

MITIGATION ACTION PLAN

FOR THE

PLAINS & EASTERN CLEAN LINE TRANSMISSION PROJECT

DOE/EIS-0486

REVISION 1

OCTOBER 2016

VERSION HISTORY

October 2016, Revision 1, clarified the definition of Applicant Proposed Project to be consistent with the definition used in the Record of Decision (81 FR 18602; March 31, 2016). Edits have also been made to correct errors in associated FEIS Resource Chapters or associated EPMs and Plans applicable to some mitigation measures.

March 2016, original version.

1 INTRODUCTION

The U.S. Department of Energy (DOE) National Environmental Policy Act (NEPA) Implementing Procedures (Title 10 Code of Federal Regulations [CFR] 1021.331) require completion of a mitigation action plan (MAP) following each Environmental Impact Statement (EIS) and its associated Record of Decision (ROD) to address mitigation commitments expressed in the ROD. The DOE Notice of Availability of the Plains & Eastern Clean Line Transmission Project Final Environmental Impact Statement (DOE/EIS-0486; Final EIS) was published in the *Federal Register* (FR) on November 13, 2015 (80 FR 70192). The Final EIS analyzes the potential environment impacts from the project as described in Clean Line's modified proposal to DOE, the range of reasonable alternatives, and a No Action Alternative. The Final EIS identifies DOE's preferred alternative, and sets forth measures for mitigating or reducing potential adverse environmental effects from elements of the project as proposed by Clean Line and DOE alternatives.

DOE issued a Record of Decision (ROD) for the Plains & Eastern Clean Line Transmission Project on March 25, 2016, and the signed ROD is available on the DOE National Environmental Policy Act (NEPA) Website at <http://energy.gov/nepa> and on the Plains & Eastern EIS website at <http://www.plainsandeasterneis.com/>. In the ROD, DOE announced its decision to participate in the development of approximately 705 miles of +600 kilovolt (kV) overhead, high-voltage direct current (HVDC) electric transmission facilities and related facilities from western Oklahoma to the eastern state line of Arkansas near the Mississippi River (the Project). The ROD determines that DOE will participate in the Project as configured in the preferred alternative described in the Final EIS for the elements of the Project in Oklahoma and Arkansas, states in which Southwestern Power Administration (Southwestern) operates, including a converter station in Arkansas. Clean Line, acting on its own and without the Department's participation, would build additional facilities that would connect to the Project in Texas and Tennessee (collectively, these additional facilities and the Project are referred to as the Applicant Proposed Project).

As stated in DOE's ROD, DOE's decision to participate in the Project is conditioned upon the Applicant's implementation, throughout the Applicant Proposed Project, of environmental protection measures (EPMs) and best management practices (BMPs) set forth in the Final EIS; compliance with the November 20, 2015 Biological Opinion, as amended or updated as required, issued by the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act (ESA); and implementation of the stipulations in the December 7, 2015 Programmatic Agreement executed to satisfy the Section 106 of the National Historic Preservation Act (NHPA; 54 USC § 300101).

Pursuant to 10 C.F.R. 1021.331, a MAP explains how mitigation measures, which have been designed to mitigate adverse environmental impacts associated with the course of action directed by the ROD, will be planned and implemented. This MAP includes commitments made in the ROD with regards to the EPMs and BMPs set forth in the Final EIS. These provisions are summarized in Appendix F of the Final EIS and Table 2.7-1 of the Final EIS. This MAP also includes the Programmatic Agreement (Appendix A of this MAP), which includes measures to take into account the effect of the undertaking on historic properties. This MAP also includes specific measures adopted for the protection of listed species and designated critical habitat under the ESA including species-specific measures identified in the Project's

Biological Assessment as well as Reasonable & Prudent Measures (RPMs) and implementing terms and conditions from the Biological Opinion (Appendix B of this MAP).

Consistent with 10 C.F.R. 1021.331(c), this MAP has been prepared based on the information presently available regarding the Applicant Proposed Project and DOE's participation in the Project as set forth in the ROD. DOE may revise the MAP as more specific and detailed information becomes available. DOE may also update the MAP to address Section 4(g) of DOE Order 451.1B, which requires DOE's NEPA Compliance Program to include: "[t]racking and annually reporting progress in implementing a commitment for environmental impact mitigation . . . that is made in a record of decision."

2 IMPLEMENTATION

Both DOE and Clean Line will ensure compliance with all applicable laws, including environmental laws. In furtherance of such compliance, Clean Line will implement any delegable obligations or responsibilities of each mitigation measure during the appropriate project phase identified in the Time of Implementation column in the table below. Clean Line will develop plans which include execution plans for the development, design engineering, construction, operation, maintenance, management, replacement and any decommissioning activities of the Applicant Proposed Project. These plans will specify how the mitigation measures will be implemented and how Clean Line will monitor and report on the progress of the implementation. DOE will be responsible for performing any non-delegable actions associated with each mitigation measure, such as providing approval and oversight for the implementation conducted by Clean Line. DOE will review plans and reports submitted by Clean Line, and shall help to ensure that the mitigation measures are being and have been implemented adequately and identify additional actions to implement the required mitigation measures as necessary. DOE will also identify appropriate federal Points of Contact for the various oversight roles.

This MAP is available on the DOE NEPA Website (<http://www.energy.gov/nepa/>) and on the Plains and Eastern EIS website (<http://www.plainsandeasterneis.com>). Any updates to this MAP will also be available at these websites.

3 MITIGATION ACTION PLAN TABLE

Mitigation measures are listed in the first column of the table below. Sources of these mitigation measures (the second column in the table) are a compilation of EPMs, BMPs, and Project Plans as identified in the Final EIS; species-specific measures (SSMs), as identified in the Biological Assessment (BA); and incidental take statements (ITS), reasonable and prudent measures (RPMs), and implementing terms and conditions (T&Cs) as identified in the Biological Opinion (BO). The Programmatic Agreement is also a source for measures to address potential impacts to cultural and historic resources. The third column in the table lists the Time of Implementation, or project phase, that is applicable to each mitigation measure. The fourth column, Identified in the Following FEIS Resource Chapter(s), lists the Final EIS sections in which the measure is cited. EPMs and BMPs are cited only once – in the most relevant portion of the table (e.g., Land Use EPMs discussed in the Land Use EIS section; certain Land Use EPMs are listed in the Agricultural Resources section of this table and other Land Use EPMs are listed in the Land Use section of this table).

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
General EPMs			
Train personnel on health, safety, and environmental matters. Training will include practices, techniques, and protocols required by federal and state regulations and applicable permits.	EIS EPM GE-1	Prior to, and during construction; and during operation and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Historic and Cultural Resources; Recreation; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Transportation; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Design, construct, maintain, and operate the Project following current Avian and Power Line Interaction Committee guidelines to minimize risk of avian mortality.	EIS EPM GE-2	Prior to, and during construction; and during operation and maintenance	Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wildlife, Fish, and Aquatic Invertebrates
Minimize clearing vegetation within the ROW, consistent with a Transmission Vegetation Management Plan (TVMP) filed with NERC, and applicable federal, state, and local regulations. The TVMP may require additional analysis under NEPA depending on whether and under what conditions DOE decides to participate in the Project.	EIS EPM GE-3	During operation and maintenance	Agricultural Resources; Air Quality and Climate Change; Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plan Species; Surface Water; Visual Resources; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Vegetation removed during clearing will be disposed of according to federal, state, and local regulations.	EIS EPM GE-4	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plan Species; Wildlife, Fish, and Aquatic Invertebrates
Any herbicides used during construction and operations and maintenance will be applied according to label instructions and any federal, state, and local regulations.	EIS EPM GE-5	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Vegetation Communities and Special Status Plan Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Restrict vehicular travel to the ROW and other established areas within the construction, access, or maintenance easement(s).	EIS EPM GE-6	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Historic and Cultural Resources; Noise; Recreation; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Transportation; Vegetation Communities and Special Status Plant Species; Visual Resources; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates; Groundwater
Roads not otherwise needed for maintenance and operations will be restored to preconstruction conditions. Restoration practices may include decompacting, recontouring, and re-seeding. Roads needed for maintenance and operations will be retained.	EIS EPM GE-7	During construction, operation, and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Groundwater; Land Use; Recreation; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Transportation; Vegetation Communities and Special Status Plant Species; Visual Resources; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Access controls (e.g., cattle guards, fences, gates) will be installed, maintained, repaired, replaced, or restored as required by regulation, road authority, or as agreed to by landowner.	EIS EPM GE-8	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Land Use; Recreation; Socioeconomics; Transportation
Avoid and/or minimize damage to drainage features and other improvements such as ditches, culverts, levees, tiles, and terraces; however, if these features or improvements are inadvertently damaged, they will be repaired and or restored.	EIS EPM GE-9	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Groundwater; Land Use; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Work with landowners to repair damage caused by construction, operation, or maintenance activities of the Project. Repairs will take place in a timely manner, weather and landowner permitting.	EIS EPM GE-10	During construction, operation, and maintenance	Agricultural Resources; Land Use; Visual Resources; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Conduct construction, operation, and maintenance activities to minimize the creation of dust. This may include measures such as limitations on equipment, speed, and/or travel routes utilized. Water, dust palliative, gravel, combinations of these, or similar control measures may be used. Implement measures to minimize the transfer of mud onto public roads.	EIS EPM GE-11	During construction, operation, and maintenance	Agricultural Resources; Air Quality and Climate Change; Geology, Soils and Minerals; Socioeconomics; Transportation; Visual Resources; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates; Land Use
Avoid remedial structures (e.g., capped areas, monitoring equipment, or treatment wells) on contaminated sites, Superfund sites, CERCLA remediation sites, and other similar sites. Workers will use appropriate protective equipment and appropriate safe working techniques when working at or near contaminated sites.	EIS EPM GE-12	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Socioeconomics
Emergency and spill response equipment will be kept on hand during construction.	EIS EPM GE-13	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Restrict the refueling and maintenance of vehicles and the storage of fuels and hazardous chemicals within at least 100 feet from wetlands, surface waterbodies, and groundwater wells, or as otherwise required by federal, state, or local regulations.	EIS EPM GE-14	Prior to, and during construction; and during operation and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Waste generated during construction or maintenance, including solid waste, petroleum waste, and any potentially hazardous materials will be removed and taken to an authorized disposal facility.	EIS EPM GE-15	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Socioeconomics; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Where required by FAA, or in certain areas to protect aviator safety, Clean Line will mark structures and/or conductors and/or shield wires with high-visibility markers (i.e., marker balls or other FAA-approved devices).	EIS EPM GE-16	During construction, operation, and maintenance	Health, Safety, and Destructive Acts; Transportation

