismic hazards (including soil liquefaction), karst conditions, and flooding are discussed below.

### Seismic Hazards

Seismic hazards include earthquakes, ground faulting, and secondary effects such as soil liquefaction. The Project is reportedly in areas of low to moderate seismic risk. Seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake as expressed in terms of the acceleration due to gravity (g), or peak ground acceleration. The U.S. Geological Survey has developed a series of maps for the entire United States that describe the likelihood for shaking of varying degrees to occur in a given area. This mapping indicates that the Project is in an area where a peak ground acceleration between 0.02 g has a 2 percent chance of being exceeded in 50 years, and a peak ground acceleration of 0.04 g has a 10 percent chance of

being exceeded in 50 years. In addition, saturated soils that could contribute to soil liquefaction are not likely to be present in the Project areas. As such, we do not anticipate seismic-related impacts on the Project.

### Karst Conditions

Karst features form as a result of dissolution and leaching of mostly carbonate bedrock (e.g., limestone, dolomite), but can also occur in gypsum, halite, and other soluble rocks. Rock dissolution takes place along fractures and bedding planes due to percolating acidic rainwater that mixes with groundwater. Based on a literature review, the majority of the Project would cross areas of potential karst topography where limestone is present. In addition, gypsum and other evaporite deposits that may form pseudokarst features are near the surface and would be crossed by the Project between about MPs 16.5 and 22.5. There is no New Mexico or Texas state law that addresses or restricts construction within karst terrain. Also, DOT regulations do not specifically address pipeline design, construction, and/or operation in karst terrain.

Gateway calculated the proposed pipeline's maximum ability to span between supports and determined that the Project pipeline has a span capacity of approximately 66 feet unsupported without any sign of deflection or sag. This span strength would further reduce the potential for a serious pipeline incident should karst degradation cause a void beneath the pipeline. Gateway initiated consultations with the Texas Bureau of Economic Geology, the National Speleological Society, and the National Cave and Karst Research Institute in order to further characterize the karst areas crossed by the Project.

Gateway prepared a Karst Plan and an HDD Plan that include engineered mitigation options in the event that karst is encountered during HDDs, construction, and re-routing or avoidance of karst is not feasible. The HDD Plan also contains crossing contingencies in the event an HDD is unsuccessful.<sup>4</sup> We reviewed final versions of these plans and consider them to be adequate.<sup>5, 6</sup> However, Gateway has not completed geotechnical analysis for the HDD crossings. Therefore, **we recommend that:**

- **With its Implementation Plan, Gateway should file with the Secretary of the Commission (Secretary) for review and written approval by the Director of the Office of Energy Projects (OEP), a complete set of revised HDD profile and plan drawings, including all geotechnical analyses and detailed mapping of cleared areas, mud pits, and pipe assembly areas.**

With the implementation of measures in the Karst Plan, HDD Plan, Gateway's SPCC Plan, FERC's Plan and Procedures (which would minimize erosion potential and

---

<sup>4</sup> Any such crossing contingencies would need additional FERC review and approval prior to being implemented.

<sup>5</sup> The final version of the Karst Plan can be accessed via FERC's eLibrary at Accession no. 20181213-5186.

<sup>6</sup> The final version of the HDD Plan can be accessed via FERC's eLibrary at Accession no. 20181018-5085.

direct water away from identified karst features), and our recommendation above, we conclude the Project would not adversely affect karst terrain.

### Flooding

Near-surface groundwater and flooding can cause buoyancy in pipelines. Flooding can also induce lateral migration of streams and cause scour that can undermine or expose a pipeline. The Project would cross three Federal Emergency Management Agency 100-year floodplains. However, these floodplains would be crossed via the HDD method, at depths of at least 25 feet below the maximum scour depths and would therefore not be impacted by stream scour. Therefore, the Project would not have any impact on floodplains.

### **1.4 Paleontology**

No known significant fossil locations were identified within the Project area based on a review of known paleontological sites. The likelihood of encountering and disturbing paleontological resources such as vertebrate fossils or scientifically significant invertebrate or plant fossils during Project construction is considered to be low due to the geologic formations crossed by the Project. If unique or significant fossil specimens are discovered during excavation activities, Gateway would cease construction activities and consult with the appropriate county or State paleontological specialist. Thus, we conclude that significant paleontological resources are unlikely to be affected by construction or operation of the Project.

Given the geologic conditions within the Project area, and the fact that about 82 percent of the Project would be collocated with existing utilities, we conclude that the overall effect of the Project on topography and geology would be minor, and significant adverse effects on geological resources are not anticipated. Likewise, we do not anticipate that Project facilities would be compromised due to seismicity, ground rupture, soil liquefaction, subsidence, flooding, or landslides; and that the proposed facilities would not result in significant impact on geologic or paleontologic resources.

## **2. Soils**

Information regarding the soil types and characteristics occurring in the Project area was obtained from the NRCS Soil Survey Geographic database, which provides detailed information useful for natural resource planning and management.

Construction activities such as clearing, grading, excavation, backfilling, heavy equipment traffic, and restoration activities could result in adverse impacts on soil resources in temporary work areas, on access roads, and at aboveground facilities. Clearing would remove protective vegetation cover and would expose soils to the effects of wind, sun, and precipitation, which could increase soil erosion and the transport of sediment to sensitive areas such as waterbodies or dry washes (also referred to as

## B. ENVIRONMENTAL ANALYSIS

---

ephemeral washes). Grading and equipment traffic could compact soil, reducing porosity and percolation rates, which could result in increased runoff potential. Soil contamination from equipment spills and/or leakage of fuels, lubricants, and coolants could also impact soils. Certain practices, such as the use of FERC's Plan and Procedures, and Gateway's Project-specific plans listed in section A.5 would help adequately minimize impacts on soils.

According to a search of federal and state databases, no reported sources of known or potential soil contamination were identified in the vicinity of the Project. Therefore, no impact from contaminated soil is anticipated. Soil contamination from equipment spills and/or leakage of fuels, lubricants, and coolants could impact soils. Gateway has filed its SPCC Plan, which addresses fluid leaks and spills. Measures outlined in Gateway's SPCC Plan include, but are not limited to:

- spill prevention and response training for construction personnel;
- regular inspection of construction equipment for leaks;
- secondary containment for storage of fuels, oils, hazardous materials, and equipment;
- collection and disposal procedures for wastes generated during equipment maintenance; and
- standard procedures for excavation and offsite disposal of any soils contaminated by spillage.

We reviewed a final version of this plan and find it adequate to address the storage and transfer of fuels and hazardous materials as well as the response to be taken in the event of a spill.<sup>7</sup> Adherence with Gateway's SPCC Plan would adequately minimize impacts on soils from inadvertent releases or spills during construction of Project facilities.

The Project would not cross any actively farmed crops. According to the NRCS online soils data, the Project does not include land designated as prime farmland in Texas. The NRCS New Mexico State Office provided a comment that the Project does not include prime or important farmland in New Mexico. The soils within the Project areas are well drained, and have generally low compaction and erosion potential. Project-area soils also appear to have low revegetation potential. Gateway would attempt to overcome low revegetation potential by implementing appropriate best management practices such as those included in FERC's Plan. Based on previous experience with revegetation of pipeline facilities, and with adherence to the protocols outlined in the Plan and Procedures, we do not anticipate significant issues with successful revegetation.

Soil erosion would be mitigated through temporary erosion and sedimentation control measures and implementation of permanent measures in accordance with FERC's

---

<sup>7</sup> The final version of the SPCC Plan can be accessed via FERC's eLibrary at Accession no. 20181218-5101.

Plan and Procedures and Gateway's plans listed in section A.5. Given the Project areas' soil characteristics and the impact minimization and mitigation measures described in these plans, we conclude that soils would not be significantly affected by Project construction and operation.

### 3. Water Resources and Wetlands

#### 3.1 Groundwater Resources

##### Aquifers

The Project is within the Delaware Basin, which extends from eastern New Mexico to west Texas. There are four major aquifers in the Delaware Basin: the Capitan Aquifer, the Rustler formation aquifer, the Santa Rosa Sandstone aquifer, and Cenozoic-Era alluvial aquifers. The Project is primarily within the Rustler formation with some of the northern portion crossing the Cenozoic-era alluvium which may contain shallow unconfined groundwater. The Cenozoic water bearing alluvium overlays the Rustler Formation and exists primarily in drainages, valleys, or basins where alluvium accumulates. The Cenozoic alluvium can be found in the northern Project area near the Black River.

Groundwater in the Rustler formation occurs under unconfined to semi-confined conditions at depths generally greater than 50 feet. The water in the Rustler formation ranges from slightly saline to brine and is not generally used for domestic purposes. Groundwater recharge is derived from precipitation and seepage loss from outcrop areas and from adjacent aquifer formations. Aquifer discharge is to the Pecos River and downgradient formations. Groundwater is primarily used for irrigation and stock watering if of suitable quality or for enhanced oil recovery.

Groundwater from the Cenozoic alluvium is used extensively for public water supplies, irrigation, industry, livestock watering, and rural-domestic supply throughout the Delaware Basin. The quality of water in the Cenozoic alluvium is variable. Chloride concentrations range from 5 to 7,400 milligrams per liter (mg/L), dissolved solids concentrations range from 188 to 15,000 mg/L, and fluoride concentrations range from 0.3 to 10 mg/L. There is no evidence of significant water use in the Cenozoic water bearing alluvium near the Project area. If present, groundwater in the Cenozoic-era alluvium is greater than 10 feet below the ground surface, except near the Black River.

##### Sole-Source Aquifers, Protected Aquifers, and Wellhead Protection Areas

Under Section 1424(e) of the Safe Drinking Water Act, the U.S. Environmental Protection Agency (EPA) defines a sole or principal source aquifer as one that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and for which there are no other reasonably available alternative drinking water source(s) that could physically, legally, and economically supply all those who depend on the aquifer

## **B. ENVIRONMENTAL ANALYSIS**

---

for drinking water should the aquifer become contaminated. The Project is not within any EPA-designated sole-source aquifers.

Wellhead Protection Areas are regions where states manage the land use above groundwater used to supply public drinking water. Generally, states do not disclose specifics regarding these plans, such as pumping centers and protection area limits, due their critical nature. No wellhead protection areas were identified in the vicinity of the Project work areas. In Texas, the Project is within Groundwater Management Area 4; however, the Project does not cross any Groundwater Conservation Districts or priority groundwater management areas. In New Mexico, the Project is within the Carlsbad Declared Groundwater Basins and within an areas of moderate Aquifer Sensitivity.

### Water Wells and Springs

Based on a review of the Texas and New Mexico databases and online maps, no active groundwater wells or springs were identified within 150 feet of the Project work areas. One water supply well was identified within 1,000 feet of an HDD work area.

### Groundwater Contamination

According to a search of federal and state databases, no reported sources of known or potential groundwater contamination were identified in the vicinity of the three Project areas. Therefore, no impact from contaminated groundwater is anticipated.

Pipeline and related infrastructure construction necessitates the use of heavy equipment and associated fuels, lubricants, and other potentially hazardous substances that, if spilled, could affect shallow groundwater and/or aquifers. Accidental spills or leaks of hazardous materials associated with vehicle fueling, vehicle maintenance, and material storage would present the greatest potential contamination threat to groundwater resources. Soil contamination resulting from these spills or leaks could continue to add pollutants to the groundwater long after a spill had occurred.

Implementation of proper storage, containment, and handling procedures would effectively minimize the chance of such releases. Gateway's SPCC Plan, discussed above, addresses preventative and mitigative measures that would be used to avoid or minimize the potential impacts of hazardous material spills during construction.

### Groundwater Impacts and Mitigation

Pipeline and aboveground facility construction activities such as trench dewatering, blasting, and spills or leaks of hazardous materials have the potential to affect groundwater in several different ways. Clearing, grading, trenching, and soil stockpiling activities within the proposed right-of-way may cause minor fluctuations in local groundwater levels and/or increased turbidity due to erosion and sediment runoff, especially where shallow aquifers exist. Soil compaction caused by heavy equipment could reduce water infiltration rates. Construction of aboveground facilities may result in

minor, permanent increases of impervious areas; however, the facilities are unlikely to affect infiltration or groundwater recharge beyond the facility limits.

