Dunkirk Gas Corporation

Dunkirk Natural Gas Pipeline Project

Exhibit 4

Environmental Effects

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EXHIBIT 4: ENVIRONMENTAL EFFECTS

This Exhibit addresses the requirements of 16 NYCRR §86.5.

4.1 Introduction

The Dunkirk Natural Gas Pipeline Project (the "Project") has been conceived and the engineering design has been developed in a manner that avoids or minimizes impacts, to the maximum extent practicable, to the environmental resources within the Chautauqua County area.

Extensive field investigations, literature reviews, and agency consultations have been and/or are being conducted to identify and assess existing environmental conditions within the Project area. This Exhibit summarizes the results of environmental impact studies undertaken by the Applicant under the following categories:

- Land Uses;
- Visual and Aesthetics Resources;
- Historic and Archaeological Resources;
- Geology, Topography, and Soils;
- Terrestrial Ecology and Wetlands;
- Water Resources;
- Traffic and Transportation;
- Noise; and
- Public Health.

The environmental impact studies results describe existing conditions; methodologies used in the investigation; the anticipated environmental effects of the proposed pipeline and associated facilities; and, the identification of mitigation measures that, if necessary or deemed appropriate, would be implemented to avoid or minimize potential adverse impacts associated with the proposed construction and operation of the Project.

4.2 Project Description

The Project involves the construction of a new approximately 11.3-mile, 16-inch diameter buried pipeline and associated facilities to transport natural gas from the Tennessee Gas Transmission Mainline Pipeline in the southern portion of the Town of Pomfret, Chautauqua County, through the Town of Dunkirk, Chautauqua County to the Dunkirk Generating Station in the City of Dunkirk, Chautauqua County.

The proposed pipeline will be 16-inch diameter coated steel with a Maximum Allowable Operating Pressure ("MAOP") 760 pounds per square inch ("psi"), and will connect to the Tennessee Gas Transmission Mainline Pipeline via a new tap to be installed by the operator of that Federal Energy Regulatory Commission ("FERC") regulated pipeline. The pipeline will be built in accordance with U.S. Department of Transportation ("USDOT") Safety Standards as set forth in Title 49, Part 192 ("Part 192") of the Code of Federal Regulations ("CFR") and 16 NYCRR Chapter III, Gas Utility Regulations and Section 255. Along the majority of the route, the pipe will be installed via direct burial in an open trench. Trench width will vary at the top of the trench from 4 to 8 feet depending upon site conditions and soil type. Typically the pipeline will have a minimum cover of 36 inches. In active agricultural land, the top of the pipeline will be buried a minimum of 48 inches below the ground surface. In certain locations, such as the New York State Thruway (I-90) crossing, protected or steep stream crossings, large wetlands, rails and other roadways, or other special resources in the right-of-way, Dunkirk Gas Corporation will install the pipeline using horizontal direction drill ("HDD") or jack and boring construction methods to minimize disturbance and the pipeline will have a minimum cover of 60 inches.

The Project will include the construction of associated aboveground facilities such as a metering station, regulating station and mainline valves. The proposed regulating station will be located within the existing, industrialized property of the Dunkirk Generating Station. The proposed metering station will be adjacent to the existing 26-inch Tennessee Gas Transmission Mainline Pipeline in the Town of Pomfret. Two mainline valves will be installed along the proposed pipeline to be able to shut down flow for maintenance and in emergency situations. Pig launching/receiving stations will be collocated with the regulating and metering stations.

4.2.1 Right-of-Way and Other Land Requirements

Dunkirk Gas Corporation has developed and designed the natural gas pipeline route to reduce

environmental impacts to the maximum extent possible. The proposed natural gas pipeline will be installed within a permanent right-of-way up to 50 feet wide. The temporary construction limit of disturbance right-of-way will typically be 85 feet wide but may be wider in limited locations where extra work space is required. In order to reduce impacts through forested areas and when crossing wetlands and streams, the temporary construction right-of-way will be reduced to 75 feet wide. The Project's total limits of disturbance is approximately 133 acres, including access roads and additional temporary workspaces ("ATWS"). Upon completion of construction activities, a permanent right-of-way (up to 50 feet wide) which will entail approximately 68 acres, will be maintained by the Applicant.

The Project's proposed regulation station will be located within the Dunkirk Generating Station property and will be installed within a fenced area approximately 100 feet x 100 feet (0.22 acres). The proposed metering station will be located at the connection point with the Tennessee Gas Pipeline on private land which Dunkirk Gas Corporation will secure through easement or land purchase. This proposed metering station will be installed within a fenced area approximately 170 feet x 130 feet (0.51 acres). Two mainline isolation valves will be installed along the pipeline within the permanent right-of-way.

4.2.2 Pipeline Construction Methods

Construction of the Project will performed in accordance with the methods described in the *Environmental Management and Construction Standards and Practices for Underground Transmission and Distribution Facilities in New York State* ("EM&CS&P") manual approved by the NYSPSC in Case 06-T-1383. This section introduces the general construction methods and practices that are proposed for the construction of the Project. Detailed specific construction methods and practices will be included in the Project's detailed Environmental Management and Construction Plan ("EM&CP"). It is anticipated that the EM&CP will be submitted within four weeks after submittal of this Application.

Where possible, the typical construction sequence will be: clearing, top soil segregation (active agricultural areas), grading, stringing, survey and bending, welding, X-ray, coating of welds, pipeline coating inspection and repair, trenching, placement of sandbags, lowering in and tie-ins, pipe padding, backfill, hydrostatic testing, clean up and restoration. Specific construction sequences may be different for unique areas including crossings under electric transmission ROW; crossings of stream, wetland, road, and railroad; certain wetlands; etc. Installation may be by open trench, horizontal directional drilling or various other trenchless techniques. An

overview of construction methods is presented below.

Construction of the proposed pipeline will entail several distinct activities. These general construction phases consist of:

- Initial Clearing and Installation of Erosion Control Measures – The route will be surveyed to clearly mark the right-of-way and limits of disturbance. Clearing activities within the construction easement will be undertaken along the length of the pipeline. This phase also includes the installation of stormwater and erosion control best management practices in accordance with the Project's EM&CP to be submitted.

- Installation of Temporary Access Roads and ATWS – Temporary construction access roads will be required to provide equipment access to the proposed pipeline right-of-way. For the most part, these roads are primarily used during construction and are, therefore, temporary in nature. Certain flexibility can be employed in locating the roads so as to avoid environmentally sensitive features. ATWS along the pipeline route will be required to support construction activities. Permanently maintained access roads will be required for the metering station and two mainline valve sites. The preliminary locations of the temporary construction access roads are shown on Figure 2-3 (Sheets 1 through 12) in Exhibit 2. The final locations and design of the temporary construction access roads will be identified in the Project's EM&CP to be submitted.

- Stream Crossing Construction

The currently anticipated stream crossing construction methods are presented in Table 2.2-1 below. Specific stream crossing details will be provided in the EM&CP to be submitted for the Project within four weeks after delivery on this Application. Typical stream and wetland crossing methods are shown in Exhibit 5.

Table 4.2-1: Streams within Project Area Right-Of-Way

Town	Waterbody Name	Currently Proposed Crossing Method
Dunkirk	Canadaway Creek Lower 839-15	HDD
Pomfret	Tributary to Lake Erie 839-26	HDD

Table 4.2-1: Streams within Project Area Right-Of-Way		
Town	**Waterbody Name**	**Currently Proposed Crossing Method**
Pomfret	Tributary to Lake Erie 839-26	Dam and Pump around or HDD
Pomfret	Potential feeder to Trib of Lake Erie 839-28	Dam and Pump around (2x flow) (detailed design)/shoefly around stream for travel lane/ this crossing needs some special consideration for restoration. (bury rock and restore naturally)
Pomfret	Potential feeder to Trib of Lake Erie 839-28	Dam and Pump around (2x flow) (detailed design)/ this crossing needs some special consideration for restoration.(bury rock and restore naturally)
Pomfret	Potential feeder to Trib of Lake Erie 839-28	Dam and Pump around (2x flow) (typical)
Pomfret	Potential feeder to Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Potential feeder to Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (detailed design)
Pomfret	Trib of Little Canadaway 839-29	Avoidance
Pomfret	Trib of Little Canadaway 839-29	Avoidance
Pomfret	Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Trib to Lake Erie 839-27	HDD
Pomfret	Trib of Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Little Canadaway Creek 839-29	HDD – requires detailed contingency plan for loss of circulation events/if open cut, detailed plan is required for steep slope stabilization on both sides, Flume, Dam and Pump around (specific design)
Pomfret	Tributary to Little Canadaway 839-29	Dam and Pump around or HDD
Pomfret	Trib to Lake Erie 839-28	Flume, Dam and Pump around (2x flow) (specific design)
Pomfret	Trib to Lake Erie 839-28	Dam and Pump around (2x flow) (typical)
Pomfret	Potential feeder for trib to Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)

Table 4.2-1: Streams within Project Area Right-Of-Way		
Town	**Waterbody Name**	**Currently Proposed Crossing Method**
Pomfret	Potential feeder for trib to Little Canadaway 839-29	Dam and Pump around (2x flow) (typical)
Pomfret	Potential trib to Little Canadaway 839-29	Dam and Pump around or HDD
Pomfret	Potential feeder for trib to Little Canadaway 839-29	Dam and Pump around or HDD
Pomfret	Potential trib to Little Canadaway 839-29	Dam and Pump around or HDD
City of Dunkirk	Crooked Brook and tribs 839-13	Flume, Dam and Pump around (2x flow) (specific design)
City of Dunkirk	Crooked Brook 839-13	Dam and Pump around (2x flow) (typical)
Dunkirk	Canadaway Creek Lower and tribs 839-18	Dam and Pump around (2x flow) (typical)
Pomfret	Canadaway Creek Lower and tribs 839-18	Dam and Pump around (2x flow) (typical)
Pomfret	Canadaway Creek Lower and tribs 839-18	Dam and Pump around (2x flow) (typical)
Pomfret	Canadaway Creek Lower and tribs 839-18	Dam and Pump around or HDD
Pomfret	Canadaway Creek Lower and tribs 839-18	Dam and Pump around of HDD
Pomfret	Potentially connected to SC7	Dam and Pump around of HDD
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around (2x flow) (typical)- High water quality
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around (2x flow) (typical)
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around (2x flow) (detailed design)
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around (2x flow) (typical)
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around (2x flow) (typical)
Pomfret	Tributary to Bear Lake 800.7-65	Dam and Pump around of HDD

- Underground Installation of Pipeline – Underground activities include soil removal, trenching/excavation, pipelaying, backfilling and hydrostatic testing activities.

- Road Crossings - The currently anticipated road crossing construction methods are presented in Table 2.2-2 below. Specific road crossing details will be provided in the road crossing permits and the EM&CP to be submitted for the Project within four weeks after delivery on this Application. Typical road crossing methods are shown in Exhibit 5.

Table 4.2-2. Anticipated Roadways Crossed Construction Methods	
Road Name	**Crossing Method**
City of Dunkirk	
Point Drive North	Open Cut
West Lake Road (State Route 5)	Drill or Bore
Town of Dunkirk	
Temple Road	Drill or Bore
Willow Road	Drill or Bore
Chestnut Road	Open Cut
Town of Pomfret	
Van Buren Road (County Touring Route 78)	Drill or Bore
New York State Thruway/I-90	Drill or Bore
Berry Road (County Touring Route 74)	Drill or Bore
West Main Road (US Route 20)	Drill or Bore
Webster Road	Drill or Bore
Chautauqua Road	Drill or Bore
Fredonia Stockton Road (County Touring Route 73)	Drill or Bore
Cummings Road	Drill or Bore

- Clean-up, Restoration and Revegetation – Clean-up activities include the removal of all equipment and construction debris from the right-of-way. Restoration activities will include the restoration of the ATWS to preexisting topography. Additional restoration actions will vary depending on the resources specific to a particular section of right-of-way and include restoration of temporary access roads and removal of mats used for stream or wetland equipment crossings, seeding and mulching, and restoration of agricultural land and vineyards to planting conditions.

Dunkirk Gas Corporation will coordinate the construction activities of all of its consultants and contractors to expedite the construction work function and to assure that the Article VII Certificate and EM&CP environmental standards are met. The construction activities requiring coordination include, but are not limited to, the designation and delineation of: natural vegetation buffer zones; temporary construction access road locations; tree and brush disposal site locations; pipe fabrication/assembly site locations; the pipeline centerline and signage throughout the pipeline route identifying stream and wetland crossings. Advance planning will assure that: tree

cutting and brush disposal are properly conducted; tree marking and selective cutting in the natural vegetative buffers precedes pipeline installation; the appropriate erosion control measures are applied; and equipment operation and construction activities are limited to design,ated areas.

4.2.2.1 Clearing and Installation of Erosion Control Best Management Practices

For the portions of the proposed pipeline right-of-way which are located adjacent to and parallel to an existing electric transmission corridor, or which are also occupied by active railroad lines, limited clearing activities are anticipated. As a consequence, selective vegetation clearing practices will be employed in accordance with the respective use/occupancy agreement obtained by Dunkirk Gas Corporation along these sections of the pipeline right-of-way. Non-selective (general) vegetation clearing practices will be employed in other areas where the pipeline will traverse wooded terrain. To minimize tree and shrub clearing, the cleared width within the right-of-way and ATWS will be kept to the minimum that will allow for spoil storage, staging, assembly of materials, equipment access and all other activities required to safely construct the pipeline. To minimize disturbance to soil and vegetation, stump removal and/or grubbing will only be performed along the proposed trench location or in areas requiring grading activities to accommodate Project construction.

The processing and disposal of cleared materials on the right-of-way will performed consistent with agreements that may be reached with respective landowners and will be done in accordance with municipal and county requirements and any conditions reflected in the Certificate and EM&CP approval. Disposal methods may include, but are not limited to, use of logs during construction (i.e., for cribbing, retaining walls), stacking along the right-of-way, merchantable, and spreading of wood chips. Specific plans for disposal methods that will be utilized will be detailed in the EM&CP to be submitted for the Project.

Closely following clearing, and prior to grading activities, erosion and sedimentation controls will be installed at the required locations as outlined in the EM&CP to be submitted for this Project. The erosion and sedimentation control measures will be implemented in accordance with the requirements of the EM&CS&P and the New York State Standards and Specifications for Erosion and Sediment Control manual and the issued by the NYSDEC. Typical controls that may be used include, but are not limited to: rock construction entrances, wash stations, silt fences, filter fabric socks, timber mats through wetlands, silt barrier outlet and erosion control matting on steep slopes or adjacent to streams.

4.2.2.2 Installation of Temporary Access Roads and Work Areas

Temporary access roads will provide access to the cleared right-of-way from local, state and public roadways during construction of the proposed pipeline. To the extent feasible, existing public and private road crossings along the proposed pipeline route will be used as the primary means of accessing the right-of-way; however, some temporary access roads will be located on private property, once permission is obtained from the appropriate landowners, in order to access the proposed pipeline right-of-way.

Basic considerations relative to the locations selected for the temporary access roads include their location relative to: avoidance of environmentally sensitive features (e.g., wetlands and vineyards); facilitation of future maintenance work; minimization of erosion problems; and maximum utilization of existing roadways and existing cleared right-of-ways. The preliminary locations of the construction access roads are shown on Figure 2-3 (Sheets 1 through 12) in Exhibit 2. The final locations of the construction access roads will be identified in the Project's EM&CP to be submitted.

The construction of new access roads, the use of existing roads, and the control of erosion and sedimentation along the access roads during construction of the proposed pipeline will be conducted in accordance with the EM&CP to be submitted for this Project. Typical activities for the construction of the access roads include, but are not limited to, rough grading, the removal of topsoil and the placement of crushed stone. A typical detail of a construction road is provided as Figure 5-6 in Exhibit 5. Project specific designs of the construction of the access roads will be detailed in the EM&CP to be submitted for this Project. Erosion control measures along the access roads will be designed to improve, maintain and protect the soil and water resources located within the proposed pipeline right-of-way during and immediately following the construction activity. These guidelines will include, but not be limited to, consideration of the following: timing of construction; accessibility; movement of construction traffic within the right-of-way at stream crossings; heavy equipment operation; and activities required for the creation of temporary access roads (i.e., cut and fill, waterbar, bridge, and culvert installation).

Along the proposed pipeline route, ATWS and staging areas will be necessary to construct the pipeline in a safe and environmentally responsible manner. The ATWS will typically be required when any of the following conditions are encountered:

- Utility crossovers and existing pipeline crossovers;
- Wetland crossings;
- River/stream crossings including ATWS required for the HDDs;
- Extra depth trench required;
- Road crossings;
- Parking areas; and
- Other site-specific constraints.

Each ATWS and staging area will vary in size which is determined on a site-specific basis. To the maximum extent possible, the ATWS will be located along the right-of-way in upland, non-agricultural, non-forested lands. The preliminary location of the ATWS and staging areas are depicted in Figure 2-3 (Sheets 1 through 12) in Exhibit 2. The final locations of the ATWS will be identified in the Project's EM&CP to be submitted. Establishment of these areas may require vegetation clearing, removal and stockpiling of topsoil, site grading, spreading of gravel cover (for access roads), and fencing. Additional vegetation clearing and grading for ATWS site access also could be required in some instances. These ATWS will be utilized at various times as construction proceeds along the proposed pipeline route. Upon completion of the pipeline, the ATWS areas will be restored to original contour and stabilized with vegetation in accordance with the Project's EM&CP to be submitted.

4.2.2.3 Underground Installation of Pipeline

The following describes the general construction methods for the underground installation of the proposed pipeline. Specific construction methods at specific locations along the route will be detailed in the EM&CP to be submitted for this Project.

Trench Excavation

Prior to construction, excavation contractors will be required to notify appropriate utility companies before undertaking excavation activities within 100 feet of an underground utility facility. The pipeline will generally be installed below existing utilities. In addition to contacting the local *One Call Center*, the Applicant's construction manager will conduct in-the-field meetings with appropriate local utility representatives (e.g., electric, gas, telephone, and cable television), NYSDOT, Chautauqua County Department of Public Works, and the local public works officials, as needed, to detail all utility and roadway crossings.

In accordance with the EM&CS&P manual, efforts will be made to limit both distance and duration between ditching and pipe-laying to minimize the potential for erosion and slumping of the open trench as well as minimize impacts to land uses and wildlife. General construction practices will restrict open trench limits to approximately 1,500 feet at the end of a working day. These open trench limits do not apply to small sections located at tie-in locations within the pipeline corridor. The trench at the tie-in locations will not remain for longer than five days. If site-specific conditions are encountered that may warrant leaving the trench open for greater distances, appropriate fencing and in-trench erosion control devices will be properly installed and maintained in accordance with specific plans outlined in the Project's EM&CP to be submitted.

Dunkirk Gas Corporation and its selected construction contractor will take care to conserve soil resources on agricultural or other special use lands (e.g., in all wetland areas), to maintain the productivity of impacted soils within the right-of-way and facilitate proper replacement and revegetation. In these sensitive areas, Dunkirk Gas Corporation will direct the contractor to minimize impacts to soil caused by mixing and compacting. Where topsoil, or "loam", is present in appreciable amounts, this material will be segregated during trenching for use as replacement topsoil. Subsoil excavated during trenching will be piled separately from the topsoil pile. All topography will be returned to existing conditions following completion of construction activities.

A trench will be excavated to the proper depth to allow for the burial of the pipe. In general, the trench will be deep enough to provide for a minimum of three feet of cover over the pipeline as required by 49 CFR Part 192 USDOT regulations. Deeper burial will be required in specific areas. Where the pipeline will cross active agricultural lands, the pipeline will have a minimum of four feet of cover. Where the pipeline is located adjacent to existing electric transmission lines, or crosses roads, streams and wetlands the pipeline will have a minimum cover of five feet.

Temporary fencing will be installed whenever public access to the work zone is possible. At trench excavations of greater than five feet below ground surface or other excavation areas determined as a potential cave-in location, the excavation will be sloped, shored, or shielded to prevent a cave-in.

If construction dewatering is necessary, a temporary sedimentation basin will be established to which filtered dewatering effluent would be pumped. Once filtered and/or settled, clear water will be pumped or allowed to flow onto a vegetated area. Retention structures will be

constructed using hay bales, filter fabric, or other approved materials. The water from the trench may also be pumped into a filter bag located on a level surface adjacent to a gently sloping, well vegetated area. Trapped sediment will be graded into the right-of-way without being washed into the adjacent stream, wetland, or other sensitive resource.

Blasting

As detailed in Section 4.7, based on the depth to bedrock and bedrock characteristics in the Project area, blasting is not anticipated. However, in the event that un-rippable subsurface rock is encountered, blasting for ditch excavation may be necessary. As an alternative to blasting when viable, Dunkirk Gas Corporation will first consider removing rock with hoe rams or other similar non-explosive means. In these areas, care will be taken to prevent damage to underground structures (e.g., cables, conduits, septic systems, and foundations, etc.), aboveground structures (e.g., homes, buildings, and utility structures, etc.), or water sources. If blasting is necessary, a formal blasting plan will be developed, and implemented and will be included as part of the EM&CP to be submitted for the Project. Pre-blast and post-blast inspections by Dunkirk Gas Corporation will be performed as necessary. Blasting mats or soil cover will be used as necessary to prevent the scattering of loose rock. All blasting will be conducted during daylight hours and will not begin until occupants of nearby buildings, stores, residences, and places of business have been notified. Dunkirk Gas Corporation will comply with applicable regulations applying to blasting and blast vibration limits with regard to nearby structures and underground utilities.

Stringing and Pipelaying

Once the trench is excavated, the next process in conventional pipeline construction is stringing the pipe along the trench. Stringing initially involves the hauling of the pipe by tractor-trailer from the pipe storage yard, onto the right-of-way and laying the pipe next to the excavated trench. The individual joints of pipes are then welded and coated with a protective coating to prevent corrosion. Typically, sections of pipe approximate 1,500 feet in length are strung together and welded.