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Consider noise and radio/television interference in the design of bundle configurations and conductors. To minimize noise and radio/television interference, maintain tension on insulator assemblies and protect the conductor surface from damage during construction.	EIS EPM GE-17	Prior to and during construction	Electrical Environment; Noise
Inspect the line from the ground and/or aircraft routinely. Damaged insulators or other equipment causing noise or radio/television interference will be identified and repaired or replaced.	EIS EPM GE-18	During operation and maintenance	Electrical Environment
Properly ground permanent structures (e.g., fences, gates) to reduce the potential for induced voltage and currents onto conductive objects in the ROW.	EIS EPM GE-19	Prior to, and during construction; during operation and maintenance	Electrical Environment; Health, Safety, and Destructive Acts
Conduct construction and scheduled maintenance activities on the facilities during daylight hours, except in rare circumstances that may include, for example, to address emergency or unsafe situations, to avoid adverse environmental effects, to minimize traffic disruptions, or to comply with regulatory or permit requirements.	EIS EPM GE-20	During construction, operation, and maintenance	Land Use; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Transportation; Wildlife, Fish, and Aquatic Invertebrates; Noise
Maintain construction equipment in good working order. Equipment and vehicles that show excessive emissions of exhaust gasses and particulates due to poor engine adjustments or other inefficient operating conditions will be repaired or adjusted.	EIS EPM GE-21	During construction, operation, and maintenance	Air Quality and Climate Change; Health, Safety, and Destructive Acts; Noise; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Impose speed limits during construction for access roads (e.g., to reduce dust emissions, for safety reasons, and for protection of wildlife).	EIS EPM GE-22	During construction	Air Quality and Climate Change; Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Transportation; Wildlife, Fish, and Aquatic Invertebrates
Maximize the distance between stationary equipment and sensitive noise receptors consistent with engineering design criteria.	EIS EPM GE-23	During construction	Land Use; Noise; Recreation; Socioeconomics

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Minimize the number and distance of travel routes for construction equipment near sensitive noise receptors.	EIS EPM GE-24	During construction	Land Use; Noise; Recreation; Socioeconomics; Transportation
Turn off idling equipment when not in use.	EIS EPM GE-25	During construction, operation, and maintenance	Air Quality and Climate Change; Health, Safety, and Destructive Acts; Noise; Socioeconomics; Wildlife, Fish, and Aquatic Invertebrates
When needed, use guard structures, barriers, flaggers, and other traffic controls to minimize traffic delays and road closures.	EIS EPM GE-26	During construction	Land Use; Recreation; Transportation
Minimize compaction of soils and rutting through appropriate use of construction equipment (e.g., low ground pressure equipment and temporary equipment mats).	EIS EPM GE-27	During construction, operation, and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Groundwater; Historic and Cultural Resources; Land Use; Socioeconomics; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Hazardous materials and chemicals will be transported, stored, and disposed of according to federal, state, or local regulations or permit requirements.	EIS EPM GE-28	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wildlife, Fish, and Aquatic Invertebrates; Groundwater
Work with landowners and operators of active oil and gas wells, utilities, and other infrastructure to identify and verify the location of facilities and to minimize adverse impacts. Identification may include use of the One Call system and surveying of existing facilities.	EIS EPM GE-29	Prior to, and during construction; during operation and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Land Use
Minimize the amount of time that any excavations remain open.	EIS EPM GE-30	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Provide sanitary toilets convenient to construction; these will be located greater than 100 feet from any stream or tributary or to any wetland. These facilities will be regularly serviced and maintained; waste disposal will be properly manifested. Employees will be notified of sanitation regulations and will be required to use sanitary facilities.	EIS EPM GE-31	During construction	Groundwater; Surface Water
Blasting Plan: This plan will describe measures designed to minimize adverse effects due to blasting.	EIS EPM—Project Plan	Complete document prior to construction; implement during construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water, Wildlife, Fish, and Aquatic Invertebrates
Storm Water Pollution Prevention Plan (SWPPP): This plan, consistent with federal and state regulations, will describe the practices, measures, and monitoring programs to control sedimentation, erosion, and runoff from disturbed areas. The SWPPP will be required to minimize adverse effects from erosion during ground disturbing activity.	EIS EPM—Project Plan	Complete document prior to construction; implement during construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wetlands, Floodplains, and Riparian Areas; Surface Water; Wildlife, Fish, and Aquatic Invertebrates
Restoration Plan: This plan will describe post-construction activities to reclaim disturbed areas. This plan will be required to minimize adverse effects associated with areas (particularly slopes) exposed during construction. This plan should include information on integrated weed management to identify current noxious weed infestations, treat those areas during construction, and periodically monitor and continue treatment of infestations as needed.	EIS EPM—Project Plan	Complete document prior to completion of construction; implement post-construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plant Species; Surface Water, Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Spill Prevention, Control and Countermeasures (SPCC) Plan. This plan will describe the measures designed to prevent, control, and clean up spills of hazardous materials.	EIS EPM—Project Plan	Complete document prior to construction; implement during construction, operation, and maintenance activities	Geology, Paleontology, Minerals, and Soils; Groundwater; Health, Safety, and Destructive Acts Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water, Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates;

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>Transmission Vegetation Management Plan (TVMP). This plan will be developed and implemented pursuant to the North American Electric Reliability Corporation (NERC) Reliability Standard FAC-003 and will describe work would be conducted in the right-of-way to prevent outages due to vegetation. The TVMP may require additional analysis under NEPA depending on whether and under what conditions DOE decides to participate in the Project.</p>	<p>EIS EPM—Project Plan</p>	<p>Complete document prior to construction; implement during construction, operation, and maintenance activities</p>	<p>Health, Safety, and Destructive Acts; Vegetation Communities and Special Status Plant Species; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates</p>
<p>Construction Security Plan. This plan will describe measures designed to avoid and/or minimize adverse effects associated with breaches in Project security during construction including terrorism, sabotage, vandalism, and theft. The plan will include provisions describing how the Project construction team will coordinate with state and local law enforcement agencies during construction to improve Project security and facilitate security incident response, if required.</p>	<p>EIS EPM—Project Plan</p>	<p>Complete document prior to construction; implement during construction</p>	<p>Health, Safety, and Destructive Acts; Socioeconomics</p>
<p>Transportation and Traffic Management Plan. This plan will describe measures designed to avoid and/or minimize adverse effects associated with the existing transportation system. This plan would include railroad crossing protocols and construction and post-construction practices to avoid vehicle, railroad, and transmission line conflicts. Typically, stoppage of railroad traffic is not required during construction or conductor stringing and tensioning activities. Crossing activities are similar to those for road crossings and typically involve the use of guard structures. Stringing and tensioning activities would be performed in coordination with the appropriate railroad authorities as required.</p>	<p>EIS EPM—Project Plan and FEIS Section 3.6-24</p>	<p>Complete document prior to construction; implement during and post-construction</p>	<p>Health, Safety, and Destructive Acts; Socioeconomics; Transportation</p>

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Agricultural Resources (FEIS Section 3.2)			
Work with landowners and operators to ensure that access is maintained as needed to existing operations (e.g., to oil/gas wells, private lands, agricultural areas, pastures, hunting leases).	EIS EPM LU-1	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Land Use; Recreation; Socioeconomics; Transportation
Coordinate with landowners to site access roads and temporary construction areas to avoid and/or minimize impacts to existing operations and structures.	EIS EPM LU-4	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Land Use; Recreation; Socioeconomics; Transportation; Visual Resources
Make reasonable efforts, consistent with design criteria, to accommodate requests from individual landowners to adjust the siting of the ROW on their properties. These adjustments may include consideration of routes along or parallel to existing divisions of land (e.g., agricultural fields and parcel boundaries) and existing compatible linear infrastructure (e.g., roads, transmission lines, and pipelines), with the intent of reducing the impact of the ROW on private properties.	EIS EPM LU-5	Prior to construction	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Historic and Cultural Resources; Land Use; Recreation; Socioeconomics; Visual Resources
Avoid or minimize adverse effects to surface and subsurface irrigation and drainage systems (e.g., tiles). Work with landowners to minimize the placement of structures in locations that would interfere with the operation of irrigation systems.	EIS EPM AG-1	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Soils, and Minerals; Land Use, Socioeconomics; Wetlands, Floodplains, and Riparian Areas
Agricultural soils temporarily impacted by construction, operation, or maintenance activities will be restored to pre-activity conditions. For example, soil remediation efforts may include decompaction, recontouring, liming, tillage, fertilization, or use of other soil amendments.	EIS EPM AG-2	During construction, operation, and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Groundwater; Socioeconomics