In areas where groundwater is near the surface, trench excavation may intersect the shallow water table and dewatering may be required. Dewatering of trenches may result in temporary fluctuations in local groundwater levels; however, trench water would be discharged into well-vegetated upland areas to allow infiltration and minimize impacts on the local water table. After installation of the pipeline and aboveground facilities, the ground surface would be restored as close as practicable to original contours, and any exposed soils would be revegetated to ensure restoration of preconstruction overland flow and recharge patterns. Therefore, these minor, direct, and indirect impacts would be temporary and would not significantly affect groundwater resources.

Gateway did not identify any specific karst features within the proposed Project workspaces; however, as discussed above in section B.1.3, the potential exists that certain bedrock units within the right-of-way may exhibit karst features. If karst is encountered during construction, Gateway would implement its Karst Plan. Gateway would implement the best management practices described in the plan as necessary to mitigate the risks to groundwater quality, such as increased sedimentation into sinkholes or changes in recharge characteristics, and impacts on pipeline integrity associated with construction in karst terrain. In areas of potential karst bedrock, pre- and post-construction testing would be done for the well identified within 1,000 feet downgradient of an HDD work area. The tests would be used to determine whether any construction-related impacts occurred at or on the well. In the event the results indicate the well water quality or yield has been adversely impacted as a result of Project construction, Gateway would provide a clean water source to the landowner until a permanent solution is found. The damaged well would be restored to its former capacity and quality to the extent practical or replaced if damaged beyond repair.

We conclude that groundwater impacts during construction would be effectively minimized or avoided by implementing construction practices outlined in FERC's Plan and Procedures and Gateway's plans listed in section A.5.

### **3.2 Surface Water**

Our review indicates that Project construction and operation would not affect or conflict with:

- public water intakes (there are no intakes within 3 miles downstream of the Project area);
- state-designated surface water protection areas (none crossed or affected);
- U.S. National Park Service-designated wild or scenic rivers or wilderness areas; and
- Clean Water Act 303(d)-listed waterways.

## B. ENVIRONMENTAL ANALYSIS

The Project is within the Upper Pecos-Black and Delaware sub-basins; both of these watersheds drain into the Pecos River. The Project would require crossing six ephemeral streams (three unnamed tributaries to Red Bluff Draw, Apple Draw, Owl Draw, and China Draw) and three perennial streams (Black River, Red Bluff Draw, and the Delaware River) as listed in table 3.

Milepost	Waterbody Name	Flow Regime	Width (feet) <sup>a</sup>	FERC waterbody classification <sup>b</sup>	State Water Quality Classification	Crossing Method
3.1	Black River	Perennial	40	Intermediate	New Mexico Special Status Water	HDD
8.2	China Draw <sup>c</sup>	N/A	N/A	Minor	None	HDD
11.5	Red Bluff Draw	Perennial	50	Intermediate	None	HDD
11.8	Unnamed Tributary to Red Bluff Draw	Ephemeral	10	Minor	None	Standard Upland Construction Techniques
11.9	Unnamed Tributary to Red Bluff Draw	Ephemeral	5	Minor	None	Standard Upland Construction Techniques
12.8	Apple Draw	Ephemeral	3	Minor	None	Standard Upland Construction Techniques
14.2	Unnamed Tributary to Red Bluff Draw	Ephemeral	3	Minor	None	Standard Upland Construction Techniques
17.4	Owl Draw	Ephemeral	1,000	Major	None	HDD
21.7	Delaware River	Perennial	12	Intermediate	New Mexico Special Status Water	HDD

N/A = Not Applicable  
a Approximate width based on ordinary high water mark observed during field surveys.  
b FERC classifies waterbodies over 100 feet wide as major, over 10 feet but under 100 feet wide as intermediate, and under 10 feet wide as minor waterbodies.  
c Categorized as a non-water feature during field surveys due to lack of channel characteristics. Classified as an ephemeral stream for analysis.

New Mexico has classified the Black River and the Delaware River as special status waters because they provide habitat for state and federal sensitive species. Gateway has proposed to install the pipeline segments underneath these two waterbodies, and underneath an additional three waterbodies that could have perceptible flow at the time of crossing, using the HDD technique to avoid direct impacts on these resources. Gateway has also proposed to cross the remaining four ephemeral waterbodies during periods of no perceptible water flow using standard upland construction techniques as defined in FERC's Plan. If perceptible flow is present during ephemeral stream crossings, Gateway has committed to using dry-ditch open-cut crossing methods (either

flume or dam and pump). Such methods allow for the trench to cross the streambed in a “dry” state, with the water being temporarily diverted from the work area, resulting in fewer downstream impacts related to sedimentation and turbidity.

The installation of pipeline underneath the waterbodies via HDD would require temporary surface disturbance at drill entry and exit points to accommodate construction equipment. To reduce construction time and potential construction effects, such as sediment erosion and stormwater runoff, drilling would occur from both sites, connecting under the river. Gateway would install the pipe between 25 to 30 feet under the waterbody, and the entry and exit points would be set back at least 450 feet from the waterbody feature on both sides.

The DOT requires pipelines to be hydrostatically tested to ensure proper integrity. About 1,357,000 gallons of water would be required to complete hydrostatic testing for the trench-laid pipeline, and an additional 270,000 gallons of water would be required to test the HDD pipe segments. All test water would be purchased from two commercial wells and trucked in to Project sites for use. After use, Gateway would dispose of this water by discharging it in a well-vegetated upland area away from the waterbodies near MP 23.3, in accordance with FERC’s Procedures and Gateway’s Karst Plan and HDD Plan.

Gateway’s Project-specific SPCC Plan, Karst Plan, and HDD Plan are consistent with the FERC’s Procedures. We have reviewed the plans and find them acceptable. Mitigation measures to reduce stormwater run-off and erosion include discharging any uncontaminated trench water into a well-vegetated upland area using geotextile filter backs or straw bale dewatering construction, reseeding and mulching disturbed areas within six working days, installing sediment fences on the perimeters of workspaces to protect the nearby wetland, minimizing vegetation disturbance by locating workspaces within already disturbed areas to the greatest extent practicable, and not conducting any routine vegetation clearing or mowing between the proposed HDD entry and exit points.

We conclude that impacts on surface waters would not be significant and that Gateway’s implementation of the FERC Plan and Procedures, as well as using the HDD method, crossing during dry periods to avoid in-water construction work, or using dry-ditch crossing methods during times of perceptible flow would adequately minimize impacts on surface water resources.

### **3.3 Wetlands**

Gateway’s July 2018 wetland delineation indicated that one small (0.02 acre) palustrine emergent wetland was present within the Project survey corridor on the banks of the Delaware River near MP 21.7. Gateway has proposed to cross the Delaware River using the HDD method, which would also avoid this wetland. No other wetlands are present within or adjacent to the proposed Project workspaces or access roads. We conclude that there would be no impacts on wetlands.

## **4. Fisheries, Vegetation, Wildlife, and Threatened and Endangered Species**

### **4.1 Fisheries**

Gateway would cross three perennial waterbodies that support fisheries resources (see table 3). However, Gateway's commitment to cross these rivers via HDD would avoid any impacts on fisheries within these waterbodies.

### **4.2 Vegetation and Wildlife**

The Project would cross open, sparsely vegetated desert land and cattle grazing areas. Open land is characterized by bare ground, grasses, flowering plants, and shrub vegetation cover, which generally provides valuable foraging and shelter habitat for a variety of wildlife species.

Construction and operation of the Project would result in various short-term impacts on wildlife species. Potential short-term impacts on wildlife include the displacement of individuals from construction areas and adjacent habitats and the direct mortality of small, less-mobile reptiles, amphibians, fish, and invertebrates that would be unable to leave the construction area.

Although individuals of some wildlife species would be affected by the Project, most of the impacts on wildlife would be short-term and limited mostly to the construction period. The Project would not permanently alter the character of the available habitat. Areas adjacent to the Project site provide similar and ample habitats for any displaced wildlife. Given that the majority of the disturbed areas would be restored and allowed to return to pre-construction use, and that adjacent areas would provide temporary similar habitat for displaced wildlife, we conclude that construction and operation of the Project would not have a significant impact on local wildlife populations or habitat.

Desert and semi-desert land (which includes mixed cacti, thorn and mesquite scrub, creosote bush, grassland, and steppe) comprising 231.2 acres; 1.2 acres of shrub and herbaceous open land; and 1 acre of woodland would be temporarily disturbed for construction. All but 2.2 acres of this construction area would be restored to preconstruction condition. The vegetated areas that would not be restored (i.e., permanently converted to non-vegetated, natural gas use) include the meter station at MP 0.0 and the interconnection and pig receiver at MP 23.3.

In total, the Project would require 334.3 acres of land for construction activities and 99.5 acres of new land for permanent operation of the Project. As noted above, the vast majority of the permanent right-of-way would be allowed to return to preconstruction vegetation cover. Although the permanent right-of-way would revegetate, we consider this a long-term impact because vegetation growth in these habitats can be very slow. Gateway has minimized impacts on vegetation and wildlife

habitat by proposing to construct the Project collocated with existing rights-of-way where possible (about 82 percent of the Project would be collocated), constructing aboveground facilities adjacent to already disturbed areas where possible, and by using the HDD method to cross underneath waterbodies with water flow. Therefore, we conclude no significant impacts on vegetation or wildlife would occur.

### 4.3 Special Status Species

#### Migratory Birds

Migratory bird species nest in the United States and Canada during the summer months and then migrate south to the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Some species migrate from breeding areas in the north to the Gulf Coast for the non-breeding season. Migratory birds are protected under the Migratory Bird Treaty Act, which prohibits the intentional take or killing of individual migratory birds, their eggs and chicks, and active nests. The Act provides that it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg of any such bird.

Executive Order 13186 (January 2001) directs federal agencies to consider the effects of agency actions on migratory birds and determine where unintentional take is likely to have a measurable negative effect on migratory bird populations, and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the FWS. Executive Order 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population level impacts.

On March 30, 2011, the U.S. Fish and Wildlife Service (FWS) and the Commission entered into a Memorandum of Understanding that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies. This voluntary Memorandum of Understanding does not waive legal requirements under the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, Endangered Species Act (ESA), Federal Power Act, Natural Gas Act, or any other statute, and does not authorize the take of migratory birds.

The FWS has established a list of Birds of Conservation Concern, which is a subset of migratory bird species that have particular management challenges, including human-interest conflicts and low population numbers. The FWS identified 29 such species that could use habitat within the Project area. Construction could result in direct impacts on birds in the right-of-way, and noise from Project activities could affect nearby nesting birds, if present. One of the 29 species (burrowing owl) is also a state-listed species of special concern, which are discussed in the State-Listed Threatened, Endangered, and Special Status section, below.

## B. ENVIRONMENTAL ANALYSIS

---

The general migratory bird nesting season in the Project area is from March to August. Gateway's proposed construction schedule of spring and early summer of 2019 would overlap the nesting season for many bird species and could impact migratory birds, including disturbance due to noise, and possible mortality and destruction of nests. These impacts would be limited to a single nesting season during Project construction. Most tree-nesting species would not be impacted, as very little forested habitat would be crossed by the Project. Construction would also reduce the amount of habitat available for foraging and would temporarily displace birds into adjacent habitats; however, there is a high proportion of adjacent similar habitat available in the Project area. Implementation of the construction and restoration measures in FERC's Plan would reduce the extent and duration of impacts on migratory bird habitat by restoring all areas not necessary to be maintained for operation to preconstruction conditions. In addition, vegetation maintenance during Project operations would be conducted outside of the peak nesting season, per the requirements of our Plan, which would avoid direct impacts on migratory birds. Based on these measures, we conclude that the Project would not significantly impact migratory birds or result in population-level impacts.

