Schuylkill River HDD Project: Mitigation Plan

Texas Eastern Transmission, LP
Schuylkill River HDD Project
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Introduction

Texas Eastern Transmission, LP (Texas Eastern) is proposing the Schuylkill River HDD Project (Project) to maintain their existing natural gas pipeline system. The Project is in Spring City and Upper Providence Townships, Chester and Montgomery Counties, Pennsylvania. The Project proposes to install a new 20-inch diameter pipe with a horizontal directional drill (HDD) of approximately 1,111 linear feet. Additionally, the existing 20-inch diameter Line 1 pipeline will be removed. The Project proposes to begin HDD activities in March 2024, followed by the removal of the existing Line 1.

The Project will result in impacts to the Schuylkill River and adjacent Wetland W1. Wetland W1 is considered an Exceptional Value (EV) wetland, as it within the corridor of the Schuylkill River (Stream S1) which is designated as scenic under the Pennsylvania Scenic Rivers Act (32 P. S. § § 820.21—820.29). A majority of the impacts to these resources will be considered temporary; however, mitigation efforts will be conducted on site to protect these resources ecological value. This mitigation plan is provided to set-forth guidance on compensating unavoidable impacts to Wetland W1.

Existing Wetland Resources

Wetland W1 consisted of a combination of PEM and PFO wetland and is characterized as a wetland complex. Wetland W1 is located in the northeast extent of the Project area, on the north side of the Schuylkill River. The PEM wetland is located entirely within the existing utility easement while the PFO wetland is located in the forested area adjacent to and as transitional area of the utility easement. The PFO wetland was mapped open ended and extends outside of the easement. Refer to the Project's Site Restoration Plan for the location of PEM and PFO Wetland W1.

The entire extent of Wetland W1 is located within the floodplain of the Schuylkill River and extends both north and south in the in the riparian floodplain; bounded to the northeast by a railroad and to the southwest by the Schuylkill River. Based off the wetland delineation conducted by Jacobs Engineering Group (Jacobs) on November 18, 2022, it was observed that Wetland W1 likely receives hydrology from groundwater flow and occasional flooding events of the Schuylkill River. As such, a Hydrogeomorphic (HGM) Classification of RIVERENE and DEPRESS was assigned to the wetland complex. Additionally, it was observed the PFO forested portions of the wetland outside of the Texas Eastern easement are seasonally flooded. These seasonally flooded PFO areas were confirmed during the Phase 1 Bog Turtle Survey conducted by Jacobs on January 18, 2023, as flooding was observed throughout the forested areas of the wetland.

Wetland W1 vegetation consists of a Red Maple – Elm – Willow Floodplain Forest per the Palustrine community classification. The PFO wetland vegetation include dominant species such as red maple (*Acer rubrum*, FAC) and silver maple (*Acer saccharinum*, FACW). The PEM wetland vegetation included Pennsylvania smartweed (*Polygonum pensylvanicum*, FACW), switchgrass (*Panicum virgatum*, FAC), and common reed (*Phragmites australis,* FACW). Wetland W1 soil composition consisted of characteristics typical to hydric soils in the region. Hydric soils observed in the wetland consisted of low chroma soils with redox features.

Wetland Impacts

Impacts associated with PEM Wetland W1 are temporary. Impacts to the PFO Wetland W1 will have minor permanent indirect impacts through 0.05 acre of tree cutting.

Wetland W1 – PEM
The entire extent of the PEM wetland within the workspace (0.50 acres) will be temporarily impacted. During the Line 1 HDD installment activities, excavation within the PEM wetland will be minimized to the entry pit (6 feet by 6 feet). During the Line 1 removal activities, excavation will be limited to the 0.15 acres of disturbed trench area. For the remainder of the PEM wetland located within the workspace, timber mats will be placed to minimize impacts to vegetation, soil, and hydrology. As a result of the timber mat placement and excavations, the 0.50 acres of wetland will be temporarily impacted.

Wetland W1 - PFO
The entire extent of the PFO wetland within the workspace (0.37 acres) will be temporarily impacted; however, only a small portion of the PFO wetland will require tree clearing (0.05 acre). Approximately 0.32 acres of the PFO wetland consists of transitional areas between the maintained Texas Eastern easement and the adjacent forested portions. This 0.32-acre area was considered PFO, as overhanging tree branches and shrub vegetation are present throughout this area and the canopy cover yielded the classification of a forested wetland. Impacts to the 0.32-acre portion will require minor side trimming of trees and cutting of shrubby species prior to construction activities.

The remaining portion of the PFO Wetland 1 will consist of the 0.05-acre forested area, north of the pipeline easement (displayed on the Site Restoration Plan). Within this 0.05-acre area, tree and shrub clearing will be required. A tree survey was conducted on the north side of the easement within the proposed additional temporary workspace (ATWS) to identify trees with diameter at breast height (DBH) greater than 12 inches. As a result of the tree survey, the 0.05 acre of tree cutting only includes one tree with DBH greater than 12 inches.

Following tree and shrub clearing of the PFO Wetland W1, timber mats will be placed to minimize impacts to wetland resources.

Site Restoration

Following the Line 1 HDD installment and removal construction activities, Wetland W1 will be restored to pre-construction conditions as near as practicable, and additional plantings will be conducted to mitigate unavoidable impacts.