After a pipe string has been coated and inspected, the trench is prepared for the installation of the pipeline. The trench is cleared of loose rock and debris and padding material, such as form or sandbag pillows, are laid into the trench. If there is water in the trench, the water is pumped out into a well-vegetated upland area and/or into an approved filter bag located on a level surface

adjacent to a gently sloping, well-vegetated area. The pipe is lowered into the trench, and once the sections of pipe are lowered-in the tie-in crew makes the final pipeline welds in the trench.

Backfilling

All suitable material excavated during trenching will be redeposited into the trench. Where excavated material is unsuitable for backfilling, additional select clean fill may be required. If the soil is rocky, the pipe is padded with relatively rock-free material placed immediately around the pipe. Where suitable, the subsoil may be mechanically screened to produce suitable padding material. Topsoil will not be used as padding material. Once the pipe is padded, the trench will then be backfilled with suitable excavated subsoil material. The top of the trench may be slightly crowned temporarily to compensate for settling except for paved areas, where standard compaction methods will be employed. The topsoil will then be spread across the regraded construction right-of-way when applicable. The soil will be inspected for compaction, and scarified as necessary.

Following backfilling, disturbed areas will be immediately seeded for grass, fertilized, and mulched. Where needed due to seasonal conditions or location, temporary grass covers and/or jute netting (i.e., a coarse, open mesh netting) may be applied directly on the soil to protect exposed soils, new seeds, and mulch.

Other Construction Methods

In areas where it is impractical to use conventional open trench or direct burial construction techniques, or in areas where environmentally sensitive resources exist, a HDD,jack and bore or dam and pump installation method will be used.

The HDD installation method involves drilling under the feature, such as a roadway, or a wetland or other surface waterbody. Typically HDD bores will place pipe 10 feet or more under a watercourse, to protect the substrate of the watercourse. A typical plan and profile of an HDD setup is provided as Figure 5-2 (Sheets 1 through 6) in Exhibit 5. Dunkirk Gas Corporation will direct the contractor to control the potential leakage of drilling lubricants along the bore path and take all necessary steps to minimize impacts such as reducing the pressure of the slurry flow, reducing the speed of drill rotation, reducing the speed of drill rod advancement, or moving the drill location. For immediate action to remedy inadvertent return extra silt control fencing and vacuum trucks shall be made available during the HDD of any stream or watercourse. A detailed

contingency plan for inadvertent return will be provided within the Project's EM&CP to be submitted.

The jack and bore installation method involves the use of conventional or slip bores to avoid impacts on sensitive resources, such as railroads and road crossings. Typically the jacking (push) and receiving pits will be at least 20 feet from the edge of the resource and the pipe will have a minimum five feet of cover. A typical setup of a jack and bore installation method is provided in Figure 5-2 (Sheets 1 through 6) in Exhibit 5.

The dam and pump installation methods may be used when crossing waterbodies where it is determined that pumps can adequately transfer stream flow around the work area. A typical setup of a dam and pump installation method is provided in Figure 5-2 (Sheets 1 through 6) in Exhibit 5.

4.2.2.4 Hydrostatic Testing

After cleaning, the pipeline will be pressure tested with water to ensure its integrity. Test pressure is obtained by adding water to the test section of the pipeline with a high-pressure pump. At the completion of the hydrostatic test, the pressure is removed from the section and the water is released from the test section by propelling the pig with air, which forces the water from the pipeline. Additional "drying" pig runs are made, if necessary, to remove any residual water from the pipeline. Dunkirk Gas Corporation proposes to utilize tanker trucks to deliver water or pump the water from a natural water body to the construction site to conduct hydrostatic testing of the proposed pipeline facilities. Prior to choosing a source for test water, an assessment will be performed on the effect of the test on the natural water body. The proposed water withdrawal source(s) and discharge location(s) will be identified in the General Constructions State Pollution Discharge Elimination System Permit - Notification of Intent. The hydrostatic test water will be collected in portable tanks and transported to an approved water treatment facility or be discharged to a retention/filtering structure of sufficient size located in a well-vegetated upland area. There will be no discharge to wetlands or waterways. Additional design details on the hydrostatic testing, including, but not limited to, identification of water sources, locations of testing and test water discharges, will be provided in the Project's EM&CP anticipated to be submitted within four weeks after the submittal of this Application.

4.2.2.5 Restoration and Revegetation

Following construction, clean-up and restoration activities will be conducted as required at all disturbed sites. Sites requiring restoration as a result of the construction work will be identified and the appropriate restoration measures applied in accordance with the EM&CP to be submitted for this Project. This work may include: regrading; repair of stream banks; temporary and permanent seeding and mulching for erosion control; and tree and shrub plantings in the AWTS. Restoration of agricultural lands and vineyards will be in accordance with agreements with the landowners. All permanent seeding and tree and shrub planting work will be conducted during the growing season.

4.2.3 Aboveground Facility Construction Methods

At the northern end of the proposed pipeline, a new regulating station will be constructed within a new fenced area within the existing Dunkirk Generating Station property. The proposed regulating station will reduce the pressure of the gas to 100 pounds per square inch gauge ("psig") as required by the Station's burner system. The regulating station will include a pig receiver, emergency block and vent valves, particulate filter, a gas heater, and regulators with a regulator building.

Near the proposed connection to the Tennessee Gas Pipeline tap, a new metering station will be constructed to measure the gas within a fenced, gravel area. The metering station will be the custody transfer point between Tennessee Gas and Dunkirk Gas Corporation and will include a filter-separator to remove any pipeline liquids prior to measurement, a condensate tank, ultrasonic meters, flow and pressure control valves, a meter building (to contain noise from the regulators and shelter the meter runs) a small building containing controls, instrumentation, and communications equipment, and a pig launcher.

Two mainline valves will be installed along the proposed pipeline to enable shut down gas flow for maintenance and in emergency situations. The mainline valves will consists of aboveground pipes and a shut-off system within a fenced, gravel area within the pipeline's permanent right-of-way.

4.2.4 Project Schedule

Construction of the Project is targeted to commence in soon after receipt of the Article VII certification. The Project schedule milestones include:

- Anticipated Construction Start: Shortly After Receipt of Article VII Certificate
- Complete Construction and Restoration: Six months after Construction Start
- Pipeline In-service: One month after Construction Completion

A overview construction sequence schedule is presented below in Table 4.2-2. A detailed construction schedule will be included with the EM&CP that will be submitted to the PSC within four weeks after submittal of this application.

Table 4.2-3 Construction Overview Schedule

Task	Duration	Timeframe
Clearing/Grubbing, Top Soil Segregation, Grading	4-8 weeks	Months 1-2
Horizontal Direction Drills	8-12 weeks	Months 1-4
Stringing	2-3 weeks	Months 1-2
Trenching	8-12 weeks	Months 2-4
Bending	4-6 weeks	Months 2-3
Welding & X-Ray	8-12 weeks	Months 2-5
Coating & Lowering	8-12 weeks	Months 2-5
Backfilling	8-12 weeks	Months 2-5
Clean up & Restoration	4 weeks	Months 5-6
Hydrostatic Testing	2 weeks	Months 5-6
Pipeline Commissioning & Startup	2 weeks	Month 6

4.3 Land Use

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(b)(2)(iv), this section evaluates land uses along and adjacent to the proposed pipeline and associated facilities. This section also reviews local land use policy plans for the area to determine whether the Project "minimizes conflict with any present or future planned land use."

4.3.1 Introduction and Summary of Results

Land uses along the proposed pipeline route and associated facilities were identified from several sources, including field reconnaissance surveys during June and July 2014, publically-available aerial photography, and inventories and maps of land use, cultural, visual, and recreational resources. State, county, and town parks and conservation areas were identified as well as scenic rivers, trails, and parkways.

The land uses adjacent to and near the proposed pipeline route vary in character moving north to south along the proposed route. At the north end of the proposed pipeline, a new regulating station will be located within the existing Dunkirk Generating Station property. Along the northern end of the pipeline route, within the City of Dunkirk, land uses consist primarily of commercial/industrial and mixed urban development characterized by residential, commercial and retail development at higher densities. Continuing south along the proposed pipeline route, into the Town of Dunkirk, land use character becomes more suburban dominated by single- and multi-family residential uses, interspersed with commercial and recreational uses. Within the Town of Dunkirk and Town of Pomfret, the proposed pipeline route crosses agricultural fields designated within agricultural districts by the New York State Department of Agriculture and Markets ("NYSDA&M"). Along the southern end of the pipeline route, within the Town of Pomfret, land use is more rural in character with residential uses interspersed within large tracts of undeveloped land and/or land devoted to agricultural uses. Undeveloped areas found within the proposed route include forested lands, wetland areas and active and fallow agricultural fields. At the southern end of the proposed pipeline, a new metering station will be located within an agricultural field.

A portion of the northern end of the pipeline route will be located adjacent to and parallel to active railroad corridors and an existing electric transmission line, thereby minimizing potential conflicts with present or future land uses within the more urban areas. The entire proposed pipeline will be located underground. As a consequence, there will be little discernable change

in land use conditions after the construction of the proposed pipeline. The regulating station will be located entirely within the existing property of the Dunkirk Generating Station and, as a consequence, the regulating station is viewed as an incremental change to the existing facility, not resulting in any significant land use impacts. The metering station is proposed at the connection to the Tennessee Gas Transmission Mainline Pipeline in the Town of Pomfret, and will be located on private land which Dunkirk Gas Corporation will secure through an easement or direct purchase. The metering station will have a small footprint and will be located away from other residential land uses. The two mainline valves that will be installed along the proposed pipeline will also have small footprints and will be located away from other residential land uses. As such, there will be no discernible long-term effects on adjacent or surrounding land uses.

4.3.2 Laws, Policies and Regulations

The land use laws, policies and regulations potentially applicable to the Project are summarized below.

4.3.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission lines, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This exhibit addresses this requirement.

4.3.2.2 Article VII Regulations

The proposed pipeline and associated facilities are subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline and associated facilities and identify changes that the construction and operation of the proposed pipeline and associated facilities might induce. 16 NYCRR §86.5(b)(2)(iv) requires that the selection of any proposed rights-of-way minimize conflict with any present or future planned land use. This section addresses this requirement.

4.3.2.3 New York State Coastal Zone Management Program

The New York State Coastal Management Program ("CMP") was established in 1981 by the Waterfront Revitalization and Coastal Resources Act (Article 42 of the Executive Law) and is administered by the New York State Department of State ("NYSDOS"), under the Authority of the Federal Coastal Zone Management Act ("CZMA") of 1972. The principal function of the CMP is to provide a framework for government decision-making in the coastal area. The CMP is based on 44 policies which can be grouped into 10 categories that address: 1) Development; 2) Fish and Wildlife; 3) Flooding and Erosion; 4) Public Access; 5) Recreation; 6) Historic Resources; 7) Visual Quality; 8) Agricultural Lands; 9) Energy and Ice Management; and 10) Water and Air Resources.

Article 42 of the Executive Law requires state agency actions within the coastal zone to be undertaken in a manner that is consistent with the State's coastal area policies, or a State approved Local Waterfront Revitalization Program ("LWRP"). A LWRP is a refinement of the State's coastal policies, developed jointly by the State and a municipality. Land development and related activities in New York's coastal area which involve state agency direct action or funding, or requiring state permits must be consistent with the coastal policies in Article 42 or an LWRP.

The locations of the Dunkirk Natural Gas Pipeline Project that are within the coastal zone are within the City of Dunkirk, Town of Dunkirk and the Town of Pomfret (see Figure 4.3-2 Sheets 1 through 3). None of these municipalities have an approved LWRP. Therefore, in the absence of an approved local plan, the proposed Project actions within the coastal zone will be reviewed for consistency with policies contained within the New York State CMP. The Project's statements of compliance with the New York State CMP are included as Appendix C of this Application.

4.3.2.4 Local Land Use Planning and Policies

Applicable local land use planning and policies are identified and discussed in Section 4.3.7.

4.3.3 Existing Land Use

Local land uses in the vicinity of the proposed pipeline and associated facilities have been inventoried, and a generalized land use map has been prepared and is presented as Figure 4.3-1

(Sheets 1 through 3). The land use map encompasses a one-mile radius around the proposed pipeline route, as well as the proposed metering station and the proposed regulating station, and based on land cover designations for the reported by the United States Geological Survey ("USGS") as part of the National Land Cover Dataset ("NLCD") (2011). Aerial photographs reflecting current land use conditions were previously provided as Figure 2-3 (Sheets 1 through 12) in Exhibit 2. For the purpose of this section, general land uses are categorized as follows:

Undeveloped Lands include parklands, deciduous, evergreen and mixed forested areas, woody and emergent herbaceous wetlands, shrub/scrub, grasslands/herbaceous, fallow agricultural parcels and other open land**.**

Agricultural includes pasture/hay and cultivated crop fields; some of which are designated as New York Agricultural Districts.

Transportation/Utility Corridor includes multi-lane roadways, canals, railroad, and electric transmission line corridors.

Suburban Residential use includes lands developed with low to medium intensity with single-family residential housing in suburban settings; primarily as part of larger subdivision development.

Commercial/Industrial includes lands developed medium to high intensity with industrial and commercial uses, including office parks.

Recreational includes open land open to the public for recreational uses.

The existing land uses for the Project area are presented on Figure 4.3-1 (Sheets 1 through 3) and described below.

Chautauqua County

The Project is located entirely within Chautauqua County. Within Chautauqua County, the proposed pipeline and associated facilities will be located in the City of Dunkirk, Town of Dunkirk and Town of Pomfret. The prominent land use within Chautauqua County is agricultural.

City of Dunkirk

As illustrated on Figure 4.3-1 (Sheet 1), at the northern end of the proposed pipeline a new regulating station will be located within the existing Dunkirk Generating Station property in the City of Dunkirk. The area surrounding the existing Dunkirk Generating Station is characterized as suburban residential, commercial/industrial and transportation/utility corridor. After exiting the Dunkirk Generating Station property, the proposed pipeline right-of-way will follow the railroad and transmission line corridor through the City of Dunkirk. Directly adjacent to the transportation/utility corridor, the land use is characterized as commercial/industrial.

Town of Dunkirk

As illustrated on Figure 4.3-1 (Sheet 1 and 2), within the Town of Dunkirk, the proposed pipeline route will be constructed within an area characterized as a transportation/utility corridor as the pipeline route will continue adjacent to and parallel to the railroad and transmission line corridor. Land uses outside of this corridor is characterized by agricultural and undeveloped lands, though there are intermixed residences and commercial land uses surrounding the existing rights-of-way.

Town of Pomfret

As illustrated on Figure 4.3-1 (Sheets 2 and 3), within the Town of Pomfret, the proposed pipeline route will traverse lands characterized primarily as undeveloped forests with smaller tracts of agricultural croplands. At the southern end of the proposed pipeline route, a new metering station will be located on private property currently characterized as agricultural lands, specifically undeveloped pasture. General land uses surrounding the new metering station are characterized as pasture/cropland and undeveloped forests.

4.3.4 Floodplains

Figure 4.3-2 (Sheets 1 through 3) illustrate the Federal Emergency Management Agency ("FEMA") designated special flood hazard areas ("SFHA") relative to the Project. As illustrated, the majority of the Project is not located within designated SFHA. Within the City of Dunkirk, the proposed pipeline will cross the 100-year floodplains associated with Crooked Brook and an unnamed tributary to Crooked Brook. Within the Town of Dunkirk, the proposed pipeline will cross Canadaway Creek and its 100-year floodplain. In the Town of Pomfret, the

proposed pipeline route is not located within any floodplains. None of the proposed associated facilities are located within designated SFHAs.

4.3.5 State and Local Parks/Public Lands

The proposed pipeline route will not traverse any state, county or local parks or public lands. The closest park or public land is the Canadaway Creek Nature Sanctuary in the Town of Dunkirk 0.3 miles off the Project centerline.

4.3.6 Agricultural Districts

Article 25-AA of the Agriculture and Markets Law authorizes the creation of local agricultural districts pursuant to landowner initiative, preliminary county review, state certification, and county adoption. These designations encourage improvements to agricultural land and the continued use of agricultural land for the production of food and other agricultural products. An important benefit of the Agricultural Districts Program is the opportunity provided farmland owners to receive real property assessments based on the value of their land for agricultural production rather than on its development value.

The Agricultural Districts Law and the Agricultural and Farmland Protection programs have had significant influence over municipal comprehensive plans and zoning regulations. County agricultural and farmland protection boards may develop protective plans in collaboration with the county soils and water conservation districts. The Agricultural Districts Law protects farmers from local laws that unreasonably restrict farm operations located within an agricultural district.

The proposed pipeline will be located on lands within Agricultural District 9 in the Town of Dunkirk and Town of Pomfret (see Figure 4.3-3 (Sheets 1 through 3)).

4.3.6.1 Vineyards

The Dunkirk Natural Gas Pipeline Project will traverse vineyards that are in the Concord Grape Belt corridor. The Concord Grape Belt is a Heritage Corridor in New York and Pennsylvania that boarders Lake Erie. There are 20 different Heritage areas in New York designated preserve and develop areas that have special significance: historical, cultural, natural and anthropogenic. The focus of Concord Grape Belt is to encourage and support the grape and wine industries of

the region and enhance the region's quality of life.

As detailed in Exhibit 3, Dunkirk Gas Corporation chose the proposed route because it minimizes impacts to vineyards. Further, because the entire pipeline will be underground after construction and the area will be returned to existing conditions. Therefore, the pipeline will not negatively impact the vineyards or Concord Grape Belt once in operation.

4.3.7 Consistency with Local Land Use Planning and Policies

The Dunkirk Natural Gas Pipeline Project will be constructed adjacent and parallel to an existing overhead electric transmission line right-of-way and in newly acquired rights-of-way. The construction of the proposed pipeline and associated facilities is not anticipated to conflict with any local land use planning and policies within the City of Dunkirk, Town of Dunkirk or Town of Pomfret. To the contrary, the construction of the proposed pipeline should assist the planned development of these communities through the support of the local tax base and employment opportunities. The City of Dunkirk and the Town of Pomfret do not have master plans. The Town of Dunkirk also does not currently have an approved master plan although the Town's planning board received two bids to work on such a plan in January 2014. No drafts are available at this time. The Project is also consistent with land use and policy plans contained within Chautauqua County Comprehensive Plan and Town of Pomfret Comprehensive Agricultural Protection Plan.

4.3.7.1 Chautauqua 20/20 Comprehensive Plan

The Chautauqua 20/20 Comprehensive Plan is a comprehensive plan for Chautauqua County that has been developed to be used by county government, institutions and citizens in making decisions that affect the County's future. The latest Chautauqua 20/20 Comprehensive Plan was completed in April 2011. The Comprehensive Plan breaks down its strategic issues into three categories: Environment, Community, and Economy. Within each of these categories there are individual goals. Three of the goals that have been determined applicable to the Project are identified below and along with a statement of the Project's consistency with each applicable policy. The Chautauqua 20/20 Comprehensive Plan policy text is indicated in italics.

Strategic Issue: Environment

Goal 1: The County values and conserves its lakes, streams, forests, and other natural resources

The Project has been sited and designed to minimize adverse impacts to natural resources, including streams and forests. Best management practices will be implemented in accordance with the Project's EM&CP to be submitted and described earlier in Section 4.2.5 to ensure crossings of streams do not adversely affect the streams and sedimentation and erosion is minimized. After construction, the pipeline will be located underground and will not have a negative impact on the streams. The aboveground pipeline facilities are not located near streams, and therefore will not have a negative impact on streams. Vegetation clearing will be required to establish the new right-of-way; however, to the extent practicable, clearing will be limited to the minimum area needed for construction activities. Once construction is completed, the construction right-of-way will be restored. The permanent right-of-way will be kept free of trees to assure pipeline safety and reliability but grasses and shrubs will be allowed to revegetate. As such, the construction and operation of the proposed pipeline and associated facilities are not anticipated to have any negative impacts on lakes, streams, forest, and other natural resources. Therefore, the Project is consistent with Chautauqua County Goal 1.

Goal 2: Historic village, working farms, and scenic rural landscapes are maintained, contributing to the County's distinctive sense of place

The Project will not traverse historical villages of the County. The Project was sited and designed to minimize impacts to working farms and scenic rural landscapes, which will be further minimized once the pipeline is constructed as the entire pipeline will be underground. If any historical objects or sites are found during construction, the Project will comply with an *Unanticipated Discovery Plan* to be provided with the Project's EM&CP, State officials will be notified and the site will be cleared before construction resumes. Therefore, the Project is consistent with Chautauqua County Goal 2.

Strategic Issue: Economy

Goal 4: The County's economy is diversified with new business and good jobs opportunities created in advanced manufacturing, agricultural production, tourism, green technologies, renewable and other current industries.

The Dunkirk Natural Gas Pipeline Project represents a critical improvement to the regional and local energy systems. By supporting the continued operation of the existing Dunkirk Generating Station, with the provision of natural gas, the proposed pipeline will be a critical component for

the safe and reliable power generation in western New York. The recently issued NYSPSC Order (NYSPSC Case No. 12-E-0577) determined that the Dunkirk Generating Station will help meet reliability needs, reduce emissions, relieve Western New York congestion, reduce costs for consumers, retain local jobs, create temporary construction jobs, stabilize the local property tax base, and improve the local economy. The increased reliability and capacity provided by the Dunkirk gas addition will support continued residential, recreational, commercial, and industrial growth in the area. Therefore, the Project is consistent with Chautauqua County Goal 4.

4.3.7.2 Town of Pomfret Comprehensive Agricultural Protection Plan

The latest Town of Pomfret *Comprehensive Agricultural Protection Plan* was published in 2011. The goals and objectives of the *Comprehensive Agricultural Protection Plan* are large-scale visionary ideas that facilitate the development of recommendations and implementation actions for the Town of Pomfret. The Town of Pomfret *Comprehensive Agricultural Protection Plan* policy text is indicated in italics. The Project's consistency with each policy is also discussed.