To further reduce potential impacts on migratory birds, Gateway plans to deploy bird monitors ahead of the mowing and clearing crews during Project construction to identify nests with eggs or young to avoid direct impacts on nesting birds. The Texas Parks and Wildlife Department and the New Mexico Department of Game and Fish have established recommended buffer zones around active nests (letters dated September 26 and September 28, 2018, respectively). If active nests were encountered, Gateway plans to suspend construction activities until either adequate buffer zones could be established to minimize disturbance to nesting birds (more than 100 feet away from songbird and raven nests, and 0.25 mile from raptor nests); or, qualified biologist or wildlife rehabilitator could relocate the nest after consultation with the state and with the FWS. In correspondence dated November 30, 2018, the FWS New Mexico Ecological Service Field Office, which is the lead office for this consultation, indicated that the proposed conservation measures were sufficient to protect migratory birds, and that no further consultation with the FWS was necessary. In a December 18, 2018 phone call, FWS staff confirmed that no further consultation was required for migratory birds.

### Federally Listed Threatened and Endangered Species

Section 7 of the Endangered Species Act ensures that any actions authorized, funded, or carried out by the agency would not jeopardize the continued existence of a federally listed threatened or endangered species or any of its designated critical habitat. The FERC, as the lead federal agency that would authorize the Project, is required to consult with the FWS to determine if designated critical habitat or federally listed species could be affected by the Project.

The FWS identified 18 federally listed threatened, endangered, candidate, or conservation concern species as potentially occurring within the Project area (two letters

## B. ENVIRONMENTAL ANALYSIS

---

to Gateway dated September 7, 2018). According to our December 18, 2018 call with the FWS, one of these species (the yellow-billed cuckoo) is listed as threatened, but only within the Rio Grande drainage. The listing status does not apply to the Pecos River drainage, crossed by the Project. The remaining 17 species are presented and described in table 4. The FWS has not designated any critical habitat within the counties crossed by the Project.

Gateway conducted pedestrian habitat surveys in 2018. Although no federally listed species were observed within the Project area, suitable habitat for several species was documented (Texas hornshell mussel, southwestern willow flycatcher, black-throated sparrow, golden eagle, Gypsum wild-buckwheat, Wright's marsh thistle, Pecos bluntnosed shiner, and Pecos gambusia).

Most of the federally listed species in table 4 do not have habitat crossed by the Project or are otherwise not expected to be affected due to the use of HDD crossing riparian habitats. Thus, we have concluded *no effect* for these species, Section 7 consultation for these species is complete, and they are not discussed further. Habitat for the conservation concern species golden eagle and black-throated sparrow would be crossed by the Project; however, Gateway's proposed measures to reduce impacts on migratory birds would provide protection for these species. The Wright's marsh thistle (candidate species) would also not be impacted, due to the use of HDD.

Habitat is or may be present for the federally listed southwestern willow flycatcher and Gypsum wild-buckwheat. Accordingly, we have determined that the Project *may affect, but is not likely to adversely affect* these two species. In correspondence dated November 30, 2018, the New Mexico Ecological Service Field Office, which is the lead office for this consultation, indicated that the proposed conservation measures were sufficient, and that no further consultation with the FWS was necessary. Specific to the southwestern willow flycatcher, the FWS indicated (phone call on December 18, 2018) that habitat crossed by the Project is marginal for this species and that no known nesting pairs have been documented in the Project area (the closest known nesting pair is in Rattlesnake Springs in Carlsbad Caverns National Park, about 20 miles away). Also during the December 18 call, FWS staff re-confirmed that no further consultation was required for ESA species. Therefore, Section 7 ESA consultation is complete.

### State-Listed Threatened, Endangered, and Special Status Species

Twenty-one state-listed endangered species, twenty-eight state-listed threatened species, and one state-listed candidate species could potentially occur within the Project area. Thirteen of the species (northern aplomado falcon, piping plover, least tern, southwestern willow flycatcher, Mexican spotted owl, Pecos bluntnose shiner, Pecos gambusia, Texas hornshell mussel, Guadalupe fescue, Kuenzler hedgehog cactus, Lee pincushion cactus, Sneed pincushion cactus, and Wright's marsh thistle) are also federally listed and are discussed above.

**B. ENVIRONMENTAL ANALYSIS**

Table 4 Federally Listed Species in the Project Area				
Common Name	Scientific Name	Status	Habitat	FERC Determination
<b>Birds</b>				
Least Tern	<i>Sterna antillarum</i>	Endangered	• Sparsely vegetated sandbars, shoreline salt flats	Species not expected; habitat not crossed. <i>No effect</i> <sup>a</sup>
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	• Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed- conifer and pine oak vegetation types	No suitable habitat present in Project area. <i>No effect</i>
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	Endangered	• These birds prefer open grasslands with scattered trees, in areas with low ground cover at elevations of 3,500 to 9,000 feet above mean sea level. They use yuccas and mesquite as nesting platforms	No suitable habitat present in Project area. <i>No effect</i>
Piping plover	<i>Charadrius melodus</i>	Threatened	• Sandflats or bare shorelines of rivers, lakes, and coasts	Species not expected; habitat not crossed. <i>No effect</i> <sup>a</sup>
Red knot	<i>Calidris canutus rufa</i>	Threatened	• Breeds in tundra, otherwise found near inlets, estuaries, and bays	Species not expected; habitat not crossed. <i>No effect</i> <sup>a</sup>
Southwestern Willow Flycatcher	<i>Empidonax trailii extimus</i>	Endangered	• Mixed stands of willow, cottonwood, box-elder, ash; water must be close by	Very little suitable habitat present; nesting pairs not anticipated. HDD entry and exit points would avoid riparian areas. <i>Not likely to adversely affect</i>
Black-throated sparrow	<i>Amphispiza bilineata</i>	Conservation Concern	• Desert scrub, often closely associated with creosote bush and other shrub species	Habitat present, but impacts would be minimized by migratory bird protections. <i>No adverse impacts</i>

**B. ENVIRONMENTAL ANALYSIS**

<b>Table 4 Federally Listed Species in the Project Area</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Habitat</b>	<b>FERC Determination</b>
Golden eagle	<i>Aquila chrysaetos</i>	Conservation Concern	•Open grassland	Habitat present, but impacts would be minimized by migratory bird protections. <i>No adverse impacts</i>
<b>Fish</b>				
Pecos bluntnose shiner	<i>Notropis simus pecosensis</i>	Threatened	•Aquatic	HDD would avoid impacts on habitat. <i>No effect</i>
Pecos gambusia	<i>Gambusia nobilis</i>	Endangered	•Aquatic	HDD would avoid impacts on habitat. <i>No effect</i>
<b>Mussels</b>				
Texas hornshell	<i>Popenaias popeii</i>	Endangered	•Aquatic	HDD would avoid impacts on habitat. <i>No effect</i>
<b>Flowering Plants</b>				
Guadalupe fescue	<i>Festuca ligulata</i>	Endangered	•Conifer-oak forests in Chihuahuan Desert at 1800 meters in elevation	No suitable habitat present in Project area. <i>No effect</i>
Gypsum wild-buckwheat	<i>Eriogonum gypsophilum</i>	Threatened	•Semi-arid climates close to Chihuahuan region of Desert Scrub Formation	Habitat present, although species not noted. <i>Not likely to adversely affect</i>
Kuenzler hedgehog cactus	<i>Echinocereus fendleri var. kuenzleri</i>	Threatened	•Limestone substrate in the lower fringes of pinyon-juniper woodland	No suitable habitat present in Project area. <i>No effect</i>
Lee pincushion cactus	<i>Coryphantha sneedii var. leei</i>	Threatened	•Semi-desert grassland in Tansil Limestone Formation	No suitable habitat present in Project area. <i>No effect</i>
Sneed pincushion cactus	<i>Coryphantha sneedii var. sneedii</i>	Endangered	•Semi-desert grassland in limestone on cliffs or ledges	No suitable habitat present in Project area. <i>No effect</i>
Wright's marsh thistle	<i>Cirsium wrightii</i>	Candidate	•Riparian habitats surrounding marshes, streams, ponds	Some habitat may be present, though species not noted. HDD entry and exit points would avoid riparian areas. <i>No effect</i>
<p>a These three bird species are occasional transients in the Project area, but do not nest there; no impacts, direct or indirect, are anticipated.</p>				

## B. ENVIRONMENTAL ANALYSIS

---

One bat species (spotted bat), one turtle species (western river cooter), six species of bird (brown pelican, bald eagle, neotropic cormorant, thick-billed kingbird, broad-billed hummingbird and black-capped vireo), two species of snake (arid land ribbonsnake and plain-bellied water snake), six species of fish (gray redhorse, blue sucker, Mexican tetra, Pecos pupfish, greenthroat darter, and bigscale logperch), and one species of snail (Pecos springsnail) are found within waterbodies or in riparian areas. Gateway is avoiding direct impacts on the waterway and its banks by using the HDD crossing method. This construction method would also avoid impacts on potential habitat used by the riparian and aquatic species.

Gateway has committed to using a monitor to look for nests before any vegetation was cleared and establish nest buffer zones. This would include the nests of western burrowing owl, aplomado falcon, peregrine falcon, arctic peregrine falcon, common ground-dove, Lucifer hummingbird, northern beardless-tyrannulet, Bell's vireo, gray vireo, Baird's sparrow, varied bunting, and zone-tailed hawk.

The black bear and gray wolf are wide-ranging, highly mobile species. They would likely avoid Project construction areas and temporarily relocate to nearby suitable habitat.

The Dune's sagebrush lizard, gray-banded kingsnake, mottled rock rattlesnake, Great Plains narrowmouth toad, Chihuahuan Desert lyre snake, mountain short-horned lizard, Texas horned lizard, eastern barking frog, black-tailed prairie dog, and ovate vertigo snail are less mobile and could become entrapped in excavations or could be inadvertently injured or killed by construction equipment. The temporary disturbance of local habitat is not expected to have population-level effects on state-listed species because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the Project area, and most of the disturbed habitat would return to pre-construction condition.

Additionally, the Project would be mostly collocated with existing rights-of-way to the greatest extent practicable. Long-term impacts from habitat alteration would be further minimized by the implementation of the FERC's Plan and Procedures, which would ensure revegetation of most areas disturbed by construction. Given Gateway's proposed mitigation measures, including its commitment to revegetate the right-of-way and temporary work areas, and the abundance of similar habitat adjacent to the Project area, we conclude that the Project would not have a significant impact on populations of state-listed species or habitat in the Project area.

## 5. Land Use, Recreation, and Visual Resources

Land use types affected by the Project include:

- **Open Land.** Includes vegetation, particularly shrubland which is the predominant land cover for all proposed Project facilities.

- **Industrial/Commercial Land.** Includes currently developed roadways (including two-track roads), utility corridors, and oil & gas facilities.

The construction of the proposed Project would require about 334.3 acres of land, including 213 acres for construction of the pipeline and 0.6 acre for construction of the aboveground facilities. The total acreage for operation of all Project facilities would be about 99.5 acres, including 84.6 acres for the pipeline and 0.6 acre for the aboveground facilities. Temporary and permanent land use impacts are summarized in table 5.

### **5.1 Residential Land and Planned Developments**

The Project does not cross residential areas or pass within 50 feet of a residence. The nearest residence to the Project is about 5,100 feet northwest of MP 0.7. No planned developments were identified in the vicinity of the Project (Eddy County, 2017). Residential or commercial developments are not likely to be proposed because of the rural nature of the area and heavy use for oil and gas activities.

### **5.2 Public Land**

The majority of the lands within the proposed aboveground facility sites, staging areas, and lands crossed by the proposed pipeline route are state lands managed by the New Mexico State Land Office (NM SLO). The remainder of lands impacted by the proposed Project facilities are privately owned. The Project does not cross lands managed by state or federal agencies in Texas. Table 6 provides a summary of land ownership along the pipeline route through New Mexico.

