Champlain Hudson Power Express Project

Assessment of Environmental Impacts Associated with Preferred Alternatives

Appendix G

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

APA	Adirondack Park Agency
Applicants	Champlain Hudson Power Express, Inc. and CHPE Properties, Inc
ARC	Astoria-Rainey Cable
BMP	Best Management Practices
Certificate	Certificate of Environmental Compatibility and Public Need
Certified Route	Approved routing
Certified Site	Approved location of Converter Station
CL	Nominal Center Line
CMP	New York State Coastal Management Program
Commission	New York State Public Service Commission
Con Edison	Consolidated Edison Company of New York, Inc.
Cornell IRIS	Cornell University Institute for Resource Information Sciences
CP	Canadian Pacific Railway
CRM	Cultural Resources Management
CSX	CSX Transportation
EM&CP	Environmental Management & Construction Plan
EMF	Electromagnetic Field
Exhibit 121	Exhibit 121: Environmental Impacts Associated with Routing Proposed in Joint Proposal (February 7, 2012)
GIS	Geographic Information System
HDD	Horizontal Directional Drilling
HVAC	High-voltage Alternating Current
HVDC	High-voltage Direct Current
Joint Proposal	Joint Proposal of Settlement
Km	Kilometer
LWRP	Local Waterfront Revitalization Plans
MP	Mile Post
National Register	National Register of Historic Places
NWI	National Wetlands Inventory
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
NYSM	New York State Museum
NWI	National Wetland Inventory
OSP	Open Space Plan
OPRHP	New York State Office of Parks, Recreation and Historic Preservation

Pan Am	Pan Am Railway
Preferred Alternatives	Proposed modifications to certified routing
Preferred Site	Proposed modification to certified converter station location
Project	Champlain Hudson Power Express Project
Project Documentation	Administrative record of proceeding
Route 22	New York Route 22
ROW	Right-of-way
SWPPP	Storm Water Pollution Prevention Plan
TE	Threatened or Endangered
%	Percent

Assessment of Environmental Impacts Associated with Preferred Alternatives

1.1 INTRODUCTION

Champlain Hudson Power Express, Inc. and CHPE Properties, Inc. (the "Applicants") were issued a Certificate of Environmental Compatibility and Public Need ("Certificate") by the New York State Public Service Commission ("Commission") on April 18, 2013. The Certificate authorized the Applicants to build, maintain, and operate the Champlain Hudson Power Express Project (the "Project"). The environmental impacts associated with the routing approved by the Commission ("Certified Route") as well as the location of the associated converter station ("Certified Site") were thoroughly reviewed and considered during the proceeding. This report provides a comparison of the expected impacts associated with the Applicants' proposed modifications to the (a) Certified Route of the Project cables ("Preferred Alternatives") and (b) the Certified Site of the Project converter station ("Preferred Site").

1.1.1 Background

In the Original Application, Exhibit 4 – Environmental Impacts provided an assessment of the Certified Route, including discussions of Land Use (§4.2), Vegetation and Natural Communities (§4.4), Wetlands and Water Resources (§4.5), Threatened and Endangered Species (§4.9), Historic and Archaeological Resources (§4.10), among other categories. As part of the Joint Proposal of Settlement ("Joint Proposal") between the Applicants and other parties, the Applicants updated Exhibit 4 with Exhibit 121: Environmental Impacts Associated with Routing Proposed in Joint Proposal (February 7, 2012) ("Exhibit 121") which included similar sections.

The Preferred Alternatives were first reviewed to determine the applicability of the potential environmental impacts identified for the Certified Route. This potential environmental impact review eliminated the applicability of certain of these Certified Route potential environmental impacts for one (1) or more of the seven (7) route modifications.

The route modifications were then reviewed to ensure they avoided and minimized applicable potential environmental impacts and then compared and contrasted to the Certified Route to determine any material change in environmental impacts or a substantial change in location.[1] The seven route modification discussions will therefore only identify, review and compare the applicable potential environmental impacts.[2]

[1] PSL §§ 126 and 123(2).

[2] For example, the Putnam Station route modification is entirely over land so water related potential environmental impacts are no longer relevant for this portion of the proposed route modification.

The following provides a summary of the findings of this review:

- Geology, Topography, and Soils (§4.3): Due to the close proximity of the proposed route modifications compared to the Certified Route, the soils regime is expected to be similar if not identical to that previously contemplated. As required by Certificate Condition 67, the Applicants will implement construction measures and procedures to ensure that there are no permanent or significant impacts related to geology or soils. Along the overland route, initial clearing operations would include the removal of soils in the immediate trench area. Erosion controls such as straw bales and silt fencing will be used during construction to minimize storm-water run-off and erosion of soils and surficial geologic materials, both at the trench and at the soil stockpiles. Upon completion of the installation of the overland cable, the area disturbed by construction activities will be graded to match the original topographic contours and be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion that could lead to possible exposure of the cables or where restoration would be contrary to sound right-of-way ("ROW") management practices.
- Physical and Chemical Characteristics of Major Aquatic Systems (§4.6): One of the proposed configurations (Putnam Station Preferred Alternative) would reduce the impacts to a major aquatic system (i.e. Lake Champlain) while there would be no change in major aquatic system impacts for the other route modifications, since they are not located in Major Aquatic Systems. To the extent the route modifications require additional water crossings and water to land transitions, the Applicants will utilize horizontal directional drilling ("HDD") technology that will avoid adverse environmental impacts to major aquatic systems by eliminating the need for shoreline trenching and disturbance of the shallow water interface between land and water.
- Fisheries (§4.7): As with the previous section, there would be a net decrease in the impacts to aquatic systems should the proposed Putnam Station Alternative be accepted and utilized, since there is less construction within Lake Champlain. The other Preferred Alternatives are not located in Major Aquatic systems and therefore there is no change in the impacts to Fisheries. By using HDD technology for water to land transitions and for installation under major waterways (i.e. Catskill Creek, Mohawk River) the Applicants will avoid, minimize or mitigate impacts associated with water quality and habitat and aquatic species. As required under the Project's Water Quality Certificate, no in-stream work, or any work that may result in the suspension of sediments, will occur in streams designated as "C(T)" and "C(TS)" streams during the trout spawning and incubation period commencing October 1 and ending May 31st.
- Wildlife (§4.8): As with the Certified Route, the Applicants have minimized long-term impacts to terrestrial wildlife habitats by primarily locating the route modifications within and along previously disturbed railroad and road ROWs. Temporary impacts to wildlife species from construction noise, ground disturbance and vegetation clearing within the construction zone will be avoided or minimized by implementing Best Management Practices ("BMPs"). Mobile wildlife species such as mammals and snakes are expected to move into similar adjacent habitats nearby during construction and return to the area once construction is completed. Restoration activities, such as soil stabilization and temporary

seeding of disturbed areas, will be conducted and any areas that are impacted during the cable installation will be allowed to revegetate naturally. Because the cable will be buried, no permanent above ground impacts to habitat for wildlife species will result except in the limited area where vegetative management beyond that currently employed is required. These impacts are anticipated to be consistent with the Certified Route.

- Threatened and Endangered Species (§4.9): The Original Application and Exhibit 121 provide an analysis of potential state or federal threatened or endangered ("TE") species, candidate TE species, and special concern species that might be found in the vicinity of the Certified Route. The Applicants, in collaboration with the New York State Department of Environmental Conservation ("NYSDEC") and the other settlement parties, have identified and developed several Certified Route measures, to be implemented where necessary, to avoid or minimize potential impacts to TE wildlife species listed at 6 N.Y.C.R.R. Part 182 and their occupied habitats. These measures are described in the Conditions 51 and 52 of the Certificate Conditions, the BMPs and Environmental Management and Construction Plan ("EM&CP") Guidelines and include protective measures for Indiana bat (*Myotis sodalis*) and Karner blue butterfly (*Plebejus melissa samuelis*). Given the close proximity of the route modifications to the Certified Route, the disturbed nature of the nearby habitat setting, and the protective measures in place, it is not expected to result in a material increase in potential TE impacts.

- Visual and Aesthetic Resources (§4.11): Burial of the cables primarily within existing disturbed ROWs will minimize impacts on visual and aesthetic resources, particularly compared to traditional overhead transmission lines. The nature of potential aesthetic impacts will include limited tree removal and associated impacts on areas of public interest (including parks, heritage resource sites, and residential areas) and the presence of line marker and warning signs located at land to water transition areas. However, these aesthetic impacts will be minimized by the Applicants through revegetation, tree protection measures, the use of landscape planting in select locations, and the installation of warning signs at the banks of navigable waterway crossings in areas where visual contrasts are minimized due to existing shoreline development and visual sensitivity is low. These visual and aesthetic impacts are anticipated to be consistent with those associated with the Certified Route.

- Noise (§4.12): All noise impacts for the construction of the Preferred Alternatives will be similar to the Certified Route. Construction noise will be temporary in nature and the impact will vary according to the construction equipment in use and existing background or ambient noise at given times and locations. Residents and businesses could be temporarily affected by noise from construction activities but no residence will be exposed to significant noise levels for an extended period. As with the Certified Route, there will be no permanent noise impacts and so the noise impacts associated with the Preferred Alternatives will be consistent with those contemplated under the Certified Route.

- Public Health (§4.13): The public health impacts associated with the proposed configurations, including those related to the electromagnetic field ("EMF") associated with the operation of the High Voltage Direct Current ("HVDC") and High Voltage Alternating Current ("HVAC") transmission cables, are anticipated to be consistent with those of the Certified Route. As discussed in the "Revised Electric and Magnetic Field

Report" provided as Exhibit 39 of the Joint Proposal, the burial of the HVDC cables reduces the electric field levels to inconsequential levels. This same report as well as the subsequent "Electric and Magnetic Fields Report – Report Supplement" (Exhibit 116 of the Joint Proposal) concluded the magnetic field associated with the cables would be consistent with the "New York Public Service Commission's Interim Policy Statement on Magnetic Fields", as issued on September 11, 1990.

For the proposed converter station alternatives analysis, a comparison is made between the likely impacts of the Preferred Site compared to those associated with the Certified Site.

1.1.2 Construction Methods

The construction methods and operational procedures for the Project are described in Exhibit 4 of the original application as well as Exhibit 121 of the Joint Proposal. For the proposed realignments, the cables will be buried via excavated trenches or HDD methods. The specific details for cable installation methods and equipment are fully described in the administrative record of this proceeding ("Project Documentation"). Design drawings, including cross-sections of the proposed facilities are provided in Exhibit 5 of the original Application as well as Exhibit 34 - Updated Design Drawings (Attachment H of the Supplement) of the Joint Proposal. It is expected that these documents will form the basis of the EM&CP that the Applicants must submit.

The only change to the methods described in the Project Documentation is that the Applicants filed an Amendment with the Public Service Commission on September 30, 2019 that included, among other provisions, a request that the Applicants be allowed to install the cables within a conduit along overland portions of the Project. Currently, the Project Documentation only contemplates direct burial of the cables in an open trench. This method offers a number of benefits including: a) it substantially reduces the length of open trench required at any given time during the construction cycle, b) it substantially reduces the duration of community impacts as installation within one place will progress more quickly, and c) it provides more flexibility in scheduling of the differing construction trades necessary to dig the trench, install the conduit, backfill the trench, and pull the cable. It is important to note that the width and depth of the trenches will remain unchanged, as will the size and frequency of the splice vaults, from those associated with the direct burial technique. Thermal impacts to surrounding soils will also be reduced by virtue of the insulating effect of the conduits.

1.2 PUTNAM STATION PREFERRED ALTERNATIVE

The Putnam Station Preferred Alternative would have the cables exit Lake Champlain at milepost ("MP") 96.6 of the Certified Route, relying on HDD. The cables would transition from Lake Champlain to the upland route on private property at the terminus of County Road 3 in the Town of Putnam, Washington County. The route would travel almost one mile within the Country Road 3 ROW to the intersection with Lake Road, at which point the route would follow Lake Road for approximately 2.2 miles to New York State Route 22 ("Route 22"). This routing is being proposed to avoid significant construction challenges associated with installation in a shallow segment of Lake Champlain and will also have the benefit of avoiding a Federal Navigation Channel.

This route modification was one of the alternatives reviewed by parties to the Joint Proposal, as documented in Exhibit 98 – Route Reconfiguration in Lake Champlain. This report notes that "the analysis did not indicate any significant differences in terms of environmental impacts". The original routing through Dresden, New York was largely adopted due to concerns over the additional cost associated with overland routing. However, detailed engineering analysis now indicates that there are significant constraints associated with the in-water routing.

1.2.1 Land Use

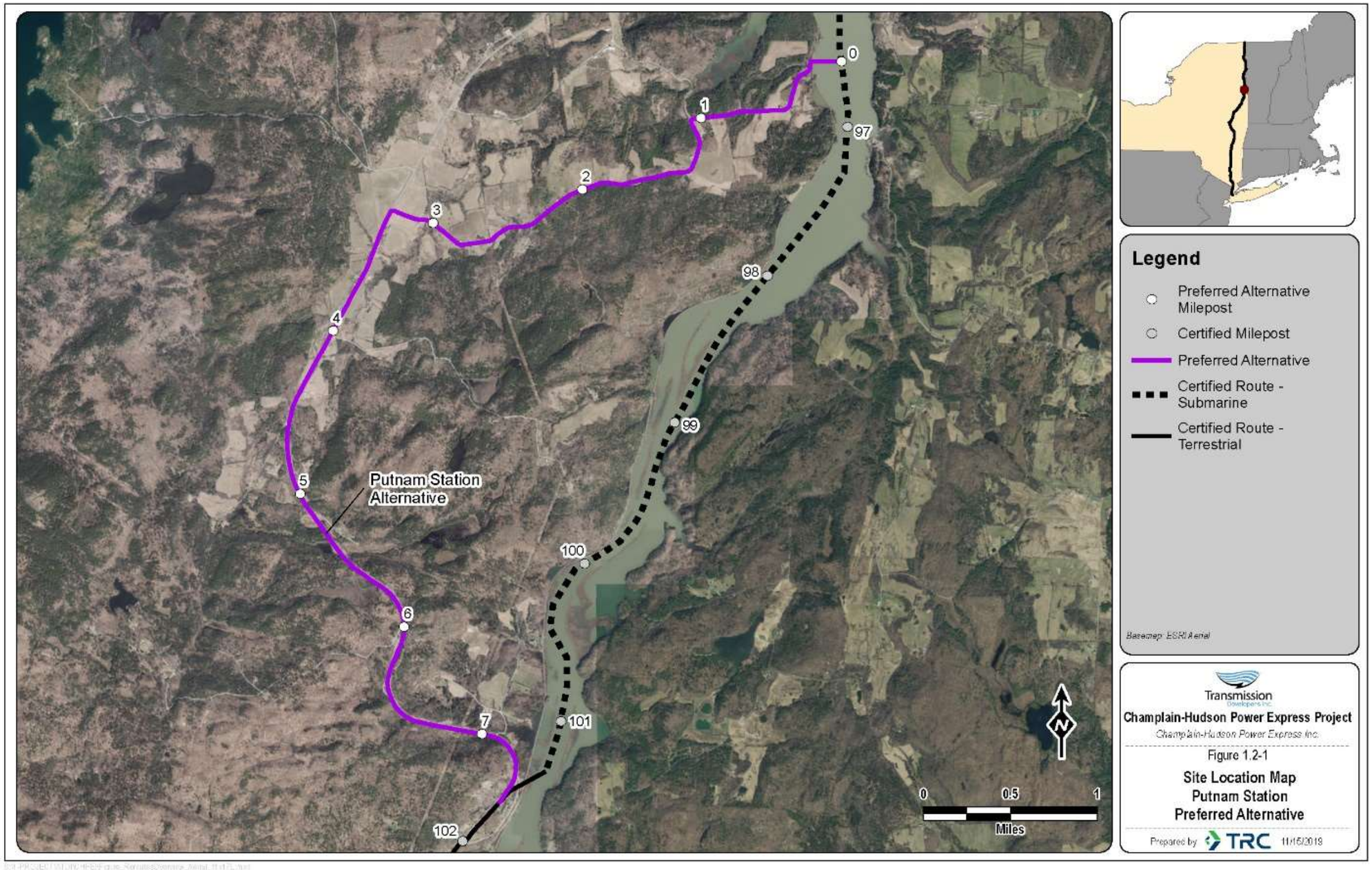
The underground transmission cable corridor of the Putnam Station Preferred Alternative consists of the underground bypass route through the towns of Putnam and Dresden until it rejoins the Certified Route at MP 101.5. As the alternative will be located within road ROWs, the immediate land use is predominantly "transportation".

Existing land use is classified based on resource data from the New York State Geographic Information System ("GIS") Clearinghouse (2004) inventories. The study area for land use includes six-hundred feet on either side of the cable route centerline. Land uses within the study area are predominantly Forested and Open Land /Pasture /Hay /Scrub /Shrub as documented in Table 1.2-1 below. No significant loss of trees or vegetation will result where the route modification follows the preexisting cleared ROW. Nearby residents may be temporarily disturbed and inconvenienced by the construction activities and traffic. These effects will be temporary and, in general, most disturbances will last only a brief period of a few days or a week at any particular location. The construction for the entire length of the Putnam Station Preferred Alternative is anticipated to be five months for the initial excavation during the first construction season and then an additional five months for installation in the next construction season.

Table 1.2-1: Land Use Classes with 600 feet of Certified Route and Putnam Station Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	1.47%	5.31%
Commercial / Industrial / Transportation	4.51%	9.04%
Forested	13.56%	49.43%
Agriculture	0.44%	0.30%
Open Land /Pasture/ Hay / Scrub / Shrub	0.94%	32.20%
Open Water	79.08%	3.72%
Parks / Open Space / Recreation	0.00%	0.00%
TOTAL:	**100.00%**	**100.00%**

Figure 1.2-1: Site Location Map for Putnam Station Preferred Alternative



In terms of consistency with land use planning, the *2016 New York State Open Space Conservation Plan* ("OSP") encourages various state and local stakeholders to take advantage of opportunities to implement conservation recommendations as these stakeholders develop strategies for achieving conservation goals. The conservation plan's goals fall into four major areas: responding to climate change; fostering green, healthy communities; connecting New Yorkers with nature and recreation; and safeguarding the state's natural and cultural heritage. The state conservation goals include measures to protect plant and animal habitats and the State's surface and ground water quality; combat global climate change; maintain an interconnected network of protected lands and waters for wildlife use; improve community quality of life and health; maintain critical natural resource industries; protect hunting, fishing, trapping and wildlife viewing habitats; provide outdoor recreation, open space, and education and research opportunities; and protect and enhance scenic, historic and cultural resources (NYSDEC 2016).