Goal A: Preserve and Promote the Rural, Agricultural Character of the Town
The Town of Pomfret is mainly a rural, agricultural community with several historic hamlets scattered throughout the countryside. Elements of the community that contribute to this rural character include open fields, forested lands, protected environmental lands and habitats, and lands used for agriculture and viticulture.

The Project was sited and designed to minimize impacts to the rural, agricultural character of the Town. Within the Town of Pomfret, the proposed pipeline route will cross agricultural lands primarily adjacent to and parallel to an existing overhead electric transmission corridor, minimizing impacts to the identified agricultural lands. Further, once constructed the proposed pipeline will be located entirely underground, and the lands will be restored to preexisting conditions. The only aboveground facilities within the Town of Pomfret, the metering station and one mainline valve, will have a small footprint and will not retract from the rural, agricultural character. Therefore, the Project will not conflict with Town of Pomfret Goal A.

Goal C: Encourage Diversity in Economic Development throughout the Town
Although agriculture is an important economic resource for the Town, other forms of economic development should be promoted to diversify the Town's economy, assist farmers in the off season, provide jobs, and increase the Town's tax base.

The Dunkirk Natural Gas Pipeline Project represents a critical improvement to the regional and local energy systems. By supporting the continued operation of the existing Dunkirk Generating Station, through supplying natural gas, the proposed pipeline will be a critical component for the safe and reliable power generation in western New York at a reasonable cost. The recently issued NYSPSC Order (NYSPSC Case No. 12-E-0577) determined that the Dunkirk Generating Station will help meet reliability needs, reduce emissions, relieve Western New York congestion, reduce costs for consumers, retain local jobs, create temporary construction jobs, stabilize the local property tax base, and improve the local economy. The increased reliability and capacity provided by the Dunkirk gas addition will support continued residential, recreational, commercial, and industrial growth in the area. Therefore, the Project will not conflict with Town of Pomfret Goal C.

Goal E: Protect the Environmental Resources of the Town
The Town consists of several natural habitat areas and other environmental resources that contribute to the rural character and beauty of the community. Additionally, there are numerous lakes and streams, watersheds, wetlands, and floodplains that are vital environmental resources. A majority of the Town is dependent upon groundwater for potable water supply, so water quality is also an important issue.

The Project has been sited and designed to minimize adverse impacts to natural habitat areas and environmental resources. The construction of the Project will be conducted in accordance with the best management practices identified in this Application and the EM&CP to be submitted, to protect and minimize any potential impacts to lakes streams, watersheds, wetlands, and floodplains that are vital environmental resources. Once constructed, the proposed pipeline will be located entirely underground, thereby minimizing impacts to the rural character and beauty of the Town. The only aboveground facilities within the Town of Pomfret, the metering station and one mainline valve, will have a small footprint and will not retract from the rural character of the area. Therefore, the Project will not conflict with Town of Pomfret Goal E.

Goal F: Provide Potable Water to Appropriate Areas of the Town
Potable water for most residents of the Town of Pomfret comes from private wells. Potable water is a quality of life issue that can be adversely affected if the viability of private wells diminishes or the quality of groundwater becomes degraded. The Town supports providing public water to appropriate areas of the Town, where feasible, in order to provide a potable and dependable supply to residents in need.

As described in Section 4.8, the Project will not impact groundwater supply or groundwater quality. During construction, best management practices will be implemented in accordance with the Project's Certificate conditions and EM&CP to minimize potential impacts to groundwater. Therefore, the Project will not conflict with Town of Pomfret Goal F.

4.3.8 Potential Impacts and Mitigation

Potential impacts related to land use include direct impacts associated with a potential change in land use along the proposed pipeline route or at the sites of proposed associated facilities as well as indirect construction-related disturbances such as noise, dust and traffic increases that temporarily disrupt adjacent or nearby land uses.

A majority of the proposed pipeline route will be located adjacent to and parallel to an existing utility corridor, with both active railroads and railroad rights-of-way and an existing overhead electric transmission line right-of-way in newly acquired right-of-way. By using established corridors, the Project will avoid many potential impacts to adjacent existing and planned land uses. The construction of the pipeline right-of-way will create temporary impacts, such as vegetation clearing; however, the operation of the proposed pipeline will have minimal impacts because as it will be located entirely underground.

Nearby industrial, commercial, and residential landowners and tenants may experience temporary disturbances and possible inconveniences associated with construction activities, primarily at locations where the existing right-of-way crosses roadways where construction vehicles will be operating. These impacts will be temporary and short-term in most locations as the construction progresses along the right-of-way. To minimize potential construction impacts to adjacent landowners, timely information to adjacent property owners and/or tenants regarding the planned construction activities and schedule. Further, as necessary, coordination with NYSDOT, Chautauqua County, and local police departments, as applicable, will occur to develop and implement traffic control measures to ensure safe and adequate traffic operations along roadways to be used by construction vehicles and/or where the proposed pipeline will cross various roadways.

While portions of the proposed pipeline will be located with designed SFHAs, all disturbed areas within the floodplain will be restored after construction and the proposed pipeline will be located entirely underground. Accordingly, the operation of the proposed pipeline and associated facilities will not increase the potential for erosion or property damage caused by flooding. All

Project construction activities will utilize the appropriate stormwater and erosion control measures, as specified in by the Project's Stormwater Pollution Prevention Plan ("SWPPP"), and all disturbed areas will be returned to previous conditions. Because there will be no permanent material change in topography within the designated floodplains following construction of the proposed pipeline, construction and operation of the proposed pipeline and associated facilities is not expected to have any permanent impacts on the floodplains or other upstream and downstream properties.

A portion of the proposed pipeline will traverse agricultural properties located within the designated Agricultural District 9. The proposed pipeline route has been designed and sited to avoid and/or minimize impacts to agricultural lands, including vineyards, within the designated Agricultural District. The Applicant has extensively consulted with the respective landowners as well as NYSDA&M representatives to develop the proposed route. Because the pipeline will be located entirely underground after construction and the area will be restored inin accordance with the standards and practices outlined in the NYSDA&M Pipeline Right-of-way Construction Projects Agricultural Mitigation through the Stages of Project Planning, Construction/Restoration and Follow-up Monitoring manual, the Applicant believes the Project will have minimal long-term adverse impacts to these agricultural lands and vineyards. To further minimize impacts to agricultural fields, with the exception of vineyards, no permanent clearing will be required. When crossing vineyards, the area of permanent clearing within the 50-foot permanent right-of-way will be limited to 30 feet required for pipeline maintenance, reliability and safety due to the semi-permanent nature of vineyard installation.

4.4 Visual Resources

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(b)(2)(i), (ii), and (8), this section includes an assessment of potential visual and aesthetic impacts resulting from the construction and operation of the Dunkirk Natural Gas Pipeline Project. The assessment evaluates the visual qualities of the Project area and the existing visual resources within a three-mile radius to determine whether the proposed pipeline and associated facilities, "avoid scenic, recreational, and historic areas," and whether the proposed pipeline has been, "routed to minimize its visibility from areas of public view."

4.4.1 Introduction and Summary of Results

Visual and aesthetic resources are those that contribute to the quality of an area or environment by their inherent beauty or cultural significance. In identifying such resources, the following criteria were considered: 1) natural features that contribute to a landscape of high visual quality (e.g., water features, colorful or varied vegetation, unusual topography); 2) manmade features that enhance a high visual quality landscape (e.g., statuary, gazebos); 3) recreational areas specially designed to be pleasing to the eye (e.g., bike paths, parkways, open gardens); and 4) landscapes of particular natural or cultural significance whose integrity depends on the preservation of original materials and/or appearances (e.g., memorials, battlegrounds, waterfalls).

Based on the above criteria, the Applicant conducted an inventory of aesthetic resources of statewide significance, including historical structures and other cultural resources, within a three-mile radius surrounding the Project route and identified resources that warrant specific consideration in terms of potential visual impacts. The Applicant identified seven known historical sites or parks within a three-mile radius of the proposed pipeline and associated facilities. Potential visual impacts from the Project will be minimized because the entire proposed pipeline will be located underground and the only aboveground facilities will be the proposed metering station, the proposed regulating station and valves. However, because the proposed regulating station will be located within the existing Dunkirk Generating Station property and because the proposed metering station and valves will have small footprints on a private property in a rural area, visual impacts from these facilities will be minimized.

4.4.2 Laws, Policies and Regulations

The aesthetic and visual resource laws, policies and regulations potentially applicable to the Project are summarized below.

4.4.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This exhibit addresses this requirement.

4.4.2.2 Article VII Regulations

The Project is subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline and associated facilities and identify changes that the construction and operation of the pipeline facility might induce. The Project is subject to 16 NYCRR §86.5(b)(2)(i) and (ii) and (8), which require that, "the right-of-way (1) avoid scenic, recreational and historic areas; (2) be routed to minimize its visibility from areas of public view; and, (3) have appurtenant structures located and designed to minimize the environmental impact of the structures (including visual…)." This section addresses this requirement.

4.4.2.3 NYSDEC Visual Policy

The NYSDEC's Program Policy: Assessing and Mitigating Visual Impacts (NYSDEC 2003) ("NYSDEC Visual Policy") provides direction for the evaluation of visual and aesthetic impacts generated from proposed facilities. The NYSDEC Visual Policy states that the State's interest with respect to aesthetic resources by protect those resources whose scenic character has been recognized through national or state designations.

4.4.3 Existing Conditions

4.4.3.1 Visual Setting

The entire Project will be located in Chautauqua County, which is located on the southwestern shore of Lake Erie. The overall landscape quality in Chautauqua County is influenced by agriculture; the surrounding communities are rural with mostly agribusiness and forested lands. The major highway corridor, the New York State Thruway (I-90) separates the county. Chautauqua County is comprised of 2 cities, 27 towns, 15 villages and 10 hamlets. The total population of the county is approximately 134,906 and the County has a land area of approximately 1,500 square miles.

The landscape proposed to be traversed by the Project is generally characteristic of a rural/agricultural landscape, and includes crop and livestock farms, as well as large tracts of forested area. Alongside a majority of the northern proposed pipeline right-of-way are overhead electric transmission lines and railroad tracks. From north to south, the topography of the Project area is not mountainous, with elevations ranging from approximately 580 feet to 1,550 feet above mean sea level ("amsl"). The lack of significant topographic change, combined with the generally rural and forested landscape, yields few areas of scenic vistas.

Historic, recreational and scenic resources throughout the Project area are typically located within an urban or suburban context, which greatly diminishes their sensitivity to changes in landscape features. With the exception of specific areas along Lake Erie at the northern fringes of the Project area, natural landscapes devoid of man-made influences are absent in the Project area.

4.4.3.2 Aesthetic and Visual Resources

Based on the above criteria, the Applicant conducted an inventory of aesthetic resources of statewide significance, including historical structures and other cultural resources, within a three-mile radius surrounding the Project route and identified resources that warrant specific consideration in terms of potential visual impacts. The Applicant identified seven known historical sites or parks within a three-mile radius of the proposed pipeline and associated facilities. The identified resources within the three-mile radius of the Project area are listed in Table 4.4-1. As required by 16 NYCRR §86.3(a)(1)(iii), Figure 2-1 (Sheets 1 through 2) show the locations of known historical or scenic areas and parks within a three-mile radius of the

proposed pipeline and associated facilities.

Table 4.4-1. Visual, Recreational and Historical Resources Located within a Three-mile Radius	
Name	**Category**
School No. 7	National Register of Historic Places
Brocton Arch	National Register of Historic Places
Fredonia Commons Historic District	National Register of Historic Places
US Post Office--Dunkirk	National Register of Historic Places
Point Gratiot Lighthouse Complex	National Register of Historic Places
Dunkirk Lighthouse	National Register of Historic Places
US Post Office--Fredonia	National Register of Historic Places
Lake Erie State Park	New York State Park
Concord Grape Belt	New York State Heritage Area
The Seaway Trail	National Scenic Byway
Source:	NYSDOT. New York State Scenic Byways. Website: https://www.dot.ny.gov/scenic-byways. Accessed June 2014. National Parks Service National Register Sites (polygons). Data date: 2013. NYS OPRHP. State parks (New York State Historic Sites and Park Boundaries). Data date: 2013.

This section addresses the 11 categories of aesthetic resources of statewide significance as identified in the NYSDEC Visual Policy that are applicable to the proposed pipeline and associated facilities (the other four categories pertain to the Palisades, Adirondack and Catskill Parks, which are far removed from the Project area and thus are not applicable). Additionally, the Project will not impact any designated Scenic Areas of Statewide Significance, which are all located in the Hudson River Valley, which is also far removed from the Project area. Potential impacts to these aesthetic resources are evaluated in Section 4.4.4.

1) *Historic Resources*. A property on or eligible for inclusion in the National or State Register of Historic Places [16 U.S.C. § 470a et seq., Parks, Recreation and Historic Preservation Law Section 14.07].

A review of the files maintained by the New York State Office of Parks, Recreation and Historic Preservation ("OPRHP") and other appropriate databases identified seven individual properties, complexes and historic districts listed in the National Register of Historic Places ("NRHP") within three miles of the proposed facilities. Of these, two are located in the City of Dunkirk, within three quarters of a mile from the Dunkirk Generating Station.

2) *State Parks* [Parks, Recreation and Historic Preservation Law Section 3.09].

There is one state park, Lake Erie State Park, located within the three-mile radius of the Project. At its closest point to the proposed pipeline route, Lake Erie State Park is located approximately 2.2 miles west of the route in the Village of Broton and Town of Portland.

3) *Urban Cultural Parks* [Parks, Recreation and Historic Preservation Law Section 35.15].

In 1982, the New York State Legislature created the Urban Cultural Parks Program under the jurisdiction of the OPRHP. This Program, which aims to develop, interpret, identify and preserve the natural and cultural resources of the state through the creation of cultural parks, and was amended in 1994 to become the State Heritage Areas Program. Within the Project area, the only cultural park is the Concord Grape Belt. The Concord Grape Belt was established by the New York State Legislature in 2004. This was the first Heritage Area to have a primary focus on New York's agricultural heritage. This Heritage Area is located entirely in the Chautauqua County and passes through the Town of Ripley, Town of Westfield, Town of Portland, Town of Dunkirk, City of Dunkirk, Town of Pomfret, and the Town of Sheridan. The focus of this Heritage Corridor is to encourage and support the grape and wine industries of the region and enhance the region's quality of life. The proposed pipeline will traverse vineyards within the Concord Grape Belt Heritage Corridor.

4) *National Wildlife Refuges* [16 U.S.C. 668dd], and State Game Refuges [ECL 11-2105].

There are no designed National Wildlife Refuges or State Game Refuges within three miles of the Project area.

5) *National Natural Landmarks* [36 CFR Part 62].

There are no National Natural Landmarks within three miles of the Project area.

6) *National Park System* [16 U.S.C. 1c].

There are no National Parks within three miles of the Project area.

7) *Rivers designated as National or State Wild, Scenic or Recreational* [16 U.S.C. Chapter 28, ECL 15-2701 et seq.].

There are no rivers designated as Nation or State Wild, Scenic or Recreational within three miles of the Project area.

8) *A site, area, lake, reservoir or highway designated or eligible for designation as scenic* [ECL Article 49].

Areas subject to Article 49 designation include Scenic Byways (which are under the purview of the NYSDOT), parkways designated by the OPRHP, and other areas designated by NYSDEC. Based on review of the NYSDOT Scenic Byways inventory, Lake Shore Drive/NY Route 5 which runs parallel to Lake Erie Shore is part of the Seaway Trail. The proposed pipeline will cross under Lake Shore Drive/NY Route 5. The Seaway Trail is a 454-mile series of highway links along New York's northern border that follows Lake Erie, Lake Ontario and the St. Lawrence River. The Seaway Trail is also designated a National Scenic Byway.

9) *A state or federally designated trail, or one proposed for designation* [16 U.S.C. Chapter 27 or equivalent].

There are no state or federal designated trails within three miles of the Project area.

10) *State Nature and Historic Preserve Areas* [Section 4 of Article XIV of the State Constitution].

There are no State Nature and Historic Preserve Areas within three miles of the Project area.

11) *Bond Act Properties purchased under Exceptional Scenic Beauty category*.

According to the NYSDEC Division of Forests and Lands website, there are no such properties within three miles of the Project area.

4.4.4 Potential Impacts and Mitigation

Potential visual impacts are greatest when incompatible landscape features or elements are added

in a way that detracts from the overall setting or the enjoyment of historic, scenic and recreational resources. Potential visual impacts from the Project are minimal because the entire proposed pipeline will be located underground and the only aboveground facilities will be the proposed metering station, the proposed regulating station and valves. However, because the proposed regulating station will be located within the existing Dunkirk Generating Station property and because the proposed metering station and valves will have small footprints on a private property in a rural area, visual impacts from these facilities will be minimal. In addition to being located entirely underground, the proposed pipeline's visual impacts are further minimized through the location of the proposed pipeline adjacent to and parallel to existing transmission right-of-way and previously cleared farmland. Futhermore, there are existing gas wells and aboveground gas structures throughout the Project region. While there will be some forested land cleared and maintained as a right-of-way, these areas are not adjacent to residences or recreational areas thus minimizing the visual impacts.

4.5 Cultural Resources

In accordance with PSL §122(1)(c) and 16 NYCRR §§86.3(a)(1)(iii) and 86.5(b)(2)(i), this section includes an assessment of potential impacts to cultural resources resulting from the construction and operation of the Project.

4.5.1 Introduction and Summary of Results

Cultural resources include both archaeological and historic architectural resources. The Applicant has reviewed the proposed pipeline route to determine the presence or likely presence of archaeological and historic structures, artifacts, sites, and areas, and the potential for impact of the Project on these resources. Based on feedback on initial consultations with the OPRHP, the Applicant is undertaking a more detailed study of these resources, consistent with OPRHP policy and guidance. A copy of the initial consultation letters with OPRHP are provided in Appendix F. The Applicant will forward the final results of this field effort to the OPRHP for its review and input. The study will also be filed with the NYSPSC as part of this proceeding.

4.5.2 Laws, Policies and Regulations

The laws, policies and regulations related to cultural resource potentially applicable to the Project are summarized below.

4.5.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This exhibit addresses this requirement.

4.5.2.2 Article VII Regulations

The Project is subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the proposed pipeline and associated facilities and identify changes that the construction and operation of the facilities might induce.

The Project is subject to 16 NYCRR §86.3(a)(1)(iii) which requires that an Article VII application provide a map showing "any known archaeologic, geologic, historic or scenic area, park, or untouched wilderness within three miles of the right-of-way" and §86.5(b)(2)(i) which require that "the right-of-way avoid scenic, recreational and historic areas." This section addresses this requirement.

4.5.2.3 National Historic Preservation Act of 1966 (Public Law 89-665; 80 Stat 915, 16 United States Code ("USC") 470 as amended)

Section 106 of the National Historic Preservation Act ("NHPA") of 1966, as amended through 2000, requires that federal or federally permitted projects "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register [of Historic Places]." According to regulations implementing the NHPA, such cultural resources are referred to as historic properties [36 CFR Part 800, Section 800.16 (l) 1] or designated historic properties [33 CFR Part 325, Appendix C 1(a)]. Cultural resources may be prehistoric (pre-European Contact Period) or historic (more than 50 years old), and include archaeological sites and historic structures and districts. Historic properties can also be generically termed significant cultural resources.

A potential adverse effect may occur when an undertaking alters the characteristics or use of an historic property. If a historic property may be adversely effected by a project, i.e., alters its characteristics or use, measures to avoid, minimize, or mitigate that effect are sought in consultation with the State Historic Preservation Office ("SHPO"). In New York State, the OPRHP serves as the SHPO.

4.5.2.4 New York State Historic Preservation Act of 1980 – Article 14 of the Parks, Recreation and Historic Preservation Law

The New York Historic Preservation Act ("NYHPA") of 1980 (Chapter 354 of Parks, Recreation and Historic Preservation Law) established a review process for State agency activities affecting historic or cultural properties, requiring consultation with the Commissioner of the OPRHP. Under Section 14.09 of the NYHPA, the OPRHP review process follows the NHPA (Public Law 89-665, as amended by Public Law 96-515; 16 USC 470 et seq.) Section 106 of the NHPA requires that agencies with jurisdiction over a proposed project take into account the effect of the undertaking on cultural resources listed, or eligible for listing on the National Register of Historic Places ("NRHP"), and afford the SHPOs and the Advisory Council on Historic

Preservation ("ACHP") an opportunity to comment.

The NYHPA requires project sponsors to consult with the OPRHP if it appears that a project that is being planned may cause any change, beneficial or adverse, in the quality of any historic, architectural, archaeological, or cultural property that is listed on the NRHP or property listed on the State Register of Historic Places ("SRHP"), or that is determined by the Commissioner to be eligible for listing on the NRHP or SRHP. The NYPA requires that project sponsors, to the fullest extent practicable consistent with other provisions of the law, avoid or mitigate adverse impacts to such properties, fully explore all feasible and prudent alternatives, and give due consideration to feasible and prudent plans that will avoid or mitigate adverse impacts.

4.5.3 Existing Archaeological and Historic Resources

4.5.3.1 Archaeological Sites

The site files and OPRHP records search conducted by the Applicant identified one recorded archaeological site within a one-mile radius of the Project in Chautauqua County (Table 4.5-1). The site was reported in 1922 as having traces of Native American occupation.

Table 4.5-1. Archaeological Sites within a 1-Mile Radius of the Project

Site Number	Site Name	Description	Location
NYSM 5427	None	Prehistoric; Traces of Occupation (Parker 1922)	Within Project Route
Source:	OPRHP June 2014		

4.5.3.2 Historic Properties

A review of the NRHP database and the OPRHP GIS identified seven individual historic properties, complexes, and historic districts listed in the NRHP within three miles of the Project route. These properties are identified and listed in Table 4.4-1 in Section 4.4. As indicated in Section 4.4, two are located in the City of Dunkirk, within three quarters of a mile from the existing Dunkirk Generating Station.