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Consult with landowners and/or tenants to identify the location and boundaries of agriculture or conservation reserve lands and to understand the criteria for maintaining the integrity of these committed lands.	EIS EPM AG-3	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Land Use; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species
Work with landowners and/or tenants to identify specialty agricultural crops or lands (e.g., certified organic crops or products that require special practices, techniques, or standards) that may require protection during construction, operation, or maintenance. Avoid and/or minimize impacts that could jeopardize standards or certifications that support specialty croplands or farms.	EIS EPM AG-4	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Land Use, Socioeconomics
Work with landowners and/or tenants to consider potential impacts to current aerial spraying or application (i.e., aerial crop spraying) of herbicides, fungicides, pesticides, and fertilizers within or near the transmission ROW. Avoid or minimize impacts to aerial spraying practices when routing and siting the transmission line and related infrastructure.	EIS EPM AG-5	Prior to, and during construction	Agricultural Resources; Health, Safety, and Destructive Acts; Land Use; Socioeconomics; Transportation
Work with landowners to develop compensation for lost crop value caused by construction and/or maintenance.	EIS EPM AG-6	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Socioeconomics
Work with landowners to develop a site plan for each cropland farm on which construction or maintenance is to be performed.	EIS EPM AG-7	Prior to, and during construction; and during operation and maintenance	Agricultural Resources; Land Use
Stabilize slopes exposed by activities to minimize erosion.	EIS EPM GEO-1	During construction, operation, and maintenance	Agricultural Resources; Geology, Paleontology, Minerals, and Soils; Groundwater; Historic and Cultural Resources; Surface Water; Wetlands, Floodplains, and Riparian Areas
Also EPMs GE-3, GE-7, GE-8, GE-9, GE-10, GE-11, GE-27 (full text of each measure is provided above).			

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Air Quality and Climate Change (FEIS Section 3.3)			
Stabilize spoil piles and sources of fugitive dust by implementing control measures, such as covering and/or applying water or chemical/organic dust palliative where appropriate at active and inactive sites during workdays, weekends, holidays, and windy conditions. EPA (1995) lists common sources of fugitive dust as unpaved roads, agricultural tilling operations, aggregate storage piles, and heavy construction operations; all but agricultural tilling operations would apply to the Project and require appropriate control measures.	EIS BMP	During construction	Air Quality and Climate Change
Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.	EIS BMP	During construction	Air Quality and Climate Change
Prevent spillage when hauling spoil material.	EIS BMP	During construction	Air Quality and Climate Change
In active construction areas including access roads, Limit speeds of non-earth-moving equipment to 15 miles per hour. Limit speed of earth-moving equipment to 10 mph.	EIS BMP	During construction	Air Quality and Climate Change
Plan construction scheduling to minimize vehicle trips.	EIS BMP	During construction	Air Quality and Climate Change
Limit idling of heavy equipment to less than 5 minutes unless needed for the safe operation of the equipment and verify through unscheduled inspections.	EIS BMP	During construction	Air Quality and Climate Change

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels, prevent tampering of source engines (i.e., knowingly disabling an emission control system component or element of design of a certified engine so that it no longer meets the manufacturer's specifications), and conduct unscheduled inspections to ensure these measures are followed.	EIS BMP	During construction	Air Quality and Climate Change
The quantity of sulfur hexafluoride emissions from maintenance activities (and potential leaks in equipment) would be minimized through the use of hermetically sealed equipment, leak detection programs, and sulfur hexafluoride recycling programs.	EIS BMP	During construction, operation, and maintenance	Air Quality and Climate Change
Also EPMs GE-3, GE-11, GE-21, GE-22, GE-25 (full text of each measure is provided above).			
Electrical Environment (FEIS Section 3.4)			
EPMs GE-17, GE-18, and GE-19 for Electrical Environment are described above in the General EPM category.	EIS EPM	Prior to and during construction (GE-17); During operation and maintenance (GE-18); Prior to, and during construction; during operation and maintenance (GE-19)	Electrical Environment; Noise; Health, Safety, and Destructive Acts
Environmental Justice (FEIS Section 3.5)			
The Applicant would implement the EPMs listed in Appendix F of the FEIS as part of the Project to avoid or minimize potential impacts to environmental resources from construction, operations and maintenance, and/or decommissioning.	EIS EPMs	See Appendix F of the FEIS as is applicable to each EPM	Resources as applicable to each EPM (and specifically listed in this table)
Geology, Paleontology, Minerals, and Soils (FEIS Section 3.6)			
Construct access roads to minimize disruption of natural drainage patterns including perennial, intermittent, and ephemeral streams.	EIS EPM W-5	During construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Dewatering will be conducted in a manner designed to prevent soil erosion (e.g., through discharge of water to vegetated areas and/or the use of flow control devices).	EIS EPM W-8	During construction, operation, and maintenance activities	Geology, Paleontology, Minerals, and Soils: Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
If signs of contaminated soils are uncovered during construction activities, work would be stopped in the area of potentially contaminated soils until appropriate Project representatives could be consulted.	EIS BMP	During construction	Specific to Geology, Paleontology, Minerals, and Soils
Also EPMs GE-1, GE-3, GE-4, GE-5, GE-6, GE-7, GE-8, GE-9, GE-12, GE-13, GE-14, GE-15, GE-22, GE-27, GE-28, GE-29, GE-30, W-11, W-12, W-13, W-14, W-15, LU-1, LU-4, LU-5, AG-2, AG-3, AG-4, GEO-1; Blasting Plan, Storm Water Pollution Prevention Plan, Restoration Plan, Spill Prevention Plan.			
Groundwater (FEIS Section 3.7)			
Ensure that there is no off-site discharge of wastewater from temporary batch plant sites.	EIS EPM W-14	During construction, operation, and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Surface Water; Wetlands, Floodplains, and Riparian Areas
Locate and minimize impacts to groundwater wells and springs within the construction ROW.	EIS EPM W-11	Prior to and during construction; during operation and maintenance	Geology, Paleontology, Minerals, and Soils; Groundwater; Wetlands, Floodplains, and Riparian Areas
If blasting is required within 150 feet of a spring or groundwater well, conduct preconstruction monitoring of yield and water quality in cooperation with the landowner. In the event of damage, arrange for a temporary water supply through a local supplier until a permanent solution is identified.	EIS EPM W-12	During construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Surface Water
If any groundwater wells are needed to support operational facilities, withdrawal volumes will be limited so as not to adversely affect supplies for other uses.	EIS EPM W-13	During construction, operation, and maintenance activities	Geology, Paleontology, Minerals, and Soils; Groundwater
Seek to procure water from municipal water systems where such water supplies are within a reasonable haul distance; any other water required will be obtained through permitted sources or through supply agreements with landowners.	EIS EPM W-15	During construction	Geology, Paleontology, Minerals, and Soils; Groundwater; Socioeconomics; Surface Water

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Also EPMs GE-1, GE-3, GE-5, GE-6, GE-7, GE-9, GE-13, GE-14, GE-27, GE-28, GE-29, GE-30, GE-31, W-5, AG-2, GEO-1; Blasting Plan, Storm Water Pollution Prevention Plan, Restoration Plan, Spill Prevention Plan.			

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Health, Safety, and Destructive Acts (FEIS Section 3.8)			
<p>Develop and implement a Health and Safety Plan that describes regulatory requirements, procedures, and practices for conducting activities to help ensure a safe working environment, which for purposes of health and safety measures should include:</p> <ul style="list-style-type: none"> • Fire prevention, suppression, and emergency responder contact procedures; • Natural disaster and severe weather reporting and contact procedures; • Law enforcement contact procedures; • Procedures for addressing hazardous materials spills and other mishaps; and • Helicopter flight safety measures 	EIS BMP	Prior to construction; implement during construction and operation	Health, Safety, and Destructive Acts specific
<p>Develop and implement a Communications Plan. The elements of this plan for purposes of health and safety should include:</p> <ul style="list-style-type: none"> • Liaison and public outreach activities with local airports, aviation communities, aviation regulatory bodies, aerial agricultural spraying operations, and railroad operators. • Local media and public outreach procedures for applicable hazard communication notices. 	EIS BMP	Prior to and during construction; implementation throughout the Project	Health, Safety, and Destructive Acts; Noise; Socioeconomics; Transportation
Also EPMs GE-1, GE-3, GE-5, GE-6, GE-8, GE-12, GE-13, GE-15, GE-16, GE-19, GE-21, GE-22, GE-25, GE-28, GE-29, AG-5; Blasting Plan, Transmission Vegetation Management Plan, Construction Security Plan, Spill Prevention Plan, and Transportation and Traffic Management Plan.			