The conservation plan includes a list of over 100 regional priority conservation projects across the State, some of which are in the vicinity of the underground portion of the transmission cable route, as described below. Conservation projects in Washington County include:

- **Project 62 - Washington Co Agriculture Lands**: The OSP expresses concern about the conversion of agricultural lands and the effect of the conversion has on both the farming community and the ecosystem. It advocates for protection of this resource through agriculture easements on existing farm lands.
- **Project 71 - Lake Champlain Watershed**: The OSP details the importance of the shoreline, wetland, watershed natural communities, and important species in this area. It recommends conserving high quality examples of these natural communities and their associated habitat.
- **Project 71 - Champlain Canal/Hudson River Corridor**: From the Town of Waterford to the Town of Whitehall, the Champlain Canal is an underused resource. Most public ownership along its length is under the jurisdiction of the Canal Corp. The conservation plan states that additional open space acquisition focus should include the completion of the Canal Recreationway Trail and recreational access.

Washington County does not have a Comprehensive Plan or Master Plan; however, it does have an Economic Development Strategic Plan dated 2007 (Laberge Group 2007), which states that Washington County is committed to developing a prosperous and economically friendly environment while preserving rural qualities that make it unique. The Economic Development Strategic Plan has goals that include:

- Grow the agricultural and forestry industries;
- Foster downtown revitalization;
- Build tourism;
- Provide efficient and cost effective infrastructure and energy; and
- Promote and develop creative economics.

It is not expected that the Putnam Station Preferred Alternative will interfere with any of the initiatives proposed in the *2016 New York State Open Space Conservation Plan* as the routing will be within existing roadways. Similarly, the Putnam Station Preferred Alternative is not anticipated to have any impact on the Washington County Economic Development Strategic Plan.

The Town of Putnam has not adopted a Comprehensive Plan to guide land use planning. However, because the town lies wholly within the Adirondack Park, its development is within the jurisdiction of the Adirondack Park Agency ("APA"). Private Land Classifications impacted by the reconfigured cable route include Rural Use and Resource Management. Because the cables will be installed within existing County Route 3, Lake Road, and NY Route 22 rights-of-way, it is anticipated that the Putnam Station Preferred Alternative will not directly affect existing or future land uses. In addition, because the cables are to be buried, they should not change the character of the neighborhoods traversed by the Project.

The Town of Dresden also has not adopted a Comprehensive Plan to guide land use planning. Like its neighbor to the north, the Town of Putnam, it likewise is within the Adirondack Park. Private Land Classifications impacted by the reconfigured cable route include Rural Use and Moderate Intensity. Because the cables will be installed within existing road rights-of-way, it is anticipated that they will not adversely affect existing or future land uses, nor change the character of the area.

The APA maps indicate no state ownership of land in the area subject to review other than the ROW itself and the parcel of "Wild Forest Land" north of County Road 3 in Putnam Station. Since the "Wild Forest Land" designation can, and often does, correspond to a "forest preserve" classification in terms of title, this parcel may fall under the protection of Article XIV of the New York State Constitution. The Applicants have confirmed that installation south of the road is feasible, but this situation does impose a potential engineering constraint.

Mapping of the Agricultural Districts in Washington County was obtained from the Cornell University Institute for Resource Information Sciences ("Cornell IRIS"), which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, the proposed Preferred Alternative will intersect with approximately 3,421 feet of Agricultural District lands within road ROW and will be located within two-hundred feet of approximately 53.7 acres of these designed areas.

Based on the above analysis, the Putnam Station Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. This Preferred Alternative does not conflict with existing county or municipal land use plan. Because the cables will be generally installed within railroad or roadway ROWs, it is anticipated that the route modification will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighbors traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires

that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.2.2 Vegetation and Natural Communities

Based on aerial photography analysis, the upland vegetation along the Putnam Station Preferred Alternative can be categorized into two major groups: open uplands and forested uplands communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Most of these open uplands appear to be agricultural lands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on substrates with less than 50 percent rock outcrop or shallow soil over bedrock (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences database found one site that was shared by both routes and another unique to the Putnam Station Preferred Alternative. Both sites are within six-hundred (600) feet of a deep emergent marsh (EO_ID 3049), which is classified as an Open Mineral Soil Wetland. The route modification is also within six-hundred feet of a Red cedar rocky summit (EO_ID 1293), which is classified as barrens and woodland. Due to the location of the cables within the existing disturbed roadway right-of-way, it is expected that there be a minimal amount of trees cut or vegetation cleared within the ROW.

The vegetative communities for the Putnam Station Preferred Alternative are similar to those found on the Lake Champlain banks surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated that vegetation will return to pre-construction conditions in most areas following restoration of the construction area. Due to the location of the cables primarily within existing ROWs, it is not expected that there will be any adverse impacts associated with NYSDEC Natural Heritage Community Occurrences sites.

1.2.3 Wetlands and Water Resources

Federal and state freshwater wetlands in the vicinity of the Putnam Station Preferred Alternative were identified by referring to USGS 7.5-minute topographic mapping, National Wetland Inventory ("NWI") mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

There are no NYSDEC wetlands within one hundred (100) feet of the nominal center line. NWI data indicates there will be an overall decrease in the acreage of wetland within one hundred (100) feet of the nominal center line ("CL"), as shown on Table 1.2-2.

Table 1.2-2: Wetlands for Certified Route and Putnam Station Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	3	11
Forested NWI Wetlands (Number Crossed by CL)	1	1
Scrub-Shrub NWI Wetlands (Acres within 100')	4.77	1.36
Forested NWI Wetlands (Acres within 100')	0.7	0.01

Based on NYSDEC databases, the Putnam Station Preferred Alternative will cross eleven waterways, bypassing 4.7 miles of Lake Champlain. Furthermore, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts to waterways.

The nature of impacts from the construction and operation of the route modification are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a wetland or riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body.

1.2.4 Historic and Archaeological Resources

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Putnam Station Preferred Alternative, a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the New York Office of Parks, Recreation and Historic Preservation ("OPRHP") and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

A review of the New York Cultural Resource Information System lists one (1) cultural resource management study completed within approximately one kilometer ("km") of the Putnam Station Preferred Alternative area. One (1) National Register of Historic Places ("National Register") listed property, two (2) historic structures that are undetermined in regard to their National Register status, and ten (10) archaeological areas/sites also occur within 1 km of the Preferred Alternative. One (1) New York State Museum ("NYSM") Area (NYSM 5086) and its associated NYSM site (11514.000118) appear to overlap the Putnam Station Preferred Alternative area.

The Putnam Station Preferred Alternative route largely follows existing roads and is not located in areas identified as archaeological sensitive except for the crossing of Mill Brook. However, the crossing of Mill Brook has been extensively modified by road construction and no longer sensitive for cultural resources. The Phase 1A report recommends no further archaeological evaluation of this alternative for either Precontact- or Historic-period archaeological resources. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this route modification which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document for the Putnam Station Preferred Alternative.

1.2.5 Conclusions

The Certified Route and the proposed Putnam Station Preferred Alternative have similar environmental impacts (see Table 1.2-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts between the Certified Route and the Preferred Alternative.

Table 1.2-3: Comparison of Certified Route and Putnam Station Preferred Alternative

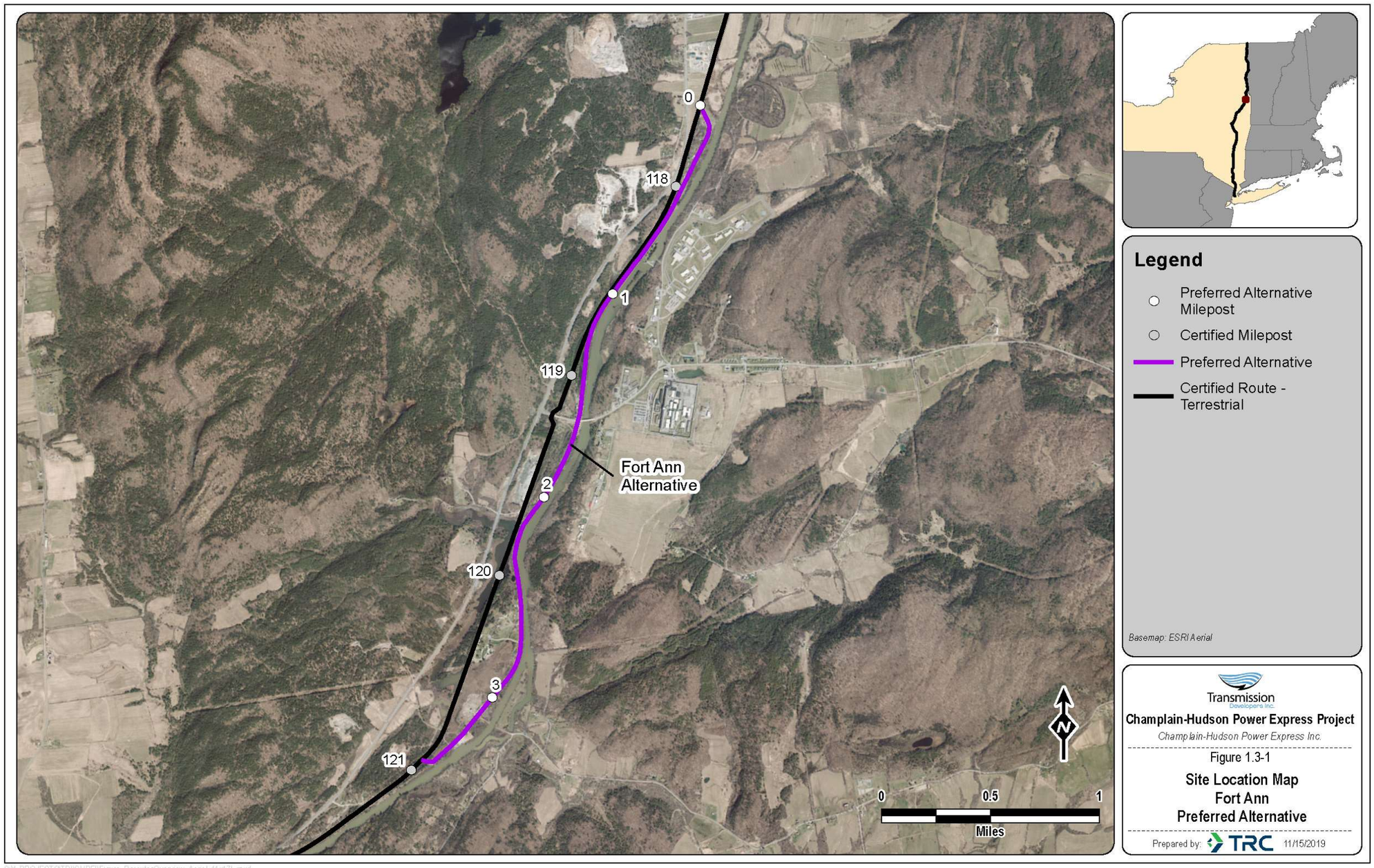
Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	0.3	7.6
Submarine (Miles)	4.69	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0	53.7
Agricultural Districts (Feet Crossed by CL)	0	3,421
NYSDEC Wetland (Acres within 600')	0	0
NYSDEC Wetland (Feet Crossed by CL)	0	0
NYSDEC Streams Crossed	NA*	14
Natural Heritage Community Occurrences (# within 600')	1	2
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

*Majority of route is within Lake Champlain.

1.3 FORT ANN PREFERRED ALTERNATIVE

The Fort Ann Preferred Alternative would have the cables transition from the Certified Route at MP 117.6 in the Town of Whitehall, Washington County to Old Route 4 ROW via an HDD. The route would travel south for approximately 3.4 miles underneath Old Route 4 in Whitehall and Fort Ann before rejoining the Certified Route at MP 120.9 via a second HDD. This reconfiguration would result in an additional 0.1 miles of cables installed within a Town Road versus the Certified Route approved within the Canadian Pacific railroad ("CP") ROW. Figure 1.3-1 presents the Preferred Alternative and the Certified Route. This routing alignment is being proposed primarily to avoid wetlands as well as a desire to reduce soil / rock removal activities associated with installing the cable in the Railroad ROW along this stretch.

Figure 1.3-1: Site Location Map for the Fort Preferred Ann Alternative



1.3.1 Land Use

The Fort Ann Preferred Alternative consists of an underground bypass route through the towns of Whitehall and Fort Ann that rejoins the Certified Route at MP 121. The purpose of this proposed route is to avoid both the need to remove rock outcroppings in the Railroad ROW and wetlands. Land uses within the study area are predominantly Forested and Open Land /Pasture /Hay /Scrub /Shrub, as documented in Table 1.3-1 below. As the alternative will be located within road ROWs, the immediate land use is predominantly "transportation".

Existing land use is classified based on resource data from the New York State GIS Clearinghouse (2004) inventories. The study area for land use includes six-hundred feet on either side of the cable route centerline. Land uses within the study area are predominantly Forested and Open Land /Pasture /Hay /Scrub /Shrub, as documented in Table 1.3-1 below. No significant loss of trees or vegetation will result where the route modification follows the preexisting cleared ROW. Nearby residents may be temporarily disturbed and inconvenienced by the construction activities and traffic. These effects will be temporary and, in general, most disturbances will last only a brief period of a few days or a week at any particular location. The construction for the entire length of the Fort Ann Preferred Alternative is anticipated require the same construction period as the corresponding section of the Certified Route.

Table 1.3-1: Land Use Classes with 600 feet of Certified Route and Fort Ann Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	7.90%	5.48%
Commercial / Industrial / Transportation	16.24%	14.30%
Forested	41.68%	39.99%
Agriculture	0.00%	0.00%
Open Land /Pasture/ Hay / Scrub / Shrub	18.87%	21.10%
Open Water	15.31%	19.13%
Parks / Open Space / Recreation	0.00%	0.00%
TOTAL:	**100.00%**	**100.00%**

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan*, as well as the proposed conservation projects for Washington County, are described in the Putnam Station section. It is not expected that the Fort Ann Preferred Alternative will interfere with any of initiatives proposed for Washington County as the routing will be within existing roadways.

The Fort Ann Preferred Alternative is not expected to affect the goals of the Washington County Economic Development Strategic Plan for the Town and Village of Fort Ann and the Town of Whitehall because it will be constructed only underground almost entirely within the existing disturbed ROWs, and it will not be visible or encroach on any additional land outside the existing ROW.

The Town of Whitehall has not adopted a Comprehensive Plan to guide land use planning. The Town and Village of Fort Ann, New York Joint Community Plan (Public Hearing Draft - February 13, 2008) entitled Fort Ann: A Beautiful Place at the Crossroads of a Beautiful Region, has overall goals of preserving the quality of woodlands, water resources and farms, improving the roads and highways, and promoting managed commercial growth compatible with the town.

Goals of the Joint Community Plan include:

- Create a framework that promotes orderly residential and commercial growth without compromising the rural and scenic character of the town;
- Protect and enhance the natural resources and the historic sites within the town;
- Promote development and rehabilitation of the town and village as a desirable commercial and residential location;
- Protect and enhance the quality of the environment within the town; and
- Promote and protect distinctive character within the communities of Fort Ann.

Article 25-AA of the New York State Agriculture and Markets Law authorizes the creation of local agricultural districts pursuant to landowner initiative, preliminary county review, state certification, and county adoption. These districts encourage improvement and continued use of agricultural land for the production of food and other agricultural products. Mapping of the Agricultural Districts in Washington County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, the proposed route modification will not cross any Agricultural District lands and there will be 2.4 acres of such lands within 200 feet of the nominal center line. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

Based on the above analysis, the Fort Ann Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. The Project does not conflict with existing county or municipal land use plan. Because the cables will be generally installed within railroad or roadway ROWs, it is anticipated that the alternative will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighbors traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.3.2 Vegetation and Natural Communities

The vegetation cover types within this route modification can be categorized into three major groups, including: open uplands, forested uplands, and terrestrial cultural communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on substrates with less than 50 percent rock outcrop or shallow soil over bedrock. Terrestrial cultural communities have been either created and maintained by human activities, or modified by human influence to such a degree that the physical conformation of the substrate or the biological composition of the resident community is substantially different from the character of the substrate or community that existed prior to human influence (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences database found that there are no sites within six-hundred feet of the nominal center line for the Fort Ann Preferred Alternative.

The vegetative communities for the alternatives are similar to those found surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated that vegetation will return to pre-construction conditions in most areas following restoration of the construction area.

1.3.3 Wetlands and Water Resources

Federal and state freshwater wetlands in the vicinity of the Fort Ann Preferred Alternative by referring to USGS 7.5-minute topographic mapping, NWI mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

The Fort Ann Preferred Alternative crosses NYSDEC wetlands for 198 feet and there are 2.65 acres of these wetlands within one hundred (100) feet of the nominal center line. The Certified Route crosses approximately 101 feet of NYSDEC wetlands with 2.84 acres of wetlands within one hundred feet of the nominal center line. NWI data indicates there will be an overall decrease in the acreage of wetland within one hundred (100) feet of the nominal center line, as shown on Table 1. 3-2.

Table 1.3-2: Wetlands for Certified Route and Fort Ann Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	10	6
Forested NWI Wetlands (Number Crossed by CL)	1	1
Scrub-Shrub NWI Wetlands (Acres within 100')	4.36	0.55
Forested NWI Wetlands (Acres within 100')	0.63	0.01

Based on NYSDEC databases, the Fort Ann Preferred Alternative will decrease the number of waterbodies crossed from four to three. Furthermore, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts.

The nature of impacts from the construction and operation of the route modifications are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a wetland or riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body. Furthermore, the implementation of BMPs and the Storm Water Pollution Prevention Plan ("SWPPP") will prevent water quality issues.

1.3.4 Historic and Archaeological Resources

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Fort Ann Preferred Alternative, a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the New York OPRHP and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

The New York Cultural Resource Information System identifies thirteen (13) cultural resource management studies completed within 1 km of the Fort Ann Project area. One (1) National Register listed property, and five (5) historic structures that are eligible for listing on the National Register, and fifteen (15) archaeological sites/areas also occur within 1 km of the Project. Six (6) archaeological sites date to the Precontact Period and nine (9) are Historic archaeological sites. Three (3) unnamed New York State Museum Areas (NYSM 5404, 5405 and 7501), one (1) Historic archaeological site (11505.000008 - Fisher Barn Site), and three (3) Cultural Resources Management studies (07SR57235, 11SR61666, and 18SR56052) appear to overlap the Project Area.