The pipeline right-of-way would be on or within 0.25 mile of NM SLO lands that have active agricultural, mineral, commercial, and hunting easement or leases. Hunting areas are discussed in Section 5.3. In total, five agricultural leases are crossed by the proposed pipeline right-of-way, and one active surface aggregate and stone mine is about 1 mile from the right-of-way (further discussed above in section B.1.2). Four commercial leases are crossed by the proposed right-of-way, and three are within 0.25 mile of the right-of-way. The pipeline is not anticipated to impact land use on these lease areas after construction; therefore, no permanent impacts on public lands are anticipated.

In addition, as required by the NM SLO, Gateway would file right-of-way easement applications for portions of the Project on NM SLO lands, including temporary construction right-of-way and temporary work areas. Gateway has consulted with the NM SLO to identify the final route, and together, Gateway and NM SLO identified environmental restoration conditions that would apply to NM SLO lands in addition to measures included in the Plan and Procedures.

**B. ENVIRONMENTAL ANALYSIS**

<b>Table 5</b>						
<b>Land Uses Affected by Construction and Operation of the Project by County (in acres) <sup>a, b, c, d</sup></b>						
Section/County/Facility	Industrial/Commercial Land <sup>e, f</sup>		Open Land		Total	
	Construction	Operation	Construction	Operation	Construction	Operation
<b>Pipeline Right-of-way</b>						
Mainline – Eddy County, New Mexico	5.5	2.3	172.6	68.5	178.1	70.9
Mainline – Culberson County, Texas	2.0	0.8	32.9	12.9	34.9	13.7
<b>Additional Temporary Workspaces</b>						
Eddy County, New Mexico	0.4	0.0	14.2	0.0	14.6	0.0
Culberson County, Texas	0.0	0.0	5.6	0.0	5.6	0.0
<b>Temporary and Permanent Access Roads</b>						
Temporary Access Roads	83.3	0.0	2.8	0.0	86.2	0.0
Permanent Access Roads	10.9	10.9	3.4	3.4	14.3	14.3
<b>Aboveground Facilities</b>						
Meter Station including MLBV and pig launcher (MP 0.0)	0.0	0.0	0.4	0.4	0.0	0.4
Mainline Block Valve (MP 15.0)	0.0	0.0	0.0	0.0	0.0	0.0
Gateway Interconnect including MLBV and pig receiver (MP 23.3)	0.0	0.0	0.2	0.2	0.0	0.2
<b>Aboveground Facilities Subtotal</b>	<b>0.0</b>	<b>0.0</b>	<b>0.6</b>	<b>0.6</b>	<b>0.0</b>	<b>0.6</b>
<b>PROJECT TOTAL</b>	<b>102.1</b>	<b>14.0</b>	<b>232.1</b>	<b>85.4</b>	<b>334.3</b>	<b>99.5</b>
MLBV = mainline block valve						
<p>a The numbers in this table have been rounded for presentation purposes. As a result, the totals may not reflect the sum of the addends in all cases.</p> <p>b Based on USDA National Agricultural Statistics Service Cropland Data Layers and verified by aerial photography and field observations.</p> <p>c Construction and operational impacts are based on an 80-foot-wide construction right-of-way and a 30-foot-wide permanent right-of-way, respectively. Construction right-of-way does not include portions of the temporary construction right-of-way avoided by the six horizontal directional drills. Operation acreage is based on a 30-foot-wide permanently maintained right-of-way and includes the MLBV site at MP 15.0 (&lt;0.1 acres).</p> <p>d Acreage for the pig launcher at MP 0.0 is not shown on the table as this facility would be within the permanent right-of-way. Similarly, acreage is not provided for the pig receiver at MP 23.3 as this facility would be within Gateway's Interconnect facilities. Acreage is also not provided for the proposed MLBV to be constructed at MP 15.0 because this facility would be constructed and operated within the pipeline construction and permanent rights-of-way, respectively.</p> <p>e Includes currently developed roadways (including two-track roads), utility corridors, and oil &amp; gas facilities. Identified using Google Earth (Imagery date 11/2/17)</p> <p>f Barren Land is included in Developed/Open Space because of the very small amount of land categorized as Barren Land crossed (less than 0.1 acre).</p>						

**B. ENVIRONMENTAL ANALYSIS**

Table 6 Land Ownership Affected by Construction and Operation of the Project by New Mexico County (in acres)			
Ownership/Facility	MP to MP	Construction (Acres) <sup>a</sup>	Operation (Acres) <sup>b</sup>
<b>NM SLO</b>			
Mainline A	0.67 to 2.67	11.1	3.6
Mainline B	3.20 to 8.87	57.3	20.6
Mainline C	10.18 to 11.21	10.6	3.7
Mainline D	11.72 to 19.50	88.8	32.4
<b>NM SLO Totals</b>		<b>167.8</b>	<b>60.3</b>
<b>Private Ownership</b>			
Mainline (remaining) and Aboveground Facilities	All remaining mainline and aboveground facilities	66.2	24.9
a Construction acres includes all areas that would be impacted by construction, except access roads (including the permanent easement).			
b Operation acres includes all areas that would be impacted by operation, except access roads.			

**5.3 Recreation and Special Use Areas**

The proposed pipeline would not cross or pass within 0.25 mile of any designated recreation or special use areas including the following: national or state forests; wild and scenic rivers; national wildlife refuges; national wilderness preservation system lands; waterfowl production areas; state nature preserves; state recreation areas or trails; state game management areas; registered natural landmarks; national or state scenic byways; Indian reservation lands; state, county, or local parks; or campgrounds. Federal lands managed by the U.S. Bureau of Land Management are within 0.25 mile of the Project facilities.

According to the NM SLO online hunting access information, pipeline right-of-way and temporary work areas would be on NM SLO lands with public hunting access that is just south of County Road 396 (Black River Village Road) and the Black River. However, that tract is also covered by commercial and agricultural leases, and oil and gas equipment are present onsite in an area that has been withdrawn from hunting. Because the tract of land is already impacted by oil and gas activities and because the pipeline would be underground after construction, impacts on hunting are not anticipated at this location after construction of the Project.

Gateway would consult with the NM SLO to identify any potential temporary use restrictions during construction of the Project. Restrictions during typical operations are not anticipated because the pipeline would be underground. If construction is planned to occur during hunting seasons, Gateway would consult with the NM SLO to identify methods of notifications and what use restrictions may be necessary. Methods of notification are anticipated to include informing the NM SLO of the construction schedule in this area (so inquiring hunters may be informed of any use restrictions), and posting notification signs at access road entry points.

Construction of the Project is not likely to have an impact on outdoor recreation activities because all facilities would be on open lands characterized by oil and gas production. Traffic and noise associated with construction activities may impact activities such as hunting; however, these impacts would be local and temporary as construction proceeds through any given area. Furthermore, opportunities to engage in outdoor recreation activities would be available in surrounding areas.

### **5.4 Visual Resources**

The proposed Project is in an area characterized by extensive oil and gas development. A network of pipelines, compressor stations, meter stations, and access roads are commonly visible in the landscape throughout the Project area. There are few residences in the general vicinity (within 1 mile) of the Project, and the pipeline route does not cross designated scenic areas or recreational areas. In addition, although the proposed pipeline would cross the Black River and Red Bluff Draw, no recreation sites were identified associated with these waterbodies.

Most visual and aesthetic impacts associated with the Project would be limited to the period of active construction as a result of construction equipment, personnel, and disturbed soil. After pipeline construction is complete, the landscape would be re-contoured to as near pre-construction conditions as practicable and revegetated.

Visual impacts from the construction of aboveground facilities would be negligible due to the presence of existing oil and gas facilities throughout the Project area. No residences are in the immediate vicinity of the aboveground facilities, and they are not expected to be visible from residences or public areas with the possible exception of travelers passing on nearby roads.

### **5.5 Traffic**

Gateway would utilize existing roadways for right-of-way access. Local roads could experience higher levels of traffic from construction workers, equipment, and materials delivery during morning and evening peak travel periods. A temporary increase in traffic is expected from commuter (worker) traffic and from the transportation of equipment and materials for construction. The initial construction staging, which would involve transporting the bulk of the construction equipment and materials to areas along the Project route, and the daily transportation of additional equipment and materials may temporarily affect local transportation systems. Traffic patterns could occasionally be affected because the route would encounter a number of roads and intersections. The transportation of equipment and materials would be consolidated through planning and coordination to limit the number of separate vehicle trips.

## 6. Cultural Resources

Section 106 of the National Historic Preservation Act, as amended, requires the FERC to take into account the effect of its undertakings on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation an opportunity to comment. Gateway, as a non-federal party, is assisting the FERC in meeting our obligations under Section 106 and its implementing regulations at 36 CFR 800.

Gateway completed a cultural resources survey for the Texas portion of the Project and provided the resulting *Phase I Cultural Resources Survey* report (Phase I report) to the FERC and Texas State Historic Preservation Office (SHPO). Approximately 241.5 acres were surveyed, including a 300-foot-wide corridor for the pipeline (except between MPs 20.2 and 23.1, where a 350- to 600-foot wide corridor was surveyed), a 50-foot-wide corridor for access roads, and extra workspace including storage yards and staging areas. No cultural resources were identified as a result of the survey. In a letter dated September 4, 2018, the Texas SHPO requested revisions to the Phase I report. Gateway provided a revised Phase I report to the FERC and SHPO. As a result of the comments provided by the SHPO, the report now identified two abandoned historic railroad grade sections (41CU799 and 41CU804) crossed by an existing access road proposed for Project use. Because the access road had been built over the railroad grades with fill and preserved the grades, Gateway recommended that the Project would not have an adverse effect on the grades. In a letter dated October 31, 2018, the Texas SHPO concurred that the Project would not have an adverse effect on historic properties, but requested additional revisions to be provided in a revised final report. Gateway provided a revised final report, but has not yet provided the SHPO's comments on the revised final report.

Gateway completed a cultural resources survey for the New Mexico portion of the Project, and provided the resulting *Class III Cultural Resources Survey* report (Class III report) to the FERC, New Mexico SHPO, and NM SLO. Approximately 658.4 acres were surveyed including a 300-foot-wide corridor for the pipeline, a 100-foot-wide corridor for access roads, and extra workspace. The survey resulted in the re-evaluation of seven previously recorded archaeological sites (LA159019, LA172574, LA174378, LA188392, LA188393, LA188394, and LA188462), and the identification of one newly recorded archaeological site (LA191832) and two newly recorded segments of the historic, now abandoned, Southern Canal system (HCPI33159 and HCPI40375). Nine isolated finds were also identified. Three of the sites (LA159019, LA172574, and LA174378) were previously recommended or determined eligible for the NRHP. Both of the canals were unevaluated for NRHP eligibility. The remaining sites and isolated finds were recommended as not eligible for the NRHP.

Site LA159019, a Mogollon and Unspecified Plains Nomadic habitation site, is considered officially eligible for the NRHP. Gateway would HDD beneath the site, but in order to do so, a 230-foot-long extension to an existing access road would need to be

## B. ENVIRONMENTAL ANALYSIS

---

built through the site. Although the road would not be used as such after construction, it overlaps an area that would become part of the permanent right-of-way for the Project. Gateway has proposed to construct the road by using protective mats through the site in this area to avoid impacting the underlying site, and place fencing and signage along the road to prevent inadvertent encroachment. Site LA172574, an Archaic open camp site, has been previously determined eligible for the NRHP. Gateway would avoid the site by HDD. Site LA174378, a prehistoric lithic scatter with features, has been previously recommended as eligible for the NRHP. An existing bladed access road through the site is proposed for Project use. Gateway would place fencing and signage along the road to prevent inadvertent encroachment on portions of the site outside the road limits. Gateway would avoid the canal segments by HDD.

Sites LA188392, LA188393, LA188394 were pre-contact artifact scatters, previously determined or recommended as not eligible for the NRHP. A small portion of Site LA188462, a multicomponent site officially eligible for the NRHP, was identified within the survey corridor, but would be avoided by the construction workspace. Site LA191832, a newly recorded historic artifact scatter associated with an historic work camp with a possible privy feature, was recommended as not eligible for the NRHP.