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Historic and Cultural Resources (FEIS Section 3.9)			
Mitigation measures contained in the Section 106 Programmatic Agreement. ¹	Programmatic Agreement	Prior to, and during construction; and during operation and maintenance	
Also EPMs GE-1, GE-6, GE-27, LU-5, and GEO-1 help avoid or minimize impacts to historic and cultural resources.			
Land Use (FEIS Section 3.10)			
Minimize the frequency and duration of road closures.	EIS EPM LU-2	During construction, operation, and maintenance activities	Land Use; Transportation; Recreation; Socioeconomics
Work with landowners to avoid and minimize impacts to residential landscaping.	EIS EPM LU-3	Prior to, and during construction; and during operation and maintenance	Land Use; Socioeconomics; Visual Resources
In addition to EPM LU-5, make reasonable efforts to avoid displacing structures on private property.	EIS BMP	Prior to construction	Land Use specific
In existing forested areas where temporary construction areas require tree clearing, replant with appropriate tree species and/or reclaim temporary construction areas in coordination with landowners.	EIS BMP	During, and following construction activities	Land Use specific
Also EPMs GE-7, GE-8, GE-9, GE-10, GE-11, GE-20, GE-23, GE-24, GE-26, GE-27, GE-29, LU-1, LU-4, LU-5, AG-1, AG-3, AG-4, AG-5, AG-7.			
Noise (FEIS Section 3.11)			
Investigate noise complaints in accordance with the Applicant's communications program.	EIS BMP	During construction and operation	Noise; Transportation

¹ The Programmatic Agreement (Appendix A of this MAP), which may be amended from time to time, includes measures to take into account the effect of the undertaking on historic properties. The Programmatic Agreement describes roles and responsibilities for DOE and the Consulting Parties; the Tribal consultation protocol; the Area of Potential Effects; the phased process to address historic properties; procedures to address the unanticipated discovery of cultural resources or inadvertent discovery of human remains, graves or associated funerary objects; a communication plan; a historic properties management plan for operations and maintenance activities, annual reporting and close out report requirements; and dispute resolution procedures. As part of implementing the Programmatic Agreement or in addition to the Programmatic Agreement, Clean Line will develop historic properties treatment plans and unanticipated discovery plans.

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>In those cases where blasting is required for tower installations, develop and implement a detailed Blasting Plan to avoid noise impacts. Examples of measures that could be included in the Blasting Plan to minimize blasting impacts are:</p> <ul style="list-style-type: none"> • Use tamping or stemming into the collars of blast holes and smooth-wall perimeter holes (stemming is defined as inserted material, such as crushed stone, sand, or any other inert objects placed in the top of the blast hole for the purpose of confining explosive charges and limiting rock movement and air-overpressure). • Use blasting mats. • Unless otherwise coordinated with landowners and adjacent landowners, plan blasting to take place only between the hours of 10:00 am and 4:00 pm, Monday through Friday. No blasting shall take place on weekends. • Notify landowners and tenants, including owners of adjacent utilities or structures, prior to blasting. • Detailed Blasting Plans would be developed for the Project based on site-specific activities and nearby conditions. 	EIS BMP	During construction	Geology, Paleontology, Minerals, and Soils; Noise
Also EPMs GE-6, GE-17, GE-20, GE-21, GE-23, GE-24, GE-25.			
Recreation (FEIS Section 3.12)			
Identify environmentally sensitive vegetation (e.g., wetlands, protected plant species, riparian areas, large contiguous tracts of native prairie) and avoid and/or minimize impacts to these areas.	EIS EPM FVW-1	Prior to, and during construction; and during operation and maintenance	Recreation; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plant Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Clearly demarcate boundaries of environmentally sensitive areas during construction to increase visibility to construction crews.	EIS EPM FVW-3	During construction	Recreation; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plant Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Identify, avoid, and/or minimize adverse effects to wetlands and waterbodies. Do not place structure foundations within the Ordinary High Water Mark of Waters of the United States.	EIS EPM W-2	During construction	Recreation; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wetlands, Floodplains, and Riparian Areas; Surface Water; Wildlife, Fish, and Aquatic Invertebrates
Do not construct counterpoise or fiber optic cable trenches across waterbodies.	EIS EPM W-6	Prior to and during construction	Recreation; Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Also EPMs GE-1, GE-6, GE-7, GE-8, GE-23, GE-24, GE-26, LU-1, LU-2, LU-4, LU-5.			
Socioeconomics (FEIS Section 3.13)			
The Applicant will prepare and implement a workforce housing strategy that would minimize potential impacts to housing availability. This strategy would consider Project component construction schedules, workforce required, and other outside influences.	EIS BMP	Prior to and during construction	Socioeconomics specific
Also EPMs GE-6, GE-8, GE-11, GE-12, GE-15, GE-20, GE-21, GE-22, GE-23, GE-24, GE-25, GE-27, GE-28, AG-1, AG-2, AG-4, AG-5, AG-6, LU-1, LU-2, LU-3, LU-4, W-15; and Construction Security Plan, Transportation and Traffic Management Plan, Communications Plan, and Spill Prevention, Control and Countermeasures Plan.			
Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species (FEIS Section 3.14) (except Endangered Species Act protected species – See separate section below)			
Identify and implement measures to control and minimize the spread of non-native invasive species and noxious weeds.	EIS EPM FVW-2	During construction, operation, and maintenance	Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plant Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
If construction- and/or decommissioning-related activities occur during the migratory bird breeding season, work with USFWS to identify migratory species of concern and conduct pre-construction surveys for active nests for such species. Consult with USFWS and/or other resource agencies for guidance on seasonal and/or spatial restrictions designed to avoid and/or minimize adverse effects.	EIS EPM FVW-4	During construction, operation, and maintenance	Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wildlife, Fish, and Aquatic Invertebrates
If construction occurs during important time periods (e.g., breeding, migration, etc.) or at close distances to environmentally sensitive areas with vegetation, wildlife, or aquatic resources, consult with USFWS and/or other resource agencies for guidance on seasonal and/or spatial restrictions designed to avoid and/or minimize adverse effects.	EIS EPM FVW-5	During construction, operation, and maintenance	Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Vegetation Communities and Special Status Plant Species; Wildlife, Fish, and Aquatic Invertebrates
Avoid and/or minimize construction within 300 feet of caves known to be occupied by threatened or endangered species.	EIS EPM FVW-6	During construction	Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Wildlife, Fish, and Aquatic Invertebrates
Avoid and/or minimize construction of access roads in special interest waters.	EIS EPM W-1	Prior to and during construction; and during operation and maintenance	Surface Water; Wetlands, Floodplains, and Riparian Areas; Special Status Wildlife, Fish, and Aquatic Invertebrates
Also EPMs GE-1, GE-2, GE-3, GE-4, GE-5, GE-6, GE-7, GE-9, GE-13, GE-14, GE-20, GE-21, GE-22, GE-28, GE-30, AG-3, W-2, FVW-1, FVW-3; Blasting Plan, Storm Water Pollution Prevention Plan, Restoration Plan, Spill Prevention Plan, Transmission Vegetation Management Plan.			

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Species Protected under the Endangered Species Act (Biological Assessment and Biological Opinion)			
General Biological Opinion Terms			
<p>Report and dispose of dead, injured, or sick listed species in accordance with the instructions in the Biological Opinion (BO).</p> <p>Upon locating a dead, injured, or sick listed species initial notification must be made to the nearest Service Law Enforcement Office [Oklahoma (405) 715-0617 or Tennessee (615) 736-5532].</p> <p>The appropriate Ecological Services Field Office should be contacted within three working days of its finding [Oklahoma (918) 581-7458, Arkansas (501) 513-4470 or Tennessee (931) 528-6481].</p> <p>Written notification must be made within seven calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information.</p> <p>The notification shall be sent to the appropriate Law Enforcement Office with a copy to the Oklahoma Ecological Field Services Field Office, Southwest Region. Care must be taken in handling sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible condition.</p> <p>All dead or moribund individuals will be frozen and the date and location of collection recorded. These specimens should then be furnished to the university, museum, or agency specified by the Service.</p>	BO (p. 96)	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>Re-initiation of formal consultation is required where discretionary federal agency involvement or control over the action has been retained (or is authorized by law) and if:</p> <ul style="list-style-type: none"> (1) the amount or extent of incidental take is exceeded (see required action limits under each species in the Biological Opinion); (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in the Biological Opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in the Biological Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. <p>In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.</p>	BO—USFWS Re-initiation Statement	During all phases of the project	Not applicable
Pondberry			
<p>Coordinate with the USFWS to determine areas and methods to conduct pre-construction surveys for the pondberry.</p> <p>Pondberry surveys are most appropriately conducted either during the flowering (March through early April) or fruiting (September through October) reproductive stages, when the yellow flowers and red fruits provide strong visual clues for discovery.</p>	BA SSM	Prior to construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Geocarpon			
Coordinate with the USFWS to determine locations where it is appropriate to conduct field surveys for geocarpon prior to construction.	BA SSM	Prior to construction	Not applicable
American Burying Beetle			
Incidental take of ABB is authorized for all individual ABBs within an area no more than 5,886.4 ha (14,545.5 acres) of occupied ABB habitat within the Action Area. ²	BO-ITS-ABB	During all phases of the project	Not applicable
The DOE will fully implement actions as described in the BO, including all proposed conservation measures and mitigation identified in the Biological Assessment (i.e., Species-Specific Measures) for protection of the ABB.	BO RPM ABB-1	During all phases of the project	Not applicable
The DOE shall work with the Oklahoma Ecological Services Field office prior to initiation of the 2016 active season to develop and prepare a monitoring report to be submitted to the Oklahoma Ecological Service's Field Office by January 1 of each year. This report shall briefly document the effectiveness of the terms and conditions and locations of listed species observed, and, if any are found dead, suspected cause of mortality. The report shall also summarize tasks accomplished under the proposed minimization measures and terms and conditions. The report shall make recommendations for modifying or refining these terms and conditions to enhance listed species protection or reduce needless hardship on the DOE and its permittees.	BO RPM ABB-1 T&C-1	Prior to 2016 active season (prior to construction)	Not applicable

² The Action Area is defined in the Biological Opinion in Appendix B of this MAP.