4.5.4 Cultural Resource Assessment Methodology

The Project will consist of the construction of approximately 11.3-miles of new 16-inch diameter buried pipeline and associated facilities to transport natural gas from the Tennessee Gas

Transmission Mainline to the existing Dunkirk Generating Station. The Project is located predominantly within agricultural fields and wooded areas; however, the proposed pipeline route will be located adjacent to and parallel to existing railroad corridors and existing overhead electric transmission line rights-of-way. An area of moderate development is present in the northern portion of the Project, within the City of Dunkirk.

The cultural resources investigations conducted to date involved two tasks: (1) a records, site file, and literature search; and (2) a sensitivity assessment. The records, site file, and literature search was conducted to identify previously recorded archaeological sites and historic properties within a one and three-mile radius of the Project, respectively. Records examined included the NRHP database, the SHPO geographic information service ("GIS"), and cultural resource reports on file at the OPRHP, which were used to identify sites in close proximity to the Project. The sensitivity assessment identified areas of High, Moderate, and Low Probability for archaeological resources and previously disturbed areas.

In terms of archaeological resources, the OPRHP has adopted guidelines for identifying archaeological resources within a Project's APE. An Area of Potential Effect ("APE") is defined as "…the geographic area within which the undertaking may cause changes in the character of or use of historic properties, if any such properties exist" [36 CFR 800.2 (c)]. The APE is defined based on the potential for effect, which will differ for above ground resources (historic structures and landscapes) and below ground resources (archaeological sites). The APE includes all areas where the ground may be disturbed, where land use (i.e., traffic patterns, drainages, etc.) may change, or any locations from which the undertaking may be visible. The guidelines (*Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* [New York Archaeological Council 1994] ["NYAC Guidelines"]) require that all previously undisturbed areas be subject to Phase I archaeological survey; however, no survey is required in areas of previous ground disturbance provided such disturbance is documented.

4.5.5 Potential Impacts and Mitigation

4.5.5.1 Archaeological Resources

A Phase I archaeological survey will be completed in accordance with the NYAC Guidelines to determine the presence or absence of archaeological resources within the Project area. The study will involve four tasks: (1) cultural context development; (2) field investigations; (3) technical reporting; and 4) curation of collections and field records.

The Applicant will conduct background research to compile an historic and prehistoric context for interpreting potential archaeological resources in the Project area. This research will include review of relevant maps, plats, historic documents, other primary sources, and published and unpublished manuscripts on the archaeology and history of the area. The field survey will be conducted to locate all archaeological resources in the Project's APE. Field methods will follow the NYAC Guidelines utilizing both surface and subsurface examination techniques in accordance with local topography and visibility. Subsurface testing will be conducted in all undisturbed areas that exhibit less than 80 percent ground surface visibility and less than 15 percent slope.

If any archaeological sites are identified, further investigation of those resources may be required to determine their NRHP eligibility if they cannot be avoided. A Phase IA/B report providing results and recommendations will be submitted to the OPRHP for review and comment and will be filed with the NYSPSC. Following review and approval of the study, all records, photographs, and archaeological collections will be prepared for permanent curation.

The Applicant will prepare an Unanticipated Discovery Plan as part of the Project's EM&CP to be submitted. The Unanticipated Discovery Plan will outline the procedures for the discovery of apparent archaeological or historical significant resources during construction.

4.5.5.2 Historic Properties

As described in Section 4.4, potential visual impacts were evaluated for the seven NRHP-listed properties within three miles of the proposed Project. There are no anticipated effects to these resources because the proposed pipeline will be constructed entirely underground and the only aboveground facility in the area of any listed property will be constructed within the Dunkirk Generating Station. In order to determine the potential effect to previously unrecorded historic resources, a field survey including photographic documentation of all buildings and structures 50 years or older within or immediately adjacent to the Project area will be conducted. This documentation will be prepared for review and comment by the OPRHP and filed with the NYSPSC in order to determine their NRHP significance and potential effect from the Project.

4.6 Geology, Topography and Soils

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(b) and (c), this section describes the existing topography and soils along the proposed pipeline route and at the location of associated facilities and the impacts of the construction and operation of the proposed pipeline and associated facilities to soils and topography. Mitigation measures, as required, are also identified.

4.6.1 Introduction and Summary of Results

The proposed pipeline and associated facilities will be designed, constructed, operated, and maintained to be compatible with on-site geologic conditions. There are no geologic or environmental issues that would have a long-term effect on the integrity of the pipeline or associated facilities. Conditions affecting pipeline construction include soil bearing capacities, high water tables, and shallow bedrock depths. These conditions will be mitigated if necessary through engineering design and use of best management practices.

4.6.2 Laws, Policies and Regulations

The laws, policies and regulations related to geology, topography and soils potentially applicable to the Project are summarized below.

4.6.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This exhibit addresses this requirement.

4.6.2.2 Article VII Regulations

The proposed pipeline and associated facilities are subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline and associated facilities as well as an identification of the changes that the construction

and operation of the facilities might induce. The pipeline and associated facilities are subject to 16 NYCRR §86.5(a), (b) and (c), which requires that an Article VII application provide information describing studies of construction and maintenance including soil stability, protection of environmental resources, site restoration, construction width clearance, and underground construction methods. This section addresses this requirement.

4.6.2.3 New York State General Business Law Article 36 and Public Service Law Section 119-b

New York State has established rules for the protection of underground facilities to assure public safety and to prevent damage to public and private property, including by General Business Law Article 36 and PSL §199-b. Industrial Code 53, Part 753, details the procedures to be implemented by any party undertaking excavation activities in New York. To support this law, New York has established a notification service, Dig Safely New York, whereby anyone undertaking excavation activities notifies one entity, which subsequently notifies the affected utility companies of the intended action. Prior to construction, the Applicant's excavation contractors will, pursuant to applicable New York law, to notify appropriate utility companies prior to conducting excavation activities are planned within 100 feet of an underground facility. In addition to contacting the Local *One Call Center*, Dunkirk Gas Corporation's construction manager will conduct in-the-field meetings with appropriate local utility representatives (e.g., gas, telephone, and cable television), NYSDOT, New York State Department of State ("NYSDPS"), New York State Thruway Authority ("NYSTA"), Chautauqua County Department of Public Works, and the local public works officials, as needed, to detail all utility and roadway crossings.

4.6.3 Existing Conditions

4.6.3.1 Geologic Setting

The proposed pipeline and associated facilities are located within the Erie-Ontario Lowlands region of New York, a plain of sedimentary rock, Paleozoic in age, consisting of shales, siltstones, and sandstones overlaid by large amounts of glacial till. The northern portion of the region is relatively flat and expresses low topographic relief due to sediment deposits from glacial lakes ancestral to Lake Erie and Ontario.

4.6.3.2 Topography

The topography of the northern, 6.5-mile portion of the Project route is generally flat to gently sloping to the north-northwest towards Lake Erie. Elevation ranges from approximately 580 feet above mean sea level ("amsl") along the shore of Lake Erie to approximately 800 feet at Webster Road in the Town of Pomfret. Topography for remaining portions of the Project route south of Webster Road are characterized by gentle to steep slopes with northerly and westerly trends and elevations reaching up to 1,550 feet amsl. Figure 2-1 (Sheets 1 through 2) of Exhibit 2 provide NYSDOT quadrangle maps depicting the topography along the proposed pipeline route.

4.6.3.3 Soils

Approximately 37 different soil units exist within the proposed Project route. The names, and physical characteristics, and engineering limitations of these soil types are summarized in Table 4.6-1.

Table 4.6-1. Soil Characteristics – Construction Suitability

Soil Series & Mapping Unit	Depth to Bedrock (ft)	Water Table		Drainage	Slope Class
		Depth (ft)	Type		
Alden mucky silt loam (Ad)	6+	0	Seasonal High	Very poorly drained	Nearly Level
Barcelona silt loam (BrA - 0-3% slope)	4	1	Seasonal High	Somewhat poorly drained	Nearly Level
Barcelona silt loam (BrB - 3-8% slope)	4	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Busti silt loam (BsB - 3-8% slope)	6+	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Canandaigua silt loam (Cb)	6+	0	Seasonal High	Poorly drained	Nearly Level
Chautauqua silt loam (CkB - 3-8% slope)	6+	2	Seasonal High	Moderately well drained	Gently Sloping
Chenango gravelly loam (CnA - 0-3% slope)	6+	0	Seasonal High	Well drained	Nearly Level
Chenango gravelly loam (CnB - 3-8% slope)	6+	0	Seasonal High	Well drained	Gently Sloping

Table 4.6-1. Soil Characteristics – Construction Suitability					
Soil Series & Mapping Unit	**Depth to Bedrock (ft)**	**Water Table**		**Drainage**	**Slope Class**
		Depth (ft)	**Type**		
Churchville silt loam (CpB - 3-8% slope)	6+	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Darien silt loam (DeA - 0-3% slope)	6+	1	Seasonal High	Somewhat poorly drained	Nearly Level
Elnora fine sandy loam (ElB - 3-8% slope)	6+	2	Seasonal High	Moderately well drained	Gently Sloping
Fluvaquents-Udifluvents complex (Fe)	6+	0	Seasonal High	Poorly drained	Nearly Level
Fremont silt loam (FmA - 0-3% slope)	6+	1	Seasonal High	Somewhat poorly drained	Nearly Level
Fremont silt loam (FmB - 3-8% slope)	6+	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Fremont silt loam (FmC - 8-15% slope)	6+	1	Seasonal High	Somewhat poorly drained	Strongly Sloping
Fremont silt loam (FmD - 15-25% slope)	6+	1	Seasonal High	Somewhat poorly drained	Moderately Steep
Lamson silt loam (La)	6+	0	Seasonal High	Very poorly drained	Nearly Level
Minoa fine sandy loam (Mn)	6+	1	Seasonal High	Somewhat poorly drained	Nearly Level
Niagara silt loam (NgA - 0-3% slope)	6+	1	Seasonal High	Somewhat poorly drained	Nearly Level
Niagara silt loam (NgB - 3-8% slope)	6+	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Orpark silt loam (OrA - 0-3% slope)	2	1	Seasonal High	Somewhat poorly drained	Nearly Level
Orpark silt loam (OrB - 3-8% slope)	2	1	Seasonal High	Somewhat poorly drained	Gently Sloping
Orpark silt loam (OrC - 8-15% slope)	2	1	Seasonal High	Somewhat poorly drained	Strongly Sloping
Pits, gravel (Pg)	Data not provided because soil material is variable				
Pompton silt loam (Po)	6+	2	Seasonal High	Moderately well drained	Nearly Level
Raynham silt loam (RaA - 0-3% slope)	6+	1	Seasonal High	Somewhat poorly drained	Nearly Level

Table 4.6-1. Soil Characteristics – Construction Suitability					
Soil Series & Mapping Unit	**Depth to Bedrock (ft)**	**Water Table**		**Drainage**	**Slope Class**
		Depth (ft)	**Type**		
Schuyler silt loam (ShB - 3-8% slope)	6+	19	Low	Moderately well drained	Gently Sloping
Schuyler silt loam (ShC - 8-15% slope)	6+	2	Seasonal High	Moderately well drained	Strongly Sloping
Schuyler silt loam (ShD - 15-25% slope)	6+	2	Seasonal High	Moderately well drained	Moderately Steep
Scio silt loam (SoA - 0-3% slope)	6+	2	Seasonal High	Moderately well drained	Nearly Level
Scio silt loam (SoB - 3-8% slope)	6+	2	Seasonal High	Moderately well drained	Gently Sloping
Towerville silt loam (ToD - 15-25% slope)	2	2	Seasonal High	Moderately well drained	Moderately Steep
Towerville silt loam (ToE - 25-35% slope)	2	2	Seasonal High	Moderately well drained	Steep
Towerville silt loam (ToF - 35-50% slope)	2	2	Seasonal High	Moderately well drained	Steep
Valois gravelly silt loam (VaB - 3-8% slope)	6+	0	Seasonal High	Well drained	Gently Sloping
Valois gravelly silt loam (VaD - 15-25% slope)	6+	0	Seasonal High	Well drained	Moderately Steep
Source:	Table compiled from U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. Soil Survey Geographic (SSURGO) Database for Chautauqua County, NY. Accessed June 2014. Available online at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm				

4.6.3.4 Surficial Geology

According to the *Surficial Geologic Map of New York, Niagara Sheet*, (Cadwell, 1988), surficial geology in the northern portion of the Project route (north of Route 20) is comprised of lacustrine silt and clay. Remaining portions of the Project route consist of lacustrine beach deposits and glacial till. Surficial geologic materials present within the Project route are illustrated on Figure 4.6-1.

4.6.3.5 Bedrock Geology

According to the *Geologic Map of New York, Niagara Sheet*, (Rickard and Fisher, 1970), bedrock in the vicinity of the Project route is a member of the Canadaway and Conneaut Groups; sedimentary rock formations Upper Devonian in age. Specifically, the northern portion of the Project route (north of Route 20 in the Town of Pomfret) is comprised of the Gowanda Shale; argillaceous gray and black shales with gray arenaceous shales and siltstones. Remaining portions of the Project route traveling south from Route 20, are comprised of three similar sedimentary formations consisting of gray shales with interbedded siltstone, namely the Westfield Shale, the Northeast Shale, and the Ellicott Formation. Bedrock geology present within the Project route is illustrated on Figure 4.6-2.

4.6.3.6 Seismic Hazard

New York State is characterized as a location of moderate level seismicity and seismic hazard. The highest levels of seismicity in the state are located in Metro-New York City, the northern Adirondacks, and Western New York (Jacob, 1993).

During an earthquake, seismic waves travel out from an earthquake epicenter through the surrounding rock. Ground motion is higher closer to the location of the event. In general, ground motion decreases away from the epicenter, though the amount of ground motion at the surface is related to more than just distance from the epicenter. In general, some natural materials can amplify ground motion, that is, ground motion is less on solid bedrock and greater on thick deposits of clay, sand, or urban fill.

During an earthquake, a particle attached to the earth will move back and forth irregularly. The horizontal force a structure must withstand during an earthquake is related to ground acceleration. Peak acceleration is the maximum acceleration experienced by a particle during an earthquake.

The U.S. Geologic Service ("USGS") produces probabilistic Seismic Hazard Maps for the United States with peak horizontal acceleration values represented as a factor of "g". The factor "g" is equal to the acceleration of a falling object due to gravity. These USGS Seismic Hazard Maps (USGS, 2008) were reviewed for the Project route with the following results:

- There is a 2 percent probability of a 6-8 percent "g" exceedance in 50 years; and,

- There is a 10 percent probability of a 2-3 percent "g" exceedance in 50 years.

4.6.4 Potential Impacts and Mitigation

There are no unique geologic or environmental features that would affect construction or operation of the proposed pipeline and associated facilities. There are also no long-term issues that would affect the integrity of the structures. Temporary environmental impacts during construction include installation of access roads and ATWS, vegetation clearing, and compaction of soil along the pipeline route. The Project's EM&CP to be developed as part of the final design will describe the best management practices that will be used for erosion control, which may include but are not limited to use of silt fences, rock construction entrances, filter socks, filter bags, erosion sediment control matting on steep slopes and adjacent to streams.

Grading operations along the proposed pipeline route will vary with soil type, land use, and topography and will be designed to protect soils from erosion, compaction or soil mixing. Grading and construction operations may result in the potential for erosion and sedimentation along access roads and structure sites. These effects will be mitigated through the use of the best management practices to be defined as part of the Project's EM&CP including but not limited to use of waterbars and rock construction entrances and.

Compaction during construction of the temporary access roads may occur as a result of variable soil bearing capacities, and the water table depths encountered along the pipeline route. The effect on the surrounding environment will be mitigated through engineering design and post-construction land restoration such as scarification. Based on the depth to bedrock and bedrock characteristics, no blasting of bedrock is anticipated.

4.7 Terrestrial Ecology and Wildlife

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5(a) and (b), this section provides a summary of the potential effects of construction and operation of the proposed facilities on terrestrial ecology and wildlife as well as the efforts undertaken during siting and design of the facilities to avoid or minimize any potential impacts.

4.7.1 Introduction and Summary of Results

The vegetative communities that occur within the right-of-way associated with the new pipeline and associated facilities were characterized based on a review of current orthophotography, published data sources, agency correspondence and field surveys that were conducted May, June and July 2014. Wildlife that is utilizing the habitats within the Project area were also identified based on agency consultation, literature reviews, and from direct observation during the field surveys.

Generally, the vegetative communities within the Project area includes large areas of agricultural cropland (mainly vineyards and corn fields), small pastures, abandoned agricultural land in various stages of succession, maintained and landscaped areas, shrubland communities and large tracts of forest. The forested communities and their locations are influenced by the difference in soils and climate that are characteristic of the ecological zones traversed by the Project.

The wildlife species assemblages that occur within the Project area includes species adapted for agricultural and urbanized areas, edge habitats and interior forest dwellers. Many of these species such as white-tailed deer (*Odocoileus virginianus*) are common ubiquitous species for the region and will utilize nearly every habitat found along the right-of-way. There are several charismatic, locally important game species or niche specialists that do occur along the right-of-way. Based on a review of U.S. Fish and Wildlife Service ("USFWS") database and correspondence received from the New York State Natural Heritage Program ("NYNHP"), there are three federally- listed and two state species of concern that may occur within or near the Project area. Copies of the Project related agency correspondence is provided in Appendix F.

4.7.2 Laws, Policies and Regulations

The laws, policies and regulations related to terrestrial ecology and wetlands potentially applicable to the Project are summarized below.

4.7.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This exhibit addresses this requirement.

4.7.2.2 Article VII Regulations

The proposed pipeline and associated facilities are subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline and associated facilities. The Application must also identify changes that the construction and operation of the pipeline and associated facilities might induce in the physical or biological process of plant life or wildlife, identify construction methods to be employed to protect natural vegetation and the protection of adjacent resources including natural habitat for wildlife. Provisions made to protect fish and other aquatic life from harm must also be identified. This section addresses this requirement.

4.7.2.3 Clean Water Act

Section 404 of the Clean Water Act requires approval prior to discharging dredged or fill material into waters of the United States, including wetlands. All wetlands (regardless of their size) that meet the federal criteria are regulated under Section 404. In New York State, Section 404 is administered by the U.S. Army Corps of Engineers ("USACE"). For this Project, Dunkirk Gas Corporation will request a Preliminary Jurisdictional Determination under the assumption that all delineated wetlands are federal jurisdictional wetlands. The anticipated permits required from the USACE for Project impacts to wetlands and streams are identified in Exhibit 8 of this Application.

4.7.2.4 Endangered Species Act of 1973

Under Section 7 of the Endangered Species Act (16 USC 1531), federal agencies are directed to use their existing authorities to ensure that their actions do not jeopardize listed threatened and endangered species or adversely affect critical habitat. This direction applies to federal approval of private activities through the issuance of federal permits or other actions. The USFWS must be consulted if it appears that an endangered or threatened species is present in the Project area. Copies of the correspondence with USFWS on this Project are provided in Appendix F.

4.7.2.5 Environmental Conservation Law of New York

The NYSDEC regulates endangered and threatened species of animals in New York under Article 11 of the Environmental Conservation Law ("ECL") and 6 NYCRR §182. This law prohibits the taking, importing, transporting, possession, or sale of any endangered or threatened species. The New York Natural Heritage Program ("NYNHP") maintains an inventory of state-listed threatened or endangered plant species. Copies of correspondence with the NYNHP for this Project are provided in Appendix F.

The State of New York regulates protected plants under ECL Articles 3 and 9 and 6 NYCRR §193.3. The State of New York prohibits picking or removal of protected plants, or application of herbicides or defoliants without the owner's permission.

The NYSDEC regulates freshwater wetlands under ECL Articles 3 and 24 and 6 NYCRR §663. The public policy of the State is to preserve, protect, and conserve freshwater wetlands. The Freshwater Wetlands Act regulates wetlands that are 12.4 acres in size or greater, or are of unusual local importance.

4.7.3 Vegetation

Existing vegetation within the Project area was field verified after a review of current aerial photographs, GIS databases and other published data sources. The dominant, commonly encountered vegetative communities have been characterized according to the classification system presented in *Ecological Communities of New York State, Second Edition* (Edinger et al., 2014).

4.7.3.1 Existing Vegetation along Pipeline Right-of-Way

The natural terrestrial communities identified along the proposed pipeline include successional old field, successional shrubland, successional northern hardwood forest, maple-basswood rich mesic forest, and hemlock-northern hardwood forest. In addition, there are terrestrial cultural communities such as vineyard, cropland, pastureland, mowed lawn, and mowed roadside/pathway (Edinger et al., 2014). These terrestrial cultural communities are discussed in Section 4.3. Some of the ATWS to be used during construction will extend into the adjacent electrical transmission line right-of-way. This existing transmission line right-of-way was recently treated with herbicide and is defined in by Edinger et al., 2014 as an herbicide-sprayed roadside/pathway and is a terrestrial cultural community. This community is a significant portion of the Project area.

Successional old field, successional shrubland and successional northern hardwood forest are community types that have been influenced by past disturbance. They communities are composed of species of grasses, forbs and shrubs adapted to colonize disturbed sites or shade intolerant tree species. Maple-basswood rich mesic forest and hemlock-northern hardwood forest are influenced by climatic and soil conditions that define ecological zones.

The proposed pipeline route will cross two NYSDEC-designated Ecological Zones: Zone B – Great Lakes Plain Ecological Zone and Erie-Ontario Plain Minor Zone and the Zone A – Appalachian Plateau Ecological Zone and Cattaraugus Highlands Minor Zone (Dickenson, 1983). The proposed pipeline route lies within the Great Lake Plan Ecological Zone from the Dunkirk Generating Station to the crossing of Webster Road or approximately 6-miles of the line. The forest composition is characterized by oak-hickory forests and maple-beech forests (Bailey, 1995). From Webster Road south to the interconnection with the existing Tennessee Gas Transmission Mainline Pipeline, the ecological zone is the Appalachian Plateau Ecological Zone and Cattaraugus Highlands Minor Zone. The elevation rises for this stretch of right-of-way, and locally this area is known as the Chautauqua Ridge. The forest composition is transitional between broadleaf deciduous forests and boreal forests resulting in mixed coniferous and deciduous species (Bailey 1995). In the Project area, white pine (*Pinus strobus*) and Eastern hemlock (*Tsuga canadensis*) are the typical coniferous species intermixing with oaks, hickories, maples and American beech (*Fagus grandifolia*).