The New York State Barge Canal Historic District (14NR06559) is a twentieth-century network of canals, canalized rivers, and lakes that allows commercial and pleasure vessels to pass from the Atlantic Ocean to the Great Lakes. It is composed of four branches: the Erie Canal, 340 miles; the Champlain Canal, 60 miles; the Oswego Canal, 24 miles; and the Cayuga-Seneca Canal, 17 miles. Constructed from 1905 to 1918, these waterways are direct successors to the canals that New York State first built during the 1820s. The Barge Canal was designed for self-propelled vessels, barges towed by tug boats or motorized canal boats, and did not require the towpaths of earlier canals. The Barge Canal has 57 locks and the system remains in operation with almost all of its original early twentieth century structures and machinery in service. It is the most extensive canal system in North America and is of national significance for the pivotal and varied roles it has played in the historical growth and development of New York State, the states of the upper Midwest, and the nation.

The Fort Ann Preferred Alternative route lies totally within existing roadways. The Phase 1A report recommends no further archaeological evaluation of this alternative for either Precontact- or Historic -period archaeological resources, as long as there are no impacts to the Champlain canal during construction. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this alternative which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP. The Applicants will adhere to the protocols laid out in that document for the Fort Ann Preferred Alternative.

1.3.5 Conclusions

The Applicants are proposing an alternative route which largely parallels the Certified Route. Table 1.3-2 summarizes a comparison of the Certified Route and Fort Ann Preferred Alternative. The route modification avoids and minimizes terrestrial resource potential environmental impacts. As would be expected given the relatively short distances involved, there is also no material increase in potential environmental impacts between the Certified Route and the Preferred Alternative.

Table 1.3-3: Comparison of Certified Route and Fort Ann Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	3.31	3.5
Submarine (Miles)	0	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	12.98	2.39
Agricultural Districts (Feet Crossed by CL)	0	0
NYSDEC Wetland (Acres within 600')	2.84	2.65
NYSDEC Wetland (Feet Crossed by CL)	101	198
NYSDEC Streams Crossed	4	3
Natural Heritage Community Occurrences (# within 600')	0	0
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.4 SCHENECTADY PREFERRED ALTERNATIVE

The Schenectady Preferred Alternative would have the cables depart from the Certified Route within the CP ROW at MP 169.1 in the City of Schenectady, Schenectady County and follow the Pan Am Railway ("Pan AM") ROW for 6 miles in a western direction. The route would then cross under the Mohawk River via an HDD, beginning from Private Property on the north side of the River to a New York State Department of Transportation ("NYSDOT") roadway ROW on the

south side of the River. The cables would then be installed within CSX Transportation ("CSX") ROW for 3 miles before rejoining the Certified Route at MP 177.1 in Rotterdam. This reconfiguration would result in an additional 1.8 miles of cables installed primarily in Railroad ROWs in comparison to the Certified Route. Figure 1.4-1 presents the Preferred Alternative and the Certified Route. This route alignment is proposed to avoid downtown Schenectady, which has undergone a significant urban redevelopment project since the Project was permitted.

1.4.1 Land Use

The underground transmission cable corridor of the Schenectady Preferred Alternative consists of the underground bypass route through the municipalities of Glenville, Scotia and Rotterdam until it rejoins the Certified Route at MP 177.1. The purpose of this proposed route is to avoid downtown Schenectady, which has undergone significant redevelopment since the Project received its Certification. As the alternative will be located within railroad and road ROWs, the immediate land use is predominantly "transportation".

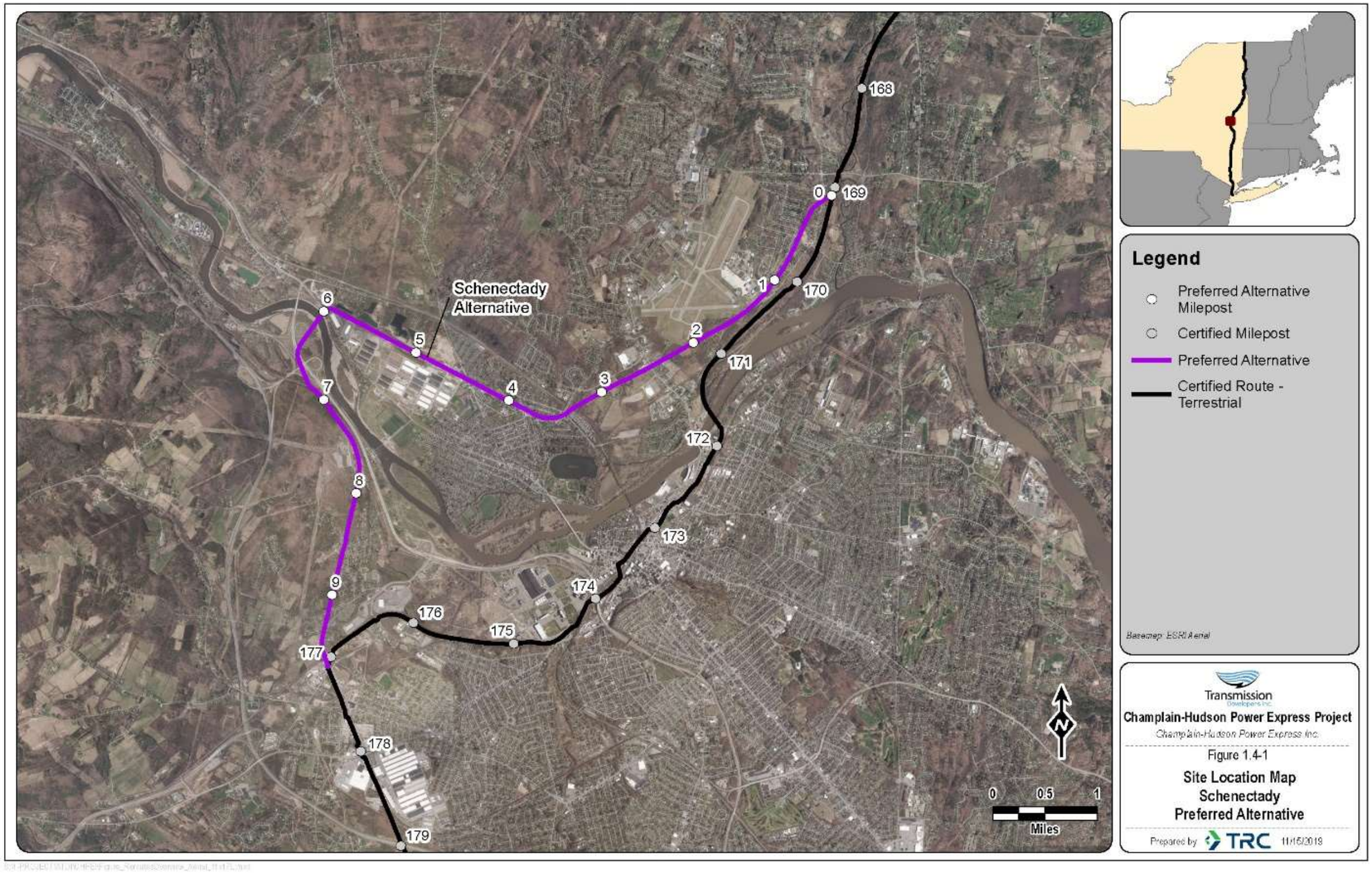
Table 1.4-1: Land Use Classes with 600 feet of Certified Route and Schenectady Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	6.35%	21.67%
Commercial / Industrial / Transportation	43.39%	32.24%
Forested	31.62%	26.25%
Agriculture	0.00%	1.94%
Open Land /Pasture/ Hay / Scrub / Shrub	14.17%	12.99%
Open Water	1.46%	4.52%
Parks / Open Space / Recreation	3.00%	0.39%
TOTAL:	**100.00%**	**100.00%**

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan* is described in the Putnam Station section. It is not expected that the Schenectady Preferred Alternative will interfere with any of initiatives proposed in this document as the routing will primarily be within existing railroad and roadway ROWs. Conservation projects in Schenectady County include:

- **Project 59 - Woodlawn Pine Barrens-Wetlands Complex***:* This area is situated northwest of the Albany Pine Bush Preserve. It includes several remnant features of the once more widely spread pine barren habitat, including sand plain and dune formations, pitch pine-scrub oak barrens and historic Karner blue butterfly habitat. The conservation plan states that this area is outside of the protection area designated by the Albany Pine Bush Commission, but its attributes have been noted to be worthy of protection.

Figure 1.4-1: Site Location Map for the Schenectady Route Preferred Alternative



Schenectady County does not have a Comprehensive Plan or Master Plan. Schenectady County does have a *Schenectady County Agricultural and Farmland Protection Plan* dated September 2002 that recommends goals and actions that promote the maintenance and expansion of lands in active agricultural use in Schenectady County. The plan notes that Schenectady County's proximity to the Capital Region's urban areas presents challenges and opportunities to farms within the County.

Major goals established in the *Schenectady County Agricultural and Farmland Protection Plan* include:

- Retain viable agricultural land resource (prime/important farmland) for agricultural purposes and ensure public policy is protecting, promoting, and sustaining agriculture;
- Diversify and broaden the agriculture economic base and attract new people to farming ventures; and
- Increase public recognition and support of agriculture and foster a better understanding of farm issues by non-farmers.

The proposed Schenectady Preferred Alternative as presented in this Application will not affect the goals of the *Schenectady County Agricultural and Farmland Protection Plan*. The proposed route in Schenectady County will be constructed almost entirely within the Pan Am and CSX railroad rights-of-way. The proposed route will be completely underground and will not include any visible above ground structures. Therefore, it is anticipated that the Schenectady Preferred Alternative will not adversely affect existing or future land uses and planned development in the towns.

In September of 2017, the Town of Glenville adopted a Comprehensive Plan. The *Town of Glenville Comprehensive Plan* established over 100 short term / on-going and long-term goals, as well as a number of initiatives. Goals adopted included:

- Promote the development of agri-tourism along the Route 5 corridor;
- Place priority on preservation of rural character whenever potentially incompatible land uses are contemplated for western Glenville, including commercial recreation uses, solar farms and wind farms; and
- Reduce the tax burden on the residential sector by expanding the commercial and industrial tax base.

The Town of Glenville Open Space Plan, adopted by the Town Board on May 7, 2008, includes goals and objectives such as the protection of natural and cultural features, land use development patterns that are consistent with the carrying capacity of natural resources, water quality, the rural character of western Glenville, buffers between developed areas in eastern Glenville, environmentally sensitive areas, scenic views, key entryways or gateways to the Town of Glenville, and the development of recreational facilities and opportunities.

During 2004, the Town of Glenville developed a *Town of Glenville Town Center Master Plan* and a *Town of Glenville Freeman's Bridge Road Master Plan*. The area of focus for each of these plans is just west of the proposed Project area for the Schenectady Preferred Alternative.

Because the proposed portion of the route in Glenville will be constructed within the existing Pan Am railroad right-of-way, will be completely underground, and will not be visible once constructed, it is consistent with the goals of the Town of Glenville's Comprehensive Plan and Open Space Plan. The proposed Project is not located in the areas addressed by the *Town of Glenville Town Center Master Plan* and the *Town of Glenville Freeman's Bridge Road Master Plan*.

The Village of Scotia has not adopted a Comprehensive Plan to guide land use planning. Because the terrestrial portion of the proposed Project will be constructed mostly within existing Pan Am railroad right-of-way, it is anticipated that the Project will not adversely affect existing or future land uses and planned development in the village.

The Town of Rotterdam Comprehensive Plan and Final Generic Environmental Impact Statement was adopted by the Town of Rotterdam Town Board on December 5, 2001. The main objective of the comprehensive plan is to preserve the town's character and identity while allowing for environmentally sound growth and development.

The goals of *The Town of Rotterdam Comprehensive Plan and Final Generic Environmental Impact Statement* include:

- Protect critical sensitive areas, maintain water quality, and conserve land, air, water and energy resources by taking advantage of existing plans or ongoing planning activities such as watershed management plans and regional and local transportation plans;
- Encourage responsible development that limits noise pollution and traffic congestion, provides pedestrian safety, discourages growth in environmentally sensitive areas, protects cultural resources, and provides quality community design;
- Encourage local involvement in community actions; and
- Enhance opportunities for recreational and cultural activities.

There will be no adverse effect on future land use or planned development in the Town of Rotterdam because the proposed Project will be constructed primarily in the existing CSX railroad right-of-way. The proposed Project will be completely underground and will not be visible from other lands.

Mapping of the Agricultural Districts in Schenectady County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, the proposed route modification will not cross any Agricultural District lands but will be located within two-hundred feet of approximately 7.74 acres of these designed areas. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions

requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

Based on the above analysis, the Schenectady Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. The Project does not conflict with existing county or municipal land use plan. Because the cables will be generally installed within railroad or roadway ROWs, it is anticipated that the alternative will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighborhoods traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.4.2 Vegetation and Natural Communities

The vegetative communities for the Preferred Alternative are similar to those found surrounding the Certified Route. The vegetation cover types can be categorized into three major groups, including: open uplands, forested uplands, and terrestrial cultural communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on substrates with less than 50 percent rock outcrop or shallow soil over bedrock. Terrestrial cultural communities have been either created and maintained by human activities, or modified by human influence to such a degree that the physical conformation of the substrate or the biological composition of the resident community is substantially different from the character of the substrate or community that existed prior to human influence (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences indicate that there are no sites within six-hundred feet of the nominal centerline of the Preferred Alternative.

Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated that vegetation will return to pre-construction conditions in most areas following restoration of the construction area.

1.4.3 Wetlands and Water Resources

Federal and state freshwater wetlands in the vicinity of the Schenectady Preferred Alternative by referring to USGS 7.5-minute topographic mapping, NWI mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

The Schenectady Preferred Alternative does not cross any NYSDEC wetlands but there are 0.04 acres of these wetlands within one hundred (100) feet of the nominal center line. The Certified

Route crosses approximately 358 feet of NYSDEC wetlands with 3.73 acres of wetlands within one hundred feet of the nominal center line. NWI data indicates there will be an overall decrease in the number of wetlands crossed and the acreage of wetland within one hundred (100) feet of the nominal center line, as shown on Table 1.4-2.

Table 1.4-2: Wetlands for Certified Route and Schenectady Route Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	6	2
Forested NWI Wetlands (Number Crossed by CL)	8	4
Scrub-Shrub NWI Wetlands (Acres within 100')	4.46	0.14
Forested NWI Wetlands (Acres within 100')	7.04	1.32

Based on NYSDEC databases, the Schenectady Preferred Alternative will decrease the number of waterbodies crossed from 15 to 14. Furthermore, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts.

The nature of impacts from the construction and operation of the route modifications are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a wetland or riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body. Furthermore, the implementation of BMPs and the SWPPP will prevent water quality issues.

1.4.4 Historic and Archaeological Resources

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Schenectady Preferred Alternative, a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the OPRHP and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

The New York Cultural Resource Information System identifies 31 cultural resource management studies completed within approximately 1 km of the Schenectady Preferred Alternative area. Four (4) National Register-listed properties, 13 historic structures that are eligible for listing on the National Register, and 82 archaeological sites also occur within approximately 1 km of the Preferred Alternative. Of the 82 documented archaeological sites, 54 relate to the Precontact Period, 26 date to the Historic period, one (1) contains both Precontact and Historic cultural materials, and one (1) is unknown due to a missing form. At least six (6) Cultural Resource Management studies overlap the Preferred Alternative area by crossing or running alongside the transmission line. One (1) Historic period archaeological site, the Brumaghim Site

(09302.000163) and one (1) National Register-listed Historic district, the New York State Barge Canal District (14NR06559), also overlap the Schenectady Preferred Alternative area.

Four (4) properties or districts with in 1 km of the Preferred Alternative area are listed on the National Register. The New York State Barge Canal Historic District (14NR06559) is a twentieth-century network of canals, canalized rivers, and lakes that allows commercial and pleasure vessels to pass from the Atlantic Ocean to the Great Lakes. It is composed of four branches: the Erie Canal, 340 miles; the Champlain Canal, 60 miles; the Oswego Canal, 24 miles; and the Cayuga-Seneca Canal, 17 miles. Constructed from 1905 to 1918, these waterways are direct successors to the canals that New York State first built during the 1820s. The Barge Canal was designed for self-propelled vessels, barges towed by tug boats or motorized canal boats, and did not require the towpaths of earlier canals. The Barge Canal has 57 locks and the system remains in operation with almost all of its original early twentieth century structures and machinery in service. It is the most extensive canal system in North America and is of national significance for the pivotal and varied roles it has played in not only the historical growth and development of New York State, states of the upper Midwest, and the nation. NRHP-listed sites Lock E-8 and cabins (09305.000240) and the Enlarged Lock No. 23, Old Erie Canal (09305.000271) are structures directly related to the New York State Barge Canal Historic District.

The Schenectady Preferred Alternative route is mainly proposed for placement in existing railroad or roadways ROWs. However, it does take an approximately 90 degree turn and heads across the Mohawk River at about Milepost 6. As this crossing will occur using an HDD where the start and exit points are approximately 300 feet or more from the river, the Phase 1A report recommends no further study. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this alternative which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document for the Schenectady Preferred Alternative.

1.4.5 *Conclusions*

The Certified Route and the proposed Schenectady Preferred Alternative have similar environmental impacts (see Table 1.4-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts between the Certified Route and the Preferred Alternative.

Table 1.4-3: Comparison of Certified Route and Schenectady Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	7.97	9.72
Submarine (Miles)	0	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0.06	7.74
Agricultural Districts (Feet Crossed by CL)	0	0
NYSDEC Wetland (Acres within 600')	3.73	0.04
NYSDEC Wetland (Feet Crossed by CL)	358	0
NYSDEC Streams Crossed	15	14
Natural Heritage Community Occurrences (# within 600')	0	0
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.5 SELKIRK YARD PREFERRED ALTERNATIVE

The Selkirk Yard Preferred Alternative would have the cables depart from the Certified Route at MP 194.1 in Bethlehem, Albany County and follow New York Route 32 (Feura Bush Road) for a tenth of a mile before connecting to West Yard Road. After approximately one mile and at the end of West Yard Road, the cables would be installed under a dirt path, crossing approximately 0.5 miles of undeveloped private land owned by CSX to South Albany Road. The cables would continue in the road ROW for 1.6 miles heading east for 0.4 miles upon private land in order to rejoin the CSX ROW. The Preferred Alternative would then parallel the Certified Route within the CSX ROW for approximately 1.5 miles, rejoining the Certified Route at MP 198.1. This Preferred Alternative would result in an additional 0.7 miles of cables being installed primarily in road ROWs and the CSX ROW in comparison to the Certified Route. Figure 1.5-1 presents the Preferred Alternative and the Certified Route. This route alignment is proposed per the request of CSX, the railroad ROW owner, due to the expected expansion of the Selkirk Railyard. CSX has concluded that installation of the cables could complicate future expansion within Selkirk Yard and lead to operational issues during construction.