In an undated letter, the New Mexico SHPO indicated it had no particular concerns about the eligibility recommendations or previous determinations for properties in the surveyed areas, but requested revisions to the report. Gateway provided a revised Class III report to the FERC, SHPO, and NM SLO. Gateway has not yet filed the New Mexico SHPO's or NM SLO's comments on the revised Class III report. Therefore, **we recommend that:**

- **Gateway should not begin construction of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads until:**
  - a. **Gateway files with the Secretary:**
    - (1) **the Texas SHPO's comments on the revised final Phase I Cultural Resources Survey report;**
    - (2) **the New Mexico SHPO's comments on the revised Class III Cultural Resources Survey report;**
    - (3) **any further studies and/or avoidance/treatment plan(s), as required; and comments on the studies and/or plans from the appropriate SHPO;**
  - b. **the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and**

- c. **FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Gateway in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.**

**All materials filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: “CUI//PRIV - DO NOT RELEASE.”**

In a September 27, 2018 letter response to our NOI, the New Mexico SHPO indicated that in the future, a consultation letter should be provided; if the FERC intended to authorize the applicant to initiate Section 106 consultation, its office needed to be notified; inquired whether the FERC had initiated consultation with the NM SLO and tribes; it was looking forward to consulting on the area of potential effects; requested information on all known ground-disturbing activities for the Project; it anticipated determinations of eligibility and effect from the FERC; and it would defer review of the unanticipated discovery plan. We note the SHPO’s preference for a letter and clarify that applicants are authorized to initiate consultation with SHPOs, in accordance with FERC regulations. Both the NM SLO and tribes have been contacted via our NOI. The SHPO has been provided a copy of the survey report containing information regarding the area of potential effects and ground disturbing activities associated with the Project. Regarding determinations of eligibility, we concur with the SHPO’s undated letter noted above. Effects on historic properties would be determined in consultation with the SHPO.

In a September 28, 2018 email response to our NOI, the New Mexico SHPO indicated it was looking forward to consulting on the area of potential effects, and requested information on all known ground disturbing activities for the Project, such as staging areas, temporary construction easements, bore pits for HDDs, and all road work. As noted above, the SHPO has been provided a copy of the survey report containing this information.

For the Texas portion of the Project, Gateway contacted the following Native American tribes, providing a Project description, mapping, and the Project Unanticipated Discovery Plan (see below), and also followed-up with the tribes: Alabama-Coushatta Tribe of Texas; Alabama-Quassarte Tribal Town; Apache Tribe of Oklahoma; Caddo Nation of Oklahoma; Cherokee Nation of Oklahoma; Comanche Nation of Oklahoma; Coushatta Tribe of Louisiana; The Delaware Nation; Kialegee Tribal Town; Kickapoo Traditional Tribe of Texas; Kickapoo Tribe of Oklahoma; Kiowa Tribe of Oklahoma; Mescalero Apache Tribe; Poarch Band of Creek Indians; Quapaw Nation; Seminole Nation of Oklahoma; Thlopthlocco Tribal Town; Tonkawa Tribe of Oklahoma; Tunica-Biloxi Tribe of Louisiana; United Keetoowah Band of Cherokee Indians; Wichita and Affiliated Tribes; and Ysleta del Sur Pueblo. For the New Mexico portion of the Project,

## B. ENVIRONMENTAL ANALYSIS

---

Gateway contacted the Fort Sill Apache Tribe of Oklahoma; Jicarilla Apache Nation; Mescalero Apache Tribe; Navajo Nation; Ohkay Owingeh (Pueblo of San Juan); Pueblo of Acoma; Pueblo of Cochiti; Pueblo of Isleta; Pueblo of Jemez; Pueblo of Laguna; Pueblo of Nambe; Pueblo of Picuris; Pueblo of Pojoaque; Pueblo of Sandia; Pueblo of San Felipe; Pueblo of San Ildefonso; Pueblo of Santa Ana; Pueblo of Santa Clara; Pueblo of Santo Domingo; Pueblo of Taos; Pueblo of Tesuque; Pueblo of Zia; Pueblo of Zuni; and Ute Mountain Ute Tribe.

On September 7, 2018, the Cherokee Nation of Oklahoma indicated the Project was outside its area of interest and deferred to other tribes that had an interest in the area. On August 29, 2018, the Pueblo of Acoma indicated it did not wish to comment on the Project. On August 21, 2018, the Pueblo of San Felipe requested information about the surveys conducted, and requested to be informed of discoveries during construction. On August 13 and 14, 2018, the Pueblo of Santa Ana indicated it had no comments or concerns. In an August 27, 2018 letter, the Ysleta del Sur Pueblo indicated that while it did not have any comments, it did not believe the Project would adversely affect any traditional, religious, or culturally significant sites of the Pueblo, but requested to be consulted if human remains or artifacts falling under the Native American Graves Protection and Repatriation Act were discovered during construction. No other comments have been received. We sent our NOI to these same tribes. In response to our NOI, in a September 25, 2018 letter, the Quapaw Nation indicated the Project was outside its area of interest and therefore did not desire to comment on the Project. No other responses to our NOI have been received from the tribes.

Gateway provided an Unanticipated Discovery Plan to address the unanticipated discovery of cultural resources and human remains during construction. We requested minor revisions to the plan. Gateway provided a revised plan which we find acceptable.<sup>8</sup>

## 7. Air Quality and Noise

### 7.1 Air Quality

Air quality would be affected by construction and operation of the Project. During construction, short-term emissions would be generated by operation of equipment, land disturbance, and increased traffic from worker and delivery vehicles for all locations. Operational emissions associated with the proposed Project would be minimal and result from fugitive component leaks and other pipeline blowdown events.

Ambient air quality is protected by federal and state regulations. Under the Clean Air Act and its amendments, the EPA has established National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), lead, nitrogen dioxide (NO<sub>2</sub>) ozone, particulate matter less than 10 microns (PM<sub>10</sub>), particulate matter less than 2.5 microns

---

<sup>8</sup> The final version of the Unanticipated Discovery Plan can be accessed via FERC's eLibrary at Accession no. 20181018-5085.

## B. ENVIRONMENTAL ANALYSIS

---

(PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). The New Mexico Environment Department and Texas Commission on Environmental Quality have the authority to implement permit programs under the Clean Air Act for the proposed Project facilities. These standards incorporate short-term (hourly or daily) levels and long-term (annual) levels to address acute and chronic exposures to the pollutants, as appropriate. The NAAQS include primary standards, which are designed to protect human health, including the health of sensitive subpopulations such as children and those with chronic respiratory problems. The NAAQS also include secondary standards designed to protect public welfare, including economic interests, visibility, vegetation, animal species, and other concerns not related to human health.

Air quality control regions (AQCRs) are areas established by the EPA and local agencies for air quality planning purposes, in which State Implementation Plans describe how the NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission reductions throughout the AQCR. Each AQCR, or smaller portion within an AQCR (such as a county), is designated, based on compliance with the NAAQS, as attainment, unclassifiable, maintenance, or nonattainment, on a pollutant by-pollutant basis. Areas in compliance or below the NAAQS are designated as attainment, while areas not in compliance or above the NAAQS are designated as nonattainment. Areas previously designated as nonattainment that have since demonstrated compliance with the NAAQS are designated as maintenance for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS. Areas that lack sufficient data to determine attainment status are designated unclassifiable and treated as attainment areas.

New Mexico and Texas have adopted all of the NAAQS directly. The Project area in Eddy County, New Mexico is part of the Pecos-Permian Basin Intrastate AQCR, while Culberson County, Texas is part of the El Paso-Las Cruces-Alamogordo Interstate AQCR, which are both in attainment for all pollutants. Therefore, a General Conformity assessment is not required.

### Greenhouse Gases

Greenhouse gases occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. GHGs are gases that absorb infrared radiation in the atmosphere, and an increase in emissions of these gasses has been determined by the EPA to endanger public health and welfare by contributing to human-induced global climate change. The most common GHGs emitted during fossil fuel combustion and natural gas transportation are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O). Emissions of GHGs are typically expressed in terms of CO<sub>2</sub> equivalents (CO<sub>2</sub>e), where the potential of each gas to increase heating in the atmosphere is expressed as a multiple of the heating potential of CO<sub>2</sub> over a specific timeframe, or its

global warming potential (GWP). The 100-year GWP of CO<sub>2</sub> is 1, CH<sub>4</sub> is 25, and N<sub>2</sub>O is 298. During construction and operation of the Project, these GHGs would be emitted from non-electrical construction and operational equipment, as well as from fugitive CH<sub>4</sub> leaks from the pipeline and aboveground facilities. Construction and operational emissions of GHGs are shown in tables 7 and 8.

On November 8, 2010, the EPA signed a rule that finalizes reporting requirements for the petroleum and natural gas industry under 40 CFR 98. Subpart W of 40 CFR 98 requires petroleum and natural gas facilities that emit 25,000 metric tons or more of CO<sub>2</sub>e per year to report annual emissions of specified GHGs from various processes within the facility. Construction emissions are not covered under the GHG Reporting Rule, but those related to the proposed Project are expected to be well below the 25,000 metric tons reporting threshold. Operational emissions from the proposed facilities are likewise not expected to exceed this threshold and be reported to the EPA. The EPA has expanded its regulations to include the emission of GHGs from major stationary sources under the Prevention of Significant Deterioration (PSD) program. The EPA's current rules require that a stationary source that is major for a non-GHG-regulated New Source Review pollutant must also obtain a PSD permit prior to beginning construction of a new or modified major source with mass-based GHG emissions equal to or greater than 100,000 tons per year (tpy) and significant net emission increases in units of CO<sub>2</sub>e equal to or greater than 75,000 tpy. There are no NAAQS or other significance thresholds for GHGs.

### **7.1.1 Regulatory Requirements**

#### New Source Performance Standards

The EPA promulgates New Source Performance Standards to establish emission limits and fuel, monitoring, notification, reporting, and recordkeeping requirements for stationary source types or categories that cause or contribute significantly to air pollution. There are no new stationary sources being constructed as part of this Project that would fall under these categories.

### **7.1.2 Construction Impacts and Mitigation**

Construction of the Project would result in short-term increases in emissions of some pollutants from the use of fossil fuel-fired equipment and the generation of fugitive dust due to earthmoving activities. Some temporary indirect emissions, attributable to construction workers commuting to and from work sites during construction and from on-road and off-road construction vehicle traffic, could also occur. Large earth-moving equipment and other mobile equipment are sources of combustion-related emissions, including criteria pollutants (i.e., NO<sub>x</sub>, CO, VOC, SO<sub>2</sub>, and PM<sub>10</sub>).

Gateway would mitigate exhaust emissions from construction equipment by requiring contractors to meet all air quality regulations and emission standards associated

## B. ENVIRONMENTAL ANALYSIS

with each piece of equipment, maintaining the equipment in accordance with the manufacturer’s recommendations and minimizing idling time of engines. The emissions in table 7 represent the combined emissions for each facility of construction equipment combustion, on-road vehicle travel, off-road vehicle travel, and earthmoving fugitives.

Construction related emission estimates were based on a typical construction equipment list, hours of operation, and vehicle miles traveled by the construction equipment and supporting vehicles for each area of the Project. These emission-generating activities would include earthmoving, construction equipment exhaust, on-road vehicle traffic, and off-road vehicle traffic. Gateway conservatively utilized emission factors from EPA’s AP-42, along with EPA’s NONROAD2008a and MOVES2014 emission modeling software.

Construction is proposed to take place between March and June 2019. Gateway filed a Fugitive Dust Control Plan which we reviewed and find acceptable. The air quality impacts of Project construction would be considered short-term and minimized by Gateway’s implementation of the fugitive dust control measures outlined in the Fugitive Dust Control Plan, such as watering exposed soil surfaces, covering areas susceptible to fugitive dust with mulch or tackifier, modifying the speed of truck and equipment traffic in disturbed areas and/or removing dirt from roadways. Following construction, air quality would revert back to previous conditions.