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
The DOE shall ensure Clean Line performs ABB presence/absence surveys or assume presence in suitable habitat prior to construction. Additionally DOE and Clean Line shall delineate actual extent of impacted area that will occur during project construction based on these surveys or within the areas where occupancy is presumed to occur.	BO RPM ABB-2	Prior to and during construction	Not applicable
The DOE shall ensure Clean Line performs ABB presence/absence surveys (or assume presence) in areas of favorable habitat to elucidate the actual occupied acreage within the Action Area. This information will be used by Clean Line and the Service to refine the estimates of take associated with the proposed project.	BO RPM ABB-2 T&C-1	Prior to construction	Not applicable
Before any ground disturbance occurs DOE shall ensure that Clean Line (a) Determines the permanent, permanent cover change and temporary impacts and provides this information in a report to the Service for review and approval and (b) Ensure that mitigation is secured prior to project construction.	BO RPM ABB-2 T&C-2	Prior to construction	Not applicable
The DOE shall ensure Clean Line submits actual impact acreage for each impact type (temporary, permanent cover change, permanent) to ensure compliance.	BO RPM ABB-2 T&C-3	After construction (in annual report)	Not applicable
The DOE shall ensure that Clean Line monitors the level of take associated with the construction of the Project to ensure the level of take provided for the ABB in the BO has not been exceeded.	BO RPM ABB-3	During construction	Not applicable
Clean Line shall monitor the project area and other areas that could be affected by the proposed action to ascertain take of individuals of the species and/or loss of its habitat that causes harm or harassment to the species.	BO RPM ABB-3 T&C-1	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
The DOE shall ensure that Clean Line takes every precaution to minimize the potential for direct killing of ABB occurring in soil in the impact area, before, during, and after project implementation.	BO RPM ABB-4	During all phases of the project	Not applicable
If a dead or impaired ABB is found, care should be taken in its handling to preserve biological materials in the best possible state for later analysis of cause of death in accordance with measures described in the section on Disposition of Dead or Injured Listed Species.	BO RPM ABB-4 T&C-1	During all phases of the project	Not applicable
All dead or moribund adults should be salvaged by placing them on cotton in a small cardboard box as soon as possible after collection. The date and location of collection should be included with the container. Specimens should then be furnished to the Sam Noble Museum of Natural History at the University of Oklahoma in Norman for deposition in their collection of invertebrates, or to another suitable site approved by the Service.	BO RPM ABB-4 T&C-2	During all phases of the project	Not applicable
The DOE shall ensure that Clean Line performs presence/absence surveys to determine which locations are known to harbor ABB, and provide the Service with the actual amount of disturbance associated with operation and maintenance of the proposed action.	BO RPM ABB-5	During operations and maintenance	Not applicable
DOE will calculate and purchase credits from U.S Fish and Wildlife Service approved ABB Conservation Banks to offset acres of ABB impact prior to the start of the project (or impact occurrence) or develop a similar amount of Permittee-Responsible Mitigation lands.	BO RPM ABB-5 T&C-1	During operations and maintenance	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
The DOE shall ensure that Clean Line tracks the amount of operation and maintenance activity and soil disturbance conducted over the life of the project to ensure that take have not been exceeded over the life of the project.	BO RPM ABB-6	During operations and maintenance	Not applicable
Clean Line can choose to survey for ABBs prior to the O&M activity following the Service's guidelines that are currently accepted at the time the surveys occur (likely to change over the life of the project). If no surveys are conducted, ABBs will be assumed to be present.	BO RPM ABB-6 T&C-1	During operations and maintenance	Not applicable
Fill dirt, if necessary for any phase of project activity, shall come from areas of nonnative vegetation where the beetle is not expected to be present. Soil should not have been recently treated with insecticides prior to use.	BO RPM ABB-7	During all phases of the project	Not applicable
During the first growing season following construction or immediately following soil ripping if construction concludes during the growing season, a mixture of native warm season grasses shall be planted within the ROW. This shall include species found within the ecoregion where the activity is implemented, such as little bluestem (<i>Schizachyrium scoparium</i>), big bluestem (<i>Andropogon gerardii</i>), Indiangrass (<i>Sorghastrum nutans</i>), and switchgrass (<i>Panicum virgatum</i>).	BO RPM ABB-7 T&C-1	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>If take cannot be avoided, Clean Line will address such impacts with habitat offsets to assist in ABB recovery efforts. USFWS has recommended that the Project conserve an amount of land proportional to the impacts on ABB habitat resulting from Project actions. For habitat offset guidance, see <i>Mitigation Recommendations for the American Burying Beetle (ABB) in Oklahoma</i> and <i>USFWS 2014, American Burying Beetle Impact Assessment for Project Reviews, Oklahoma Ecological Services Field Office, March 6, 2014</i>.</p>	BA SSM	Prior to construction	Not applicable
<p>Clean Line will conduct construction and maintenance activities during daylight hours except in rare circumstances such as emergencies.</p> <p>If night work is required in ABB habitat, any artificial lighting would directed away from suitable ABB habitat to the extent practicable and limited to the shortest duration feasible to avoid affecting ABB nocturnal activity.</p>	BA and EPM (GE-20)	During construction and maintenance during night work	Not applicable
Fat Pocketbook, Pink Mucket, Rabbitsfoot, Scaleshell, Snuffbox, Speckled Pocketbook, Spectaclecase Mussels			
<p>Pre-construction presence/absence mussels surveys will be performed for each of the listed mussel species as follows:</p> <ul style="list-style-type: none"> • <u>Fat Pocketbook</u>—Survey in waterbody crossings where bank disturbance or instream construction activities will occur in the White River, and perennial streams/rivers/ditches capable of supporting freshwater drum in the St. Francis River basin; • <u>Pink Mucket</u>—Survey in waterbody crossings with potential populations of pink mucket, where bank disturbance or in-stream construction activities will occur in Jackson and White Counties, Arkansas; 	BA SSM	Prior to construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<ul style="list-style-type: none"> • <u>Rabbitsfoot</u>—Survey in waterbody crossings with potential populations of rabbitsfoot, where bank disturbance or in-stream construction activities will occur in Jackson, Van Buren, and White, Arkansas; • <u>Scaleshell</u>—Survey in waterbody crossings with potential populations of scaleshell mussels, where bank disturbance or in-stream construction activities will occur in Crawford, Cross, Franklin, Jackson, Mississippi, Poinsett, and White Counties, Arkansas; • <u>Snuffbox</u>—Survey in waterbody crossings with potential populations of snuffbox mussels, where bank disturbance or in-stream construction activities will occur in Pope, Poinsett, Cross, and Mississippi Counties, Arkansas; • <u>Speckled pocketbook</u>—Survey waterbody crossings with potential populations of speckled pocketbook mussels, where bank disturbance or in-stream construction activities will occur in Crawford, Cross, Franklin, Jackson, Mississippi, Poinsett, and White, Counties, Arkansas; and • <u>Spectaclecase</u>—Survey in waterbody crossings with potential populations of spectaclecase mussels, where bank disturbance or in-stream construction activities will occur in Johnson and Franklin Counties, Arkansas. 			
<p>Where presence of a listed mussel species is documented or as determined through consultation with the USFWS, vegetation removal would be minimized by cutting vegetation to a height of no less than 6 feet within a buffer zone 100 feet from the OHWM (i.e., the river buffer zone), except where necessary for access.</p>	BA SSM	During construction and operations	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Per EPM FVW-5, if waterbodies with known or presumed presence of listed mussel species require in-stream work, then Clean Line would coordinate with USFWS and applicable state resource agencies to identify site-specific minimization measures to avoid impacts.	BA SSM	Prior to construction	Not applicable
Arkansas Darter			
Presence of Arkansas darter is assumed for perennial and intermittent tributaries of the Cimarron River in Harper County, OK. Clean Line will not excavate or disturb substrates within the OHWM of perennial or intermittent waterbodies, and springs or spring runs that have important aquatic vegetation where the Arkansas darter is assumed to be present.	BA SSM	During all phases of the project	Not applicable
Clean Line will attempt to avoid constructing new access roads in tributaries within the range of this species; however, if this becomes necessary, Clean Line will coordinate with the USFWS and applicable state resource agencies to identify site-specific measures to avoid or minimize these impacts.	BA SSM	During construction	Not applicable
When possible, Clean Line will not remove low-growing vegetation within 100 feet of the OHWM (i.e., the river buffer zone), except where necessary for access, along all perennial and intermittent waterbodies where the Arkansas darter is present. Within the river buffer zone, Clean Line will implement vegetation clearing methods that avoid or minimize soil disturbance.	BA SSM	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
If waterbodies with potential presence of the Arkansas darter require in-stream disturbance activities, including excavation or other project activities, then Clean Line will coordinate with the USFWS and applicable state resource agencies to identify additional site-specific measures to avoid or minimize impacts to the extent possible.	BA SSM	During all phases of the project	Not applicable
Arkansas River Shiner			
Clean Line will limit construction-related activities that could result in soil disturbance, such as use of mechanized construction equipment, in designated ARS critical habitat; for the Project this includes the Cimarron River crossing in Major County, Oklahoma, which includes upland areas within 300 feet of each side of the river width at bankfull discharge. Within critical habitat, crews will hand clear trees and shrubs and use a tractor (or similar equipment) to dispose of the cleared material to an upland area beyond the critical habitat.	BA SSM	During construction and operation	Not applicable
Clean Line will not excavate or disturb substrates within the OHWM of perennial or intermittent waterbodies where the ARS is present.	BA SSM	During all phases of the project	Not applicable
Clean Line will attempt to avoid constructing new access roads in tributaries within the range of this species; however, if this becomes necessary, Clean Line will coordinate with the USFWS and applicable state resource agencies to identify site-specific measures to avoid or minimize these impacts.	BA SSM	During construction	Not applicable
When possible, Clean Line will not remove low-growing vegetation within 100 feet of the OHWM (i.e., the river buffer zone), except where necessary for access, along all perennial and intermittent waterbodies where the ARS is potentially present.	BA SSM	During construction and operations	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
If waterbodies with potential presence of ARS (with the exception of the Cimarron River crossing and associated designated critical habitat in Major County) require instream disturbance activities, including excavation, or other Project activities, then Clean Line will coordinate with the USFWS and applicable state resource agencies to identify additional site-specific measures to avoid or minimize impacts.	BA SSM	Prior to construction	Not applicable
Pallid Sturgeon			
Clean Line will not excavate or disturb substrates within the OHWM of the Mississippi River or Side Channel A.	BA SSM	During construction	Not applicable
Clean Line will avoid construction of new access roads within the OHWM of the Mississippi River or Side Channel A, if possible, and will attempt to use existing access roads to access Island 35.	BA SSM	During construction	Not applicable
Clean Line would minimize vegetation removal along the Mississippi River and Side Channel A by maintaining vegetation at a height of 6 feet within a buffer zone 100 feet from the OHWM (i.e., the river buffer zone), except where necessary for access.	BA SSM	During construction and operations	Not applicable
If Clean Line determines that excavation, travel through, or other construction activities are required within the OHWM of the Mississippi River or Side Channel A, then Clean Line will coordinate with the USFWS and applicable state resource agencies to identify site-specific measures to avoid or minimize impacts to the extent possible.	BA SSM	Prior to construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Ozark Hellbender			
<p>Where presence is documented or through coordination with the USFWS, vegetation removal would be minimized by maintaining vegetation at a height of 6 feet within a buffer zone 100 feet from the OHWM (i.e., the river buffer zone), except where necessary for access. Following construction activities, Clean Line will re-seed with grass seed and plant river cane on the top of the bank with areas further back from the bank being sumac, blackberry, shrub willow species, or other native woody shrubs along the river buffer zone located on the ROW.</p>	BA SSM	During construction and operations	Not applicable
General BA Protective Measures Applicable to Listed Bat Species			
<p>When drilling or blasting within 0.5 mile of a known or presumed occupied hibernacula entrances and passages, Clean Line will coordinate with the local USFWS office to ensure that the blasting will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the hibernacula.</p>	BA SSM	During construction	Not applicable
<p>Clean Line will avoid woody vegetation or spoil (e.g., soil, rock, etc.) disposal within 100 feet of known or assumed hibernacula entrances and associated sinkholes, fissures, or other karst features.</p>	BA SSM	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
BA Protective Measures for Indiana Bat			
Clean Line will coordinate with the USFWS to mitigate all impacts on occupied habitat by the Project.	BA SSM	Prior to construction	Not applicable
Where potential summer roosting habitat is found to be occupied, Clean Line will conduct tree clearing between November 1 and March 31.	BA SSM	During construction	Not applicable
Clean Line will conduct pre-construction surveys according to the current <i>Range-wide Indiana Bat Summer Survey Guidelines</i> available at the time to determine whether Indiana bats are present or likely absent from all or portions of the Action Area.	BA SSM	Prior to construction	Not applicable
If occupied maternity roost trees are identified, Clean Line will maintain a minimum of 100 feet between roost trees and construction areas. Clean Line will erect fencing to delineate the boundary and prevent inadvertent encroachment into the area, and erect signs stating “no trespassing” or “do not disturb – sensitive area.” If it is not possible to avoid occupied roost trees by 100 feet, Clean Line will consult the USFWS.	BA SSM	During construction and operations	Not applicable