1.5.1 Land Use

The underground transmission cable corridor of the Selkirk Yard Preferred Alternative consists of the underground bypass route through the town of Bethlehem joining the Certified Route at MP 194.0. The purpose of this proposed route is to relocate outside the Selkirk Railroad Yard due to expansion plans by CSX. As the alternative will be located within road ROWs, the immediate land use is predominantly "transportation".

Figure 1.5-1: Site Location Map for Selkirk Yard Route Preferred Alternative

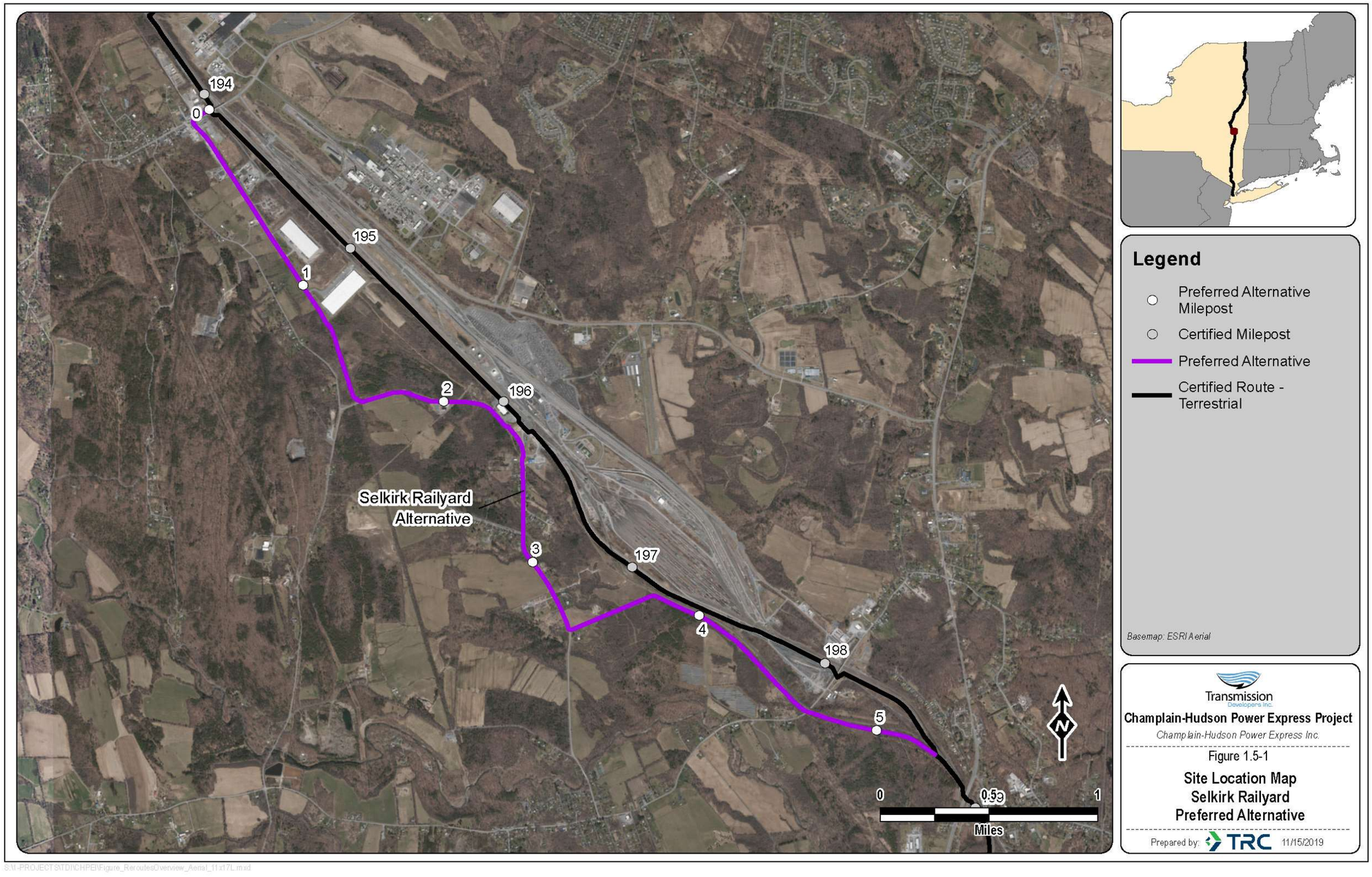


Table 1.5-1: Land Use Classes with 600 feet of Certified Route and Selkirk Yard Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	2.12%	3.90%
Commercial / Industrial / Transportation	51.48%	26.30%
Forested	13.76%	40.46%
Agriculture	0.00%	0.00%
Open Land /Pasture/ Hay / Scrub / Shrub	32.56%	29.24%
Open Water	0.08%	0.10%
Parks / Open Space / Recreation	0.00%	0.00%
TOTAL:	**100.00%**	**100.00%**

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan* is described in the Putnam Station section. It is not expected that the Selkirk Yard Preferred Alternative will interfere with any of the initiatives proposed in this document as the routing will primarily be in existing roadway ROWs or developed land. Conservation projects in Albany County include:

- **Project 46 - Albany Pine Bush:** This area supports a rare and endangered inland pine barren ecosystem. The Albany Pine Bush Preserve Commission established guidelines for much of this area in their management plan with the main objective of establishing an ecologically viable and manageable preserve.

- **Project 51 - Helderbergs:** The Helderbergs protection area includes lands associated with the Helderberg Mountains, which extend diagonally from northeast Greene County, over much of western Albany County, to southwest Schenectady County. The area includes a variety of lowland habitats and diverse wetlands such as Vly Swamp and Black Creek Marsh State Wildlife Management Area. The overall landscape affords a high diversity of habitats that support a correspondingly high diversity of fauna and flora. This includes an amphibian diversity that rivals the entire New England region; two sites included on the National Audubon Society's list of Important Bird Areas in New York State; and the 250-acre Joralemon Park, believed to have more fern species than any site of comparable size in New York State. The Helderberg is also home to the John Boyd Thacher State Park.

- **Project 49 - Five Rivers Environmental Education Center:** This education center is located between the suburban towns of Bethlehem and New Scotland. The conservation plan states that the entire area surrounding the education center remains vulnerable to subdivision and development activity, therefore opportunities for protection of public access, public use and buffer areas remain a priority.

Albany County does not have a Comprehensive Plan or Master Plan. Albany County does have an *Albany County Agricultural and Farmland Protection Plan* dated 2004 that details ways to

support farming and enhance agriculture in the county. The plan establishes a comprehensive strategy and presents ways that can be used at the private, town and county level to meet the goals for agricultural and farmland protection.

Major goals established in the *Albany County Agricultural and Farmland Protection Plan* include:

- Retain viable agricultural land resources for agricultural purposes;
- Increase marketing opportunities, competitiveness and profitability of farming and the agriculture industry in Albany County; and
- Increase public recognition of the value of agriculture and farmland in Albany County.

The proposed Project will not affect the goals of the *Albany County Agricultural and Farmland Protection Plan*. The proposed Project in Albany County will be constructed almost entirely within an existing road rights-of-way. The proposed Project will be completely underground and will not be visible to neighboring areas.

The Town of Bethlehem adopted the *Town of Bethlehem Comprehensive Plan and Generic Environmental Impact Statement* on August 24, 2005. The plan was developed with the intent of achieving a balance between urban, suburban, and rural land use perspectives; a balance between the need and desire for economic growth, for tax base expansion and diversification, and for stewardship of finite environmental resources and land; and a balance between short-term and long-term health, safety, and welfare of the community. The *Town of Bethlehem Comprehensive Plan and Generic Environmental Impact Statement* discusses the use of railroad corridors for the development of recreational trail networks. The *Town of Bethlehem Comprehensive Plan and Generic Environmental Impact Statement* recommends that any utility facilities be placed in visually unobtrusive locations.

The goals of the *Town of Bethlehem Comprehensive Plan and Generic Environmental Impact Statement* include:

- Encourage compact, mixed-use commercial and residential development/redevelopment;
- Expand public, private or non-profit active and passive recreational resources and community services available in town;
- Manage and protect significant environmental systems;
- Promote commercial and industrial growth in specifically designated locations;
- Promote energy efficiency and conservation and the use of renewable energy in the town;
- Recognize the town's significant cultural resources, historic resources, and natural resources; and
- Utilize flexible land use regulations and creative land development techniques to retain the economic value of rural land.

Since the proposed Project will be constructed almost entirely within existing roadway rights-of-way and will be completely underground, the Project is consistent with the goals of the Comprehensive Plan. The Town of Bethlehem is currently undertaking a complete update of the *Town of Bethlehem Comprehensive Plan*, but there are no indications that the Project would be inconsistent with the revised plan.

Mapping of the Agricultural Districts in Albany County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, the Selkirk Alternative will intersect with approximately 115 feet of Agricultural District lands and will be located within two-hundred feet of approximately 27.4 acres of these designed areas. By comparison, the Certified Route is located within 0.2 acres of Agricultural District lands.

Based on the above analysis, the Selkirk Yard Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. The Project does not conflict with existing county or municipal land use plan. Because the cables will generally be installed within railroad or roadway ROWs, it is anticipated that the alternative will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighbors traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.5.2 Vegetation and Natural Communities

The vegetation cover types within this route modification can be categorized into two major groups: open uplands and forested uplands communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Most of these open uplands appear to be agricultural lands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on substrates with less than 50 percent rock outcrop or shallow soil over bedrock (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences database found that there are no sites within six-hundred feet of the nominal center line for the Selkirk Yard Preferred Alternative.

The vegetative communities for the Selkirk Yard Preferred Alternative are similar to those found surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated

that vegetation will return to pre-construction conditions in most areas following restoration of the construction area.

1.5.3 Wetlands and Water Resources

Federal and state freshwater wetlands in the vicinity of the Selkirk Yard Preferred Alternative by referring to USGS 7.5-minute topographic mapping, NWI mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

Neither the Selkirk Yard Preferred Alternative nor the Certified Route cross any NYSDEC wetlands or are within one hundred (100) feet of these features. NWI data indicates that Selkirk Yard Alternative crosses one more wetland than the Certified Route but there will be an overall decrease in the acreage of wetland within one hundred (100) feet of the nominal center line, as shown on Table 1.5-2.

Table 1.5-2: Wetlands for Certified Route and Selkirk Yard Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	3	0
Forested NWI Wetlands (Number Crossed by CL)	0	4
Scrub-Shrub NWI Wetlands (Acres within 100')	1.82	0
Forested NWI Wetlands (Acres within 100')	0	0.29

Based on NYSDEC databases, the Selkirk Yard Preferred Alternative will increase the number of waterbodies crossed from zero (0) to seven. However, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts

The nature of impacts from the construction and operation of the route modifications are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a wetland or riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body. Furthermore, the implementation of BMPs and the SWPPP will prevent water quality issues.

1.5.4 Historic and Archaeological Resources

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Selkirk Yard Preferred Alternative a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the OPRHP and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

A review of the New York Cultural Resource Information System lists six (6) Cultural Resource Management studies completed within approximately 1 km of the Selkirk Yard Preferred Alternative area. Three (3) National Register-listed properties, eight (8) historic structures that are eligible or undetermined in regard to their National Register status, and seven (7) Precontact Period archaeological sites also occur within 1 km of the Preferred Alternative. None of the cultural resources listed appear to overlap the Selkirk Yard Preferred Alternative area.

The Selkirk Yard Preferred Alternative route mainly follows existing roadways and railways. Beginning around Milepost 4.5, it makes several crossings of Onesquethaw Creek. However, as these crossings will be achieved with an HDD, the Phase 1A report recommends no further studies are required for this Preferred Alternative. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this route modification which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document for the Selkirk Yard Preferred Alternative.

1.5.5 Conclusions

The Certified Route and the proposed Selkirk Yard Preferred Alternative have similar environmental impacts (see Table 1.5-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts between the Certified Route and the Preferred Alternative.

Table 1.5-3: Comparison of Certified Route and Selkirk Yard Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	4.62	5.30
Submarine (Miles)	0	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0.02	27.4
Agricultural Districts (Feet Crossed by CL)	0	115
NYSDEC Wetland (Acres within 600')	0	0
NYSDEC Wetland (Feet Crossed by CL)	0	0
NYSDEC Streams Crossed	0	7
Natural Heritage Community Occurrences (# within 600')	0	0
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.6 CATSKILL PREFERRED ALTERNATIVE

The proposed Catskill Preferred Alternative would depart from the Certified Route at MP 221 in Catskill, Greene County and travel west for approximately 0.1 miles underneath undeveloped land owned by the State of New York to reach Allen Street. The route would then follow Allen Street for 0.2 miles, at which point an HDD would place the cables under Catskill Creek from Allen Street (north side of Creek) to a private property (south side of Creek). From the private property, the cables would travel across Route 9W and proceed onto Willow Lane prior to accessing a private easement prior and rejoining the CSX ROW and the Certified Route at MP 221.7. Figure 1.6-1 presents the Preferred Alternative and the Certified Route. This route alignment is being proposed to move the cable off a railroad bridge per the request of the owner, CSX Transportation.

1.6.1 Land Use

The underground transmission cable corridor of the Catskill Adjustment consists of the underground bypass route that departs the Certified Route at MP 221 and follows adjacent roadways and private properties to effect an HDD under Catskill Creek before it rejoins the Certified Route at MP 221.5. The purpose of this proposed route is to avoid the CSX railroad bridge at the request of the owner, who notes that the bridge will need to be replaced at some point in the future. As the alternative will be located within railroad and road ROWs, the immediate land use is predominantly "transportation".

Table 1.6-1: Land Use Classes with 600 feet of Certified Route and Catskill Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	23.89%	23.84%
Commercial / Industrial / Transportation	34.49%	37.56%
Forested	14.13%	13.73%
Agriculture	0.00%	0.00%
Open Land /Pasture/ Hay / Scrub / Shrub	15.26%	12.38%
Open Water	6.56%	6.58%
Parks / Open Space / Recreation	5.67%	5.91%
TOTAL:	**100.00%**	**100.00%**

Figure 1.6-1: Site Location Map for the Catskill Preferred Alternative

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan* is described in the Putnam Station section. It is not expected that the Catskill Preferred Alternative will interfere with any of the initiatives proposed in this document as the routing will be within existing roadways. Conservation projects in Greene County include:

- **Project 41 –Hudson River Corridor Estuary/ Hudson River Estuary and Greenway Trail / Hudson River School Art Trail:** This project encompasses a wide range of actions that have been identified in the Hudson River Action Plan. These include the development of trails and public recreational opportunities as well as habitat, watershed tributary and historic resource protection along the entire lower Hudson Corridor.

Greene County does not have an overall Comprehensive or Master Plan. The County does have an Open Space and Recreation Plan (2002), an Agricultural Development and Farmland Protection Plan (2002), a Comprehensive Economic Development Plan (2007) and a Hudson River Corridor Study (2008). Since the proposed Project will be constructed almost entirely within existing rights-of-way, will be completely underground and will not encroach on any additional land outside the existing ROW not controlled by the Applicants, the Project is consistent with the goals of the above plans and Study.

The town and village of Catskill's Joint Comprehensive Plan was adopted by the town and village on February 5, 2008. The plan outlines a program to preserve the rural character of the town, create a diversity of economic, recreational, and housing opportunities for people at all stages of their lives, and to thoughtfully plan the location of neighborhoods, commerce, and industry, so as to create a healthy balance between the built and natural environments. The goals of the plan are:

- Protection of rural beauty and natural environment;
- Enhancement of a vibrant, walkable and historic village core;
- Strengthened system of pedestrian-friendly hamlet centers and commercial areas that serve as community focal points;
- Preservation of farming and enrichment of the rural economy;
- Residential, commercial and industrial growth that respect that rural beauty, historic character and the natural environment of both the village and town;
- Greater range of job opportunities;
- An efficient system of infrastructure and public services that support community goals;
- Effective code enforcement;
- A town and village working together to efficiently raise the quality of life for all; and
- Preservation of historic assets and cultural heritage.

Because the Project will be constructed almost entirely within the existing ROWs, will be completely underground, and will not create a visual contrast or encroach on any additional land outside the existing ROW and land controlled by the Applicants, it is consistent with the goals of

the Joint Comprehensive Plan and is not anticipated to impact existing or future land uses and planned development.

In addition, the Village of Catskill has a Downtown and Waterfront Revitalization Strategy. The Strategy identifies efforts to improve the physical condition of the downtown while maintaining its historic quality, link the downtown to the proposed waterfront improvements, and launch a targeted marketing effort to recruit tourist-based businesses that also appeals to the local population. Because the route will not be constructed in the downtown area, and because it is underground (including an HDD under Catskill Creek) and will not be permanently visible from the downtown area, it is therefore consistent with the redevelopment objectives of the Strategy.

Mapping of the Agricultural Districts in Greene County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, neither the Preferred Alternative nor the Certified Route intersect with or are located within two-hundred feet of Agricultural District lands.

The Catskill Preferred Alternative is located within the coastal zone of the state of New York and therefore is subject to New York State Coastal Management Program ("CMP"). The Village of Catskill does not have a Local Waterfront Revitalization Program ("LWRP") at this time, although they anticipate completing one by May 31st, 2023[3]. A review of the consistency of the Preferred Alternatives with coastal policies is provided in Attachment A. This analysis concluded that the Project would be consistent with the CMP program.

Based on the above analysis, the Catskill Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. The Project does not conflict with existing county or municipal land use plan. Because the cables will generally be installed within railroad or roadway rights of way ("ROWs"), it is anticipated that the alternative will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighbors traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.6.2 Vegetation and Natural Communities

The vegetation cover types within this route modification can be categorized into three major groups, including: open uplands, forested uplands, and terrestrial cultural communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on

[3] Regional Economic Development Councils, 2019. Local Waterfront Revitalization Program. Accessed on-line on October 16, 2019 at: https://regionalcouncils.ny.gov/cfa/project/262562.

substrates with less than 50 percent rock outcrop or shallow soil over bedrock. Terrestrial cultural communities have been either created and maintained by human activities, or modified by human influence to such a degree that the physical conformation of the substrate or the biological composition of the resident community is substantially different from the character of the substrate or community that existed prior to human influence (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences database found one site within six-hundred feet of both the Preferred Alternative and Certified Route: a tidal river (EO_ID 3354), which is classified as a Subtidal Wetland.