The following are descriptions of the six terrestrial vegetation communities not under agricultural use or mowed and which are traversed by the proposed pipeline.

Successional Old Field

Successional old fields are openland with secondary successional vegetative growth. The plants typical for this community type are mainly grasses and forbs that tend to sprout quickly in disturbed sites, such as sites that have been previously plowed, graded, or cleared (Edinger et al., 2014). This community may have no more than 50% cover of shrubs and unless this community is regularly maintained, succession to shrubland, woodland or forest communities would occur (Edinger et al., 2014). The dominant species observed in this community along the proposed route include grasses such as bluegrass (*Poa pratensis*, *P. compressa*), timothy (*Phleum pratense*), witchgrass (*Panicum capillare*), reed canary grass (*Phalaris arundinacea*) and orchard grass (*Dactylis glomerata*). Commonly encountered forb species include goldenrods (*Solidago spps.*), asters (*Aster spps.*), wild strawberry (*Fragaria virginiana*), and clover (*Trifolium spps.*). Shrubs occurring within this community include smooth buckthorn (*Frangula alnus*), honeysuckle (*Lonicera tartarica*) and arrowwood (*Viburnum recognitum*), and black berries (*Rubus spp.*), sumac (*Rhus spps.*), and eastern red cedar (*Juniperus virginiana*). The successional old fields in the Project area were found at the southern end of the route (See Figure 4.7-1 (Sheets 1 through 29)).

Successional Shrubland

A successional shrubland usually results from overgrowth of a successional old field community and is defined by more than 50% cover of shrub plants (Edinger et al., 2014). This community is found at the northern end of the Project at the edge of the City of Dunkirk and is generally found adjacent to large wetland complexes (See Figure 4.7-1 (Sheets 1 through 29)). This community along the proposed route is composed of dense stands of smooth buckthorn and arrowwood. Multiflora rose (*Rosa multiflora*), gray dogwood (*Cornus foemina ssp. racemosa*), hawthorne (*Crataegus spp.*) and sapling hardwood species are found intermixed in the dense stands of buckthorn and arrowwood.

Successional Northern Hardwoods

Successional northern hardwoods are mixed forests in areas that have been previously disturbed, likely from historical agricultural activities or historical clear cutting (Edinger et al., 2014). This community type was found in a few locations in the southern zone adjacent to vineyards and the existing electric transmission line right-of-way. They were small woodlots and varied from young trees and saplings 3 to 10 inches diameter at breast height ("DBH") to mature stands of

trees with diameters ranging from 12-16 inches DBH. This community was mainly composed of a mixture of black locust (*Robinia pseudoacacia*), black cherry (*Prunus serontina*), sugar maple (*Acer saccharum*), red maple (*Acer rubrum*) and white ash (*Fraxinus americana*).

Maple-Basswood Rich Mesic Forest

Maple-basswood rich mesic forests are found in the northern half of the pipeline route between Webster Road and north to the Dunkirk Generating Station within the Great Lakes Plain Ecological Zone and Erie-Ontario Plain Minor Zone. Typical dominant tree species composition encountered include sugar maple, basswood (*Tilia americana*), and white ash. Associate tree species found throughout the Project area include ironwood (*Ostrya virginiana*), yellow birch (*Betula alleghaniensis*), red oak (*Quercus rubra*), American beech (*Fagus grandifolia*), bitternut hickory (*Carya cordiformis*), shagbark hickory (*Carya ovata*), tulip tree (*Liriodendron tulipifera*), butternut (*Juglans cinerea*), and American hornbeam (*Carpinus caroliniana*). These forests occur as fragmented woodlots within an area of the pipeline route where the land use is predominantly agricultural and the woodlots are managed for timber and firewood production. The understory contains scattered shrubs mainly consisting of honeysuckle, multiflora rose and witch hazel (*Hamamelis virginiana*). Several wood ferns (*Dryopteris spps.*) and common woodland flowers such as Jack-in-the-pulpit (*Arisaema triphyllum*) were also observed in this community.

Hemlock-Northern Hardwood Forest

Hemlock-northern hardwood forest is a mixed forest with variable amounts of hemlock (*Tsuga canadensis*) present. It is located in the southern portion of the Project area within the Appalachian Plateau Ecological Zone and Cattaraugus Highlands Minor Zone. More specifically, this community is located in the area surrounding the Little Canadaway Creek and it continues to the south to the proposed connection to the Tennessee Gas Transmission Mainline Pipeline. Other species that are found in this community include American beech (*Fagus grandifolia*), sugar maple, red maple, black cherry, white pine (*Pinus strobus*), yellow birch, black birch (*Betula lenta*), red oak, cucumber magnolia (*Magnolia acuminata*) and basswood. Striped maple (*Acer pensylvanicum*), honeysuckle and witch hazel are commonly occurring shrubs in the understory. Characteristic vines and forbs observed in this forest community include beech-drops (*Epifagus virginiana*), greenbrier (*Smilax rotundifolia*), pink lady slipper (*Cypripedium acaule*) and hepatica (*Hepatica spp.*). Within the Project area, this forest community is found as large tracts of unfragmented forest cover creating habitat for interior forest dwelling wildlife species. The Project area traverses parcels containing this community that is managed for timber production on a regular cycle. As a result, there are defined logging

roads that cross the pipeline route that are used on a regular basis.

Herbicide-Sprayed Roadside/Pathway

Edinger et al., 2014 defines an herbicide-sprayed roadside/pathway as a "narrow strip of vegetation along the side of a road or along a utility right-of-way corridor that is maintained by spraying herbicides". The existing electrical transmission line corridor located adjacent to and parallel to the proposed pipeline route and which extends for approximately 6-miles was sprayed with an herbicide in the last few years. The herbicide treatment resulted in very sparse to no living plant material within the right-of-way during the field surveys performed on behalf of the Applicant in May, June and July 2014. The right-of-way did contain thick stands of glossy buckthorn and trees 8 to 12 feet tall which are dead.

4.7.3.2 Existing Vegetation at Associated Facilities

The Project will involve the construction of permanent associated facilities, including a metering station, a regulating station and two mainline valves that will be constructed along the proposed pipeline as required by federal regulations. The proposed regulating station will be constructed within the existing Dunkirk Generating Station property, which is devoid of vegetation. The proposed metering station will be constructed on land that is currently used for agricultural purposes. In accordance with USDOT regulations, above-ground mainline valves will be installed as required within the pipeline right-of-way.

During construction, the Project construction team will utilize defined areas within the delineated limits of disturbance for ATWS and staging areas. These areas will be restored and revegetated in accordance with the EM&CP to be submitted for the Project.

4.7.3.3 Threatened or Endangered Plant Species

No rare, threatened or endangered plant species were observed during field surveys conducted in the Project area. Additionally, USFWS's Information, Planning and Conservation ("IPaC") System was reviewed to determine potential federally-listed species that may occur within the Project area. The results of the IPaC system review did not indicate any federally-listed threatened or endangered plant species in the Project area.

The NYNHP was consulted to identify state-listed threatened or endangered plant species in the Project area. Correspondence with NYNHP from a consultation response on June 23, 2014

(NYNHP, 2014a) indicated that there are four recent records of state-listed threatened or endangered plant species in the Project area (Table 4.7-1). The consultation response can be found in Appendix F. A brief description of each state-listed rare plant species is provided in below.

Table 4.7-1. State-Listed Threatened and Endangered Plant Species

Common Name	Scientific Name	Date of Last Observation	Status
Southern Yellow Flax	*Linum medium var. texanum*	1998	Threatened
Small's Knotweed	*Polygonum aviculare ssp. buxiforme*	1992	Endangered
Wafer-ash	*Ptelea trifoliata ssp. trifoliata*	2012	Endangered
Bushy Cinquefoil	*Potentilla paradoxa*	1998	Endangered
Source:	NYNHP, 2014a.		

Southern Yellow Flax

Southern Yellow Flax is a perennial herb that has alternate (except sometimes for the lowermost 1 or 2 nodes), entire, and lance-shaped leaves up to 2.5 cm long. It has light yellow petals 4-8 millimeters wide that are fused at the base. It was last documented at Van Buren Point approximately 0.45 mile west of the proposed pipeline, on the east side of the railroad, south of Van Buren Road. The habitat is an existing maintained electric transmission line right-of-way in moist soil in this area. Other existing locations of this species in New York are "mostly early successional, artificially-created habitats such as powerline right-of-ways, roadsides, and pasturelands" (NYNHP, 2014b).

Small's Knotweed

Small's Knotweed is a bluish or grayish green annual herb that grows up to 15 centimeters tall. It typically occurs on sandy, pebbly, or gravel beaches (NYNHP, 2014c). It was last documented at Point Gratiot Park at a sand-gravel beach used as a public swimming area, altered by bulldozing and a seawall. The plants grow in a small area of stabilized sand along the Lake Erie shoreline.

Wafer Ash

Wafer-ash is a native, alternately branching shrub (or small tree) that grows up to 7.6 meters with a broad crown (NYNHP, 2014d). Its bark is reddish brown to gray-brown that has an unpleasant odor and bitter taste. Wafer ash are also net-veined (reticulate) and have the odor of hops. It was last documented at the mouth of Canadaway Creek in 2012. "The plants were growing in

gravelly soils along the shore of Lake Erie. The plants are a component of the understory within an open, successional northern hardwood forest. There is a small, narrow trail along the lakeshore and the site is bordered by agricultural land with a few residences" (NYNHP, 2014a).

Bushy Cinquefoil

Bushy Cinquefoil is annual (or short-lived perennial) forb with reclining (decumbent) to arching stems that often grow parallel along the ground for the first 5 centimeters before turning upwards, and reaching 20 to 50 centimeters at maturity (NYNHP, 2014e). The leaves are mostly pinnate (occasionally with some trifoliate leaves) with 7 to 11 leaflets. The flowers are elongated and loosely clustered and are typically yellow. It was last documented at Point Gratiot Park in 1998 at a sand beach used as a public swimming area and at an inaccessible shale shoreline outcrop. The vegetation in that area was sparse due to severe growing conditions and severe rock outcrops. There is continuous water seepage near crevices of the outcrop facing Lake Erie where the plants grow (NYNHP, 2014a).

While the NYNHP correspondence indicated that these species may be present in the Project area, after reviewing the species characteristics, it was determined that only one plant species, Southern Yellow Flax, had any possibility of occurring within the Project area. The other three species all occur on shorelines or beaches, which will not be impacted by the Project. A species specific survey was conducted in July 2014 and determined the species is absent from the Project area.

4.7.3.4 Unique, Sensitive or Protected Plant Communities

The NYNHP consultation letter identified the Sand Beach at Point Gratiot as a significant natural community. This is a west-facing shore with a narrow beach that is somewhat disturbed, but very diverse (NYNHP, 2014a). This Sand Beach is in front of the existing Dunkirk Generating Station on the harbor side and runs to the west to the exposed bedrock at the waterline toward and around the Point. The defined limits of disturbance to install the proposed pipeline and associated facilities are not located near the defined area and will not impact the Sand Beach significant natural community. Neither the proposed pipeline nor any of the associated facilities will impact this community.

No "Old Growth Forest" or "Sugar Bush" areas were identified during the field surveys from May, June or July 2014. Additionally, based on a review of information available from the New York State Maple Producers Association members, no active sugar bushes are known to be

located within or adjacent to the temporary construction or permanent right-of-way of the Project (New York State Maple Producers, 2014). There were two trees listed in the Registry of Big Trees in New York State in Chautauqua County, but these trees are not located within the Project area.

4.7.3.5 Invasive Species

According to the NYSDEC, invasive species are non-native species that can cause harm to the environment or to human health. The NYSDEC has created an "Interim Invasive Species Plant List" which is intended to be an advisory list of species to consider for invasive species management.

Invasive species surveys were conducted for the Project during May, June and July 2014 using this Interim Invasive Species Plant List as a guide. Field staff identified areas where invasive species were prevalent to plan for management of those species during construction. During field surveys, the following invasive species were found in dense concentrated stands: black locust (*Robinia pseudoacacia*), glossy buckthorn (*Frangula alnus Mill.*), Japanese knotweed (*Fallopia japonica*), purple loosestrife (*Lythrum salicaria*), and common reed (*Phragmites australis*).

Several other invasive species were observed in low densities or as individual plants throughout the entire pipeline route and are not a risk for further invasion or infestation in other parts of the pipeline route. These species include multiflora rose (*Rosa multiflora*), garlic mustard *(Alliaria petiolata*), mugwort (*Artemisa vulgaris*), Canada thistle (*Cirsium arvense*), honeysuckle, and Japense barberry (*Berberis thunbergii*). Reed canary grass (*Phalaris arundinacea*) was also commonly observed throughout the pipeline route. Because reed canary grass is often planted and used in agriculture in the region and would be impossible to control, with it being cultivated and widespread adjacent to the pipeline right-of-way, it will not be controlled or managed for during construction.

In order to prevent transportation of seeds or propagules of any invasive species off-site to other non-project related areas, all equipment will be brushed clean before leaving identified invasive species located along the proposed right-of-way. Additional measures to prevent the spread of invasive species will be identified in the EM&CP for the Project which will be submitted to the NYSPSC for review and approval.

4.7.4 Wetlands

In accordance with PSL §122(1)(c) and 16 NYCRR §86.5 (b)(1)(2)(6), this section describes the studies and methodology undertaken to identify the potential changes or effects of the construction and operation of the Project on wetlands. This section also describes the extensive engineering and consultation efforts undertaken during the siting and design of the proposed facilities to avoid or minimize potential environmental effects on these resources.

Wetland delineations were conducted using the Federal Routine Determination Method presented in the *Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2) (USACE, 2012), including clarifications and interpretations provided in the March 6, 1992 guidance memorandum (Williams, 1992), and the USACE and U.S. Environmental Protection Agency ("USEPA") guidance on jurisdictional forms (USEPA and USACE, 2007 and USACE, 2008). In addition, NYSDEC requires the use of the *New York State Freshwater Delineation Manual* (Browne et al., 1995). Therefore the methods in the state manual were also implemented. A survey corridor surrounding the proposed limits of disturbance for the Project was surveyed to identify wetlands located within the Project's right-of-way as well as adjacent areas that will be disturbed during construction so erosion and sediment controls maybe prescribed to protect the resources.

Wetland cover types were assigned to each delineated wetland according to *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Using this hierarchical wetland classification system, three primary cover types were identified for vegetated wetlands in the Project area: palustrine emergent ("PEM"), palustrine scrub-shrub ("PSS"), and palustrine forested "(PFO") wetlands. Some wetlands contained mixed cover types of PEM, PFO, and PSS. Furthermore, these cover types were identified into their ecological community according to *Ecological Communities of New York State, Second Edition* (Edinger et al., 2014). Wetland boundary delineations along the Project right-of-way have been depicted on Figure 4.7-2 (Sheets 1 through 3).

4.7.4.1 Existing Wetland Resources along Pipeline Right-of-Way

A variety of wet meadows, marshes, scrub-shrub and forested wetlands occur within the Project right-of-way. Several are associated with rivers, perennial streams and intermittent streams

while many are also large wetlands within the landscape with multiple covertypes. A total of 63 wetland areas were identified in the survey corridor during wetland delineations in May and July 2014. Those wetlands that are crossed by the Project are indicated in the table. The wetlands delineated within the survey corridor are presented in Table 4.7-2. The Project right-of-way does not cross any NYSDEC mapped wetlands.

Table 4.7-2. Delineated Wetlands in Project Area

Wetland Field Designation	Area Delineated (acres)	Field Designated Cover type (Cowardin et al. 1979)	Crossed By Project (Y/N)
WA-01	0.06	PEM	Y
WA-02	15.57	PEM/PSS/ PFO	Y
WA-03	2.39	PEM	Y
WA-04	11.35	PFO/PSS	Y
WA-05	0.34	PEM/PFO	Y
WA-06	1.27	PEM/PSS	Y
WA-07	0.25	PFO/PEM	Y
WA-08	0.17	PFO	Y
WA-09	1.32	PFO	Y
WA-10	0.93	PFO	Y
WA-11	1.84	PFO/PEM	Y
WA-12	.27d	PEM/PSS/ PFO	N
WB-01	1.83	PEM	Y
WB-02	0.72	PEM	Y
WB-03	3.08	PSS/PFO	Y
WB-04	0.14	PEM/PSS/ PFO	N
WB-05	2.02	PFO/PSS	Y
WB-06	0.81	PFO	Y
WB-07	0.17	PEM/PSS	Y
WB-08	1.13	PSS/PFO	Y
WB-09	1.65	PEM/PSS	Y
WB-10	2.09	PSS/PEM	Y
WB-11	0.76	PEM/PSS	Y
WB-12	1.61	PEM/PSS	Y
WB-13	0.60	PFO/PSS	Y
WB-14	0.16	PEM/PSS	Y

Table 4.7-2. Delineated Wetlands in Project Area			
Wetland Field Designation	**Area Delineated (acres)**	**Field Designated Cover type (Cowardin et al. 1979)**	**Crossed By Project (Y/N)**
WB-15	12.86	PEM/PFO/ PSS	Y
WB-16	11.79	PSS	Y
WB-18	0.27	PEM	Y
WB-19	1.05	PFO/PEM	Y
WB-20	0.03	PFO/PEM	N
WB-100	0.18	PEM	N
WB-101	0.13	PEM	N
WB-102	2.62	PSS	Y
WB-103	0.01	PEM/PFO	Y
WC-01, WC-02, WB-17	2.65	PEM/PSS	Y
WC-03	0.43	PEM	Y
WC-04	0.27	PEM/PSS	Y
WC-05	0.06	PEM/PSS	Y
WC-06	0.13	PEM/PFO	Y
WC-07	0.06	PFO	N
WC-08	0.88	PFO/PEM	Y
WC-09	0.90	PFOPEM	N
WC-10	0.09	PFO/PEM	N
WC-11	5.24	PFO/PSS/ PEM	Y
WC-12	1.12	PSS/PEM	Y
WC-13	0.54	PEM	Y
WC-14	2.05	PFO/PEM	Y
WC-15	1.17	PFO	Y
WC-16	0.52	PFO	Y
WC-17	1.05	PFO	Y
WC-18	0.38	PFO	Y
WC-19	0.06	PEM	N
WC-20	0.22	PSS/PFO	N
WC-21	0..04	PEM/PSS	N
WC-22	0.04	PEM/PSS	N
WC-23	0.05	PSS/PEM	N

Table 4.7-2. Delineated Wetlands in Project Area			
Wetland Field Designation	**Area Delineated (acres)**	**Field Designated Cover type (Cowardin et al. 1979)**	**Crossed By Project (Y/N)**
WC-24	0.06	PEM/PSS/ PFO	N
WC-25	0.52	PEM/PSS	Y
WC-101	0.06	PEM	N
WC-102	2.53	PEM	Y
WC-103	0.21	PEM	Y
WC-104	0.01	PEM/PFO	N
WC-105	0.06	PEM/PSS/ PFO	N
Source:	Wetland Delineation Report prepared for the Dunkirk Natural Gas Pipeline Project, prepared by TRC in July 2014.		

Three primary cover types were identified for vegetated wetlands in the Project area according to the *Classification of Wetlands and Deepwater Habitats of the U.S.* (Cowardin et al 1979): PEM, PSS, and PFO wetlands. Some wetlands contained mixed cover types of PEM, PFO, and PSS. Brief descriptions of each community type, based upon the Cowardin system and descriptions included in *Ecological Communities of New York State* (Edinger et al., 2014), are provided below.

Palustrine Emergent Wetland/ Shallow Emergent Marsh

The PEM cover type is characterized by presence of erect, rooted and herbaceous hydrophytes, excluding mosses and lichens (Cowardin et al., 1979). Within the survey corridor, PEM wetlands were found as a single dominant wetland cover type, and also as a co-dominant wetland type with other plant community types, mainly PSS. PEM wetlands within the Project area are shallow emergent marshes according to the *Ecological Communities of New York State* (Edinger et al., 2014). This is a broadly defined community and is common throughout New York and the local region. Shallow emergent marshes have generally mineral or mucky soils that are permanently saturated and seasonally flooded.

Emergent wetlands are the most common wetland cover type present in the proposed right-of-way throughout the Project area. Commonly observed species in emergent wetlands include Phragmites (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), sensitive fern (*Onoclea sensibilis*), sedge species (*Carex spps.*), wide-leaf cat-tail (*Typha latifolia*), bristly dewberry (*Rubus hispidus*), fowl manna grass (*Glyceria spps.*), and goldenrods (*Solidago spps.*). Many of these wetlands had standing water or areas of open water.

Palustrine Scrub-Shrub Wetland/Shrub Swamp

The scrub-shrub wetland cover type includes areas dominated by saplings and shrubs that are less than 20 feet tall (Cowardin et al., 1979). Scrub-shrub wetlands were the least common wetland cover type found within the survey corridor. This cover type was found mainly near the railroad crossings on the northern section of the route and within the electrical transmission right-of-way, in a few cases in combination with PEM components. Commonly observed shrub species, as discussed above, include silky dogwood (*Cornus amomum*), grey dogwood (*Cornus racemosa*), pussy willow (*Salix spp.*) and speckled alder (*Alnus incana*). Dense stands of shrubs were found consistently in the PSS wetlands. Shrub Swamp is the PSS community found within the Project area as defined by Edinger et al., 2014.