To minimize potential impacts on foraging Indiana bats during construction, Clean Line will limit clearing and heavy equipment operation activities within 300 feet of documented roost trees identified during pre-construction surveys to one-half hour after dawn to one-half hour before dusk from April 1 to November 1. This timing restriction will allow time for bats to return to roost trees at dawn and time for bats to emerge from roosts at dusk. If this is not possible, the USFWS would review these on a case-by-case basis after consultation is completed to ensure adequate protection of occupied maternity roost trees.	BA SSM	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
BA Protective Measures for Northern Long-eared Bat			
Clean Line will coordinate with the USFWS to mitigate all impacts on occupied habitat by the Project.	BA SSM	Prior to construction	Not applicable
If occupied maternity roost trees are identified, Clean Line will maintain a minimum of 100 feet between roost trees and construction areas. Clean Line will erect fencing to delineate the boundary and prevent inadvertent encroachment into the area, and erect signs stating “no trespassing” or “do not disturb – sensitive area.” If it is not possible to avoid occupied roost trees by 100 feet, Clean Line will consult the USFWS.	BA SSM	During construction	Not applicable
Clean Line will conduct pre-construction surveys according to the most up-to-date NLEB planning guidance available at the time to determine whether NLEBs are present or likely absent from all or portions of the Action Area.	BA SSM	Prior to construction	Not applicable
Where potential summer roosting habitat is found to be occupied, Clean Line will conduct tree clearing between November 1 and March 31.	BA SSM	During construction	Not applicable
To minimize potential impacts on foraging NLEBs during construction, Clean Line will limit clearing and heavy equipment operation activities within 300 feet of documented roost trees identified during pre-construction surveys to one-half hour after dawn to one-half hour before dusk from April 1 to November 1. This timing restriction will allow time for bats to return to roost trees at dawn and time for bats to emerge from roosts at dusk. If this is not possible, the USFWS would review these on a case-by-case basis after consultation is completed to ensure adequate protection of occupied maternity roost trees.	BA SSM	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Biological Opinion RPMs and RPM-Terms & Conditions Applicable to Listed Bat Species Indiana, Northern Long-Eared, Ozark Big-Eared and Gray Bats			
Incidental take of bats (expressed as acres of suitable and occupied habitat) is authorized and shall not exceed 6,451.3 acres for the northern long-eared bat, 4,999 acres for the gray bat, 2,618 acres for the Ozark big-eared bat, and 3,677.8 acres for the Indiana bat. ESA consultation must be re-initiated if take of bat habitat exceeds any of these limits.	BO-ITS-BATS	During all phases of the project	Not applicable
Clean Line will ensure surveys are conducted for potential bat roost trees and locations of caves or cave-like features throughout the entire final selected route within the known range of these species.	BO RPM BATS-1	Prior to construction	Not applicable
All surveys must be conducted by a biologist with a current section 10 permit for gray bat, Indiana bat, northern long-eared bat and Ozark big-eared bat. Results of these surveys are to be provided to the Service as quickly as possible.	BO RPM BATS-1 T&C-1	Prior to construction	Not applicable
If a survey finds evidence of current or likely use of cave or cave-like formations or roost trees by federally-listed bats (e.g., presence of federally-listed bats, moth wings and/or guano), DOE will reinitiate consultation.	BO RPM BATS-1 T&C-2	Prior to construction	Not applicable
Considering very few caves meet gray bat or Ozark big-eared bat biological requirements for both maternity sites and hibernacula, all caves and cave-like features within the selected ROW must be surveyed for use during the same maternity or hibernating season of the same year that construction is planned.	BO RPM BATS-1 T&C-3	Prior to construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Ozark big-eared bat maternity surveys should be conducted between May 15 and July 15, and winter hibernation surveys should be conducted between November 15 and February 15. If the duration of the project is anticipated to occupy both the maternity and hibernation seasons of the same year, then surveys will be conducted during both seasons to check for use before construction starts.	BO RPM BATS-1 T&C-4	Prior to construction	Not applicable
If, during surveys, a cave or cave-like feature is found to be occupied by the gray bat, Indiana bat, northern long-eared bat or Ozark big-eared bat, Clean Line will monitor the site for three years post-construction to determine the impact of construction on occupancy of the identified site. Clean Line shall contact the appropriate Service office to determine appropriate methods for monitoring the site.	BO RPM BATS-1 T&C-5	Prior to construction & annually for 3-years post-construction, if caves or cave-like features are found to be occupied	Not applicable
Clean Line will monitor take to verify that the authorized level of take has not been exceeded.	BO RPM BATS-2	During all phases of the project, but particularly during construction	Not applicable
Take by harm and harassment when active maternity trees are removed during the inactive season will be monitored through documentation of the number of active roost trees removed. The number of potential roost trees removed will be provided to the Service along with the number of individuals known to occupy the tree(s) during the active season. These data will be reported to the Service as described below.	BO RPM BATS-2 T&C-1	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Clean Line will provide the Service an annual report detailing the area (acres) of forested habitat removed, number of active maternity roost trees and/or the 300 ft. buffer removed, number of caves identified and surveyed, and species observed during cave surveys. This report must include a copy of all Indiana and northern long-eared bat survey results and reasonable and prudent measures implemented. Verify that the report covers their permit areas prior to submitting it to the USFWS. Submit the full report by December 31 every year.	BO RPM BATS-2 T&C-2	Annually by December 31	Not applicable
Clean Line will apply time of year restrictions and limit tree removal and burning to the period between October 15 and March 31.	BO RPM BATS-3	During all phases of the project October 15–March 31	Not applicable
Tree removal will be conducted during the inactive season of October 15th through March 31st.	BO RPM BATS-3 T&C-1	Oct 15–March 31 during construction	Not applicable
Active season will be extended to November 15th if a new hibernaculum/fall swarming site is identified through survey efforts. This will represent new information and DOE must reinitiate consultation.	BO RPM BATS-3 T&C-2	Nov 15–March 31 during construction	Not applicable
Clean Line will implement all environmental measures identified for protection of the northern long-eared, gray, Ozark and Indiana Bats in the BA and supporting documents in an effort to minimize harassment during construction within either the active or inactive season.	BO RPM BATS-4	During all phases of the project	Not applicable
Direct temporary lighting away from suitable habitat.	BO RPM BATS-4 T&C-1	During construction	Not applicable
Insure that all phases/aspects of the project (e.g., temporary work areas, alignments, fill disposal area, etc.) avoid tree removal in excess of what is required and has been assessed to implement the project safely.	BO RPM BATS-4 T&C-2	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Ensure tree removal is limited to that specified in project plans. Install bright orange flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand clearing limits and how they are marked in the field.	BO RPM BATS-4 T&C-3	During construction	Not applicable
To minimize potential effects on air quality, construction contractors will use water trucks and other proactive measures to prevent discharges of dust into the atmosphere that may unreasonably interfere with the public and adjacent properties or may be harmful to plants and animals.	BO RPM BATS-4 T&C-4	During construction	Not applicable
To minimize potential indirect effects on bats or aquatic insects which may provide forage, adverse effects to aquatic resources will be minimized through strict adherence to the Stormwater Pollution Prevention Plan (SWPPP).	BO RPM BATS-4 T&C-5	During construction	Not applicable
Clean Line will provide appropriate mitigation for the loss of any habitat known to be occupied by gray bat, Indiana bat, northern long-eared bat or Ozark big-eared bat, as stated in the BA.	BO RPM BATS-5	During all phases of the project	Not applicable
Clean Line shall ensure that appropriate mitigation is secured for any impacts prior to initiation of construction. Use or development of a conservation bank or development of a similar amount of Permittee-Responsible mitigation lands is appropriate and should be in accordance with Service conservation banking guidance.	BO RPM BATS-5 T&C-1	Prior to construction	Not applicable
If post-construction monitoring indicates abandonment of a previously occupied cave or cave-like feature, Clean Line will work with the Service and appropriate State agencies to protect, by fee or easement, or enhance a suitable surrogate feature currently under protection for use by these bats.	BO RPM BATS-5 T&C-2	Post-construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Interior Least Tern			
Incidental Take of ILT is authorized for 21 ILT each year with a total take of up to 630 ILT over a 30-year project life. ESA consultation must be re-initiated if the average direct and indirect take of adults and fledglings, for the Action Area, over a 5-year period exceeds 105 ILT.	BO-ITS-ILT	During all phases of the project	Not applicable
Clean Line will conduct pre-construction surveys within 0.25 miles from suitable breeding habitat at the Cimarron River in Oklahoma, and the Mississippi River in Arkansas and Tennessee during the nesting season (from May 1 through August 31) to ensure that there are no nesting terns within 0.25 miles of the construction area. Daily surveys for nesting ILT would be conducted during the nesting season when construction activities occur within 0.25 miles of potential nesting habitat.	BA SSM	During construction	Not applicable
If ILT nests are found at the crossings, then Clean Line would: (1) adhere to the 0.25-mile buffer of no construction activity and (2) continue to monitor nests if any are within 0.25 miles of the construction footprint until young have fledged.	BA SSM	During construction	Not applicable
Clean Line will install bird flight diverters on the shield wire on the line span between the banks at the Cimarron and Mississippi River crossings.	BA SSM	During construction and operations	Not applicable
If the ILT is observed at or near the Project site prior to or during construction, Clean Line will immediately contact the USFWS and other appropriate natural resource agencies.	BA SSM	Prior to and during construction	Not applicable
Monitor take of interior least terns.	BO RPM ILT-2	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>Monitor habitat with a survey for the presence and condition of sand bars/gravel bars and a subsequent presence/absence survey for terns prior to initiating construction or maintenance in areas within 1 mile of the river sections between April 15 and September 15.</p> <p>Conduct routine monitoring surveys during the breeding season for bird strikes near the river crossings and coordinate with ongoing survey efforts near the crossings. If it is determined as part of the APP and monitoring plan that automated monitoring devices will be used on the transmission line, then two different types of monitors should be used: a Bird Strike Indicator and a Bird Activity Monitor. Work with the Service to develop an appropriate post-construction monitoring plan. This monitoring is needed to ensure take limit is not exceeded.</p>	BO RPM ILT-2 T&C-1	During all phases April 15 to September 15	Not applicable
<p>Clean Line shall enroll in and utilize the Service's Office of Law Enforcement Bird Fatality/Injury Reporting Program to report bird collisions, injuries, and fatalities with the Plains and Eastern transmission line at: https://birdreport.fws.gov/BirdReportHomePage.cfm.</p>	BO RPM ILT-2 T&C-2	Prior to construction	Not applicable
<p>Conduct, evaluate, and adjust construction, maintenance, and operations as needed to minimize take of ILT.</p>	BO RPM ILT-3	During all phases of the project	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Adaptive management strategies shall be used to minimize take of interior least terns including alteration and improvement to monitoring strategies and line markings based on observed interior least tern take. Activities, such as initial construction and structure placement or routine maintenance, having the potential to disturb interior least terns or their habitat should take place outside of the nesting season (April 1 to September 1). Clearing of woody vegetation within the transmission line ROW and access roads will be performed to the extent possible during the fall and winter months to minimize the potential for clearing activities to disturb nesting birds.	BO RPM ILT-3 T&C-1	During all phases September 1 to April 1	Not applicable
Human activities near nesting sandbars can disrupt nesting. Clean line should map or obtain the most recent breeding season's information on interior least tern nesting sites within three miles of the project site and maintain a 1,500 feet buffer between work sites and nesting sandbars during construction activities in the nesting season if those activities cannot be completed outside of the nesting season.	BO RPM ILT-3 T&C-2	Prior to and during construction	Not applicable
Piping Plover			
Incidental Take of PP is authorized for 15 PP over the 30 year of life of the project. ESA consultation must be re-initiated if take of PP exceeds this limit.	BO-ITS-PP	During all phases of the project	Not applicable
Monitor take of piping plover.	BO RPM PP-2	During all phases of the project	Not applicable
If it is determined, as part of the APP and monitoring plan that automated monitoring devices will be used on the transmission line, then two different types of monitors should be used: a Bird Strike Indicator and a Bird Activity Monitor.	BO RPM PP-2 T&C-1	During construction	Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Clean Line shall enroll in and utilize the Service's Office of Law Enforcement Bird Fatality/Injury Reporting Program to report bird collisions, injuries, and fatalities with the Plains and Eastern transmission line at: https://birdreport.fws.gov/BirdReportHomePage.cfm .	BO RPM PP-2 T&C-2	During all phases of the project	Not applicable
Biological Opinion RPM and RPM-Terms & Conditions Applicable to Both Interior Least Terns and Piping Plover			
The Avian Protection Plan (APP) will be consistent with the Avian Power Line Interaction Committee (APLIC) guidance and should include such measures as bird diverters, perch deterrents, and timing of construction and planned maintenance operations to avoid the breeding season for the interior least tern.	BO RPM ILT-1 T&C-1 BO RPM PP-1 T&C-1		Not applicable
As part of the APP, Clean Line will mark those sections of transmission line that cross major rivers and may therefore be preferentially used as movement corridors by bald eagles, least terns, and other avian species with traditional marker balls, spiral vibration dampeners, or air flow spoilers. These markers will be installed on the shield wires with spacing dependent on the type of marker used. Markers placed at river crossings would extend from the river centerline out to a distance of 300 feet beyond each river bank. Markers will be inspected and replaced as necessary as part of routine maintenance activities.	BO RPM ILT-1 T&C-2 BO RPM PP-1 T&C-2		Not applicable