The vegetative communities for the alternatives are similar to those found surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated that vegetation will return to pre-construction conditions in most areas following restoration of the construction area. Due to the location of the cables primarily within existing ROWs or installed under major waterbodies via HDD, it is not expected that there will be any adverse impacts associated with the NYSDEC Natural Heritage Community Occurrences site.

1.6.3 Wetlands and Water Resources

Federal and state freshwater wetlands in the vicinity of the Catskill Preferred Alternative by referring to USGS 7.5-minute topographic mapping, NWI mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

Neither the Catskill Preferred Alternative nor the Certified Route cross any NYSDEC wetlands or are within one hundred (100) feet of these features. NWI data also indicates that there are no wetlands within one hundred (100) feet of the nominal center line of the Catskill Preferred Alternative or the Certified Route, as shown on Table 1.6-2.

Table 1.6-2: Wetlands for Certified Route and Catskill Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	0	0
Forested NWI Wetlands (Number Crossed by CL)	0	0
Scrub-Shrub NWI Wetlands (Acres within 100')	0	0
Forested NWI Wetlands (Acres within 100')	0	0

Based on NYSDEC databases, the Catskill Preferred Alternative will increase the number of waterbodies crossed from two to five. Furthermore, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts.

The nature of impacts from the construction and operation of the route modifications are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body. Furthermore, the implementation of BMPs and the SWPPP will prevent water quality issues.

1.6.4 Historic and Archaeological Resources

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Catskill Preferred Alternative, a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the OPRHP and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

A review of the New York Cultural Resource Information System lists seven (7) Cultural Resource Management studies completed within 1 km of the Catskill Preferred Alternative. Eleven (11) National Register-listed properties, five (5) historic structures that are eligible for listing on the National Register, and twenty (20) archaeological sites also occur within 1 km of the Preferred Alternative. Fourteen (14) archaeological sites date to the Precontact Period, five (5) are Historic archaeological sites and one site dates to both the Precontact and Historic periods. One (1) unnamed New York State Museum Area (NYSM 3106), one (1) Precontact archaeological site (03940.001143), and three (3) Cultural Resource Management studies (15SR00252, 16SR00557, and 18SR56550) appear to overlap the Catskill Preferred Alternative.

The Catskill Preferred Alternative is largely in a railroad and road ROW and located in areas that are heavily developed. Archaeological sensitivity for any portions of the route have largely been obliterated by development in the late 19th and 20th centuries with the possible exception of the crossing of Catskill Creek at the Preferred Alternative's northern end. As this crossing will be achieved via an HDD, the Phase 1A report recommends no further studies are required. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this alternative which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document for construction and operation of the Catskill Alternative.

1.6.5 Conclusions

The Certified Route and the proposed Catskill Preferred Alternative have similar environmental impacts (see Table 1.6-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts shared by the Certified Route and the Preferred Alternative.

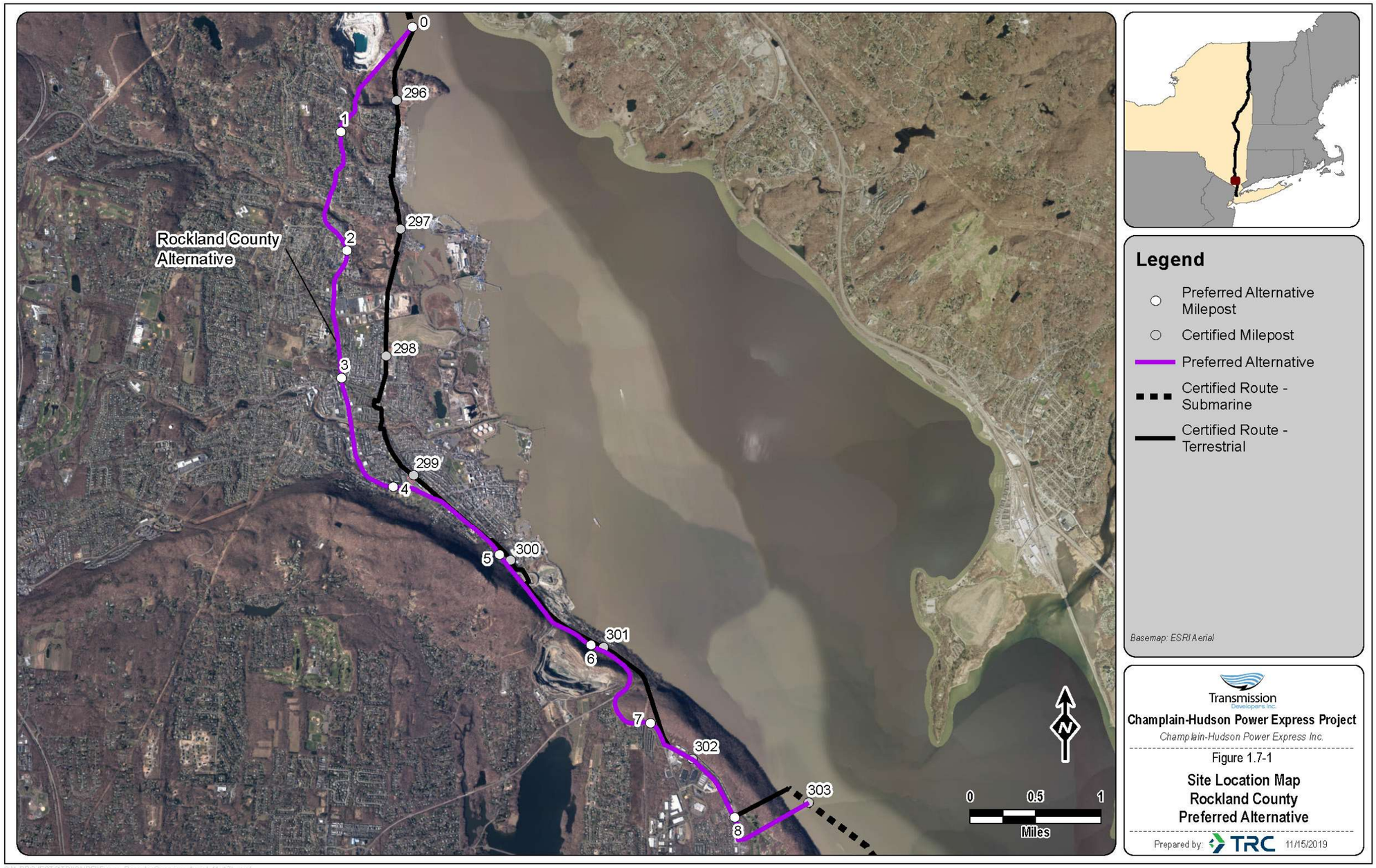
Table 1.6-3: Comparison of Certified Route and Catskill Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	0.67	0.70
Submarine (Miles)	0	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0	0
Agricultural Districts (Feet Crossed by CL)	0	0
NYSDEC Wetland (Acres within 600')	0	0
NYSDEC Wetland (Feet Crossed by CL)	0	0
NYSDEC Streams Crossed	2	5
Natural Heritage Community Occurrences (# within 600')	1	1
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.7 ROCKLAND COUNTY PREFERRED ALTERNATIVE

The proposed Rockland County Preferred Alternative would exit the Certified Route at MP 294.9 in Stony Point, Rockland County and transition from the Hudson River to land via an HDD which traverses a private property onto Elm Street. Following Elm Street south for 0.3 miles, the route would connect to New York State Route 9W and travel south through the Town of Stony Point, the Town of Haverstraw, the Villages of West Haverstraw and Haverstraw, and the Town of Clarkstown for approximately 7 miles. A land-to-water HDD would be launched from a private property located adjacent to Route 9W and extend under lands of the Palisades Interstate Park Commission for 0.3 miles until the cables reach the Hudson River. The route would rejoin the Certified Route at MP 302. This reconfiguration would result in an additional 0.7 miles of cables installed primarily in road ROWs in comparison to the Certified Route. Figure 1.7-1 presents the Preferred Alternative and the Certified Route. This modification is proposed based on significant construction challenges within the railroad ROW, including the installation of additional tracks since the project was permitted, which narrowed the available space. In addition, the realignment would address significant community concerns related to installing the cables within the railroad ROW, which is in close proximity to residential homes and historic sites.

Figure 1.7-1: Site Location Map for the Rockland County Preferred Alternative



1.7.1 Land Use

The underground transmission cable corridor of the Rockland County Preferred Alternative consists of the underground bypass route through the towns of Stony Point, Haverstraw and Clarkstown, and the Village of Haverstraw until it rejoins the Certified Route at MP 303.0. The purpose of this proposed route is to avoid the CSX double tracked railroad right-of-way. As the alternative will be located almost entirely within road ROWs, the immediate land use is predominantly "transportation".

Existing land use is classified based on resource data from the New York State GIS Clearinghouse (2004) inventories. The study area for land use includes six-hundred feet on either side of the cable route centerline. The underground portions of the Rockland County Preferred Alternative traverse industrialized populated areas. Land uses within the study area are predominantly Commercial / Industrial / Transportation, Forested, and Residential as documented in Table 1.7-1 below. No significant loss of trees or vegetation will result where the route modification follows the preexisting cleared ROW. Nearby residents may be temporarily disturbed and inconvenienced by the construction activities and traffic. These effects will be temporary and, in general, most disturbances will last only a brief period of a few days or a week at any particular location. The construction for the entire length of the Rockland County Preferred Alternative is anticipated to require the same construction period as the corresponding section of the Certified Route.

Table 1.7-1: Land Use Classes with 600 feet of Certified Route and Rockland County Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	22.64%	26.64%
Commercial / Industrial / Transportation	27.26%	32.09%
Forested	26.15%	28.62%
Agriculture	0.00%	0.00%
Open Land /Pasture/ Hay / Scrub / Shrub	10.59%	4.04%
Open Water	12.59%	6.88%
Parks / Open Space / Recreation	0.76%	1.74%
TOTAL:	**100.00%**	**100.00%**

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan* is described in the Putnam Station section. It is not expected that the Rockland County Preferred Alternative will interfere with any of the initiatives proposed in this plan as the routing will primarily be within existing roadways. Conservation projects in Rockland County include:

- **Project 41 –Hudson River Corridor Estuary/ Hudson River Estuary and Greenway Trail / Hudson River School Art Trail:** This project encompasses a wide range of actions that have been identified in the Hudson River Action Plan. These include the development of trails and public recreational opportunities as well as habitat, watershed tributary and historic resource protection along the entire lower Hudson Corridor.

- **Project 35 - Rockland Riverfront Communities/ Palisades Ridge:** This area houses a critical drinking water supply aquifer. It encompasses important wildlife habitat areas, including wetlands, scenic vistas and other critical environmental areas.

Rockland County adopted its comprehensive plan, *Rockland Tomorrow: Rockland County Comprehensive Plan*, on March 1, 2011. The Plan addresses the redevelopment pressures and demographic changes that may fundamentally alter the character of the county, including issues of affordable housing, jobs, traffic congestion, preservation of natural and scenic qualities of the Hudson River and county, provision of adequate infrastructure, and preservation of open space and other environmental resources.

Recommendations regarding infrastructure include:

- Using County or municipal GIS systems, consider developing an inventory of gas and electric transmission rights-of-way and utility easements to assist towns and villages in planning and review of development adjacent to these facilities.
- Take the lead in encouraging communication and coordination between utility and highway companies, and in developing a "master schedule" for the permitting and notification process on major projects.

Since the proposed alternative will be constructed primarily within an existing road ROW and will be completely underground and, therefore, not visible or result in any changes in land use, the Project is consistent with the goals of the Plan and is not anticipated to impact existing or future land uses and planned development.

The Town of Stony Point has not adopted a Comprehensive Plan to guide land use planning at this time. Since the Project will be constructed almost entirely within existing ROWs, will be completely underground and will not be visible or encroach on any additional land outside the existing ROW that is not under the control of the Applicants, it is anticipated that the Project will not impact existing or future land uses and planned development in the town.

The Town of Haverstraw has not adopted a Comprehensive Plan to guide land use planning at this time. Since the Project will be constructed almost entirely within the existing ROWs, will be completely underground and will not be visible or encroach on any additional land outside the existing ROW that is not controlled by the Applicants, it is anticipated that the Project will not impact existing or future land uses and planned development in the town.

The Village of Haverstraw adopted a *Master Plan and Zoning Plan* on June 21, 1993. The Master Plan provides background studies, land use maps, and development policies, and describes proposed changes to the zoning ordinance and zoning map. The major land use policies and criteria include a requirement for electric power lines to be underground in all land developments as required by State law. The Village is has also established a Joint Committee for the

Comprehensive Plan & Local Waterfront Redevelopment Plan[4]. Since the proposed Project will be constructed primarily within existing road ROWs, will be completely underground, and will not be visible, the Project is consistent with the Master Plan and is not anticipated to impact existing or future land uses and planned development.

The Village of West Haverstraw has yet not adopted a Comprehensive Plan to guide land use planning. Because the Project will be constructed almost entirely within the existing ROWs, will be completely underground and will not be visible or encroach on any additional land outside the existing ROW that is not under the control of the Applicants, it is anticipated that the Project will not impact existing or future land uses and planned development in the town.

The Town of Clarkstown's *Comprehensive Plan* was adopted November 24, 2009, which provides a description of existing conditions, outlines goals and objectives developed through the planning process, and recommends implementation actions. The *Comprehensive Plan* does not specifically address or propose any recommendations regarding electric transmission corridors.

The goals of the plan are:

- Economic Development - Apply zoning changes to create and expand commercial and industrial development in appropriate areas; enhance communication between the town and the business community; continue the Economic Development Office to attract new businesses and assist established businesses; ensure that a variety of housing options exists; create connections between the commercial sector and educational institutions; and implement new programs and continue those already in place that beautify the town.
- Environmental Resources - Protect sensitive environmental areas, natural resources, farmlands, ridgelines, and views of wooded and natural areas; implement programs, standards, or regulations for stormwater, erosion and sediment control, wetland protection, airborne pollutants, species of concern, critical environmental areas, noise, dust, odor, and environmentally sound building design; and preserve the suburban and remaining semi-rural character of the town.
- Health, Safety & Welfare - Ensure the efficient provision of emergency services; ensure that building and fire codes are current and enforced; and develop zoning and building regulations that reduce drainage and flooding problems resulting from new construction, reduce negative environmental impacts on residential areas, and encourage and protect the safety of pedestrian and bicycle traffic.
- Historic & Cultural Resources - Identify and maintain an up-to-date inventory of historic resources; protect historic properties from demolition or renovations that would result in loss of historic status; improve maintenance of publicly owned historic buildings and cemeteries; and create a plan to communicate with and educate residents regarding historic and cultural resources.

[4] Village of Haverford. July 2019. Visioning Report, Draft Goals and Objectives and Initial Strategies. Accessed on-line on October 16, 2019 at: https://www.dropbox.com/sh/8osgajbb5h9yr7u/AACkg8OT-kElAWsyJ8Tkd8Hwa/Final%20Documents?dl=0&preview=Visioning+Report+Final.pdf&subfolder_nav_tracking=1

- Housing - Promote affordable housing; expand initiatives to safeguard neighborhoods from inappropriately scaled development; and implement programs which require and/or encourage environmentally sound building design.
- Recreation, Parks & Open Space - Upgrade existing recreational land; construct a multi-use, domed sport and recreational facility; construct a regulation sized ice rink; develop trails; and continue acquisition of open space.
- Transportation - Provide safe and efficient travel through town; provide local public transportation services that promote sustainable travel options; provide for commuter transit services that are accessible, efficient, and safe; create accessible, safe, and enjoyable walking and bicycling environments; and develop Hamlet Centers with transportation options and connections.

Since the proposed Project will be constructed primarily within the existing road ROW or buried with an HDD installation and therefore completely underground and not visible, the Project is consistent with the goals of the *Comprehensive Plan* and is not anticipated to impact existing or future land uses and planned development. When entering the Hudson River, HDD installation will be used to avoid disturbing the shoreline area. The HDD is expected to exit the water at a depth sufficient to avoid and/or minimize impacts to intertidal and nearshore areas.

Mapping of the Agricultural Districts in Rockland County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, neither the Preferred Alternative nor Certified Route is within two-hundred feet of Agricultural District lands.

Based on the above analysis, the Rockland County Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. The Project does not conflict with existing county or municipal land use plan. Because the cables will generally be installed within roadway ROWs, it is anticipated that the alternative will not directly affect existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighbors traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. If construction activities require that work occur on agricultural lands outside of the ROWs, Section I of the Certificate Conditions requires that appropriate mitigation measures be applied to maintain agricultural viability of agricultural soils, including the designation of an "Agricultural Inspector".

1.7.2 Vegetation and Natural Communities

The vegetation cover types within this route modification can be categorized into three major groups, including: terrestrial cultural communities, open uplands, and forested uplands. Terrestrial cultural communities have been either created and maintained by human activities, or modified by human influence to such a degree that the physical conformation of the substrate or the biological composition of the resident community is substantially different from the character of the substrate or community that existed prior to human influence. Open uplands are defined as communities

with less than 25 percent canopy cover of trees. Open upland communities include grasslands, meadows, and shrublands. Forested uplands are communities with greater than 60 percent canopy cover of trees. Forested upland communities occur on substrates with less than 50 percent rock outcrop or shallow soil over bedrock (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

A review of the NYSDEC Natural Heritage Community Occurrences database found two sites that are within six-hundred (600) feet of both routes: a) a tidal river (EO_ID 3354), which is classified as a Subtidal Wetland; and b) an oak-tulip tree forest (EO_ID 3150), which is classified as Forested Uplands.

The vegetative communities for the alternatives are similar to those found surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction. It is anticipated that vegetation will return to pre-construction conditions in most areas following restoration of the construction area. Due to the location of the cables primarily within existing ROWs, it is not expected that there will be any adverse impacts associated with NYSDEC Natural Heritage Community Occurrences sites.

1.7.3 *Wetlands and Water Resources*

Federal and state freshwater wetlands in the vicinity of the Rockland County Preferred Alternative by referring to USGS 7.5-minute topographic mapping, NWI mapping, NYSDEC freshwater wetlands mapping, and aerial photography.