Palustrine Forested Wetland

Forested wetland cover types are dominated by trees and shrubs that have developed a tolerance to a seasonal high water table. In order to be characterized as forested, a wetland must be dominated by trees and shrubs that are at least six meters tall (Cowardin et al., 1979). Forest wetlands typically have a mature tree canopy, and depending upon the species and density, can have a broad range of understory and groundcover community components. PFO wetlands occur as a single dominant wetland cover type, and also as a co-dominate wetland type where other plant community types exist with the wetland.

Forested wetlands were mainly found in the southern half of the proposed pipeline route as this area is not located adjacent to an existing cleared electric transmission right-of-way. Forested wetlands were also found adjacent to off-right-of-way access routes. Two different vegetation communities according to Edinger et al., 2014 are PFO cover types. These include red maple-hardwood swamp and hemlock-hardwood swamp. Descriptions of these communities are provided below.

<u>Red Maple-Hardwood Swamp</u>

Red maple-hardwood swamps occur mainly in inorganic soils found in depressional areas with poor drainage, but occasionally on much or shallow peat, that is typically acidic to circumneutral. Within the Project area and consistent with the definition of this community, red maple is the dominant species with several other species as co-dominants includes green ash (*Fraxinus pennsylvanica*), and American elm (*Ulmus americana*). Yellow birch (*Betula alleghaniensis*) and swamp white oak (*Quercus bicolor*) are also observed species in these wetlands. These communities were mainly found within the northern portion of the Project area

within the Great Lakes Plain Ecological Zone and Erie-Ontario Plain Minor Zone.

Hemlock-Hardwood Swamp

Hemlock-hardwood swamp is a hemlock dominant forested swamp typically found mineral soils and deep muck in depressions. Within the Project area, it is found in both the Great Lakes Plain Ecological Zone and Erie-Ontario Plain Minor Zone and Appalachian Plateau Ecological Zone and Cattaraugus Highlands Minor Zone. Pit and mound topography was a distinct characteristic of this community. Typical vegetation observed within forested wetlands included red maple (*Acer rubrum*), silver maple (*Acer saccharinum*), hemlock (*Tsuga canadensis*), yellow birch (*Betula alleghaniensis*), cinnamon fern (*Osmunda cinnamomea*), and sensitive fern (*Onoclea sensibilis*).

4.7.4.2 Existing Wetland Resources at Associated Facilities

There are no wetlands in the vicinity of the proposed metering station, regulating station or the two mainline valve sites which will be constructed within the defined pipeline right-of-way.

4.7.5 Wildlife

Wildlife species assemblages and wildlife habitat within the Project area were identified based on existing data sources such as the New York State Breeding Bird Atlas (NYSDEC, 2014a), the New York State Reptile and Amphibian Atlas (NYSDEC, 2007b), New York State Bird Conservation Area Programs (NYSDEC, 2014b), National Audubon Society Important Bird Areas (National Audubon Society, 2014). Supplemental information was collected through consultations with the USFWS, the NYNHP (Appendix F) and direct observation during field surveys in May, June and July 2014.

4.7.5.1 Existing Wildlife Resources along Pipeline Right-of-Way

The distribution and abundance of wildlife species is directly dependent upon the type, quantity and quality of available habitat. As described in Section 4.7.1, the Project includes a mix of agricultural fields, successional old fields, successional shrubland, forestland and various wetland communities. The majority of the Project area has habitat influenced by agriculture, existing maintained utility right-of-way and timber production. As a result, the Project area mainly supports a variety of wildlife species that are adapted to edge habitat, fragmented forested blocks and agricultural land. The only specialized wildlife habitat traversed by the Project is in

the large contiguous forested area in the southern portion of the pipeline route. The following discussion describes each general habitat type within the Project area and describes the wildlife species assemblage found in each.

Agricultural Areas

Agricultural land within the Project area mainly consists of vineyards and row crops. These fields are used by wildlife in various capacities but mainly offer foraging opportunities. Typical wildlife species that are utilizing this habitat within the Project area include white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), Eastern cottontail rabbit (*Sylvilagus floridanus*), woodchuck (*Marmota monax*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), common garter snake (*Thamnophis sirtalis*), house mouse (*Mus musculus*) and meadow vole (*Microtus pennsylvanicus*).

Forested Habitats

The forested habitats within the Project area can be generally divided into the smaller woodlots within the largely agricultural landscape and the large contiguous forest tracts. The smaller woodlots found in the northern portion of the Project area provide shelter and nesting/breeding habitat for those species that forage within the agricultural land and general forest dwellers. Species that utilize the smaller woodlots include white-tailed deer (*Odocoileus virginianus*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), raccoon (*Procyon lotor*), gray squirrel (*Scirus carolinensis*), eastern chipmunk (*Tamias striatus*), striped skunk (*Mephitis mephitis*), American robin (*Turdus migratorius*), blue jay (*Cyanocitta cristata*), blackcapped chickadee (*Parus atricapillus*), tufted titmouse (*Parus bicolor*), northern cardinal (*Cardinalis cardinalis*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), and American toad (*Bufo americanus*).

The southern portion of the Project area traverses a large expansive hemlock-northern hardwood forest that provides habitat for the same forest dwelling species as the smaller woodlots as well interior forest dwelling species. Interior forest dwelling species found within the Project area include porcupine (*Erethizon dorsatum*), black bear (*Urus americanus*), pileated woodpecker (*Dryocopus pileatus*), red newt (*Notophthalmus viridescens*) and scarlet tanager (*Piranga olivacea*).

Edge Habitats

The edge habitats within the Project area consists primarily of two kinds of edge. The edge that results from the transition to managed right-of-way from forest and the edge that results from the transition to agricultural fields from forest. Both kinds of edge are induced and are not natural on the landscape. The boundary between habitat types promotes a higher species diversity because the species that rely on only one habitat type can be found up to the edge and species that rely on both habitat types can be found along the edge. Also, by utilizing two habitat types there is a greater diversity of resources to be exploited for survival, which can help to support a larger and more diverse community. For example, wildlife are able to find suitable shelter and nesting/breeding areas in the forest and suitable foraging habitat in the agricultural land. Edge species found within the Project are include white-tailed deer (*Odocoileus virginianus*), Northern mockingbird (*Mimus polyglottos*), vireos (*Vireo spp.*), gray catbird (*Dumetella carolinensis*), and cedar waxwing (*Bombycilla cedrorum*).

Shrublands

The shrubland habitats within the Project area primarily occur within a managed right-of-way (i.e., existing utility corridors) and at the northern end of the Project. Large portions of the shrublands within the Project area are a monoculture of glossy buckthorn (*Frangula alnus*) that have been killed due to application of herbicide in the course of standard management practices along the right-of-way. These shrublands are used by wildlife in numerous capacities but mainly offer shelter and foraging opportunities. Species that utilize shrublands include white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), wild turkey (*Meleagris gallopavo*), Northern mockingbird (*Mimus polyglottos*), gray catbird (*Dumetella carolinensis*), brown thrasher (*Toxostoma rufum*), warblers (*Parulidae spp.*), common garter snake (*Thamnophis sirtalis*), brown snake (*Storeria dekayi*), and eastern milk snake (*Lampropeltis triangulum*).

Aquatic Habitats

The aquatic habitat within the Project area consists of streams, wetlands, vernal pools, and ponds. These aquatic habitats are used by wildlife in numerous capacities offering shelter, forage, drinking water, breeding areas and corridors for forage. While vernal pools can be utilized in all the capacities mentioned above, they are important for the seasonal breeding and reproductive habitat they provide the amphibian community. Typical amphibian species found within the wetland communities along the Project area include northern spring peeper (*Pseudoacris c. crucifer*), green frog (*Rana clamitans melanota*), bull frog (*Rana catesbeiana*), wood frog (*Rana sylvatica*) and northern redback salamander (*Plethodon c. cinereus*). Several

reptilian species may also be found along the Project area within aquatic habitats, including the northern water snake (*Nerodia sipedon*), common snapping turtle (*Chelydra serpentina*), and painted turtle (*Chrysemys picta*). These species are listed on the New York State Reptile and Amphibian Atlas for Chautauqua County (NYSDEC, 2007b). Bird species that utilize the shallow, emergent wetlands within the Project area include red-winged blackbird (*Agelaius phoeniceus*), marsh wren (*Cistothorus palustris*), and common yellowthroat (*Geothlypis trichas*). Mammal species that utilize the aquatic habitats in the project area, either for foraging or as a travel corridor between habitats include raccoons (*Procyon lotor*), opossum (*Didelphis virginiana*), and white-tailed deer (*Odocoileus virgianus*).

Important Bird Areas

There were no New York State Bird Conservation Area Programs located in the Project area (NYSDEC, 2014). There were two Important Bird Areas ("IBA") as designated by the National Audubon Society within the vicinity of the Project area. The closest IBA is the Dunkirk Harbor & Point Gratiot that is located to the east and west of the Dunkirk Generating Station. The Dunkirk Harbor is an ideal overwintering location for many water birds, such as gulls and ducks. The harbor is naturally protected by Point Gratiot and discharged warm water from the Dunkirk Generating Station prevents ice build-up. This area supports multiple water birds and acts as a migratory stop for many land birds. The area is a known breeding location of red-headed woodpeckers (*Melanerpes erthrocephalus*). Additionally, common loons (*Gavia immer*) and pied-billed grebes (*Podilymbus podiceps)*, both species of concern, have been known to frequent the harbor (National Audubon Society, 2014). The Project will not impact any habitat for shorebirds or waterfowl.

The second IBA, as designated by the National Audubon Society, is Wheeler's Gulf located approximately 2.5 miles east of the Project. This area encompasses a valley floor and the adjacent slopes covered in a mature forest. Wheeler's Gulf supports diverse plant communities and has become a haven for many breeding birds in the region, including the Acadian flycatcher (*Empidonax virescens*), hooded warbler (*Setophaga citrina*), scarlet tanager (*Piranga olivacea*), rose-breasted Grosbeak (*Pheucticus ludovicianus*), and American redstart (*Setophaga ruticilla*). Additionally, this is the only known breeding site for cerulean warblers (*Setophaga cerulea*) in Chautauqua County (National Audubon Society, 2014). Due to the distance from the Project, this IBA will not be impacted.

4.7.5.2 Existing Wildlife Resources at Associated Facilities

The proposed regulating station will be located within the existing Dunkirk Generating Station property, which is not typically used by wildlife. The proposed metering station is located within an agricultural field and the typical mammal, bird, and amphibian species that are found at this location are those that are utilizing agricultural lands adjacent to within the rest of the Project area. The mainline valves will be installed within the pipeline permanent right-of-way that will be constructed in areas supported by a variety of wildlife species.

4.7.5.3 Threatened or Endangered Wildlife Species

The USFWS provides information and consultation for the protection of federally-listed rare species. State-listed rare species are protected under New York State law. The NYNHP provides information and consultation for protection of state-listed rare species. Information on federally-listed and state-listed rare species was provided by the USFWS and NYNHP as described in the sections below. Agency consultation documents are located in Appendix F.

Federally-Listed Wildlife Species

USFWS's IPaC System was reviewed to determine potential federally-listed species that may occur within the Project area. The results of the IPaC system revealed that three federally-listed species may occur within the Project area. Table 4.7-3 lists these species.

Table 4.7-3. Federally-Listed Threatened and Endangered Species

Common Name	Scientific Name	Federal Listing
Northern long-eared bat	*Myotis septentrionalis*	Proposed Endangered
Clubshell	*Pleurobema clava*	Endangered
Rayed Bean	*Villosa fabalis*	Endangered
Source:	USFSW IPAC 2014	

Northern long-eared bat

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length in the genus *Myotis*. It is found in 39 states including much of the eastern and north central United States and all Canadian provinces. Recently, the fungal pathogen White-nose syndrome has become the primary threat to this bat across most of its range where decline has been estimated at 99 percent from pre-epidemic populations. Loss of habitat also continues to contribute to this species decline. Northern long-eared bats overwinter in large caves or mines (hibernacula) and emerge in spring and migrate to summer grounds where the females form maternity colonies to birth and raise pups. Northern long-eared bats are opportunistic in selecting summer roosts, utilizing live or dead trees that retain bark or provide cavities and crevices. Roosts may contain solitary males

or maternity colonies of between 30-60 bats. Habitat for northern long-eared bat consists of forested hillsides where the bats will feed on insects within the understory and have access to an ample selection of roosting trees (USFWS, 2014a).

A literature review was conducted to determine records of northern long-eared bat within the vicinity of the Project area. Based on the literature review, several acoustical surveys were identified as having been conducted for proposed wind farms within 10-30 miles away from the Project area between 2005 and 2008. The acoustical survey revealed high activity of Myotis bat species suggesting that northern long-eared bats may be present within the Project area. In order to confirm the presence or absence of the species within the Project area, bat mist netting surveys were conducted in June and July 2014 along the Project route. The mist netting surveys were performed in accordance with a survey protocol reviewed and approved by the USFWS. The mist netting surveys confirmed that the northern long-eared bat is absent from the Project area. A summary of the mist netting surveys is provided in Appendix E. The results of the surveys are currently under review by the USFWS.

Clubshell

Clubshell is a species of mussel found in medium to small rivers and streams where it buries itself in the clean, loose sand and gravel up to four inches deep. Clubshell was once found from Michigan to Alabama and from Illinois to West Virginia, but has been reduced to portions of only 12 streams across its range. This includes portions of the upper Ohio River watershed in Chautauqua and Cattaraugus counties of New York. The primary threats to this species are not well understood but are thought to be linked to pollution from agricultural run-off, industrial wastes, and extensive impoundments for navigation. The introduction and spread of the non-native zebra mussel is also a threat to the club shell. Clubshell reproduction requires a stable undisturbed habitat and a sufficient population of fish hosts to complete the mussel's larval development. Females must siphon in sperm that has been discharged into the current from males in order to fertilize their eggs. Once hatched, larvae attach themselves by means of tiny clasping valves to the gills of a host fish, where they will continue to grow into juveniles with a shell. Once they reach this stage, they will detach from the host fish and settle into the streambed. Clubshells may live as long as 50 years as an adult (USFWS, 2014b).

No streams within the Ohio River watershed capable of supporting clubshell will be crossed by the Project.

Rayed bean

The rayed bean is a small mussel, usually less than 1.5 inches (3.8 centimeters) in length. The shell outline is elongate or ovate in males and elliptical in females, and moderately inflated in both sexes with valves that are thick and solid. Key characteristics useful for distinguishing the rayed bean from other mussels are its small size, thick valves, unusually heavy teeth for a small mussel, and color pattern. Its historic range spread across the Great Lakes region and from northern Ontario to Alabama (USFWS, 2014c). Rayed bean populations have been reduced by 78% across this range and it is thought to be extirpated in most of the southern regions. It remains widespread in the Ohio River drainage basin including the upper reaches in Chautauqua and Cattaraugus counties in western New York. The rayed bean is typically found in riffle areas of headwater creeks but has been documented in larger rivers and along lake shores in shallow wave washed areas of Lake Erie. Larval ray beans are obligate parasites on several species of Darter (*Etheostoma spp.*). Adult rayed beans are considered habitat generalists that will tolerate various substrates and stream flow but they are very susceptible to pollution, sedimentation, and habitat destruction (NatureServe, 2014).

No streams within the Ohio River watershed capable of supporting rayed bean will be crossed by the Project.

State-Listed Wildlife Species

Information on state-listed or rare species was received in correspondence from the NYNHP (See Appendix F). There were no records of threatened or endangered wildlife species within the Project area. There were two species of conservation concern to the state which are considered rare by the NYNHP, and one species with a historical record identified in Table 4.7-4. A brief description of each state-listed rare species is provided below.

Table 4.7-4. New York State-Listed Species of Special Concern

Common Name	Scientific Name	Date of Last Observation	NY State Listing
Red-headed Woodpecker	*Melanerpes erythrocephalus*	2013	Special Concern
Freshwater Drum	*Aplodinotus grunniens*	Not recorded	Unlisted
Channel Darter	*Percina copelandi*	1894	Unlisted
Source: NYNHP, 2014a.			

Red-headed Woodpecker

The red-headed woodpecker is a bird that reaches approximately 24 cm in length and 72 grams in weight. They are typically found in open woodland, especially with beech or oak, open

situations with scattered trees, parks, cultivated areas and gardens (NatureServe, 2014). The most recent documented presence of the red-headed woodpecker in the Project area was at the Point Gratiot Park in 2013. The woodpeckers were "found in a wooded portion of a park with trails. They were often nesting in an area with dead sycamores" (NYNHP, 2014a).

Freshwater Drum

The freshwater drum is a fish that lives in shallow, open waters that are sheltered from prevailing winds and waves. They often live in areas with rock and gravel substrates and less rooted vegetation are in the more exposed areas. It was noted to possibly occur in the Dunkirk Harbor because "the power plant discharges heated wastewater and maintains the open area" (NYNHP, 2014a). Adults feed on immature aquatic insects such as mayflies (*Hexagenia*), amphipods, fish (especially shad and young drum), crayfish and mollusks (Encyclopedia of Life, 2014).

Channel Darter

The channel darter is a small fish that may be found in large river systems in gravel and cobble shoals and riffles. They are a member of the Perch family and are typically between 34 and 61 mm in total length (Fisheries and Oceans of Canada, 2014). The channel darter was last documented in the Canadaway Creek in 1894 (NYNHP, 2014a).

After reviewing the species characteristics and the database record regarding date of last recorded observation, it was determined that none of these wildlife species had any possibility of occurring in the narrow area of disturbance associated with the Project. No disturbance is anticipated in the Point Gratiot Park where the red-headed woodpecker has been observed. The freshwater drum will not be impacted because no in-water work is planned or will be conducted for this Project in the Dunkirk Harbor. As the most recent siting was in 1894, the channel darter is likely no longer present in the Canadaway Creek. Even if it is present, the Project will not impact populations or individuals because the channel darters remain in deep sections of rivers during the day (NYSDEC, 1985). The pipeline will be installed across the Canadaway Creek via HDD and will require no in-water work at this location.

4.7.6 Potential Effects and Mitigation

The potential effects of the Project on vegetation, wetlands, and wildlife along with proposed mitigation measures are discussed below.

4.7.6.1 Vegetation

The pipeline route was sited to minimize impacts to vegetation communities by using degraded and previously disturbed areas where practicable, mainly located adjacent to and parallel to an existing electrical transmission line right-of-way. Paralleling the existing right-of-way will result in the expansion of an existing corridor that undergoes regular vegetation maintenance and will avoid further fragmentation of forested areas. Where the pipeline diverges from the existing electrical transmission line right-of-way and will require the establishment of new utility right-of-way, the length of the pipeline was minimized to the maximum extent practicable. Associated facilities for the pipeline such as the metering and regulator stations and valves are sited within areas already developed or agricultural land devoid of vegetation. Furthermore, the pipeline was also sited to avoid heavy infestation of invasive species to avoid the potential to spread these species within the Project area.

Construction activities will cause temporary and permanent impacts to vegetative communities. Activities that would result in direct impacts to vegetation include the cutting and clearing of vegetation, the removal of rooted systems and stumps, and soil disturbance. Outside the permanent right-of-way, areas will be allowed to naturally regenerate back to forestland. It will require an estimated 20-years or more for trees in these areas to re-establish and provide forest cover. The permanent right-of-way will be maintained free of trees and converted to herbaceous cover.

To minimize direct impacts to vegetation during construction, the limits of the Project will be clearly marked in the field prior to construction to ensure that no disturbance occurs outside this area. A line of sight will be cleared over areas where the pipeline will be installed via HDD. Proposed clearing techniques, the handling and disposal of logs and slash, are described in Section 4.2 and specific detailed plans will be provided in the EM&CP to be submitted for the Project.

Indirect impacts to all vegetation communities may include increased soil erosion and sedimentation, changes to the hydrology in the area, and the creation of conditions conducive to invasive species establishment. Sedimentation and soil erosion will be managed through the incorporation of best management practices and incorporation of erosion and sediment control devices. The use and maintenance of temporary erosion control measures during construction will minimize sediment transport, thereby maintaining the soil integrity in impacted areas and contributing to the overall success of revegetation efforts and decrease the time needed for

regeneration. The installation of permanent erosion control devices (e.g., trench breakers and slope breakers) will slow subsurface trench flow, reduce the velocity and divert the flow of surface water off of the right-of-way, and prevent long-term sediment deposition in impacted areas. This will prevent the pooling of water on the permanent right-of-way and help restore the pre-construction hydrological patterns of impacted areas, thereby contributing to the overall revegetation success. Establishment of desirable vegetation post construction will be crucial to preventing the establishment of invasive species within the right-of-way.

Within the Project area, potential effects of operation of the proposed facilities on vegetation include general right-of-way maintenance including mowing and clearing of trees to provide unimpeded and safe access to the pipeline and ancillary facilities.

Overall, significant adverse effects to vegetation communities are not expected, because vegetative communities present in the Project area are locally and regionally common. Although the Project will result in the permanent removal of some of the vegetation present within the proposed permanent right-of-way, no significant or unusual plant communities, populations, or individuals will be adversely affected.

4.7.6.2 Wetlands

The Project has been designed to minimize significant permanent effects to wetland resources by locating the proposed facilities outside of wetlands to the extent practicable. Temporary effects on wetlands from construction activities will primarily be associated with the construction of temporary access roads and the installation of the pipeline. To minimize temporary effects, the construction right-of-way within wetlands will be reduced to 75 feet. Further, tracked vehicles and/or swamp mats will be used as necessary when working in wetlands and near stream banks to protect vegetation root systems, reduce compaction, and minimize ruts and in select locations will utilize HDD to minimize impacts to wetlands. The EM&CP to be submitted for the Project will specify the work procedures in wetlands and at stream crossings and appropriate restoration and mitigation measures will be prescribed on a site-by-site basis.

Proposed tree clearing in the newly acquired right-of-way and proposed facility locations will result in some minor permanent conversion of forested wetland to scrub-shrub/emergent wetland. However, to minimize impacts the permanent maintained cleared right-of-way will be reduced to 30 feet wide through wetlands. There are no permanent wetland loss proposed for the Project.