Given the temporary nature of construction, and the intermittent nature of construction emissions, we find that emissions from construction-related activities for the Project are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard, or significantly affect local or regional air quality.

<b>Facilities</b>	<b>NO<sub>x</sub></b>	<b>CO</b>	<b>VOC</b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>Total HAPs</b>	<b>GHG<sup>a</sup> (CO<sub>2e</sub>)</b>
<b>2019</b>								
Diesel Non-Road Equipment	0.74	0.28	0.06	0.05	0.04		0.01	178
Diesel and Gas On-Road Equipment	29.52	68.15	2.42	0.91	0.84		0.32	15,621
Construction Fugitive Dust	-		-	0.01	0.00		-	-
Roadway Fugitive Dust	-		-	7.65	0.76		-	-
Pre-Operational Purging	-		0.38	-	-	-	-	-
<b>Project Total</b>	<b>30.26</b>	<b>68.43</b>	<b>2.87</b>	<b>8.62</b>	<b>1.65</b>	<b>0.13</b>	<b>0.33</b>	<b>15,798.42</b>
a All construction emissions are expected to occur within three months, in 2019.								

### 7.1.3 Operational Impacts and Mitigation

The Project would not require the installation of any new sources of emissions and would not result in a significant increase to the operational emissions. Minor operational emissions would occur from equipment fugitive component leaks, integrity

## B. ENVIRONMENTAL ANALYSIS

---

management pigging operations, and pipeline blowdowns. Operational emission estimates are presented in table 8.

After completion of the Project, there would not be any sources of operational emissions other than fugitive leaks and blowdown operations. Considering the minimal operational emissions associated with the Project, no significant impact on air quality would be anticipated.

<b>Facility</b>	<b>VOC</b>	<b>CH4</b>	<b>GHG</b>
Aboveground Facilities	0.03	0.99	24.66
Pigging Operations	0.00	0.00	0.01
Pipeline	0.48	15.41	385.26
<b>Total</b>	<b>0.51</b>	<b>16.40</b>	<b>409.93</b>

### 7.2 Noise

Construction and operation of the Project would affect the local noise environment in the Project area. The ambient sound level of a region, which is defined by the total noise generated within the specific environment, is usually comprised of sounds emanating from both natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week, in part due to changing weather conditions and the impacts of seasonal vegetation cover.

Two measurements used by some federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level ( $L_{eq}$ ) and the day-night sound level ( $L_{dn}$ ). The  $L_{eq}$  is an A-weighted sound level containing the same sound energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The  $L_{dn}$  takes into account the duration and time the noise is encountered. Specifically, in the calculation of the  $L_{dn}$ , late night to early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 decibels (dB), to account for people's greater sensitivity to sound during the nighttime hours. The A-weighted scale (dBA) is used because human hearing is less sensitive to low and high frequencies than mid-range frequencies. For an essentially steady sound source that operates continuously over a 24-hour period and controls the environmental sound level, the  $L_{dn}$  is approximately 6.4 dB above the measured  $L_{eq}$ .

In 1974, the EPA published its Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Noise levels are expressed as decibels on the A-weighted scale (dBA) to put more emphasis on frequencies in the range that humans hear best. Because noise levels are perceived differently, depending on length of exposure and time of day, the day-night

sound level ( $L_{dn}$ ) takes into account the duration and time the noise is encountered. Specifically, the  $L_{dn}$  adds 10 dBA to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for a people's greater sensitivity to sound during the night. The EPA has indicated that an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSA), such as residences, schools, or hospitals. Also, in general, a person's threshold of perception for a perceivable change in loudness on the A-weighted sound level is about 3 dBA, whereas a 5 dBA change is clearly noticeable, and a 10 dBA change is perceived as either twice or half the loud.

There are no state, county, or city noise regulations associated with this Project.

### **7.2.1 Construction Noise Impacts and Mitigation**

Construction of the facilities would involve operation of general construction equipment and noise would be generated during the installation of the Project components. HDD activities would occur at six sites, none of which have NSAs within 0.5 mile, the closest being a residence approximately 5,100 feet northwest of the Project. Noise construction impacts would be short term, with HDD activities occurring between 30 and 40 days at entry and exit sites. Measures to mitigate construction noise would include compliance with federal regulations limiting noise from trucks, proper maintenance of equipment, and ensuring that sound muffling devices provided by the manufacturer are kept in good working condition.

Construction noise would be highly variable because the types of equipment in use at a construction site changes with the construction phase and the types of activities. Noise from construction activities may be noticeable at nearby NSAs. However, construction equipment would be operated on an as-needed basis during the short-term construction period. Further, Gateway's construction activities would primarily occur during daytime hours, between 7:00 a.m. to 9:00 p.m. Certain construction activities may require nighttime work, such as HDDs, operation of pumps at waterbody crossings, or tie-in activities; however, NSAs are not located in proximity to the proposed HDDs and construction activities would be episodic and temporary.

Because of the varied locations of activities, and that construction of the Project would be primarily limited to daytime hours and intermittent, we conclude construction noise would not have a significant impact on the environment.

### **7.2.2 Operational Noise Impacts and Mitigation**

The Project would be completely within rural/non-urban areas. There are no NSA in a 0.5-mile radius of any Project facility, and based on the types of aboveground facilities to be constructed, the noise generated would not result in a substantial increase

to the existing noise environment. We conclude that the Project would not result in significant noise impacts on residents and the surrounding communities.

## **8. Reliability and Safety**

A natural gas compressor station or aboveground interconnect site involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a leak, or rupture at the facility. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The modifications to the Project facilities must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent facility accidents and failures, including emergency shutdowns and safety equipment. The DOT's Pipeline and Hazardous Materials Safety Administration ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level.

The DOT provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. DOT federal inspectors perform inspections and enforce the pipeline safety regulations for interstate gas pipeline facilities in New Mexico and Texas.

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

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

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. There are two Class 1 areas within 100 kilometers of the Project. Carlsbad Caverns National Park is 24 kilometers away from the proposed

## B. ENVIRONMENTAL ANALYSIS

---

new meter station site, and Guadalupe Mountains National Park is 65 kilometers from this station site. Project facilities would be designed to meet existing Class requirements.

Part 192 also requires a pipeline operator to establish a written emergency plan that includes procedures to minimize the hazards in an emergency. Additionally, the operator must establish a continuing education program to enable the public, government officials, and others to recognize an emergency at the facility and report it to appropriate public officials. Gateway would provide the appropriate training to local emergency service personnel before the facilities are placed in service.

### High Consequence Areas

Under 49 CFR 192.903, operators must develop integrity management programs for natural gas transmission pipelines in High Consequence Areas (HCA). Definitions and identification of HCAs as defined in 49 CFR 192.903 are as follows:

“High consequence area” means an area may be defined in one of two ways. In the first method an HCA includes:

- A Class 3 location under Part 192.5; or
- A Class 4 location under Part 192.5; or
- Any area in a Class 1 or Class 2 location where the potential impact radius is greater than 660 feet (200 meters), and the area within a potential impact circle contains 20 or more buildings intended for human occupancy; or
- Any area in a Class 1 or Class 2 location where the potential impact circle contains an identified site.

In the second method, HCAs include any area within a potential impact circle which contains:

- 20 or more buildings intended for human occupancy, unless the exception in paragraph (4) applies; or
- An identified site.

There are no HCAs along the Project.

Facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with DOT’s safety regulations and Gateway’s standards, including the provisions for written emergency plans and emergency shutdowns. Gateway would provide the appropriate training to local emergency service personnel before the facilities are placed into service. The construction and operation of the modified facilities would represent a minimum increase in risk to the nearby public and we are confident that with implementation of the required design criteria for the design of these facilities, that they would be constructed and operated safely.

## 9. Cumulative Impacts

In accordance with NEPA and with FERC policy, we identified other actions in the vicinity of the proposed Project facilities and evaluated the potential for a cumulative impact on the environment. As defined by the CEQ, a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of the agency or party undertaking such other actions. Cumulative impacts can result from individually minor, but collectively significant actions, taking place over time. The CEQ guidance states that an adequate cumulative effects analysis may be conducted by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions. In this analysis, we consider the impacts of past projects within defined geographic scopes as part of the affected environment (environmental baseline) which were described and evaluated in the preceding environmental analysis. However, present effects of past actions that are relevant and useful are also considered. Table 9 summarizes the resource-specific geographic scopes that were considered in this analysis.

We have evaluated the cumulative impacts of the proposed Project consistent with other recent assessments issued by the Commission, and in accordance with recommended CEQ and EPA methodologies. The EPA also recommended that we follow the cumulative impacts analysis methodology *Guidance for Preparers of Cumulative Impact Analysis* developed jointly by the EPA, the Federal Highway Administration, and the California Department of Transportation<sup>9</sup> to assess cumulative impacts for the proposed Project.

Our cumulative effects analysis focuses on potential impacts from the proposed Project on resource areas or issues where the incremental contribution could result in cumulative impacts when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affects a resource also potentially affected by the Project;
- causes this impact within all, or part of, the Project area defined by the resource-specific geographic scope; and
- causes this impact within all, or part of, the time span of the proposed Project's estimated impacts.

As described in our analysis above within section B of this EA, constructing and operating the Project would temporarily and permanently affect the environment. However, with the exception of air and noise impacts, we concluded that nearly all of the Project-related impacts would be contained within or adjacent to the temporary

---

<sup>9</sup> See [http://www.dot.ca.gov/ser/cumulative\\_guidance/approach.htm](http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm).

## B. ENVIRONMENTAL ANALYSIS

---

construction workspaces. For example, erosion control measures included in FERC's Plan would keep disturbed soils within the work areas and would therefore not contribute to cumulative impacts on soil resources. Resources that could be affected outside the immediate Project area and are subject to our cumulative impacts review include watershed-level impacts on vegetation and wildlife; visual resources; traffic; air quality and noise (both construction-related and operational); and climate change.

The following resources would not be affected by the Project, and therefore no cumulative impacts would occur on:

- 100-year floodplains, as all floodplains would be crossed via the HDD method;
- active mineral resources or oil wells, as none are present within the immediate Project area;
- natural or scenic areas and parks, recreational areas, registered natural landmarks, designated National or State Wild and Scenic Rivers, special use areas, or visually sensitive areas, because none are within the Project area;
- operational air quality and noise, as no additional compression is proposed for the Project; or
- wetlands, as these resources are not present in the Project-affected area.

Table 9 below summarizes the resource-specific geographic boundaries considered in this analysis, and the justification for each. Actions outside of these boundaries were not evaluated because their potential to contribute to cumulative impacts diminishes with increasing distance from the Project.

### **9.1 Other Actions identified within the Geographic Scope**

Table 10 summarizes recent past, current, and reasonably foreseeable actions and affected resources potentially falling within one or more geographic scopes identified in table 9. Gateway obtained the information about present and future planned actions summarized in table 10 by consulting federal, state, and local agency and municipality websites.

### **9.2 Potential Cumulative Impacts of the Proposed Project**

The actions considered in our cumulative impact analysis are included based on the likelihood of their impacts coinciding with impacts from Gateway's Project, meaning the other actions have current or ongoing impacts or are "reasonably foreseeable." The actions we considered are those that could affect similar resources during the same timeframe as Gateway's proposed Project. The anticipated cumulative impacts of the Project and these other actions are discussed below.