The Rockland County Preferred Alternative crosses NYSDEC wetlands for 21 feet and there are 0.81 acres of these wetlands within one hundred (100) feet of the nominal center line. The Certified Route crosses approximately 1,225 feet of NYSDEC wetlands with 4.29 acres of wetlands within one hundred feet of the nominal center line. NWI data indicates there will be an overall decrease in the number of wetlands crossed by the nominal center line, as shown on Table 1.7-2.

Table 1.7-2: Wetlands for Certified Route and Rockland County Preferred Alternative

Land Use Class	Certified Route	Preferred Alternative
Scrub-Shrub NWI Wetlands (Number Crossed by CL)	1	1
Forested NWI Wetlands (Number Crossed by CL)	1	0
Scrub-Shrub NWI Wetlands (Acres within 100')	0.04	1.12
Forested NWI Wetlands (Acres within 100')	0.43	0

Based on NYSDEC databases, the Rockland County Preferred Alternative will decrease the number of waterbodies crossed from four to three. Furthermore, all water crossings in this route modification will use HDD or other methods approved in the Certificate so there will be no anticipated impacts

The nature of impacts from the construction and operation of the route modifications are expected to be temporary and include both direct impacts, where the edge of the cleared construction corridor traverses a wetland or riparian area, and indirect impacts from vegetation clearing and ground disturbance in adjacent areas. During construction, limited short-term effects on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching and disturbance within the water body. Furthermore, the implementation of BMPs and the SWPPP will prevent water quality issues.

1.7.4 *Historic and Archaeological Resources*

The Project Documentation provides information on the historic and archaeological resources within the Project's vicinity. For the Rockland County Preferred Alternative, a Phase IA archeological resource assessment was conducted in accordance with guidelines established by the OPRHP and the Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations published by the New York Archaeological Council (2000).

A review of the New York Cultural Resource Information System lists eight (8) cultural resource management studies completed within 1 km of the Rockland County Preferred Alternative area. Eleven (11) National Register-listed properties, thirty (30) historic structures that are eligible or undetermined in regard to their National Register status, ten (10) Precontact Period archaeological areas/sites, and nine (9) Historic archaeological sites also occur within 1 km of the Preferred Alternative. Three (3) unnamed New York State Museum Areas (NYSM 4631, 4632, 7461), one (1) historic structure (Tunnel 1904; 08740.000228), and one (1) National Register-listed property (Stony Point Battlefield; 90NR02408) appear to overlap the Rockland County Preferred Alternative area.

The Rockland County Preferred Alternative route largely travels through extensively developed areas. However, its northern terminus near Hudson Quarry and its southern terminus in Hook Mountain State park are potentially sensitive for Precontact period archaeological resources. However, since HDDs are used to achieve the transition in and out of the Hudson River, the Phase 1A report recommends no further studies are necessary. This finding has not been confirmed with the OPRHP.

A Phase 1A cultural resource investigation was completed for this alternative which presented an assessment of the archeological sensitivity and potential for the prospective area of potential effects. Archeological sites were identified, both pre-contact and historic, but none of these sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants

will adhere to the protocols laid out in that document for the Rockland County Preferred Alternative.

1.7.5 Conclusions

The Certified Route and the proposed Rockland County Preferred Alternative have similar environmental impacts (see Table 1.7-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts shared by the Certified Route and the Preferred Alternative.

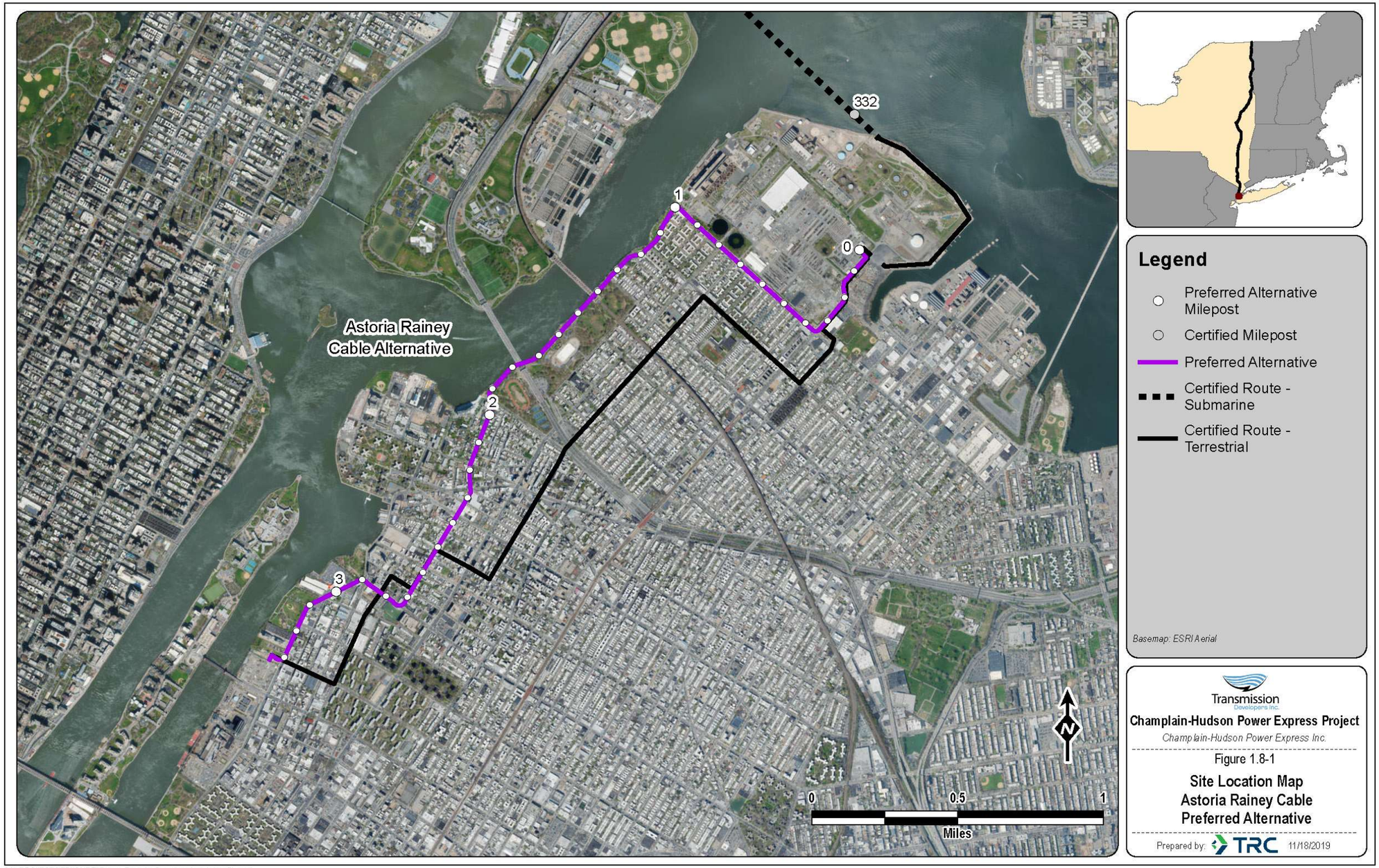
Table 1.7-3: Comparison of Certified Route and Rockland County Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	7.9	8.56
Submarine (Miles)	0.22	0.23
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0	0
Agricultural Districts (Feet Crossed by CL)	0	0
NYSDEC Wetland (Acres within 600')	4.29	0.81
NYSDEC Wetland (Feet Crossed by CL)	1,225	21
NYSDEC Streams Crossed	2	2
Natural Heritage Community Occurrences (# within 600')	0	0
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.8 ASTORIA RAINEY CABLE PREFERRED ALTERNATIVE

The Astoria-Rainey Cable ("ARC") Preferred Alternative would have the cables exit the Certified Route at 20th Avenue, where the cables would travel northwest for approximately 0.6 miles to Shore Boulevard. The route would follow Shore Boulevard south for approximately one mile before turning east on Astoria Park South for one block before turning south onto 14th Street. After approximately 0.56 miles, the Preferred Alternative would connect with the Certified Route at the intersection of 30th Drive. After overlapping the Certified Route for approximately 0.2 miles to the intersection with 31st Drive, the Preferred Alternative would continue approximately 0.8 miles to Broadway, where it would turn to the northwest. After approximately 0.16 miles, the Preferred Alternative would turn southwest to follow Vernon Boulevard. The Preferred Alternative would follow Vernon Boulevard for approximately 0.41 miles before connecting with the Certified Route at the intersection with 35th Avenue, just outside of the Rainey Substation. This reconfiguration would result in a 0.01 mile decrease of cables installed in road ROWs in comparison to the Certified Route. Figure 1.8-1 presents the Preferred Alternative and the Certified Route. This modification is proposed based on significant construction challenges associated with existing infrastructure which has been identified as part of a detailed engineering review.

Figure 1.8-1: Site Location Map for the Astoria Rainey Cable Preferred Alternative



1.8.1 Land Use

The underground transmission cable corridor of the ARC Preferred Alternative consists of the underground route through a parcel that has hosted utility-related land uses and through the streets of Queens before connecting to the Rainey Substation. As the alternative will be located within road ROWs, the immediate land use is predominantly "transportation".

Existing land use is classified based on resource data from the New York State GIS Clearinghouse (2004) inventories. The study area for land use includes six-hundred feet on either side of the cable route centerline. Land uses within the study area are predominantly Commercial / Industrial / Transportation and Residential as documented in Table 1.7-1 below. No clearing of tree or vegetation is anticipated to be required. Nearby residents may experience temporary disturbance and traffic inconvenience associated with construction activities. These effects will be temporary and, in general, most disturbances will last only a brief period of a few days or a week at any particular location. The construction for the entire length of the ARC Preferred Alternative is anticipated to require the same construction period as the corresponding section of the Certified Route.

Table 1.8-1: Land Use Classes with 600 feet of Certified Route and ARC Preferred Alternative

Land Use Class	Percentage of Total Land Use Certified Route	Percentage of Total Land Use Preferred Alternative
Residential	44.85%	26.81%
Commercial / Industrial / Transportation	51.12%	47.36%
Forested	0.00%	0.00%
Agriculture	0.00%	0.00%
Open Land /Pasture/ Hay / Scrub / Shrub	0.00%	0.00%
Open Water	1.10%	14.98%
Parks / Open Space / Recreation	2.93%	10.85%
TOTAL:	**100.00%**	**100.00%**

The New York City Open Accessible Space Information System or Oasis database [5] identified that Shore Boulevard is adjacent to parkland, specifically Ralph Demarco Park and Astoria Park. The Preferred Alternative would also be located along the following parks or open spaces: (1) St George Church; (2) Astoria Health Center Playground; (3) Socrates Sculpture Park; and (4) Rainey Park Playground. Oasis also identified the following public building along the route: (1) Queens Public Library, 14 Astoria Boulevard, Queens, New York City; (2) PS 171 Peter G. Van Alst, 14 29th Avenue, Queens, New York City; and (3) Long Island City High School, 12 Broadway, Queens, New York City. Because the cables will be buried underground, there will be no long term impact to these facilities. While the installation of the cables will temporarily disrupt business

[5] http://www.oasisnyc.net/map.aspx?zoomto=lot:4008500001

and land uses as well as traffic, the Applicants have committed to addressing these concerns in the EM&CP designed for this portion of the Project.

Additional mapping provided by the New York City [6] indicates that Preferred Alternative would be located in close proximity to the Isamu Noguchi Garden Museum, 9-01 33rd Road, Astoria, New York City. Engine 262 Fire House (30-89 21 Street) is also near but not along the route. This dataset does not locate any of the following public facilities directly along the route: (1) EMS station; (2) fire house; (3) police precinct house; (4) hospital; or (5) post office. Because the cables will be buried underground, there will be no long term impact to these facilities. While the installation of the cables will temporarily disrupt business and land uses as well as traffic, the Applicants have committed to addressing these concerns in the EM&CP designed for this portion of the Project.

Bus route mapping provided by the Metropolitan Transportation Authority[7] indicates that the Astoria-Rainey Cable route will initially run parallel with Bus Route 100 along 20 Avenue from 31st Street to 21st Street. The cable route will then cross three existing bus travel paths along 14th Street before running parallel to Bus Route 104 along Broadway. Bus route 103 parallels the Vernon Avenue portion of the Preferred Alternative. Because the cables will be buried underground, there will be no long term impact to bus routing and any construction impacts will be temporary in nature.

In terms of existing land use plans, the *2016 New York State Open Space Conservation Plan* is described in the Putnam Station Preferred Alternative section. It is not expected that the ARC Preferred Alternative will interfere with any of the initiatives proposed in this document as the routing will be buried. Conservation projects in the Queens / New York region include:

Project 17- Inner City / Underserved Community Parks: This project will provide open space and recreational opportunities in densely populated urban areas with limited or no open space resources.

- Con Edison 15th Street Ballfields – A much-valued recreational resource, now in private hands, in an under-served area of Manhattan near the East River.
- Greening Gray Neighborhoods – Several vacant lots that would provide much needed green space in the communities of Harlem, Hunt's Point in the South Bronx and Bushwick, Brooklyn.
- Jones Woods Playground Addition – Wooded six-acre hillside with scenic views in an under-served neighborhood.
- Travers Park Expansion – The site of the Queens Borough Toyota Car Dealership located at 77-12 Northern Boulevard in Jackson Heights, Queens, in a community that is greatly under-served for open space.

[6] http://maps.nyc.gov/doitt/nycitymap/?searchType=AddressSearch&addressNumber=23&street=29%20Street&borough=Queens
[7] http://web.mta.info/nyct/maps/busqns.pdf

- Nicholas Avenue – Nine and one-half acres, including some freshwater wetlands, located in the Port Richmond section of Staten Island.

The *New York City Comprehensive Waterfront Plan* proposed by the Department of City Planning provides a framework to guide land use along the city's entire 578-mile shoreline in a way that recognizes its value as a natural resource and celebrates its diversity. The plan presents a long range vision that balances the needs of environmentally sensitive areas and the working port with opportunities for waterside public access, open space, housing, and commercial activity. The *New York City Comprehensive Waterfront Plan* identifies the following planning goals with respect to redeveloping the waterfront:

- Promote economic development and enhance the city's tax base by providing opportunities for new uses, including housing for a range of income groups;
- Enliven the waterfront by promoting people-attracting uses, open space, and public access to the waterfront;
- Integrate new development with adjacent upland communities;
- Consider land use, availability of services and infrastructure capacity in determining scale of redevelopment; and
- Promote social and economic diversity on the waterfront.

In the discussion of potential projects in the Upper East River, the plan states that efforts should be made to "explore street and public access to [Luyster] creek from 19th avenue." More generally, the plan states that the City should continue to implement the Queens East River and North Shore Greenway Plan, explore additional locations to provide signage, and to improve connections between upland neighborhoods and existing publicly accessible waterfront sites with consideration for public safety and security. While this Route Modification will not, in and of itself, meet any of these objectives, the Applicants believe there is sufficient space available to locate the transmission cables so as to not interfere with any of these goals.

The *New York City Waterfront Revitalization Program* is the city's principal coastal zone management tool. As originally adopted in 1982, this Local Waterfront Revitalization Program ("LWRP") establishes the city's policies for development and use of the waterfront and provides the framework for evaluating the consistency of all discretionary actions in the coastal zone with those policies. The guiding principle of the document is to maximize the benefits derived from economic development, environmental preservation, and public use of the waterfront, while minimizing the conflicts among these objectives.

Portions of the ARC Preferred Alternative are located within the coastal zone of the state of New York and therefore is subject to New York State Coastal Management Program as well as any LWRP. A review of its consistency with coastal policies and LWRPs is provided in Attachment A. This analysis concluded that the Project would be consistent with the CMP program and the ten major policies of the City of New York's LWRP.

Mapping of the Agricultural Districts in New York County was obtained from the Cornell IRIS, which maintains the county-produced Agricultural District maps on file under contract with the New York State Department of Agriculture and Markets. Based on this information, the proposed route modification will not intersect any Agricultural District lands or be located within two-hundred feet of these designed areas.

Based on the above analysis, the ARC Preferred Alternative will not adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands. There will be no impact to existing or future land uses or agricultural lands. In addition, because the cables are to be buried, they should not change the character of the neighborhoods traversed by the Project and will not will adversely affect local or regional land uses, land use planning, or any federal, state, or local public lands.

1.8.2 Vegetation and Natural Communities

The upland vegetation cover types within this route modification can be categorized as terrestrial cultural communities. Open uplands are defined as communities with less than 25 percent canopy cover of trees. Terrestrial cultural communities have been either created and maintained by human activities, or modified by human influence to such a degree that the physical conformation of the substrate or the biological composition of the resident community is substantially different from the character of the substrate or community that existed prior to human influence (Edinger et al. 2002). Further discussion of subsets of these vegetation communities can be found in Section 1.2.4 of the Application and Section 4.1 of Exhibit 121.

The vegetative communities for the ARC Preferred Alternative are similar to those found surrounding the Certified Route. Vegetation clearing within the construction zone will be avoided or minimized by implementing BMPs and restoration activities, such as soil stabilization and temporary seeding of disturbed areas, will be undertaken following construction.

1.8.3 *Wetlands and Water Resources*

There are no NYSDEC wetlands within one hundred (100) feet of the nominal center line. NWI mapping shows both the Preferred Alternative and Certified Routes cross a single forested wetland but aerial photography shows a storage yard in this location.

The route will not cross any waterways.

1.8.4 Historic and Archaeological Resources

The Applicants have proposed to extend the transmission line along a terrestrial route extending from the Astoria Substation to the existing Rainey substation adjacent to the intersection of Vernon Boulevard and 36th Avenue in the Borough of Queens. The Rainey substation is located along the shoreline of the East River, opposite Roosevelt Island. The Applicants have reviewed publicly available data regarding the nature and character of historic properties along this section of the proposed extension of the terrestrial route. This approximately three mile-long section of the

transmission line route is located in an area categorized by the New York State Office of Parks, Recreation, and Historical Preservation as archaeologically sensitive.

A number of previously reported archaeological sites have been mapped in Astoria, including Precontact and Historic period sites. Many of these sites were reported to the New York State Museum during the 1920s through the 1940s but were not investigated to determine if archaeological deposits remained intact. More recent archaeological studies in the vicinity of the ARC Preferred Alternative indicate that approximately 10 to 12 feet of urban fill underlie portions of the western section of Astoria. These findings are consistent with the historic development of the area that transformed swamps and estuaries into urban land (Historical Perspectives, Inc. 1988). Given the amount of fill likely to be present along the proposed terrestrial section of the route, the likelihood of construction activities impacting archaeological resources is anticipated to be minimal. Nonetheless, the Applicants anticipate conducting a Phase IA assessment of the proposed Astoria to Rainey extension in 2020 to identify previously reported archaeological and/or historic resources along this section of the transmission cable's alignment. At this time, the Applicants anticipate that archaeological monitoring of construction activities will occur along this section of the route.