4.7.6.3 Wildlife

The Project has been designed to minimize impacts to wildlife populations, particularly threatened and endangered species, through siting Project components away from sensitive habitats and using degraded and previously disturbed areas as well as existing right-of-ways where practicable. This will act to reduce further habitat fragmentation and disturbance.

Construction activities may cause temporary and permanent impacts to vegetative communities and disturbance to soil, which will impact wildlife that utilize these communities. Those wildlife species utilizing scrub-shrub or forested areas where clearing is proposed may be temporarily affected by the loss of woody species for food, shelter and/or nesting. However, the vegetation directly adjacent to the proposed facilities will be unaffected and will continue to meet the local wildlife habitat needs in most cases. Wildlife species that are interior forest dwellers, such as black bear (*Ursus americanus*), may be more affected by the fragmentation of habitat and the creation of edge in areas where clearing is proposed. However, edge species, such as the gray catbird (*Dumetella carolinensis*) and bats that utilize open corridors within forested areas to feed, will benefit in scrub-shrub or forested areas where clearing is proposed as this will create new edge habitat for edge species to utilize. A large portion of the existing plant communities are in early successional stages or agricultural lands that will remain unaltered by the Project. Therefore, wildlife species that utilize these cover types will be largely unaffected as they will continue to have a significant amount of suitable habitat available within the Project right-of-way.

Due to the linear nature of the Project, impacts are anticipated to be brief within any given area. Construction will cause temporary displacement of most wildlife in the immediate vicinity of the construction zone and adjacent areas. However, wildlife patterns of movement would be expected to return to "normal" following the completion of the construction activities at a given site. Highly mobile species such as white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), and raccoon (*Procyon lotor*) will be able to move out of the way of construction activities and return upon completion. However, construction activities may result in mortality of individuals to some small mammals, nesting species, tree cavity nesting species, and non-mobile species specifically amphibians and reptiles such as American toads (*Bufo americanus*) and common snapping turtle (*Chelydra serpentine*) as these species are not able to move out of the way of construction activity and are difficult or dangerous to completely remove from a construction site.

Wildlife could be drawn to the construction areas by food discarded or intentionally left on the construction site. Consumption of human food by wildlife can lead to nutrient deficiencies and disease in wildlife. This impact will be avoided by ensuring that construction worker trash is removed on a regular basis and workers will be prohibited from feeding wildlife.

The general construction and operational impacts of the Project are applicable to endangered and threatened species. However, there are no federally-listed species that occur within the Project area. There were also no records of state-listed threatened or endangered wildlife species within the Project area. There were two species of conservation concern to the State and are considered rare by the NYNHP. Due to the limited distribution and abundance of endangered and threatened species, no significant impacts are anticipated in association with this Project.

4.8 Water Resources

In accordance with PSL §122(1)(c), this section presents the studies that have been conducted to characterize existing ecological conditions and evaluate the potential for impacts to the water resources of the area as a result of the construction and operation of the Project. Measures that will be incorporated into the Project's design and construction activities to avoid and/or mitigate potential impacts are discussed below in Section 4.8.6.

4.8.1 Introduction and Summary of Results

The proposed facilities will be designed and constructed in accordance with current industry standards. Dunkirk Gas Corporation does not anticipate impacts to the waters of the State relative to the construction or operations of the proposed facilities.

Construction activities for the project will entail disturbance of greater than one acre. Under these conditions, state law requires that storm water discharge(s) from the construction site(s) be covered under a State Pollutant Discharge Elimination System ("SPDES") permit. Dunkirk Gas Corporation will comply with this requirement by preparing a SWPPP and seeking coverage under the State's General Permit for Stormwater Discharges from Construction Activities (GP-0-10-001).

4.8.2 Laws, Policies and Regulations

The laws, policies and regulations related to water resource potentially applicable to the Project are summarized below.

4.8.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline and associated facilities. This section addresses this requirement.

4.8.2.2 Federal/State Laws

The USACE regulates waters of the United States under both Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the CWA. Under Section 10, a USACE permit is required to do any work in, over or under a Navigable Water of the United States. Waterbodies have been designated as Navigable Waters of the United States based on their past, present, or potential use for transportation for interstate commerce. Under Section 404, a USACE permit is required for the discharge of dredged or fill material into waters of the U.S.

Under Article 15 of the Environmental Conservation Law, the NYSDEC has regulatory jurisdiction over activities that disturb the bed or banks of protected streams based on their classification. The NYSDEC Surface Water Quality Standards ("SWQS") classifies surface waters according to the following water quality criteria:

- Class AA Fresh Surface Waters – Best usages are water supply source for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival. This classification may be given to those waters that, if properly treated, meet or will meet New York State Department of Health drinking water standards and are or will be considered safe and satisfactory for drinking water purposes.
- Class A Fresh Surface Waters – Best usages are a water supply source for drinking, culinary, or food processing purposes; primary and secondary contact recreation; and fishing. Waters shall be suitable for fish propagation and survival.
- Class B Fresh Surface Waters – Best usages are primary and secondary contact recreation and fishing. Waters shall be suitable for fish propagation and survival.
- Class C Fresh Surface Waters – Best usage is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.
- Class D Fresh Surface Waters – Best usage is suitable for primary and secondary contact recreation, including fishing, but there are limiting factors. Due to such natural conditions as intermittency of flow and stream bed conditions, conditions are not conducive to propagation of game fishery and will not support fish propagation.
- Trout Waters – Some streams may be suitable and/or designated as trout waters. These streams are designated with (T) after the classification. If trout spawning is suitable in a stream, it will be designated with (TS).

Under Article 15, protected streams are those with a classification of C(T) or higher (i.e., Class C(T), C(TS), B, A, AA). In addition, Class AA, A, B, and C waters are subject to NYSDEC's water quality standards that prohibit visible turbidity impacts.

4.8.3 Existing Conditions

4.8.3.1 Surface Waters

Streams were identified within the Project route during the field surveys conducted in May, June and July 2014. Additional information regarding the surface waterbodies in the Project area was obtained from publically available resources from the NYSDEC, Division of Water. The surface waterbodies and their associated NYSDEC SWQS classification are identified below in Table 4.8-1.

Table 4.8-1. Streams Delineated in Project Area

Stream Field Designation	Municipality	Waterbody Name	Water Quality Classification
SA1	Town of Dunkirk	Canadaway Creek Lower 839-15	B(TS)
SA2	Pomfret	Tributary to Lake Erie 839-26	B
SA3	Pomfret	Tributary to Lake Erie 839-26	B
SA4	Pomfret	Potential feeder to Trib. Of Lake Erie 839-28	Unclassified
SA5	Pomfret	Potential feeder to Trib. Of Lake Erie 839-28	Unclassified
SA6	Pomfret	Potential feeder to trib. Of Lake Erie 839-28	Unclassified
SA7	Pomfret	Potential feeder to Trib of Little Canadaway 839-29	Unclassified
SA8	Pomfret	Potential feeder to Trib of Little Canadaway 839-29	Unclassified
SA8	Pomfret	Trib of Little Canadaway 839-29	Unclassified
SA9	Pomfret	Trib of Little Canadaway 839-29	C
SA10	Pomfret	NA	Unclassified
SA11	Pomfret	NA	Unclassified
SA12	Pomfret	NA	Unclassified
SA13	Pomfret	NA	Unclassified
SB1	Pomfret	Trib to Lake Erie 839-29	C

Table 4.8-1. Streams Delineated in Project Area			
Stream Field Designation	**Municipality**	**Waterbody Name**	**Water Quality Classification**
SB2	Pomfret	NA	Unclassified
SB3	Pomfret	Little Canadaway Creek 839-29	C
SB4	Pomfret	Tributary to Little Canadaway 839-29	C
SB5	Pomfret	Tributary to Lake Erie 839-28	C
SB6	Pomfret	NA	Unclassified
SB7	Pomfret	Potential feeder for tributary to Little Canadaway 839-29	Unclassified
SB8	Pomfret	Potential feeder for Tributary to Little Canadaway 839-29	Unclassified
SB9	Pomfret	Potential feeder for tributary to Little Canadaway 839-29	Unclassified
SB10	Pomfret	Potential feeder for tributary to Little Canadaway 839-29	Unclassified
SB11	Pomfret	Potential tributary to Little Canadaway 839-29	Unclassified
SB12	City of Dunkirk	Crooked Brook and tributaries 839-13	C
SB13	City of Dunkirk	Crooked Brook 839-13	C
SC1	Town of Dunkirk	Canadaway Creek Lower and tributaries 839-18	B
SC2	Pomfret	NA	Unclassified
SC3	Pomfret	NA	Unclassified
SC4	Pomfret	NA	Unclassified
SC5	Pomfret	NA	Unclassified
SC6	Pomfret	Potentially connected to SC7	A
SC7	Pomfret	Tributary to Bear Lake 800.7-65	Unclassified
SC8	Pomfret	NA	Unclassified
SC9	Pomfret	NA	Unclassified
SC10	Pomfret	NA	Unclassified
SC11	Pomfret	NA	Unclassified
SC12	Pomfret	NA	Unclassified
SC101	Pomfret	NA	Unclassified
SC102	Pomfret	NA	Unclassified
Source:	Wetland Delineation Report prepared for the Dunkirk Natural Gas Pipeline Project, prepared by TRC in July 2014.		

As indicated in Table 4.8-1, the proposed pipeline route crosses 41 surface waterbodies. Of

those 41 streams, 6 streams are NYSDEC-protected streams with a SWQS classification of C(T) or higher, including: 4 Class B streams; 1 Class B(TS) stream; and 1 Class A stream. There are no streams in the area of the proposed metering station, proposed regulating station or valve sites. For additional detailed information on the streams and their classification the completed Wetland Delineation Report is provided in Appendix C.

The proposed pipeline will cross the streams by utilizing both open trench excavation and HDD. For smaller streams, open trench excavation will be used. Open trench excavation across small streams will be accomplished by damming the stream and pumping the water around the excavation area. HDD will be used to bore under large and high quality streams and habitat when open excavation is not feasible. The currently anticipated stream crossing construction methods are presented in Table 2.2-1. Specific stream crossing details will be provided in the EM&CP to be submitted for the Project within four weeks after delivery on this Application.

4.8.3.2 Aquatic Resources

According to the NYSDOS, Office of Communities and Waterfronts New York State Coastal Boundary Map, there are three Significant Coastal Fish and Wildlife Habitat mapped within the vicinity of the proposed natural gas pipeline. These habitat areas are described below.

Dunkirk Harbor

The Dunkirk Harbor habitat area is located along the southern shoreline of Lake Erie between Buffalo and the City of Dunkirk, Chautauqua County, New York. The rare aquatic wildlife habitat of Lake Erie covers approximately 375 acres of sheltered bay and shallow open embayment beds of aquatic macrophytes, which provides essential spawning habitat for warm water fisheries. The vast diversity of the Dunkirk Harbor habitat area provides important habitat for many fish and wildlife species, including northern pike (*Esox lucius*), muskellunge (*Esox masquinongy*) and smallmouth bass (*Micropterus dolomieu*) throughout the year; gizzard shad (*Dorosoma cepedianum*), rainbow smelt (*Osmerus mordax*), carp (*Cyprinidae* spp.), emerald shiner (*Notropis atherinoides*), brown bullhead (*Ameiurus nebulosus*), white bass (*Morone chrysops*) and walleye (*Sander vitreus*) during the summer months; and rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), coho salmon (*Oncorhynchus kisutch*) and occasionally chinook salmon (*Oncorhynchus tshawytscha*) within the winter months. Along with fish, the harbor's warm water also provides essential foraging habitat for migratory birds, such as: waterfowl, loons, grebes, gulls, wading birds and other water birds. Birdwatching and angling are common recreational activities within the Dunkirk Harbor, which is possible through

public access and vantage points. There are no known endangered, threatened, or special concern species in the area.

Van Buren Point

Van Buren Pont stretches approximately four miles southwest of the City of Dunkirk, in the Towns of Portland, Pomfret, and Dunkirk, Chautauqua County, New York. The approximate 2,500 acre area of Van Buren Point habitat area provides essential habitat for warm water fish species, roughly located within a two and one-half mile radius of Van Buren Point. The gravel and cobble shoals of the habitat provide warm water fish species, including walleye (*Sander vitreus*), yellow perch (*Perca flavescens*) and smallmouth bass (*Micropterus dolomieu*). Van Buren Point habitat area receives a significant recreational anglers, and access the habitat is available from the Dunkirk Harbor. Van Buren Point has now become established with medium and high density residential areas and erosion protection of extensive rip-rapping. There are no known endangered, threatened, or special concern species in the area.

Canadaway Creek

The Canadaway Creek habitat area extends approximately two miles southwest of Dunkirk Harbor, in the Towns of Dunkirk and Pomfret, Chautauqua County, New York. The wildlife habitat extends approximately six miles from Lake Erie to Laona Falls, east of the Village of Fredonia. Commercial and recreational important aquatic species known to inhabit the area include coho salmon (*Oncorhynchus kisutch*), chinook salmon (*Oncorhynchu tshawytscha*), brown trout (*Salmo trutta*), steelhead trout (lake-run rainbow trout) (*Oncorhynchus mykiss*). Canadaway Creek provides an important salmonid fishery to anglers in the Lake Erie coastal region. Canadaway Creek is relatively undisturbed stream ecosystem which provides a habitat for major salmon spawning runs. There are no known endangered, threatened, or special concern species in the area.

4.8.3.3 Groundwater

The Federal Safe Drinking Water Act of 1974 (42 USC 300h-3.e) established a program to designate Sole Source Aquifers. A Sole Source Aquifer, as defined by the U.S. Environmental Protection Agency ("USEPA"), is an aquifer that is the sole or principal drinking water source, which if contaminated, would create a significant hazard to public health (CFR 1978). The proposed pipeline and associated facilities are not located above a Sole Source Aquifer. The nearest Sole Source Aquifer is the Cattaraugus Creek Sole Source Aquifer, located northeast of the Project area. In addition to the USEPA classifications, NYSDEC designates Primary and

Principal Aquifers. A Primary Aquifer is defined as a "highly productive aquifer presently being utilized as sources of water supply by major municipal water supply systems". The Jamestown Aquifer is the closest NYSDEC designed Primary Aquifer, and is located more than three miles from the Project area. A Principal Aquifer is defined as an "aquifer known to be highly productive or whose geology suggests abundance potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time." The Project is not located within an area defined as a Principal Aquifer.

As documented in the Soil Survey of Chautauqua County, New York (USDA Soil Conservation Services, 1973*)* and previously presented in Table 4.6-1, groundwater depths along the Project area are relatively shallow and typically range from 0 to 2 feet. As most locations throughout New York State, the groundwater beneath the Project area is classified by the NYSDEC as GA, fresh groundwater that is suitable for use with or without treatment.

4.8.4 Potential Impacts and Mitigation

4.8.4.1 Surface Waters

Construction of the proposed pipeline and associated facilities will have no significant effect on surface waterbodies identified in Table 4.8-1. Potential temporary construction impacts, such as siltation and sedimentation, loss of vegetation and associated shade, and streambed disturbance, may result; however, they will be short-term and will have no long-term effect on the bodies of water. Sedimentation and stormwater runoff will be minimized through the implementation of erosion control procedures to be developed as part of the Project's EM&CP. Typical controls that may be used include but are not limited to rock construction entrance, wash stations, silt fences, filter fabric socks, timber mats through wetlands, silt barrier outlet and erosion control matting on steep slopes or adjacent to streams. Vegetation clearing along surface waters will be kept to a minimum and following construction, areas will be restored and revegetated. At larger streams, Dunkirk Gas Corporation is proposing to utilize HDD crossing methods to minimize impacts to the beds and banks of streams. Any unanticipated inadvertent return of the stream bed caused by HDD boring will be cleaned and reported to the proper agencies in accordance with the EM&CP to be submitted for the Project. Any water discharges associated with hydrostatic testing will be cleaned and filtered by using filter bags when necessary and released into a vegetated area.

Construction of the associated facilities will not result in adverse impacts to surface waters.

Operation of the proposed pipeline and associated facilities will also have no effect on water resources given that there will be no discharges associated with the operation of the proposed pipeline.

4.8.4.2 Aquatic Resources

While the construction of the proposed ROW may result in vegetation clearing alongside streams, resulting in the temporary loss of streamside shade, to the extent practicable, Dunkirk Gas Corporation will minimize clearing along stream banks. Use of HDD and diversion of water in open trenching and the use of dam and pump installation methods will also mitigate any impacts construction may have on aquatic resources.

The operation of the proposed pipeline and associated facilities will not jeopardize water quality of surface waterbodies with chemical contamination. As such, the operation of the proposed facilities will not affect aquatic resources in the Project area.

4.8.4.3 Groundwater

During construction, dewatering may be required due to the shallow groundwater table in the Project area. Should dewatering be necessary, a temporary sedimentation basin will be established outside the limits of disturbance to which filtered dewatering effluent would be pumped. Once filtered and/or settled, clear water will be pumped or allowed to flow onto a vegetated area. Retention structures will be constructed using hay bales, filter fabric, or other materials. Filter bags will be bought commercially and any trapped sediment will be graded into the right-of-way without being washed into the adjacent stream, wetland, or other sensitive resource.

Groundwater resources will also not be adversely impacted as a result of the proposed pipeline and associated facilities, as the Project area is not located within any designated special groundwater protection area.

There will be no interconnections to the local water distribution system or sanitary sewer system for the construction of the proposed pipeline and associated facilities. During construction, tanker trucks will deliver potable water to the construction site (if required) and for hydrostatic testing and portable sanitary facilities will be provided at designated locations. All hydrostatic

test water will be trucked to a waste water disposal location to be identified the Project's EM&CP.

Because the pipeline and associated facilities are identified as "unmanned" facilities, no potable or sanitary facilities are currently located or proposed to be located on-site. Accordingly, the project will not impact the local infrastructure associated with water supply and sanitary services.

4.8.4.4 Stormwater Management

Construction of the proposed pipeline and associated facilities will not result in an increase in stormwater runoff volumes or erosion potential along the proposed pipeline route, proposed temporary access routes, or surrounding lands. The installation of the proposed pipeline will occur adjacent to and parallel to an existing electric transmission line and railway right-of-way for more than half the proposed route, which will require minimal tree clearing. While portions of the right-of-way will require clearing to establish the new right-of-way, there will be no permanent changes in topography or discernable change in stormwater runoff volumes along the Project route. Following restoration, vegetation growth within the proposed pipeline route will be maintained to limit stormwater runoff and sedimentation and to avoid negative impacts on the infrastructure of the proposed pipeline. No perceptible increase in stormwater runoff volumes is anticipated as a result of the installation of the proposed pipeline.

Minimal impervious surfaces are proposed to be added as part of the construction of the proposed associated facilities; therefore, no appreciable increase in stormwater runoff is anticipated. The proposed regulating station will be constructed with the existing paved area of the Dunkirk Generating Station, and will not result an increase in stormwater discharge. The proposed metering station and required mainline valves will be constructed on crushed stone to maximize groundwater infiltration and minimize increases in stormwater runoff. Accordingly, the construction and operation of the pipeline's associated facilities are not anticipated to result in increases in stormwater volumes or runoff.

Construction activities for the Project will entail disturbance of greater than one acre. Under these conditions, State law requires that stormwater discharge(s) from the construction site(s) be covered under a SPDES Permit. Dunkirk will comply with this requirement by preparing a SWPPP and seek coverage under the State's General Permit for Stormwater Discharges from Construction Activities (GP-0-10-001). The SWPPP will comply with NYSDEC's SPDES General Permit for Stormwater Discharges from Construction Activities and will present the

proposed erosion and sediment control plan for the disturbed areas, implementation schedule, inspection and maintenance requirements, proper materials management procedures, dust control plan and recordkeeping and reporting requirements. The Project will be constructed in accordance with the Project EM&CP to be submitted as well as the SWPPP to minimize any impacts to the local water resources.

A detailed description of the new equipment to be added and the types of construction activities required to support the installation of the proposed pipeline and associated facilities are provided in Exhibit 5: Design Drawings. To prevent liquid fuels (gasoline and diesel) and hydraulic fluid from construction equipment from entering waters of the State, the EM&CP will include the following best management practices:

- No temporary fuel storage tanks will be allowed;
- Spill control equipment will be present during all refueling activities;
- Equipment will be inspected daily for leaks and immediate repairs will be completed, if any leaks are found; and
- Construction crews will be trained in procedures for handling fuel, hydraulic fluid and oil.

Other general best management practices that will be incorporated into the SWPPP and Project's EM&CP to reduce potential pollution in stormwater runoff during construction activities include, but are not limited to:

- Utilizing dust suppression practices;
- Properly storing and handling materials on-site;
- Proper disposing of sanitary waste;
- Properly disposing of solid waste;
- Properly handling and manifesting any hazardous waste generated on-site (if any); and
- Implementing spill prevention and control measures.

All proposed best management practices will be designed and maintained in accordance with the requirements of the EM&CS&P, SWPPP guildaines and the New York State Standards and Specifications for Erosion and Sediment Control manual and the New York STromwater Management Design manual issued by the NYSDEC. .

4.9 Traffic and Transportation

In accordance with PSL §122(1)(c) and 16 NYCRR §§86.3(b)(1)(iii), 86.5(a), and 86.5(b)(8), this section provides a summary of potential traffic impacts that may result from the construction and operation of the proposed pipeline and associated facilities. Potential impacts to railroads and other transportation corridors are also summarized in this section.

4.9.1 Introduction and Summary of Results

The Project involves the construction of a new pipeline and associated facilities. The proposed locations of these facilities are illustrated on the NYSDOT maps and aerial photographs provided in Exhibit 2 of this Application. Construction activities associated with the Project include HDD, jack and boring or other method to cross existing transportation infrastructure. Transportation infrastructure in the vicinity of the Project was inventoried by examining NYSDOT publically-available mapping and aerial photographs. The proposed pipeline will cross under several roadways under State, county and local jurisdiction as well as several railroad corridors.