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Lesser Prairie-Chicken³			
Clean Line will avoid non-emergency operations, construction and maintenance activities, where humans are present, during lekking, nesting, and brooding season (March 1 to July 15) within 1.25 miles of leks recorded active within the previous five years. Clean Line will conduct pre-construction surveys for LEPC leks in areas identified in the Habitat Assessment report. This includes areas within the Estimated Occupied Range where suitable habitat exists, but recent surveys have not identified leks, as well as areas where leks have been identified as active within the last five years.	BA SSM	During construction and operations	Not applicable
Whooping Crane			
Construction phase: During spring (March 25 to May 15) and fall (October 15 to December 15) whooping crane migration periods, environmental monitors will complete a brief survey of any wetland or riverine habitat areas potentially used by whooping cranes in the morning before starting equipment. If whooping cranes are sighted during the morning survey or at any time of the day, the environmental monitor will immediately contact the USFWS and respective state agencies for further instruction and require that all human activity and equipment start-up be delayed or immediately cease. Work could proceed if whooping crane(s) leave the area. The environmental monitor would record the sighting, bird departure time, and work start time on the survey form. The USFWS would notify the compliance manager of whooping crane migration locations during the spring and fall migrations through information gathered from the whooping crane tracking program.	BA SSM	During construction	Not applicable