Based on the New York Cultural Resource Information System, the Preferred Alternative will pass by the following properties that are designed at eligible for listing on the National Register:

- Hell Gate Bridge (USN Number 08101.000043)
- Astoria Play Center (USN Number 08101.006250)
- Triborough Bridge (USN Number 08101.000051)
- P.S. 171 Peter G. Van Alst (USN Number 08101.011575)
- Department of Health City of New York (USN Number 08101.012627)

The transmission cable will be placed primarily beneath the pavement of existing roadways and is not expected to directly or indirectly impact any historic buildings or structures.

The Applicants will complete a Phase 1A assessment of this Preferred Alternative to identify archeological sites, both pre-contact and historic, although it is not anticipated that any such sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document for the ARC Preferred Alternative.

1.8.5 Conclusions

The Certified Route and the proposed ARC Preferred Alternative have similar environmental impacts (see Table 1.8-3). The route modification avoids and minimizes terrestrial resource potential environmental impacts. There is also no material increase in potential environmental impacts between the Certified Route and the Preferred Alternative.

Table 1.8-2: Comparison of Certified and ARC Preferred Alternative

Resource	Certified Route	Preferred Alternative
Terrestrial Length (Miles)	3.39	3.38
Submarine (Miles)	0	0
Conflicts with Land Use Plans	None	None
Agricultural Districts (Acres within 200')	0	0
Agricultural Districts (Feet Crossed by CL)	0	0
NYSDEC Wetland (Acres within 600')	0	0
NYSDEC Wetland (Feet Crossed by CL)	0	0
NYSDEC Streams Crossed	0	0
Natural Heritage Community Occurrences (# within 600')	0	0
Threatened /Endangered Species Conflicts	Unlikely	Unlikely
Culture Resource Conflicts	Unlikely	Unlikely

1.9 CONVERTER STATION PREFERRED ALTERNATIVE

The Preferred Alternative Site for the converter station is located approximately 0.2 miles north of the Certified Site on the same parcel of land. The proposed use would be consistent with nearby existing uses of the property. Nearby land use is primarily industrial in nature, with open water immediately to the east of the proposed site. Residential properties are located to the south-west of 20th Avenue, which is located over 2,800 feet from the proposed converter station location (while the Certified Site is located only 1,200 feet from these same residential properties). Figure 1.9-1 presents the Preferred Site and the Certified Site.

1.9.1 Construction and Operational Procedures

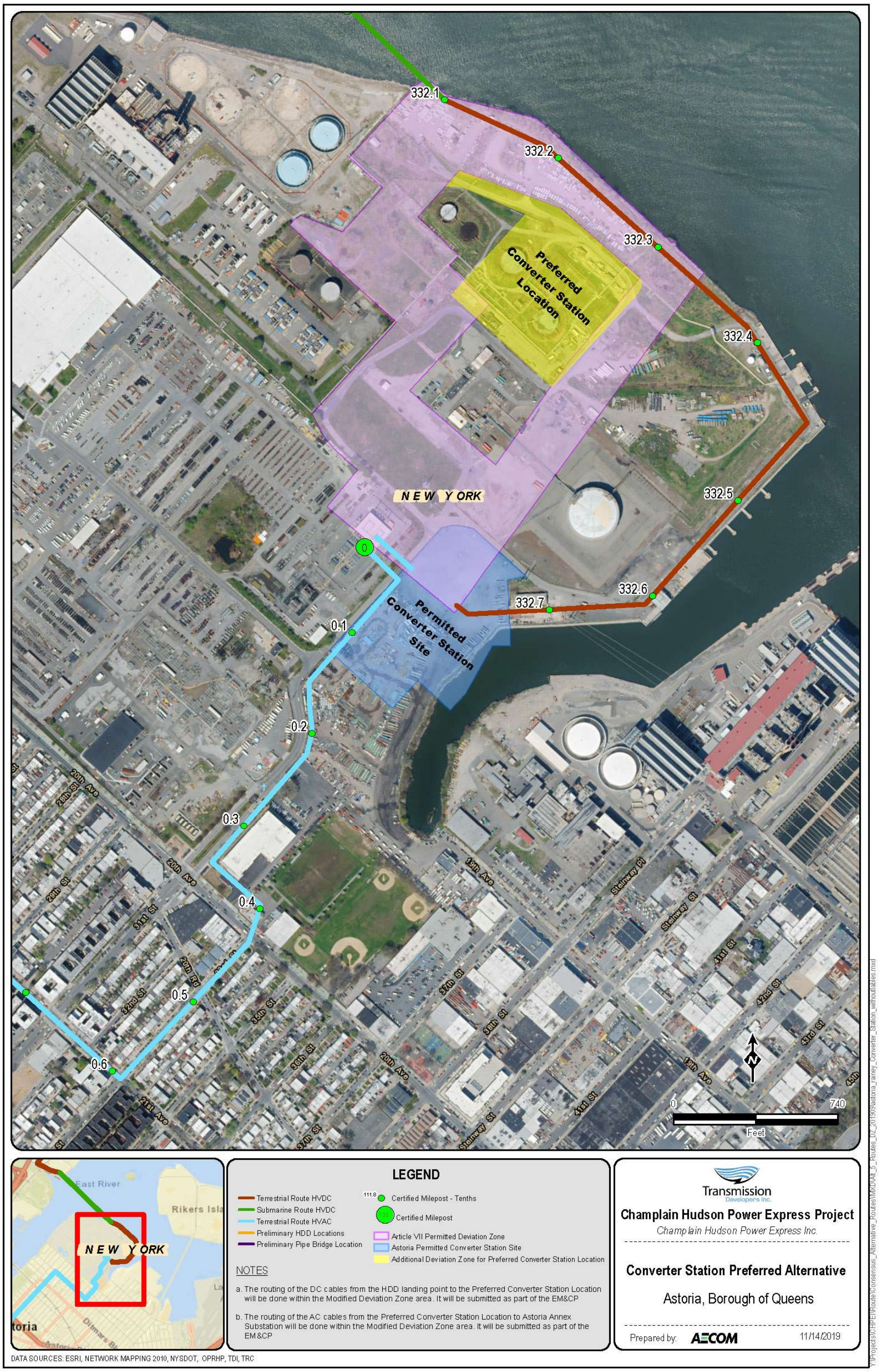
The construction and operation of the converter station would be the same at the Preferred Alternative and Certified Sites.

1.9.2 General Environmental Impacts

The close proximity of the Preferred Alternative and Certified Sites suggest that the potential environment impacts will be similar:

- Land Use (§4.2): The Preferred Alternative and Certified Sites are located on portions of the same parcel that has hosted utility-related land uses and is zoned M3-1 for heavy manufacturing-industrial uses. There would be no impact to using either location in terms of existing New York City plans, including the New York City Comprehensive Waterfront Plan and the New York City Waterfront Revitalization Plan.

Figure 1.9-1: Site Location Map for the Convert Station Preferred Alternative



- Geology, Topography, and Soils (§4.3): Due to the close proximity of the Preferred Alternative Site compared to the Certified Site, the soils regime is expected to be similar if not identical to that previously contemplated. Historically, this parcel has been used for utility related uses, including a manufactured gas plant and coal-burning power plants, and there is a risk of contaminated soils and/or groundwater at both sites.
- Vegetation and Natural Communities (§4.4): The two Sites are located on properties in urban areas with varying degrees of development and will have the similar ecological communities (Edinger 2002). The impacts on vegetation and natural communities associated with development of these two sites should be equivalent or nearly so.
- Wetlands and Water Resources (§4.5): There are no known wetlands either of the site, although field work has not been completed. Tidal wetlands are found along the portions of the Con Ed property that border the East River and Luyster Creek. These resource areas are avoided to the extent feasible through the use of HDD construction methods for all landfall locations. The impacts on wetlands and water resources associated with development of these two Sites should be equivalent or nearly so.
- Physical and Chemical Characteristics of Major Aquatic Systems (§4.6): Neither the Preferred Alternative or Certified Sites are expected to have any impact on the physical or chemical characteristics of nearby aquatic systems.
- Fisheries (§4.7): Neither the Preferred Alternative or Certified Sites are expected to have any impact on fisheries.
- Wildlife (§4.8): Both Sites are located on properties in urban areas with varying degrees of development. The impacts on wildlife associated with development of these two Sites should be equivalent or nearly so.
- Threatened and Endangered Species (§4.9): There are no known terrestrial threatened or endangered species in the vicinity.
- Historic and Archeological Resources (§4.10): Both Sites are located on a parcel in urban areas with varying degrees of historic uses. Ground-disturbing activities at these locations have the potential to adversely affect the integrity of archaeological resources at the site, should any exist. The property where the Preferred Alternative and Certified Sites are located has been identified by the State Historic Preservation Office as an archaeologically sensitive area that may contain potentially significant cultural deposits associated with the historic operation of the Astoria Gas Works. The Applicants will complete a Phase 1A assessment of this Preferred Alternative to identify archeological sites, both pre-contact and historic, although it is not anticipated that any such sites are likely to pose a significant obstacle to the completion of the Project. The Applicants developed a Cultural Resources Management Plan that was reviewed with no comments by the OPRHP that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction.

For the proposed converter station alternatives analysis, a comparison is made between the likely impacts of the Alternative Site compared to those associated with the Certified Site.

Visual and Aesthetic Resources (§4.11)

The visual setting of the Preferred Alternative and Certified Sites is dominated by existing utility infrastructure and the immediate environment surrounding the proposed location of the converter station is predominantly industrial and commercial in nature, so that a converter station at either location would not be out of character with existing local land use and will not redefine the nature of the view. Views toward the converter station site from nearby residential areas are dominated by the expanse of existing utility infrastructure. Most of the converter station's elements will be enclosed within buildings which are within a scale similar to existing facilities adjoining the site at Astoria.

A visual assessment for the Certified Site was completed in June of 2011 (Exhibit 110). Access to the Consolidated Edison Company of New York, Inc. ("Con Edison") property is restricted so locations for suitable photosimulations were limited to 20th Avenue and at the end of 19th Avenue looking across Luyster Creek. There are no sensitive receptors as listed in the NYSDEC Visual Resources Policy within 0.25 miles of the Certified Site. The assessment concluded that since the immediate environment is that of a heavy industrial nature, the converter station at the Certified Site would not be out of character with existing land use and will not redefine the nature of the view in context. No new types of visual elements will be introduced into the landscape beyond what already exists in the area. As the Preferred Alternative Site will be further from potential viewpoints than the Certified Site, it is anticipated that this site will be consistent with applicable standards.

The only significant visual impact of the converter station will be the temporary impact caused by the large equipment necessary for construction both on-land and in-water, which would be seen along the project route for a limited amount of time, as well as any stormwater and erosion controls, such as silt fences, hay bales, temporary mulching, etc. Once construction is completed, all equipment will be removed and the impacted areas will be re-seeded. Temporary erosion controls will be removed once revegetation is established.

Noise (§4.12)

The area in the vicinity of the Preferred Alternative Site includes a combination of industrial, commercial, and residential land uses. In addition to the noise associated with the operations of Con Edison and other utilities in and around the property, street noises can be heard along 20th Avenue. Aircraft from LaGuardia Airport follow a take-off flight path over the proposed Preferred Alternative Site.

A Noise Assessment for the Certified Site was completed in June of 2011 (Exhibit 107 of Joint Proposal). Computer modeling was used to estimate noise levels that would be experienced at nearby residential and industrial areas due to operation of the converter station at the Certified Site. Based on the Operation Noise Contour map provided in the Noise Assessment and the increased distance from residential areas, the modeling data demonstrates that the estimated Project noise at the Preferred Alternative Site would be in compliance with the New York City Zoning Resolution for industrial and residential property lines, the New York City Noise Code, and the NYSDEC

Noise Policy. A pure tone analysis was also completed, with the model indicating that pure tone noises associated with the Project's operation are not anticipated.

Public Health

The parcel which contains both the Preferred Alternative and Certified Sites has a long history of industrial use and construction of the converter station at either location will take into account the potential for existing contamination commonly found in these settings. The Applicants have examined environmental reports for the larger property which describe previous investigations that employed both invasive and non-invasive survey techniques. To the extent contamination is present on the site, the Applicants will implement construction measures, as evidenced by the record, to protect workers, the community and the environment.

Previous modeling demonstrated that electro-magnetic fields associated with the HVDC and HVAC cables for the Certified Site would be compliant with existing state standards (see Supplement, Attachment M). The Preferred Alternative Site is located in the same area and utilized the same equipment, so it is expected that its health effects will be consistent with those of the Certified Site.

Based on the above analysis, the expected environmental impacts related to public Health for the proposed Preferred Alternative Site are expected to be consistent with those of the Certified Site.

1.9.3 Conclusions

Both the Preferred Alternative and Certified Sites for the converter station are located on properties in urban areas with varying degrees of development. The noise and visual assessments completed for the Certified Site indicates that the installation and operation of the converter station at either site would be in compliance with applicable noise standards. The Applicants believe that each of these sites would be suitable locations for the converter station associated with the Project, with no material increase in potential environmental impacts between the Certified Site and the Preferred Site.

1.10 REFERENCES

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (editors). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's "Ecological Communities of New York State" (Draft for review). New York Natural Heritage Program, New York Department of Environmental Conservation. Albany, NY.

Green County. 2002. Agricultural Development and Farmland Protection Plan. Accessed online November 13, 2019 at: https://greenegovernment.com/wp-content/uploads/2013/10/AgriculturalandFarmlandProtectionPlan.pdf

_____. 2002. Open Space and Recreation Plan. Accessed on-line November 13, 2019 at: https://greenegovernment.com/wp-content/uploads/2013/10/Open-Space-Plan-2.pdf

_____. 2007. Comprehensive Economic Development Plan. Accessed on-line November 13, 2019 at: https://www.greenegovernment.com/departments/planning-and-economic-development/studies-plans-and-data

_____. 2008. Hudson River Corridor Study. Individual sections accessed on-line November 13, 2019 at: https://www.greenegovernment.com/departments/planning-and-economic-development/studies-plans-and-data

Laberge Group. 2007. Washington County, New York, Economic Development Strategic Plan. Accessed online November 13, 2019 at: https://washingtoncountyny.gov/DocumentCenter/View/11771/Final-WCED-PHASE-II--10-2-07

New York Archaeological Council. 2000. Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations. Accessed on-line November 13, 2019 at: https://nysarchaeology.org/wp-content/uploads/2013/12/nyachandbook.pdf

[NYSDEC] New York State Department of Environmental Conservation. 2016. New York State Open Space Conservation Plan. Accessed on-line November 13, 2019 at: http://www.dec.ny.gov/lands/98720.html

[OPRHP] Office of Parks, Recreation and Historic Preservation. 2005. New York State Historic Preservation Office (SHPO) Phase I Archaeological Report Requirements. OPRHP, Waterford, New York. Accessed on-line November 13, 2019 at: https://parks.ny.gov/shpo/environmental-review/documents/PhaseIReportStandards.pdf

ATTACHMENT 1

COASTAL CONSISTENCY ANALYSIS

Coastal Consistency Analysis

This section discusses the consistency of the proposed alternative routes and converter station locations with the New York State Coastal Management Plan policies. Local municipalities that border coastal areas and inland waterways may voluntarily prepare Local Waterfront Revitalization Programs ("LWRPs"), in conjunction with the New York State Department of State ("NYSDOS"), for the preservation, enhancement, protection, development, and use of the state's coastal and inland waterways and adjacent waterfront land. Projects which may impact coastal areas or inland waterways must be reviewed for consistency with those LWRPs that pertain to territory within the Project area.

This section includes a review of consistency with coastal policies and LWRPs for the two route alternatives potentially located in coastal or waterfront areas: Catskill Preferred Alternative and Astoria-Rainey Cable ("ARC") Preferred Alternative. It also reviews the consistency of the Converter Station Preferred Site.

1.0 New York Coastal Zone Management Policies

The federal Coastal Zone Management Act ("CZMA") requires that Federal agency activities within or outside the coastal zone that affect any land or water use or natural resource of the coastal zone shall be reviewed for consistency with the enforceable policies of approved State management programs. In New York State, the enforceable coastal policies are those in the New York State Coastal Management Program ("CMP") and the enforceable policies of any LWRP. The assessment of compliance with the New York City Waterfront Revitalization Program is discussed below in Section 2.

Two of the proposed Preferred Alternative routes are located within coastal waters (Catskill Preferred Alternative and ARC Preferred Alternative), as is the Converter Station Preferred Site. The following review shows that the construction and operation of the two Preferred Alternative routes and the converter station at the Preferred Site is consistent with the CMP program.

There are 44 policies under the CMP. The consistency of the Project with each of these policies is described below.

Policy 1 *- Restore, revitalize, and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational, and other compatible uses.*

> The Project, which consists of a 330 mile long buried electric transmission line and a converter station in New York City, is consistent with this policy by not deterring the revitalization of any urban deteriorated or underutilized waterfront areas.

Policy 2 *- Facilitate the siting of water dependent uses and facilities on or adjacent to coastal waters.*

The Project is consistent with the policy by neither displacing existing water-dependent or water-enhanced uses or activities nor preventing reasonably foreseeable future water-dependent and water-enhanced uses from being sited on, in or adjacent to the water because the transmission lines will be buried on land and in the bed of the Hudson, Harlem and East rivers.

Policy 3 *- Further develop the state's major ports of Albany, Buffalo, New York, Ogdensburg, and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, Including those under the Jurisdiction of state public authorities, of land use and development which is essential to, or in support of, the waterborne transportation of cargo and people.*

This policy is not applicable because the Preferred Alternative routes don't intersect any of the major ports.

Policy 4 *- Strengthen the economic base of smaller areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.*

The Preferred Alternative routes are overland with buried cables and will not interfere with this policy objective to enhance traditional maritime uses and the economic base of localities with small harbors. The Preferred Site for the converter station and the interconnection are located in industrial areas and will also not conflict with this policy.

Policy 5 *- Encourage the location of development in areas where public services and facilities essential to such development are adequate.*

The Project is consistent with this policy because it will provide renewable electricity to existing New York City infrastructure, development and public services.