Construction will be temporary and will be programmed and coordinated with the City of Dunkirk, Towns of Dunkirk and Pomfret, Chautauqua County and the NYSDOT and NYSTA to limit its impact on traffic flows and other conditions in the area.

During the construction of the Project, the need to close roads to general vehicular traffic will be minimized to the extent practicable. All construction will be conducted within public rights-of-way or within negotiated easements over previously developed County property. The crossings of the New York State Thruway (I-90) will be via HDD, so as not to affect traffic along this roadway.

To further minimize potential impacts to traffic flow in the vicinity of the Project during construction, a Maintenance and Protection of Traffic ("MPT") Plan will be developed for each location where construction vehicles will access the Project right-of-way frequently from local roadways, and to provide a safe construction work zone near the edge or within a traffic lane for construction activities within the road right-of-way. The MPT Plan will indicate temporary signage, lane closures, possible shoulder closings, stabilized construction entrances, placement of temporary barriers, traffic diversion patterns and procedures for moving equipment and materials onto the proposed pipeline right-of-way, as necessary. The MPT Plan traffic control measures

will be developed as part of the final design of the Project and will be incorporated into the Project's EM&CP.

The operation of the proposed pipeline and associated facilities are not anticipated to affect traffic conditions. The proposed pipeline and associated facilities will be unmanned facilities and will not require full-time station personnel. Thus, operations of these facilities will not result in additional traffic on the local roads.

4.9.2 Laws, Policies and Regulations

The laws, policies and regulations related to traffic and transportation potentially applicable to the Project are summarized below.

4.9.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122(1)(c), and mandate a description of the studies that have been made of the environmental impact of the proposed pipeline and associated facilities. This exhibit addresses this requirement.

4.9.2.2 Article VII Regulations

The proposed pipeline and associated facilities are subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline and associated facilities and identify changes that construction and operation of the pipeline and associated facilities might induce. This section discusses the requirements of 16 NYCRR §§86.3(b)(1)(iii), 86.5(a), and 86.5(b)(8) which include the environmental impacts and mitigation related to traffic. This section addresses this requirement.

4.9.2.3 New York State Guidelines

During construction, the procedures contained in the New York State Manual on Uniform Traffic Control Devices ("NYSMUTCD") and the New York State Vehicle and Traffic Law will be followed and used in the development of the MPT Plan this manual sets forth the basic principles

governing design, use, installation, and operation of traffic control devices. These principles are reflected throughout the text in discussions of devices, and should be followed in the selection and application of each device. The standards in this manual apply to all highways open to public travel, regardless of type or the governmental agency having jurisdiction.

4.9.2.4 Local Standards and Guidelines

The proposed pipeline and associated facilities will be located in the following jurisdictions within Chautauqua County:

- City of Dunkirk
- Town of Dunkirk
- Town of Pomfret

The traffic standards for these jurisdictions were reviewed and are identified below and discussed in detail in Exhibit 7.

City of Dunkirk

The City of Dunkirk Code prohibits trucks and other motor vehicles having a gross weight of more than twelve thousand (12,000) pounds from traveling over any street in the City (except as provided in § 76-63 Designates Truck Route System), except for the purpose of pickup and delivery of loads.

Further, the City of Dunkirk Code states that parking is prohibited on designated streets between the hours of 3:30 a.m. and 7:00 a.m. 1:00 a.m. and 6:00 a.m. during the period commencing the first Sunday in November and ending the first Saturday in April (§76-85) and prohibits trucks in excess of twelve thousand pounds from parking on any City street except for the pick-up and delivery of loads and from parking in any City owned parking lot (§76-86).

Town of Dunkirk

No traffic ordinances were identified for the Town of Dunkirk.

Town of Pomfret

The Town of Pomfret prohibits heavy vehicles from parking on a road or public right-of-way and must be 150 feet away from the closets dwelling unit on adjacent parcels (§621(B)). Further, no diesel/compressors shall operate after dark if a nuisance is created with nearby residence due to the noise. These regulations can be waived for a 48 hour maximum in the case of emergency. Heavy vehicles are defined as vehicles "with a gross weight in excess of 10,000 pounds" (§621).

4.9.3 Existing Conditions

4.9.3.1 Roadways

The NYSDOT maps and aerial photographs provided in Exhibit 2 illustrate the local roadway network in the vicinity of the Project. Table 4.9-1 identifies the roadway crossings and the jurisdiction of that crossing.

Table 4.9-1. Roadways Crossed along the Project Route

Road Name	Jurisdiction
City of Dunkirk	
Point Drive North	Local
West Lake Road (State Route 5)	State
Town of Dunkirk	
Temple Road	Local
Willow Road	Local
Chestnut Road	Local
Town of Pomfret	
Van Buren Road (County Touring Route 78)	County
New York State Thruway/I-90	State (NYSTA)
Berry Road (County Touring Route 74)	County
West Main Road (US Route 20)	State
Webster Road	Local
Chautauqua Road	Local
Fredonia Stockton Road (County Touring Route 73)	County
Cummings Road	Local

During construction, the Project right-of-way will be accessed by temporary construction access roads from these local road crossings. The preliminary locations of the construction access roads are shown in Figure 2-3 (Sheets 1 through 12). Temporary construction access points from local

roads will be located to ensure the maintenance of safe traffic operations at roadway crossings.

4.9.3.2 Railroads

The proposed route for the new pipeline crosses and parallels several railroad corridors owned by CSX Transportation, Incorporated and Norfolk Southern Railway Company.

4.9.3.3 Other

The Project crosses the Great Lakes Seaway Trail in the City of Dunkirk. The Great Lakes Seaway Trail is a National designated scenic byway consisting of designated roads and highways that stretches 518-miles along the shorelines of Lake Erie, the Niagara River, Lake Ontario and the St. Lawrence River in New York and Pennsylvania. Within the Project area, the trail follows West Lake Road (State Route 5).

4.9.4 Potential Impacts and Mitigation

4.9.4.1 Roadways

To ensure safe and continued traffic flow and to maintain access to local residences, a MPT Plan will be developed for each location where construction vehicles will access the Project right-of-way frequently from local roadways, and to provide a safe construction work zone near the edge or within a traffic lane for construction activities within the road right-of-way. The MPT Plan will indicate temporary signage, lane closures, possible shoulder closings, stabilized construction entrances, placement of temporary barriers, traffic diversion patterns and procedures for moving equipment and materials onto the proposed pipeline right-of-way, as necessary. The MPT Plan traffic control measures will be developed as part of the final design of the Project and will be incorporated into the Project's EM&CP.

Should parking along the local roadways be required, all vehicles will be situated such that the safe operation of the roadway is not impeded.

The number of trips generated by the construction crews for right-of-way clearing and pipeline installation will be minimal and short-term. Construction-related truck traffic will consist of equipment and material deliveries to the structure sites and removal of cleared vegetation and construction debris from the right-of-way. The location of temporary construction staging areas

and work areas along the right-of-way are shown in the NYSDOT map and aerial photographs in Exhibit 2. Construction workers are anticipated to arrive at and depart from these areas outside of morning and evening peak travel periods. Deliveries of oversized equipment are not anticipated, but will be scheduled during off-peak periods to minimize traffic disruption.

The NYSDOT requires a Utility Work Permit Application be submitted for the installation of utilities within or adjacent to State highway rights-of-way. Further, while the pipeline will be installed under the New York State Thruway (I-90) via HDD, the NYSTA will require a Work Permit. Following final design, Dunkirk Gas Corporation will submit applications for all applicable road crossings and will fully comply with the permit conditions. Copies of the issued permits will be filed with the Commission.

All work within State highway rights-of-way will be designed and performed in accordance with the traffic and safety standards and other substantive requirements contained in 17 NYCRR Part 131, entitled Accommodation of Utilities Within State Highway Right-of-Way, applicable design standards of the American Associated of State Highway and Transportation Officials ("AASHTO"), including the NYSMUTCD, the Highway Design Manual and the Policy and Standards for Entrances to State Highways.

The construction of the proposed associated facilities will also not affect traffic operations. The proposed regulating station will be constructed within the existing Dunkirk Generating Station property and the existing driveway at the Station will be used as the main construction entrance. The proposed metering station will be constructed in an agricultural field and will be accessed by a new permanent road. The valve locations will be along the proposed pipeline and will be accessed by maintained roads. The temporary construction laydown area(s) and contractor parking lots for these associated facilities will be identified in the EM&CP to be submitted for the Project but will be selected to minimize impacts to local traffic during construction of the facilities.

The Project's associated facilities will be unmanned facilities and will not require full-time station personnel. Thus, operations of these facilities will not result in additional traffic on the local roads. Parking for the associated facilities limited maintenance personnel will be provided adjacent to or within each facility site.

4.9.4.2 Railroads

Dunkirk Gas Corporation will seek approvals, as required, from various railroad companies to construct within the railroad rights-of-way, including longitudinal placement of electric transmission facilities within easements from the railroad companies, longitudinal placement of the pipeline facility adjacent to railroad lines, and underground crossings of railroad lines. The final design for the Project will reflect appropriate design criteria and clearance requirements for the proposed longitudinal placement of pipelines or crossings.

To minimize impacts to railroads, the jack and bore construction methods will be used. Construction activities will be performed in accordance with the Use and Occupancy Agreements executed by Dunkirk Gas Corporation with the respective railroad companies. Construction work efforts will be coordinated with the local railroad companies and flagmen as appropriate will ensure that construction activities do not conflict with railroad operations and freight movements.

4.9.4.3 Other

While pedestrian traffic is not prevalent in the vicinity of the Project appropriate construction practices, such as temporary barricades and fencing, will be implemented to prevent pedestrians from entering construction zones and avoid potential conflicts with pedestrian traffic.

The proposed pipeline underground crossing of the Great Lakes Seaway Trail should not pose any issues related to continued trail use. The MPT Plan traffic measures will be implemented along the trail to protect trail users from entering the construction zones and avoiding potential conflicts with trail users.

4.10 Noise

In accordance with PSL §122(1)(C) and 16 NYCRR §§86.5(a), and 86.5(b)(8), this section includes a study of the noise impacts resulting from the construction and operation of the Dunkirk Natural Gas Pipeline Project. The study identifies the location of sensitive receptors and describes what, if any, mitigative measures will be required to minimize noise during both construction and operation of the Project.

4.10.1 Introduction and Summary of Results

Construction noise related impacts from the proposed pipeline and associated facilities are expected to be minimal. Construction noise, while varying according to the equipment in use, will be mitigated by the attenuating effects of distance, the intermittent and short lived character of the noise, the presence of existing vegetation, and the use of functional mufflers on all construction equipment. Further, the nature of construction to be performed, especially for the pipeline, dictates that construction activities and associated noise levels will move along the route and that no one residence will be exposed to significant noise levels for an extended period. Finally, the type and magnitude of noise will be similar to that associated with public works projects and tree service companies. When operational, the underground pipeline will not generate noise.

Similar to the pipeline construction, construction of the associated facilities, both a metering station and a regulating station, will also have minimal impacts. The addition of new equipment for the stations will generate some noise, but, as with construction of the pipeline, construction will be short term and any impact therefore minimal. Once operational, the addition of the regulating station within the existing Dunkirk Generating Station property will not generate additional noise beyond the Station's existing equipment. The metering station will be located approximately 350 feet from the nearest sensitive receptor; however, the valves will be installed within a building on the site in order to contain noise and no significant noise impacts are anticipated to occur with metering station operation.

4.10.2 Laws, Policies and Regulations

The laws, policies and regulations related to noise potentially applicable to the Project are summarized below.

4.10.2.1 Public Service Law

Article VII of the PSL governs the siting of major utility transmission facilities, including natural gas pipelines, in the State of New York. PSL §122 sets forth the requirements for an application seeking issuance of a Certificate of Environmental Compatibility and Public Need. The requirements applicable to this Section are set forth in PSL §122 (1)(c), and mandate a description of the studies that have been made of the environmental impact of the pipeline facilities. This exhibit addresses this requirement.

4.10.2.2 Article VII Regulations

The proposed pipeline is subject to 16 NYCRR Part 86, which requires that an Article VII application include studies of the expected environmental impact of the pipeline facilities and identify any impacts/changes that the construction and operation of the pipeline might induce. This section discusses the requirements of 16 NYCRR §§86.5(a) and 86.5(b)(8) that includes the environmental impacts and mitigation related to noise disturbance. This section addresses this requirement.

4.10.2.3 Local Standards and Guidelines

The proposed pipeline and associated facilities will be located in the following jurisdictions within Chautauqua County:

- City of Dunkirk
- Town of Dunkirk
- Town of Pomfret

The noise standards for these jurisdictions were reviewed and are identified below. Compliance with the local noise requirements are described in Exhibit 7. There are no State of New York noise standards applicable to the proposed Project.

City of Dunkirk

The City of Dunkirk has a noise ordinance (Chapter 47 of the City Code). The ordinance is a general, nuisance type noise ordinance which prohibits any person to make, continue, or cause loud, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort,

repose, health, safety of others in the City of Dunkirk. Construction activities, including the erection, demolition, alteration, or repair to any building and the operation of any pile driver, derrick or other equipment, are prohibited between the hours of 9 P.M. and 7 A. M.

Town of Dunkirk

No noise ordinances were identified for the Town of Dunkirk.

Town of Pomfret

No noise ordinances were identified for the Town of Pomfret.

New York State Department of Environmental Conservation

The NYSDEC has a program guidance document entitled Assessing and Mitigating Noise Impacts (NYSDEC, 2010). This guidance, which is premised on state statutory authority, has been utilized as a standard for evaluating potential noise impacts from numerous projects throughout New York. The NYSDEC guidance recommends that for non-industrial settings, the Sound Pressure Level ("SPL") due to a permanent source should probably not exceed ambient noise levels by more than 6 dBA at a given receptor in order to avoid noise impacts. The addition of any noise source, in a non-industrial setting, should not raise the total future ambient noise level above a maximum of 65 dBA.

The NYSDEC guidance explicitly states that the 6 dBA increase is to be used as a general guideline. There are other factors which should also be considered. For example, in settings with very low ambient sound levels, a greater increase may be acceptable since sound levels are so low.

4.10.3 Existing Conditions

The proposed pipeline will be located in a variety of settings, including generally rural areas (southern portion of the route) and urbanized areas with major highways (e.g., New York State Thruway). Existing noise sources in the more rural areas likely include local vehicular traffic, aircraft overflights and natural sounds (e.g., birds, insects). Daytime noise levels (Leq) in these types of settings are typically about 45 dBA. Somewhat higher ambient levels are likely during the warm weather months due to increased insect and other natural sounds. In the more

urbanized areas and near the New York State Thruway, with more significant existing noise sources, typical daytime noise levels are likely in the range of 60 dBA or more (ANSI S12.9, 2013).

Existing ambient noise levels in the vicinity of the metering station are estimated to be about 45 dBA during the day and 39 dBA at night (ANSI S12.9, 2013).

4.10.4 Potential Impacts and Mitigation

Potential noise impacts associated with the proposed Project are discussed below.

4.10.4.1 Pipeline

Construction

The proposed pipeline will be constructed entirely underground. Construction is anticipated to occur over a 3 to 6-month period. Work in the vicinity of any single general receptor on the pipeline route will likely last for short durations, typically one week or less, as construction activities move along the route. Construction of the proposed pipeline will typically include the following activities:

- Site and vegetation clearing;
- Trenching;
- Pipe Installation;
- Backfilling and right-of-way restoration.

Noise is generated during construction primarily from two sources: diesel engines which power the equipment and impact noise from rock drills and jack hammers (if needed). Exhaust noise usually is the predominant source of diesel engine noise, and contractors will be required to maintain functional mufflers on all relevant equipment. Maximum sound levels associated with the construction equipment typically used is provided in Table 4.10-1. It is important to note that each piece of equipment presented in the table is not used in each phase of construction. Further, any equipment used is generally not operated continuously.

Table 4.10-1. Maximum Noise Levels of Major Construction Equipment (dBA)			
Equipment Type	**50 Feet**	**400 Feet**	**1000 Feet**
Trucks	84	65	57
Crane	85	66	58
Roller	85	66	58
Bulldozers	85	66	58
Pickup Trucks	55	35	28
Backhoes	80	61	53
Source:	FHWA, 2006		

For the purposes of this analysis, the aforementioned construction activities have been addressed by construction phases. A variety of construction equipment sources will be associated with each phase. A listing of the ranges of sound levels typically associated with each phase of pipeline construction activity is provided in Table 4.10-2. These sound levels encompass the maximum sound levels associated with the individual construction equipment sources anticipated to be used during construction. Sound levels are presented for a standard distance of 50 feet and other representative distances.

Table 4.10-2. Typical Range of Sound Levels by Construction Phase					
Construction Phase	**Typical Range of Sound Levels (dBA)**				
	50 Feet	**100 Feet**	**400 Feet**	**1000 Feet**	**2000 Feet**
Excavation	60-90	54-84	42-72	34-64	28-58
Pipe laying	50-90	44-84	32-72	24-64	18-58
Backfilling	73-84	67-78	55-66	47-58	41-52
Restoration	70-85	64-79	52-67	44-59	38-53
Source:	New York Power Authority Sound Cable Project (1987)				

The residential areas are found at varying distances and densities from the proposed pipeline route. The data presented above reveal that for the nearest residences, construction sound levels will exceed ambient levels for the short term period when construction will occur. For the majority of residences further from the route, construction noise will be much lower and at times be below ambient levels.

The increases in the existing sound environment, such as are expected during construction, would create significant impacts if they were to occur over long periods of time and at sensitive time periods, such as late at night. However, many factors exist which will reduce the significance of any impacts.

The noise levels presented in Table 4.10-2 are those that would be experienced by people

outdoors. A building will provide significant attenuation of associated construction noise impacts. For instance, sound levels can be expected to be up to 27 dBA lower indoors with windows closed. Even in homes with windows open, indoor sound levels can be reduced by up to 17 dBA (USEPA 1978).

As demonstrated in Table 4.10-2, construction sound will be attenuated with distance. Other factors, such as vegetation, terrain and obstacles such as buildings will act to further reduce noise levels, but were not considered for this analysis.

An additional significant mitigating factor in the potential impact of construction noise associated with the proposed pipeline construction is that construction will occur over relatively short 50 to 400 foot stretches. Work in the proximity of any single general location along the proposed pipeline route will likely last no more than approximately one week, as construction activities move along the pipeline route. Therefore, no single receptor will be exposed to significant noise levels for an extended period. Additionally, because construction equipment does not operate continually, construction noise is expected to be intermittent. The construction equipment to be used is similar to that used during typical public works projects (e.g., road resurfacing, storm sewer installation, natural gas line installation, tree removal, etc.). As a general construction practice, functional mufflers will be maintained on all equipment to maintain noise levels as low as reasonably achievable.

Normal construction activities will be scheduled to occur between the weekday hours of 7 A.M. and 9 P.M. Specialized construction activities may be required to run 24-hours and relief from certain local substantive requirements are identified in Exhibit 7.

Operation

Once constructed, the pipeline will be located entirely underground and will not generate noise.

4.10.4.2 Associated Facilities

Construction

A new regulating station will be constructed within the existing Dunkirk Generating Station property. In addition, a new metering station will be constructed at the southern end of the pipeline route in the Town of Pomfret on Cummings Road, and mainline valves will be located

along the pipeline. Similar to the pipeline, noise will be generated during construction of the metering and regulating stations. Similar pieces of construction equipment are anticipated to be used, although the equipment will differ from construction phase to construction phase. In general, heavy equipment will only be used on a limited basis during excavation and foundation installation.

Noise levels generated during construction of the metering station and regulating station will be similar to those presented in Table 4.10-2 for the pipeline. It is anticipated that there will be times when construction noise is greater than ambient conditions at the nearest residences. However, as noted above for pipeline construction, the sound levels presented are for outdoor locations, and a building will provide significant attenuation of associated construction noise levels.

Additionally, because construction equipment does not operate continually, construction noise is expected to be intermittent, and is only scheduled to occur during daytime hours. The construction equipment to be used is similar to that used during typical public works projects, and, as a general construction practice, functional mufflers will be maintained on all equipment to maintain noise levels as low as reasonably achievable.

Operation

The regulating station will be located within the existing Dunkirk Generating Station property, approximately 800 feet from any residential locations, and will be located amidst existing noise-producing equipment associated with the Station. The regulating station will contain pressure reducing valves ("PRV"); however, once operational, the addition of the regulating station within the existing Dunkirk Generating Station property is not anticipated to increase offsite noise levels.

Two residences are located in the vicinity of the metering station site, with the nearest residence being located approximately 350 feet away. No major noise generating sources will be located within the metering station.

There are no major generating sources associated with the mainline valves.

Accordingly, no significant changes to the existing ambient noise levels are anticipated and no significant noise impacts are anticipated to occur with the operation of the associated facilities.

4.11 Public Health

Dunkirk Gas Corporation will design, construct, maintain and operate the proposed pipeline and associated facilities to meet or exceed the USDOT Minimum Federal Safety Standards as set forth in Title 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Part 192 specifies the design, material selection, construction, operation, and maintenance of the Project facilities.

The Project will also be built in accordance with 16 NYCRR Chapter III, Gas Utility Regulations and Sections 255.101 through 255.115.

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4.13 Figures

Figure 4.3-1. General Land Use within One-Mile

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Figure 4.3-1. General Land Use within One-Mile (Sheet 3 of 3)

Figure 4.3-2. Flood Hazards, Coastal Zone & Significant Coastal Habitat

Figure 4.3-2. Flood Hazards, Coastal Zone & Significant Coastal Habitat (Sheet 2 of 3)

Figure 4.3-2. Flood Hazards, Coastal Zone & Significant Coastal Habitat (Sheet 3 of 3)

Figure 4.3-3. Agricultural Districts within One-Mile

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Figure 4.6-1. Surficial Geology Map

Figure 4.6-2. Bedrock Geology Map

Figure 4.7-1. Ecological Communities

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Figure 4.7-2. Wetlands Within One-Mile

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