³ Since the BA was prepared, the USFWS final rule listing the Lesser Prairie Chicken was vacated by the U.S. District Court for the Western District of Texas. Case No. 7:14-CV-000500000-RAJ (Sept. 1, 2015). Consequently, the USFWS did not address the Lesser Prairie Chicken in the Biological Opinion. DOE and Clean Line are retaining this protective measure for the species.

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
If activities must occur outside of daylight hours, Clean Line will prevent lighting from projecting upwards during spring and fall whooping crane migrations in areas that provide suitable stopover habitat.	BA SSM	During construction	Not applicable
Clean Line will install avian markers and deflectors within 0.25 miles of suitable whooping crane stopover habitat as directed by the USFWS. The USFWS will be contacted should a whooping crane be spotted in the area of the proposed power line construction site.	BA SSM	During construction and operation	Not applicable
Surface Water (FEIS Section 3.15)			
Establish streamside management zones within 50 feet of both sides of intermittent and perennial streams and along margins of bodies of open water where removal of low-lying vegetation is minimized.	EIS EPM W-3	Prior to, and during construction; during operation and maintenance	Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Locate spoil piles from foundation excavations and fiber optic cable trenches outside of streamside management zones.	EIS EPM W-7	During construction	Surface Water; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Also EPMs GE-1, GE-3, GE-5, GE-6, GE-7, GE-9, GE-13, GE-14, GE-21, GE-27, GE-28, GE-30, GE-31, W-1, W-2, W-5, W-6, W-8, W-12, W-14, W-15, GEO-1; and Blasting Plan, Storm Water Pollution Prevention Plan, Restoration Plan, Spill Prevention, Control and Countermeasures (SPCC) Plan.			
Transportation (FEIS Section 3.16)			
Accommodate existing and programmed, approved, and/or funded transportation facility projects to the extent practicable into the final Project design, and coordinate with appropriate jurisdictions to avoid or minimize disruptions to trails, streets, or drainage/irrigation structures.	EIS BMP	Prior to and during construction	Transportation

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
<p>In identified areas of traffic impact, conflicts between the Project traffic and background traffic such as movements of normal heavy trucks (dump trucks, concrete trucks, standard size tractor-trailers or flatbeds, etc.) would be minimized by scheduling (essential deliveries only) to the extent practicable during peak traffic hours/times and scheduling remaining heavy truck trips during off-peak traffic hours/times.</p>	EIS BMP	During construction	Transportation
<p>To the extent practicable, staging activities and parking of equipment and vehicles will occur primarily within private ROW on private land.</p>	EIS BMP	During construction	Transportation
<p>Implement a Communications Program. The initial elements of a communications program include:</p> <ul style="list-style-type: none"> • Clean Line will review and respond to all concerns and complaints from the public. • Clean Line will publish methods for public input through various forms of media including newspaper advertisements, online social media, email or direct correspondence. • Clean Line will establish a toll-free hotline, mailing address, email address, and an online comment submission form to receive direct input. 	EIS BMP	During construction	Noise; Socioeconomics; Transportation
<p>Perform mitigation to address Project structures in the vicinity of private airstrips. This BMP would require conducting specific flight plan analyses to determine whether interference with private airstrips can be avoided through micrositing within the 1,000-foot-wide corridor to the extent practicable. If impacts are unavoidable, develop and implement mitigation measures and/or provide compensation, in coordination with landowners. Apply similar mitigation to private airstrips where Project structures would present a hazard within a 1:20 glide slope from each end of private airfields.</p>	EIS BMP	Prior to and during construction	Transportation

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Also EPMs GE-1, GE-6, GE-7, GE-8, GE-11, GE-16, GE-20, GE-22, GE-24, GE-26, LU-1, LU-2, LU-4, AG-5.			
Vegetation Communities and Special Status Plan Species (FEIS Section 3.17)			
EIS EPMs and BMPs for this resource have previously been described in this table above. See applicable EPMs and BMPs listed in the “Source” column.	EPMs GE-3, GE-4, GE-5, GE-6, GE-7, FVW-1, FVW-2, FVW-3, FVW-5; Restoration Plan, Transmission Vegetation Management Plan.	See previous listings on this table as is applicable to each EPM and BMP. Time of implementation information is also provided for EPMs in FEIS Appendix F.	Vegetation Communities and Special Status Plan Species; Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Historic and Cultural Resources; Noise; Recreation; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Transportation; Visual Resources; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates; Groundwater
Visual Resources (FEIS Section 3.18)			
EIS EPMs and BMPs for this resource have previously been described in this table above. See applicable EPMs and BMPs listed in the “Source” column.	EPMs GE-3, GE-6, GE-7, GE-10, GE-11, LU-3, LU-4, LU-5.	See previous listings on this table as is applicable to each EPM. Time of implementation information is also provided for EPMs in FEIS Appendix F.	Visual Resources; Geology, Paleontology, Minerals, and Soils; Health, Safety, and Destructive Acts; Historic and Cultural Resources; Noise; Recreation; Socioeconomics; Special Status Wildlife, Fish, Aquatic Invertebrate, and Amphibian Species; Surface Water; Transportation; Vegetation Communities and Special Status Plan Species; Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates; Groundwater; Land Use
Wetlands, Floodplains, and Riparian Areas (FEIS Section 3.19)			
If used, selectively apply herbicides within streamside management zones.	EIS EPM W-4	During construction, operation, and maintenance activities	Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Design converter station sites to avoid adverse changes to the base flood elevation within the 100-year floodplain.	EIS EPM W-9	Prior to construction	Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates
Minimize fill for access roads and structure foundations within 100-year floodplains to avoid adverse changes to the base flood elevation.	EIS EPM W-10	Prior to and during construction; during operation and maintenance	Wetlands, Floodplains, and Riparian Areas; Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
In addition to protection of intermittent and perennial streams, ephemeral streams would also be included in streamside management zones. This BMP would add to EPM W-3.	EIS BMP	Prior to and during construction	Wetlands, Floodplains, and Riparian Areas specific
In addition to minimization of clearing vegetation within the ROW (GE-3), if it is recommended that where tree removal is necessary in the ROW, this removal should be accomplished at ground level leaving root wads in place to aid in the stabilization of soils.	EIS BMP	During construction	Wetlands, Floodplains, and Riparian Areas specific
Limit, to the extent practicable, the amount of vegetation removed along streambanks and minimizing the disruption of natural drainage patterns.	EIS BMP	During construction	Wetlands, Floodplains, and Riparian Areas specific
All permanent and temporary crossings of waterbodies would be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of aquatic species. The crossings would also be constructed to withstand expected high flows. The crossings would not restrict or impede the passage of normal or high flows.	EIS BMP	Prior to and during construction	Wetlands, Floodplains, and Riparian Areas specific
Excavated trenches that are to be backfilled should separate the upper 12 inches of topsoil from the rest of the excavated material. The topsoil should be used as the final backfill.	EIS BMP	During construction	Wetlands, Floodplains, and Riparian Areas specific
Also EPMs GE-1, GE-3, GE-5, GE-6, GE-7, GE-9, GE-11, GE-13, GE-14, GE-15, GE-21, GE-27, W-1, W-2, W-3, W-5, W-6, W-7, W-8, W-11, W-14, FVW-1, FVW-2, FVW-3, AG-1, GEO-1; Storm Water Pollution Prevention Plan, Restoration Plan, Spill Prevention Plan, Transmission Vegetation Management Plan.			
Wildlife, Fish, and Aquatic Invertebrates (FEIS Section 3.20)			
All vegetation clearing would comply with both state and federal spatial and timing windows, and would not occur during the avian breeding season applicable to each respective region.	EIS BMP	During construction	Wildlife, Fish, and Aquatic Invertebrates

Mitigation Measures	Source	Time of Implementation	Identified in the Following FEIS Resource Chapter(s)
Identify, control, and minimize the spread of non-native, invasive species and noxious weeds to the extent practicable, including ensuring that in-water equipment and vehicles are cleaned between waterbodies to minimize the chance of transferring non-native species between waterbodies. This BMP would expand EPM FVW-2.	EIS BMP	Prior to, and during construction	Wildlife, Fish, and Aquatic Invertebrates
Also EPMs GE-1, GE-2, GE-3, GE-4, GE-5, GE-6, GE-7, GE-9, GE-10, GE-11, GE-13, GE-14, GE-15, GE-20, GE-21, GE-22, GE-25, GE-27, GE-28, GE-30, FVW-1, FVW-2, FVW-3, FVW-4, FVW-5, FVW-6, W-2, W-3, W-4, W-5, W-6, W-7, W-9, W-10; Restoration Plan, Transmission Vegetation Management Plan, Storm Water Pollution Prevention Plan, Blasting Plan.			

Appendix A

Programmatic Agreement: Plains and Eastern Clean Line Transmission Project

Appendix B

Biological Opinion: Plains and Eastern Clean Line Transmission Project

As part of its responsibilities under Section 7 of the Endangered Species Act (ESA), DOE as a participant in the Plains and Eastern Clean Line Transmission Project entered into formal consultation with the U.S. Fish and Wildlife Service (FWS) regarding potential effects of the project on threatened or endangered species in the states of Oklahoma, Arkansas, and Tennessee. The Biological Opinion in this Appendix prepared by the FWS is the result of that consultation process and is included here for reference. In the Biological Opinion, the FWS has issued allowable incidental take limits for potentially affected species. To minimize potential take of these threatened or endangered species, reasonable and prudent measures and terms and conditions have been specified in the Biological Opinion that are non-discretionary and must be implemented. In order to be exempt from the prohibitions of take in Section 9 of the ESA, DOE and Clean Line must comply with the reasonable and prudent measures and the implementing terms and conditions. These measures and the implementing terms and conditions have been included in the Mitigation Action Plan for each of the threatened or endangered species that could be potentially affected. Further, species-specific measures proposed by DOE and Clean Line in the Biological Assessment are also included in the Mitigation Action Plan.