Wetland W1 - PEM

The PEM portion of Wetland W1 will be restored per the Erosion and Sediment Control Plan (ESCP) and Site Restoration Plan, specifically backfilling the trench with the stockpiled subsoil/topsoil, returning graded areas to preconstruction contours, removing timber mats and site clean up. Topsoil, segregated where excavation occurs in wetlands, will be restored and provide a seed base for revegetation. Following a growing season, should overseeding of the wetland be needed, a wetland seed mix (ERNMX-261) will be used. Re-establishment of PEM wetland vegetation will be monitored for three years following construction and additional seeding measures can be implemented depending on vegetation re-establishment.

Wetland W1 - PFO

The PFO portion of Wetland W1 will also be restored per the ESCP and Site Restoration Plan, specifically, removing timber mats and site clean up. There is an existing water line that runs parallel to the pipeline easement along the northwest side. The utility has stated that no tree or shrub species should be re-planted in the water line easement (20 feet wide). The 0.05 acre of tree clearing is within the water line easement. Since much of the PFO wetland in the easement and ATWS consists of transitional areas

between the maintained Texas Eastern easement and the adjacent forested wetland, Texas Eastern proposes to plant shrub species in the PFO wetland within the ATWS, outside of the water line and pipeline easements. No tree or shrub planting can occur within the existing pipeline easement for pipeline integrity.

Vegetative conditions are similar in both the northern and southern portions of PFO Wetland W1. PFO Wetland W1 consisted of multiple species of trees and shrubs. Tree species consisted of red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), and white ash (*Fraxinus americana*). Shrub species were dominated by invasive shrubs such as multiflora rose (*Rosa multiflora*) and amur honeysuckle (*Lonicera maackii*). Since a majority of the shrub species located in the PFO wetland are considered invasive, the replanting of native shrubs would enhance the overall ecological well-being of the on-site and adjacent wetland area.

Native shrub species observed on-site such as Gray Dogwood (*Comus racemose*), northern spicebush (*Lindera benzoin*), and Silky Dogwood (*Comus amomum*) will be replanted in PFO ATWS to assist in restoration of the wetland. Additionally, shrub species will be planted in the riparian area adjacent to the Schuylkill River per request of the DCNR.

Planting Scheme

Following project construction activities, shrub species will be planted in the PFO wetland ATWS. The species were observed within and adjacent to Wetland W1 and are typically resilient to a variety of habitat types. These species will be purchased from a local nursery in the form of either bare roots or potted plants. Following restoration, the contractor will plant these species in an alternate fashion throughout the designated PFO wetland ATWS for an equivalent density of approximately 400 stems per acre. Wildlife controls will be installed to deter herbivory from rodents and larger mammals. The contractor will replant approximately 0.15 acres of ATWS adjacent to the pipeline easement.

It is anticipated that Gray Dogwood and Silky Dogwood will have a high success rate. These species are shade tolerant and should thrive in the understory of the designated planting area of the PFO wetland. Success rate of these species will be monitored by a wetland specialist for three years, following construction.

In addition to replanting the PFO wetland in the ATWS, plantings are proposed in riparian areas adjacent to the Schuylkill River in the ATWS (approximately 0.16 acres). This area will be planted with species observed on-site such as gray dogwood, silky dogwood, river birch, and Allegheny blackberry.

The following table provides details of the proposed plantings.

Planting Area	Species	Size / Type	Spacing/Density
PFO Wetland W1 Planting in ATWS (0.15 acre)	Northern Spicebush (*Lindera benzoin*)	#3 container (minimum)	15-20ft on center (approximately 60 shrubs)
	Gray dogwood (*Cornus racemosa*)		
	Silky dogwood (*Cornus amomum*)		
Riparian Planting in ATWS (0.16 Acre)	Allegheny Blackberry (*Rubus allegheniensis*)	#3 container (minimum)	15-20ft on center (approximately 64 shrubs)
	Gray dogwood (*Cornus racemosa*)		
	Silky dogwood (*Cornus amomum*)		

	River birch (*Betula nigra*)	4-6ft container	

Monitoring

The Project site will be monitored for three years following construction to assess re-establishment of herbaceous and shrub wetland vegetation within Wetland W1. Stabilization will be considered a minimum uniform 70% perennial vegetative cover. Monitoring will be conducted by a qualified wetland specialist once a year. Inspection will occur within the growing season to document effectiveness of restoration and replantings. The wetland specialist will document overall revegetation success and will identify possible areas of concern. Following each inspection, a brief report will be prepared including representative photographs and a photograph location map.

The site will also be monitored for invasive and noxious weeds. Given the existing adjacent disturbed areas (railroad, streets, and commercial sites) and the existing seed base, some invasive species growth is likely. Plant species composition should be consistent with adjacent areas that were not disturbed by construction. Should invasive species levels increase beyond adjacent areas, corrective actions will be taken such as, use of herbicides and/or mowing prior to seed dispersal. Herbicide use will be discussed with PADEP and/or county conservation districts prior to use.

Conclusion

The Schuylkill River HDD Project construction impacts on Wetland W1 will be mitigated through avoidance, minimization, and site restoration and replanting efforts. The 0.37 acres of impacted PFO Wetland W1 will be revegetated with replantings in the PFO wetland ATWS, adjacent to the pipeline easement. The 0.50 acres of impacted PEM Wetland W1 will be restored on site. Mitigation success rate will be document through three years of monitoring efforts. Texas Eastern will continually update PADEP on the overall success rate of their mitigation and will take any corrective actions to achieve appropriate re-vegetation coverage at the site.