Policy 6 *- Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.*

This policy is not applicable because the Project is already subject to the PSL Article VII review process.

Policy 7 *- Significant Coastal Fish and Wildlife Habitats will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.*

This Project will not significantly impair or destroy the viability of any Significant Coastal Fish and Wildlife Habitat ("SCFWH") because all Preferred Alternative routes are overland and HDD will be used to cross under coastal waterbodies, including Catskill Creek. Construction and operation of the converter station and interconnection work in the

preferred converter station location will be located in previously disturbed areas which are not in proximity to SCFWH.

Policy 8 *- Protect fish and wildlife resources in the coastal area from bio-accumulation of hazardous wastes and other pollutants which bi-accumulate in the food chain or which cause significant sublethal or lethal effect on those resources.*

The Project is consistent with the policy objective of protecting coastal fish and wildlife from bio-accumulation of hazardous wastes and other pollutants during the construction of the Project by the handling and storage of these materials in accordance with local, state, and federal regulations to effectively minimize the potential for any discharge to coastal waters. Best Management Practices ("BMPs") and a Stormwater Pollution Prevention Plan ("SWPPP") consistent with the requirements of the NY DEC General Permit for Stormwater Discharges Associated with Construction Activities (GP #-0-15-002) ("Stormwater Construction Permit") will be included within the Environmental Management and Construction Plan ("EM&CP").

Policy 9 *- Expand coastal use of fish and wildlife resources in coastal areas by increasing access to existing stocks, and developing new resources.*

This Project will be consistent with this policy by not affecting existing public access points to coastal waters because the Preferred Alternative routes primarily follow existing railroad and road rights of way.

Policy 10 *- Further develop commercial finfish, shellfish and crustacean resources in the coastal area by encouraging the construction of new, or improvement of existing on-shore commercial fishing facilities, increasing marketing of the state's seafood products, maintaining adequate stocks, and expanding aquaculture facilities.*

This policy is not applicable because the location of the Project will not have any direct effect on the state's commercial fishing industry.

Policy 11 *- Building and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.*

The Preferred Alternative routes are consistent with this policy because the underground cables will be backfilled to restore pre-existing elevations resulting in no potential change to the existing potential for flooding and erosion. Portions of the Preferred Site for the converter station are within a mapped floodplain and its location and construction is also consistent with this policy by meeting floodplain construction and elevation design standards.

Policy 12 *- Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural features including beaches, dunes, barrier islands and bluffs.*

This policy is not applicable because there are no beaches, dunes, barrier islands or bluffs along the Preferred Alternative routes. In addition, the cable installations at shoreline crossing locations and beneath the Catskill Creek will use HDD with no disturbance to the surface area. Lastly, the Preferred Site for the converter site in Queens is not within a mapped coastal erosion hazard area or natural protective feature as designated and mapped pursuant to the Coastal Erosion Hazard Areas Act [ECL Article 34]

Policy 13 *- The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.*

The Project is consistent with this policy because the surface of the right-of-way areas disturbed by construction activities will be graded to match the original topographic contours and be compatible with surrounding drainage patterns, except at those locations where permanent changes in drainage will be required to prevent erosion that could lead to possible exposure of the cable. Upon the completion of the construction activities, all disturbed areas will be stabilized in accordance with the most current version of the New York State Standards and Specifications for Erosion and Sediment.

Policy 14 *- Activities and development, including the construction or reconstruction of erosion protection structures, shall be under taken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.*

This Project is consistent with this policy because no erosion protection structures are planned [e.g., groin, jetty, seawall, revetment, bulkhead, breakwater, or artificial beach nourishment project].

Policy 15 *- Mining, excavation, or dredging in coastal waters shall not interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.*

This policy is not applicable to the Project because no mining, excavation, or dredging in coastal waters with the installation of the Preferred Alternative overland routes or Preferred Site for the converter station.

Policy 16 *- Public funds shall only be used for erosion structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the*

long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.

This policy is not applicable to the Project because no public funds will be used to construct erosion structures.

Policy 17 *- Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.*

The Project meets the objectives of this policy because of the implementation of construction and post-construction SWPPP erosion and sediment control measures, the use of HDD for shoreline crossings, and the construction of the converter station above the base flood elevation.

Policy 18 *- To safeguard the vital economic, social, and environmental interests, and the safeguards which the state has established to protect valuable coastal resource areas.*

The Project is consistent with this policy because it will not impair valuable coastal waters and resources or reverse vital economic, social, and environmental interest safeguards, including those established to protect valuable coastal resource areas because the converter station will be constructed on a previously disturbed area and the transmission cable will provide a new, important source of electricity to New York City that will benefit development and reduce CO2 emissions, thus helping to combat climate change..

Policy 19 *- Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.*

The Project is consistent with this policy because all of the overland construction work will be temporary and will be located within existing rights of way or on private property without creating any new physical or legal barriers to coastal waters. During construction, to protect the safety of the public, access may be restricted in the vicinity of construction activities. This work will only occur on a small area adjacent to the waterbody and will be temporary in any one location, so impacts will be minor during the construction period.

Construction and operation of the converter station at the Preferred Site and revised interconnection between the Astoria and Rainey substations are located on private utility sites or public roadways that are already disturbed. The City of New York's Vision 2020 document calls for efforts to be made to increase public access to Luyster Creek from 19th Avenue. Project layout and security features will be designed to not conflict with any New York City plans for limited public access to this waterway at the site.

Policy 20 *- Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publically-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.*

This policy is not applicable to the project because there is no use of public lands that will permanently impede access to coastal waters.

Policy 21 − *Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water related uses along the coast.*

The Project is consistent with this policy because the Preferred Alternative routes are not going to permanently impact boating, swimming, and fishing and the general public's access to the coastal areas such as pedestrian and bicycle trails, picnic areas, scenic overlooks and passive recreation areas that take advantage of coastal scenery.

Policy 22 - *Development, when located adjacent to the shore, will provide for water-related recreation, whenever such is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.*

This policy is not applicable because this type of Project doesn't present practical opportunities for providing recreation facilities as an additional use of the transmission cable or the converter building.

Policy 23 - *Protect, enhance and restore structures, districts, areas and sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.*

The Project meets this policy objective because the routing is unlikely to have a significant effect on standing historic structures, districts, areas, or sites of significance within the Project's vicinity. The Project's HVDC cables will be buried primarily within pre-disturbed ROWs and will not have an effect on the viewshed. The converter station will match the character of the surrounding area, and is not expected to have an adverse impact on any historic properties in the vicinity. The revised interconnection between the Astoria and Rainey substations will not involve overhead lines. The Applicants developed a Cultural Resources Management Plan that was reviewed by the New York State Parks, Recreation, and Historic Preservation that details resource evaluation, avoidance and impact minimization measures that will be undertaken, including procedures if resource discoveries are made during Project construction. The Applicants will adhere to the protocols laid out in that document. It is anticipated that with appropriate avoidance and/or minimization measures, impacts on cultural resources will be insignificant.

Policy 24 - *Prevent impairment of scenic resources of statewide significance.*

The Project meets this policy by not diminishing or altering the attributes of the Catskill-Olana, Statewide Areas of Scenic Significance ("SASS") which is adjacent to the Catskill Preferred Alternative route. Specifically, the southern portion of the Catskill Preferred Alternative crosses a section of SASS Sub-unit CO-3 of the Catskill-Olana SASS which runs next to the "West Shore Railroad". The potential clearing of vegetation during the

burying of the cable will have only have a brief visual impact, if any, and will therefore have no significant impact on views from the shorelines to this SASS.

Policy 25 *- Protect, restore or enhance natural and man-made resources, which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area.*

The Project meets this policy by not affecting the overall scenic quality of the Preferred Alternative route areas because the buried cable will not have any permanent effect on any of the viewsheds. The cables will transition under Catskill Creek and they will not be visible when completed.

Policy 26 *- Conserve and protect agricultural lands in the state's coastal area.*

The Project is consistent with this policy because the agricultural lands in reasonable proximity to the overland Preferred Alternatives are not prime farmland, unique farmland or farmland of statewide significance and there will be no loss of important farmlands as the routing is primarily along existing disturbed rights-of-way. In addition, an Agricultural Inspector will be employed to oversee construction in the vicinity of agricultural resources.

Policy 27 *- Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the Project's need for a shorefront location.*

This Project is consistent with this policy because the previous Articles VII approval established the compatibility of this Project with the environment and the basis of necessity for providing additional transmission or generation capacity. The ongoing Article VII environmental review process for the Preferred Alternative routes and the converter station will demonstrate the Preferred Alternative locations are consistent with the goals and objectives of the CMP and the New York City LWRP.

Policy 28 *- Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.*

This policy is not applicable because no ice management practices are required for the construction and operation of this Project.

Policy 29 *- Encourage the development of energy resources on the Outer Continental Shelf, in Lake Erie and in other water bodies, and ensure the environmental safety of such activities.*

This policy is not applicable because the Project will not affect any offshore resource development.

Policy 30 *- Municipal, industrial, and commercial discharge of pollutants, including but not limited to toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.*

The Project is consistent with this policy because there are no planned point source discharges and the BMPs, Spill Prevention, Control and Countermeasure ("SPCC") plan and the SWPPP will be included in the EM&CP to prevent any discharges to coastal waters. Compliance with these measures throughout the construction of the transmission line and the converter station will protect the coastal waters.

Policy 31 *- State coastal area policies and management objectives of approved local waterfront revitalization programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already overburdened with contaminants will be recognized as being a development constraint.*

The Project is consistent with this policy because it will not affect the best usage of coastal waters because there are no planned point source discharges to coastal waters and the use of BMPs, a SPCC plan and the SWPPP will prevent nonpoint discharges to the coastal waters.

Policy 32 *- Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of existing tax base of these communities.*

This policy is not applicable because the Project doesn't include any planned sanitary waste discharges.

Policy 33 *- Best management practices will be used to ensure the control of stormwater drain runoff and combined sewer overflows draining into coastal waters.*

The Project will meet this policy by constructing and operating the transmission system and the converter station in accordance with BMPs, a SPCC plan and the SWPPP included in the EM&CP. The City of New York has a combined sewer overflow system and the converter station will be operated in accordance with their SPDES permit long term control plan requirements.

Policy 34 *- Discharge of waste materials into coastal waters from vessels subject to state jurisdiction will be limited so as to protect Significant Fish and Wildlife Habitats, recreational areas and water supply areas.*

The Project will meet this policy objective by prohibiting any sanitary waste discharges to coastal waters from any vessels used during construction.

Policy 35 *- Dredging and filling in coastal waters and disposal of dredged materials will be undertaken in a manner that meets existing state permit requirements, and protects Significant*

Fish and Wildlife Habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

The Project is consistent with this policy by the installation of the underwater portions of the transmission cable in compliance with existing state permit requirements to protect SCFWHs, scenic resources, natural protective features, important agricultural land, and wetlands. The Applicants will further comply with all applicable dredged material spoil temporary storage and removal requirements.

Policy 36 *- Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.*

The Project will be consistent with this policy by minimizing the storage and transportation of any necessary petroleum products and construction materials and by transporting and storing them in accordance with local, state, and federal regulations to prevent any discharges to coastal waters that may affect the aquatic resources in the area. The EM&CP will include BMPs, a SPCC plan and the SWPPP.

Policy 37 *- Best Management practices will be utilized to minimize the non-point discharge of excess nutrients, organics, and eroded soils into coastal waters.*

The SWPPP included in the EM&CP will meet the objectives of the NYSDEC General Permit for Stormwater Discharges Associated with Construction Activities (GP #-0-15-002) to prevent offsite discharges from the construction areas and will include post-construction stabilization requirements.

Policy 38 *- The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.*

This Project is consistent with this policy because it is not located over the Long Island "primary source aquifer" and the New York City municipal water supplies are located upstate away from the Preferred Alternatives. This Project will also be subject to BMPs, a SPCC plan and a SWPPP in the EM&CP.

Policy 39 *- The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, Significant Fish and Wildlife Habitats, recreation areas, important agricultural land, and scenic resources.*

The Project will be consistent with this policy because any solid waste generated during the construction will be properly handled, stored and transported to a permitted or registered solid waste management facility in accordance with NYSDEC applicable

regulations including but not limited to 6 NYCRR Parts 360 and 364. The waste management practices will be included in the EM&CP.

Policy 40 *- Effluent discharges from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.*

This policy is not applicable because this Project is neither a major steam electric generating facility nor an industrial facility discharging to coastal waters.

Policy 41 *- Land use or development in the coastal area will not cause national or state air quality standards to be violated.*

This policy is not applicable because there will be no stationary source emissions associated with this Project. The EM&CP will contain a fugitive dust control plan to prevent any violations of applicable NYSDEC opacity and nuisance standards in 6 NYCRR Part 211. Previous modeling efforts included in the original Certificate have predicted that the implementation of the Project could reduce SOx, NOx, and CO2 greenhouse gases by 499-571 tons, 744-1,432 tons and 1.5-2.2 million tons, respectively, through the replacement of existing fossil-fuel generation sources with clean hydropower.

Policy 42 *- Coastal management policies will be considered if the state reclassifies land areas pursuant to the prevention of significant deterioration regulations of the Federal Clean Air Act.*

This policy is not applicable because there will be no stationary source emissions associated with this Project.

Policy 43 *- Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.*

This policy is not applicable because there will be no stationary source emissions associated with this Project.

Policy 44 *- Preserve and protect tidal and freshwater wetland and preserve the benefits derived from these areas.*

The Project is consistent with this policy because the Preferred Alternative routes were designed to avoid and minimize impacts to freshwater and tidal wetlands to the maximum extent feasible.

The Project will result in the temporary disturbance of wetlands that can be restored after the overland cable is buried. This may include areas where the edge of the cleared construction corridor traverses a wetland or riparian area or where vegetation clearing and ground disturbance occurs in adjacent uplands. In limited areas, permanent conversion of forested wetland to scrub-shrub wetland will occur. The success of wetland re-vegetation

shall be monitored and recorded annually for the first two (2) years after construction, or longer, until wetland re-vegetation is successful.

The relocation of the converter station to the Preferred Site and the Preferred Alternative interconnection between the Astoria and Rainey substations will not result in any impacts to wetlands.

2.0 Waterfront Revitalization of Coastal Areas and Inland Waterways

The NYSDOS implements Article 42 of the Executive Law entitled: Waterfront Revitalization of Coastal Areas and Inland Waterways. Local municipalities that border coastal areas and inland waterways are encouraged to prepare LWRPs, in conjunction with NYSDOS, for the preservation, enhancement, protection, development and use of the state's coastal and inland waterway. Under the statute, LWRPs are reviewed and approved by the NYSDOS before they become effective. Projects which may impact coastal areas or inland waterways must be reviewed for consistency with all of the LWRPs that have been prepared. The NYSDOS has developed 44 policies to be implemented by LWRPs. In addition, several LWRPs have amended the policies and added new policies to protect natural resources unique to their specific areas. Project sponsors must review these policies to ensure that their project is consistent with the policies in the LWRP and will balance the need between natural resources, population growth, and economic development.

The Village of Catskill received funding to develop a LWRP with an expected completion date of May 31, 2023[8].

2.1 Consistency with New York City Local Waterfront Revitalization Plan

New York City has established an LWRP in accordance with the CZMA and Article 42 of the New York State Executive Law. The New York City's LWRP is made up of 10 major policies focusing on the goals of improving public access to the waterfront; reducing damage from flooding and other water-related disasters; protecting water quality, sensitive habitats like wetlands, and the aquatic ecosystem; reusing abandoned waterfront structures; and promoting development with appropriate land uses. Based on the analysis provided below, the Project will be consistent with these policies.

Policy 1 *- Support and facilitate commercial and residential redevelopment in areas well-suited to such development.*

The Preferred Site for the converter station, and Preferred Alternative interconnection between the Astoria and Rainey substations are consistent with existing zoning and will not permanently affect commercial or residential development in the area.

[8] Regional Economic Development Councils, 2019. Local Waterfront Revitalization Program. Accessed on-line on October 16, 2019 at: https://regionalcouncils.ny.gov/cfa/project/262562.

Policy 2 *- Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.*

The underground Project will not conflict with the LWRP's goal of fostering the continuation of water-dependent uses. Installation of buried cable in the Hudson River will require the use of a port and marine construction equipment, personnel and vessels.

Policy 3 *- Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers.*

The Project will not conflict with the LWRP's goal of promoting use of New York City's waterways for commercial and recreational boating and water-dependent transportation centers, as the cables will be buried.

Policy 4 *- Protect and restore the quality and function of ecological systems within the New York City coastal area.*

The underwater and underground transmission cables will not affect the quality and function of ecological systems within the New York City coastal area. The installation method allows for *in situ* backfilling of the trench following a brief period of disturbance. The benthic community, associated fish, and water quality will all recover following construction.

Policy 5 *- Protect and improve water quality in the New York City coastal area.*

The cables and converter station will be installed in a manner that protects water quality. The Applicants will develop and implement a SWPPP for control of construction stormwater and will implement appropriate spill control, prevention, and mitigation in order to ensure protection of water quality in the New York City area.

Policy 6 *- Minimize loss of life, structures, and natural resources caused by flooding and erosion.*

The underwater cable installation will not alter the riverbed elevation and will have no effect on flooding characteristics of the river.

Policy 7 *- Minimize environmental degradation from solid waste and hazardous substances.*

Surface and groundwater resources will be protected by implementing BMPs, SPCC plan and SWPPP that will be included in the EM&CP. Any solid waste or hazardous substance associated with construction or operation of the Project will be used, stored, and disposed of in accordance with local, state, and federal requirements.

Policy 8 *- Provide public access to and along New York City's coastal waters.*

The connection to the converter station will be underwater or underground and will not conflict with the LWRP's goal of providing public access to and along New York City's

coastal waters. The East River shoreline crossing will involve cable installation via HDD methods, which do not alter public access.

Policy 9 *- Protect scenic resources that contribute to the visual quality of the New York City coastal area.*

The transmission cables in New York City will be buried underground or underwater and therefore will not be visible. The converter station will be designed to match the character of the surrounding area, which includes utility systems, and is not expected to have an adverse impact on any scenic resources. The revised interconnection between the Astoria and Rainey substations will be buried. Therefore, there is not any expected effect on the visual quality of the New York City coastal area.

Policy 10 *- Protect, preserve, and enhance resources significant to the historical, archaeological, and cultural legacy of the New York City coastal area.*

The Applicants will avoid and/or minimize any impacts to any underwater historical, archeological, and cultural resources along the underwater portions of the transmission cable route.