**B. ENVIRONMENTAL ANALYSIS**

<b>Table 9 Resource-Specific Geographic Regions for Determining Cumulative Impacts of the Projects</b>			
<b>Resource(s)</b>	<b>Cumulative Impact Geographic Scope</b>	<b>Justification for Geographic Scope</b>	<b>Temporal Scope</b>
Geology and Soils	Area of disturbance of the Project and other activities that would be overlapping or abutting each other	Project impacts on geology and soils would be highly localized and limited to the immediate areas of disturbance during active construction. Cumulative impacts on geology and soils would only occur if construction of other projects were geographically overlapping or abutting Gateway’s Project.	Construction through successful revegetation
Surface Water and Groundwater	Hydrologic Unit Code (HUC)-12 watershed boundary	Impacts on surface waters can result in downstream contamination or turbidity; therefore, the geographic scope we used to assess cumulative impacts on waterbodies is the HUC-12 subwatershed crossed by the Project. We believe this scope would be the reasonable scope in which cumulative impacts could occur on surface waterbodies based on both project areas.	Construction through revegetation
Vegetation and Wildlife	HUC-12 watershed boundary	Vegetation clearing can temporarily reduce or permanently eliminate wildlife habitat; affecting both resident and transient species. The geographic scope we used to assess cumulative impacts on vegetation and wildlife are the HUC-12 subwatersheds the Project occupies. Watersheds can serve as a geographic proxy for impacts on vegetation and wildlife and provides a natural boundary, as recommended by CEQ.	Construction through revegetation; except areas of permanent conversion of vegetation (including permanent tree clearing)
Cultural Resources	Area of disturbance of the Project	Project impacts on cultural resources would be highly localized and limited to the immediate areas of disturbance during active construction.	Limited to construction duration unless unanticipated permanent impacts on cultural resources (buried or visual) occur
Land Use	1.0 mile from the Project workspaces	Project impacts on general land uses would be restricted to the construction workspaces. Land use in the project areas is mainly agricultural and open land. Therefore, we considered a 1.0-mile distance from the projects for the geographic scope because this would cover any land use impacts, which could be incremental to the Project.	Limited to construction except for areas of permanent land use conversion
Traffic	Affected counties	Due to the Project’s limited scope and the short construction duration, the geographic scope for assessing contributions to cumulative impacts on socioeconomics and traffic were evaluated on a county-wide basis.	Limited to construction duration
Air Quality – Construction	0.25 mile from all active construction (pipeline, road crossing, aboveground facilities)	Since construction emissions are localized, the geographic scope used to assess potential cumulative impacts on air from construction activities was set at 0.25 mile from either project area.	Limited to construction duration
Noise – Construction	NSAs within 0.25 mile of conventional construction activities and 0.5 mile of HDD activities.	The geographic scope for assessing potential cumulative impacts on construction noise was determined to be areas within proximity to the construction activities.	Limited to construction duration

**B. ENVIRONMENTAL ANALYSIS**

<b>Table 10</b>					
<b>Projects With Potential Cumulative Impacts on Resources Within the Study Area</b>					
Project	County/State	Distance and Direction from Project	Description	Construction and Operation Timeframe	Potentially Affected Environmental Resources
Sendero Midstream Partners, LP (non-jurisdictional facility)	Eddy, NM	Adjacent to Gateway Meter Station Site at MP 0.0	Sendero II gas Processing Plant addition	Construction ongoing, and operation anticipated to be contemporaneous with Gateway Project, June 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Cultural Resources, Land Use, Traffic, Air Quality, Noise
White Water Midstream (non-jurisdictional facility)	Culberson, TX	Adjacent to Gateway Interconnect Site at MP 23.3	New meter station and intrastate lateral pipeline	Construction and Operation anticipated to be contemporaneous with Gateway Project, March to June 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Cultural Resources, Land Use, Traffic, Air Quality, Noise
Plains All-American	Eddy, NM	Collocated for 6.6 miles, offset about 100 feet west of the Proposed Gateway Pipeline	New Crude Oil pipeline	Construction underway, late 2018 early 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Traffic
Plains All American	Eddy, NM	Adjacent to Proposed Gateway Pipeline near MP 15.0	Crude Oil tank farm storage facilities for new crude oil pipeline	Construction underway, late 2018 early 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Cultural Resources, Land Use, Traffic, Air Quality, Noise
Plains All-American	Eddy, NM	Adjacent to Proposed Gateway Pipeline near MP 15.0	Pumping station for new crude oil pipeline	Construction underway, late 2018 early 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Cultural Resources, Land Use, Traffic, Air Quality, Noise
EPIC NGL Transmission	Eddy, NM	Collocated 3.4 miles immediately adjacent east of the Proposed Gateway Pipeline	Phase one – NGL Pipeline	In service 2018	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Traffic
Devon Energy	Eddy, NM	Approximate distance is 2.5 miles east of Gateway Project at MP 9.6	Oil & Gas Well drilling and production	Drilling of wells are completed and additional wells are underway	Surface Water, Groundwater, Vegetation, Wildlife, Traffic
Oryx Midstream Services	Eddy, NM and Culberson, TX	Collocated for 5.6 miles, offset about 100 feet east of Proposed Gateway Pipeline	New crude oil pipeline	Construction ongoing and initial phase complete 2 <sup>nd</sup> half 2018 with final completion 2 <sup>nd</sup> Quarter 2019	Geology, Soils, Surface Water, Groundwater, Vegetation, Wildlife, Traffic
Targa Resources	Eddy, NM and Culberson, TX	2,200 feet east of the Proposed Gateway Pipeline	New high pressure gas gathering pipeline	Construction planned for various stages in 2019	Surface Water, Groundwater, Vegetation, Wildlife, Traffic

## **B. ENVIRONMENTAL ANALYSIS**

---

### Geology and Soils

The Project's impact on geology and soils would be highly localized and limited primarily to the Project footprint during the period of active construction. Cumulative impacts on geology and soils would only occur if other geographically overlapping or abutting projects were constructed at the same time (and place) as the Project (and the exposure of soils to erosion and sedimentation) occurs. The following projects identified in table 10 fit this definition: the two non-jurisdictional projects, the three Plains All-American projects, and the Onyx Midstream crude oil pipeline.

Neither Gateway's Project nor the other actions occurring within the geographic and/or temporal scopes of the Project would result in impacts on mineral resources. Cumulative impacts from geologic hazard impacts would only occur if other projects are constructed at the same time and place as the proposed facilities. Impacts on geologic resources and hazards could occur due to construction through karst terrain along the Project. Literature reviews indicated about 20 percent of the Project crosses areas of shallow bedrock; however, based on the type of bedrock and its weathered condition, Gateway would use mechanical methods such as jackhammers or rock teeth on backhoe bucket to excavate in this area. In the remaining areas of the Project, bedrock would not be impacted by the open cut or HDD construction methods.

In the event ground disturbing activities for the identified projects and non-jurisdictional facilities occur at the same time as the Gateway Project, there would be a minor cumulative increase in the potential for soil erosion from stormwater, high winds, or other soil impacts. However, Gateway's Project would implement best management practices to limit erosion and sedimentation. Gateway would implement FERC's Plan to minimize impacts on soils. We believe that the limited footprint and the measures Gateway would adopt to minimize impacts on soils would prevent any significant contribution to cumulative impacts on geology and soils from the proposed projects in consideration with the other identified actions.

### Surface Water Resources

Nearby projects that could contribute to cumulative impacts on surface water resources include the Plains All-American new crude oil pipeline, the Plains All-American crude oil tank storage farm, the Plains All-American pumping station for the new crude oil pipeline, the EPIC NGL Transmission pipeline, the Devon Energy oil and gas well drilling and production project, the Oryx Midstream Services new crude oil pipeline, and the Targa Resources new high pressure gas gathering pipeline. Although their workspaces do not overlap, they occur within the same watershed as the Gateway Project. These projects would likely overlap the time that the Gateway Project was being constructed; construction and operational acreages were not available for these projects.

These projects would likely be required to install erosion control measures or other best management practices as a standard construction practice or in compliance with state

## **B. ENVIRONMENTAL ANALYSIS**

---

or local permits in order to minimize impacts on water resources and wetlands. While many of the projects listed above may result in a large area of open-cut trenching, workspace clearing, and multiple waterbody crossings, based on the limited scale of the proposed Project (where flowing waterbodies would be crossed via HDD), the mitigation measures Gateway would implement, including the measures specified in the Plan and Procedures and SPCC Plan, as well as any state or local measures identified in permits, impacts from the Project are not expected to significantly contribute cumulatively to impacts on water resources.

### Groundwater Resources

Nearby projects that could contribute to cumulative impacts on groundwater resources include the Plains All-American new crude oil pipeline, the Plains All-American crude oil tank storage farm, the Plains All-American pumping station for the new crude oil pipeline, the EPIC NGL Transmission pipeline, the Devon Energy oil and gas well drilling and production project, the Oryx Midstream Services new crude oil pipeline, and the Targa Resources new high pressure gas gathering pipeline.

As indicated in section B.3.1, the depth to groundwater is deeper than the trench excavations for open-trench construction. Consequently, impacts from Gateway's proposed Project on groundwater would likely be limited only to HDD activities. There is a chance that HDD construction associated with the Project, in combination with HDD construction associated with other projects identified in table 10, could result in temporary cumulative impacts within the aquifers if the HDD activities occur concurrently or within several days of one another. If temporary impacts occur, it would likely be limited to short-term turbidity visible in groundwater via potential loss of HDD fluids in karst areas. We also anticipate that implementation of Gateway's HDD Plan, Karst Plan, and SPCC Plan would prevent or minimize the opportunity for and necessitate immediate control and clean-up of spills of fuels, lubricants, or other hazardous material, and would therefore minimize the opportunity for cumulative impacts that could result if other actions were to also result in spills. For these reasons, we conclude that any contribution to cumulative impacts on groundwater from the proposed projects would be negligible.

### Vegetation and Wildlife

Construction of the Project is expected to have temporary and permanent impacts on vegetation. Nearby projects that could contribute to cumulative impacts on vegetation, wildlife, or special status species include the Plains All-American new crude oil pipeline, the Plains All-American crude oil tank storage farm, the Plains All-American pumping station for the new crude oil pipeline, the EPIC NGL Transmission pipeline, the Devon Energy oil and gas well drilling and production project, the Oryx Midstream Services new crude oil pipeline, and the Targa Resources new high pressure gas gathering pipeline. However, given the relatively small acreage associated with permanent impacts on vegetation at the Project aboveground facilities, and the abundance

## **B. ENVIRONMENTAL ANALYSIS**

---

of vegetation within the general vicinity of Eddy County, New Mexico and Culberson County, Texas, the proposed Project is expected to contribute only minor cumulative impacts on vegetation.

Disturbance during construction is expected to cause short-term displacement of wildlife from, in, and near the construction workspace and mortality of wildlife that cannot avoid construction disturbance. All of the projects identified in table 10 are within the same geographic scope and timeline as the proposed Project and may contribute cumulatively to impacts on wildlife. However, based on the short-term and temporary nature of construction, and the abundance of similar habitat nearby, impacts from the Project are not expected to significantly contribute cumulatively to impacts on wildlife (including special status species). In addition, projects defined as federal actions would have to adhere to Section 7 of the ESA and consult with the FWS to avoid or minimize impacts on federally listed species.

### Land Use

The Project and several other pipeline projects listed in table 10 would result in both temporary and permanent modifications to existing land uses. Several pipelines are adjacent or collocated with the proposed Gateway Project route (about 70 percent of the proposed route) along existing utility corridors established by the NM SLO. Overall about 82 percent of the Project is collocated along existing pipelines or utility corridors. Permanent impacts on land use associated with the Project would be minimal as the land impacted by pipeline construction of the Project facilities would be allowed to revert to pre-construction uses following construction, except for the small permanent footprints related to the proposed aboveground facilities outside of existing infrastructure (e.g., block valves, pigging facility).

Following construction, the affected areas along the pipeline route would be restored and relinquished back to the landowner without restrictions except for the new permanent right-of-way. Because a relatively small area of land used by the Project would be permanently converted to another land use type, the Project would contribute negligibly to overall impacts on land use within the geographic scope.

### Traffic

As described in section B.5.5, traffic impacts from Project construction are expected to be minimal. Traffic levels and congestion in Project areas may be affected during the 6-month construction period due to personnel movement and materials and equipment deliveries. If this takes place during the same time period as other active projects listed in table 10, there could be a cumulative impact on local traffic. However, we would expect the projects that involve considerable use of local road systems to have traffic management plans, and that related impacts would be short term and minor. We conclude that the Project would result in a minimal cumulative impact on traffic within the geographic scope.

## **B. ENVIRONMENTAL ANALYSIS**

---

### Cultural Resources

Cumulative impacts would occur if the Gateway Project and another project were to result in overlapping effects on a cultural resource. Projects defined as federal actions would have to adhere to Section 106 of the National Historic Preservation Act and include mitigation measures designed to avoid or minimize additional impacts on cultural resources. Non-federal actions would need to comply with mitigation measures required by the affected states. Because Gateway would be required to implement treatment measures if historic properties would be adversely affected, impacts on cultural resource would be minimized and would not contribute to significant cumulative impacts on cultural resources.

### Construction Air Quality and Noise

Concurrent construction and operation of the projects and other actions in the vicinity of the same NSA could result in cumulative sound level impacts. Noise impacts from the Project as well as the other actions listed in table 10 above would only occur during construction activities. Temporary cumulative impacts on noise could occur if a project is actively constructed within the immediate vicinity and at the same time as construction of Gateway's Project. Based on the intermittent and temporary duration of construction activities, we conclude that there would be no significant impact to sound levels during construction of the Project.

Construction emissions from Gateway's Project and the projects in table 10 would be short term and localized to the Project area. Other projects in the vicinity would have to adhere to federal and state ordinances, and with Gateways proposed mitigation measures, we conclude there would be no significant cumulative impact for construction air emissions.

### Climate Change

Climate change is the change in climate over time, and cannot be represented by single annual events or individual weather anomalies. While a single large flood event; a particularly cold summer; or warm winter are not necessarily strong indications of climate change; a series of floods or warm years that statistically change the average precipitation or temperature over years or decades may indicate climate change. However, recent research has begun to attribute certain extreme weather events to climate change.

Climate change is driven by accumulation of GHGs in the atmosphere primarily through combustion of fossil fuels (coal, petroleum, and natural gas), combined with agriculture and clearing of forests. These impacts have accelerated throughout the end of the 20th and into the 21st century, and as a result, the U.S. and the world are warming; global sea level is rising and acidifying; and certain extreme weather events are becoming more frequent and more severe. Climate change is a global concern; however, for this

## B. ENVIRONMENTAL ANALYSIS

---

analysis, we will focus on the potential cumulative climate change impacts on the Project areas.

Southwest region (U.S. Global Change Research Program, 2017a and 2017b; Melillo, 2014; National Oceanic and Atmospheric Administration, 2017):

- snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing water supply reliability for cities, agriculture, and ecosystems;
- the Southwest produces more than half of the nation's high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and increasing competition for scarce water supplies will displace jobs in some rural communities;
- increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas;
- flooding and erosion in coastal areas are already occurring even at existing sea levels and damaging some California coastal areas during storms and extreme high tides. Sea level rise is projected to increase as Earth continues to warm, resulting in major damage as wind-driven waves ride upon higher seas and reach farther inland; and
- projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90 percent of the region's population. Disruptions to urban electricity and water supplies will exacerbate these health problems.

The FERC staff has presented GHG emissions associated with construction and operation of the Project in section B.8.5. There is no generally accepted significance criteria for GHG emissions. In addition, we cannot determine the Project's incremental physical impacts on the environment caused by GHG emissions. Therefore, we cannot determine whether the Project's contribution to climate change would be significant.

The construction and operation would increase the atmospheric concentration of GHGs, in combination with past and future emissions from all other sources, and contribute incrementally to future climate change impacts. There is no standard methodology to estimate what extent, a project's incremental contribution to greenhouse gas emissions would result in physical effects on the environment for the purposes of evaluating the Project's impacts on climate change, either locally or nationally. Further, we cannot find a suitable method to attribute discrete environmental effects to greenhouse gas emissions. We have looked at atmospheric modeling used by the Intergovernmental Panel on Climate Change, EPA, National Aeronautics and Space Administration, and

## **B. ENVIRONMENTAL ANALYSIS**

---

others and we found that these models are not reasonable for project-level analysis for a number of reasons. For example, these global models are not suited to determine the incremental impact of individual projects, due to both scale and overwhelming complexity.

## C. ALTERNATIVES

In accordance with NEPA, we evaluated alternatives to Gateway's proposed action to determine whether they would be preferable to constructing the Project as proposed. Our evaluation criteria for selecting potentially preferable alternatives are:

- technical and economic feasibility and practicality;
- significant environmental advantage over the proposed action; and
- ability to meet the objectives of the proposed action.

Our evaluation of alternatives is based on Project-specific information provided by the applicant; publicly available information; our consultations with federal and state resource and permitting agencies; our expertise and experience regarding the siting, construction, and operation of natural gas projects, and such projects' potential environmental impacts; and the specific environmental impacts associated with the Gateway Project, as described in section B of this EA. Because the only proposed new aboveground facilities would be minor installations within an existing right-of-way or within other existing Gateway-owned natural gas facilities, and we did not receive any comments regarding siting of the new facilities, we did not evaluate any aboveground facility site alternatives for the Project.

Likewise, the proposed route primarily parallels existing natural gas and utilities right-of-way for about 82 percent of the alignment, with minor deviations already incorporated to avoid specific environmental resources. We found this routing acceptable and that it minimizes environmental impact without interruption of service to existing customers. Further, we did not receive any comments regarding alternative routes. Therefore, we did not evaluate alternative routes.

### 1. No-Action Alternative

Under the no-action alternative, Gateway would not construct or operate the Gateway Project, and none of the impacts associated with the Project would occur. However, the Project objectives would not be met. Gateway would not be able to meet the Project's stated need in section A.2, including providing about 400 million standard cubic feet of natural gas per day from Gateway's newly expanded Carlsbad Plant (a cryogenic gas processing plant) to the Agua Blanca intrastate pipeline owned by White Water.

Although a Commission decision to deny the proposed action would avoid the environmental impacts addressed in this EA, other natural gas projects could be constructed and provide a substitute for the natural gas supplies offered by Gateway; or other fuel sources could be sought. Such alternative projects would require the construction of additional and/or new facilities in the same or other locations to meet the Project objectives. These alternatives would result in their own set of specific environmental impacts that could be greater or equal to those associated with the current

proposal. Therefore, we have dismissed this alternative as a reasonable alternative to meet the Project objectives.

## **2. System Alternatives**

System alternatives are alternatives to the proposed action that would make use of Gateway's (or other companies') existing, modified, or proposed pipeline systems to meet the stated objective of the proposed Project. Because Gateway and its parent companies currently operate a transmission system in eastern New Mexico and western Texas, Gateway can supply the increased demand for natural gas in this area using efficiencies afforded by its existing system. The Project has a firm purchaser commitment and can meet the demand sooner than a hypothetical project not yet planned or committed. Further, the proposed Project route was selected to minimize environmental impacts to the greatest extent possible while using existing right-of-way to limit the need for construction on undisturbed lands.

We did not identify any other existing systems in the area that could deliver the same quantities of gas, at similar locations, without substantial additional pipeline construction. Existing systems in the area (i.e., Transwestern Pipeline Company LLC's Crawford Lateral and El Paso Natural Gas Company's Line 3191) would require a minimum of 23 miles of pipeline loop to reach target delivery points and would likely require additional pipeline system upgrades. The modification or expansion of another existing or new pipeline system that does not connect at or near the specified receipt and delivery points would require construction with similar or greater environmental impact than Gateway's proposal. Therefore, we did not further evaluate the expansion of another existing pipeline system to meet the Project objectives.

## **3. Conclusion**

We reviewed alternatives to Gateway's proposal based on our independent analysis. No system or other alternative was identified that would provide a significant environmental advantage over the Project design. Therefore, we conclude that the proposed Project is the preferred alternative to meet the Project objectives.

## D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if Gateway constructs and operates the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures below, approval of the Project would not constitute a major action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to Gateway.

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

#### D. CONCLUSIONS AND RECOMMENDATIONS

---

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Gateway shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

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

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

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

#### D. CONCLUSIONS AND RECOMMENDATIONS

---

6. **Within 60 days of the acceptance of the authorization and before construction begins**, Gateway shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Gateway must file revisions to the plan as schedules change. The plan shall identify:
  - a. how Gateway will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
  - b. how Gateway will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
  - c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
  - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
  - e. the location and dates of the environmental compliance training and instructions Gateway will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change);
  - f. the company personnel (if known) and specific portion of Gateway's organization having responsibility for compliance;
  - g. the procedures (including use of contract penalties) Gateway will follow if noncompliance occurs; and
  - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    - (1) the completion of all required surveys and reports;
    - (2) the environmental compliance training of onsite personnel;
    - (3) the start of construction; and
    - (4) the start and completion of restoration.
7. Gateway shall employ at least one EI. The EI shall be:
  - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
  - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;

#### D. CONCLUSIONS AND RECOMMENDATIONS

---

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

#### D. CONCLUSIONS AND RECOMMENDATIONS

---

11. **Within 30 days of placing the authorized facilities in service**, Gateway shall file an affirmative statement with the Secretary, certified by a senior company official:
  - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
  - b. identifying which of the conditions in the Order Gateway has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
  
12. **With its Implementation Plan**, Gateway shall file with the Secretary for review and written approval by the Director of OEP, a complete set of revised HDD profile and plan drawings, including all geotechnical analyses and detailed mapping of cleared areas, mud pits, and pipe assembly areas.
  
13. Gateway **shall not begin construction** of facilities and/or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
  - a. Gateway files with the Secretary:
    - (1) the Texas SHPO's comments on the revised final Phase I Cultural Resources Survey report;
    - (2) the New Mexico SHPO's comments on the revised Class III Cultural Resources Survey report;
    - (3) any further studies and/or avoidance/treatment plan(s), as required; and comments on the studies and/or plans from the appropriate SHPO.
  - b. the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and
  - c. FERC staff reviews and the Director of OEP approves the cultural resources reports and plans, and notifies Gateway in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

All materials filed with the Commission containing **location, character, and ownership** information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CUI//PRIV- DO NOT RELEASE.**"

## E. REFERENCES

- National Oceanic and Atmospheric Administration. 2017. Global and Regional Sea Level Rise Scenarios for the United States. Available at: [https://tidesandcurrents.noaa.gov/publications/techrpt83\\_Global\\_and\\_Regional\\_SLR\\_Scenarios\\_for\\_the\\_US\\_final.pdf](https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf). Accessed November 2018.
- U.S. Global Change Research Program. 2017a. *Climate Science Special Report: Fourth National Climate Assessment, Volume I, Chapter 3 Detection and Attribution of Climate Change* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6.
- \_\_\_\_\_. 2017b. *Climate Science Special Report: Fourth National Climate Assessment, Volume I*. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6.

**F. LIST OF PREPARERS**

**Rodgers, Keith – Project Manager, Geology, Groundwater, Soils, Contaminated Sites, Cumulative Impacts, and Alternatives**

Professional Geologist, 2008, North Carolina Board for the Licensing of Geologists  
M.E., Master of Engineering in Water Resources (i.e., Hydrogeochemistry), 2008,  
University of Arizona  
B.S., Geological Sciences (Geochemistry option), 2004, Virginia Tech

**Balsom, Arianne – Surface Water, Wetlands, Vegetation, and Wildlife**

M.S., Ecology and Evolutionary Biology, 2003, University of Tennessee  
B.S., Ecology and Evolutionary Biology, 2000, University of Tennessee  
B.A., Marine Biology, 2000, University of Tennessee

**Boros, Laurie – Cultural Resources**

B.A., Anthropology/Archaeology, 1980, Queens College, City University of New York

**Griffin, Robin- Land Use**

M.S., Environmental Management, 1999, Illinois Institute of Technology  
B.A., English Composition, 1992, DePauw University

**McDaniel, Nina – Air Quality, Noise, Safety, and Reliability**

M.S., Engineering Management, University of New Orleans  
B.S., Civil Engineering, University of New Orleans