NORTH AMERICA TRANSMISSION
SCOPING STATEMENT AND SCHEDULE

FOR EDIC TO FRASER COMPONENT

The December 16 Order requires a scoping statement and schedule describing how and when the following Part B Article VII application requirements will be met:

- 86.4 – Exhibit 3: Alternatives
- 86.5 – Exhibit 4: Environmental Impact
- 86.7 – Exhibit 6: Economic Effects of Proposed Facility
- 86.8(1), (3), (5), (6) – Exhibit 7: Local Ordinances
- 86.9 – Exhibit 8: Other Pending Filings
- 86.10 – Exhibit 9: Cost of Proposed Facility
- 88.1(e) and (f) – Exhibit E-1: Description of the Proposed Transmission Line
- 88.2 – Exhibit E-2: Other Facilities
- 88.3 – Exhibit E-3: Underground Construction
- 88.5 – Exhibit E-5: Effect on Communications
- 88.6 – Exhibit E-6: Effect of Transportation

Scoping statements for these items are provided in the following subsections, including a description of the studies performed to date, the anticipated future studies, and the analyses to be performed to comply with Article VII application requirements.

Figure 1-1 presents a schedule of studies and permitting activities based on the preliminary design and permits anticipated. This schedule includes an estimate of the time needed to prepare and submit applications for any regulatory approvals necessary to begin construction.

1. ALTERNATIVES (§86.4 – EXHIBIT 3)

This subsection describes the scope of the alternatives analysis to be included in the Part B application while fulfilling the need for 1,000 MW of transmission congestion relief. 16 NYCRR § 86.4(a) requires that the application explain what consideration, if any, was given to the following:

1) any alternative routes,
2) expansion of any existing ROW, and
3) any alternative method that would fulfill the energy requirements with comparable costs, including comparative advantages and disadvantages of such alternative considered.

16 NYCRR § 86.4(b), as revised by the December 16 Order, also requires the applicant to indicate on recent edition topographic maps any alternative proposed for evaluation. Maps indicating the locations of proposed alternatives are provided in Exhibit 2.

1.1 SITING CRITERIA AND PRELIMINARY PROPOSED ROUTE

North America's goal in route selection is to fulfill the need for 1,000 MW of transmission congestion relief, to minimize impacts on the human environment, and to minimize costs of construction and operation. North America typically selects a transmission line route based on a thorough review of routing options and public and agency input. In accordance with the December 16 Order, North America selected a preliminary proposed route for the Project.

North America's criteria for selecting the preliminary route include many factors, such as the following:

- New York Energy Highway Blueprint guidance expressing a preference for alignment parallel to existing rights-of-way to reduce potential impacts to the human and natural environment; Commission preference expressed in the December 16, 2014 Order to minimize the acquisition of additional lands for rights-of-way
- Technical feasibility of a given alternative
- Public input regarding proposed route options
- Proximity to residences, airports, and commercial and industrial areas
- Avoidance of State lands and other protected areas
- Compatibility with Local land use requirements
- Avoidance of agricultural lands
- Avoidance of protected biological resources
- Avoidance of wetlands and water resources
- Avoidance of cultural and historical resources
- Consideration of visual effects
- Effects on existing infrastructure
- Cost effectiveness
- Reducing number of high-angle support structures
- Existing transmission line crossings

In the Blueprint, the New York Energy Highway Task Force ("Task Force") indicated a preference for projects developed along existing rights-of-way:

> "*DPS, in its invitation to developers and transmission owners, should emphasize a preference for projects developed along existing rights-of-way* or that include upgrades to existing lines. By doing so, it is expected that this initiative will minimize environmental impacts and potential community opposition that could result from construction in new transmission rights-of-way." [1] [emphasis added]

In its November 30, 2012 Order instituting the AC Upgrade Proceeding, the Commission required project sponsors to include in their statement of intent to develop transmission projects "the extent to which the project would utilize existing rights-of-way and/or previously disturbed land."[2]

In its December 16, 2014 Order, the Commission further expounded on its preferences with respect to using existing rights-of-way and acquiring new rights-of-way:

> "Regarding right-of-ways, the Commission clarifies that its objective is to encourage innovation and the use of existing rights-of-way so that the State experiences smart growth of the electric grid with the least impact to the environment and our communities. Therefore, the Commission desires, to the degree possible consistent with other policy objectives, to minimize the acquisition of additional lands for right-of-ways and the construction of major electric transmission facilities that are out of scale or character with existing facilities already in the landscape. While it is unfortunately impractical and would be unduly restrictive to impose an outright ban on all new right-of-way acquisition, the degree of necessity for such acquisition will be a key distinguishing factor affecting the viability of project proposals. The Commission recognizes that some additional private lands may be needed, but encourages developers to limit such requirements to the degree possible."[3]

This emphasis on use or expansion of existing right-of-way reinforces the Commission requirement that Article VII applications include a statement explaining what consideration was given to "the expansion of any existing right-of-way of the applicant or of another."[4]

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[1] New York Energy Highway Task Force, *New York Energy Highway Blueprint*, pp. 41-42, October 22, 2012, http://www.nyenergyhighway.com/PDFs/BluePrint/EHBPPT/ (accessed August 20, 2013).

[2] See, PSC Case No. 12-T-0502, *Proceeding on Motion to Examine Alternating Current Transmission Upgrades*, Order Instituting Proceeding, November 30, 2012 ("Order Instituting Proceeding") at 4.

[3] Public Service Commission Case No. 12-T-0502 and related cases, Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades, *Order Establishing Modified Procedures for Comparative Evaluation,* September 19, 2013, at p. 39.

[4] 16 NYCRR §86.4(a)(2).

A further, implicit, recognition that occupation or expansion of existing right-of-way typically creates fewer or less significant impacts or issues can be found in the Commission's regulations regarding intervenor funding. There the fee is reduced for certain facilities that use an existing right-of-way for more than 90% of their length.[5]

North America reviewed publicly available geographic information system (GIS) data and recent aerial imagery combined with engineering analysis and other data to develop a preliminary route for the Edic-Fraser transmission line. The preferred route is shown in Figure 1-2, below. While it was not feasible to route a line between Edic and Fraser that would not necessitate new right-of-way acquisition, North America worked diligently to minimize the amount of new right-of-way acquisition to the maximum extent possible. Consistent with the preference established in the Blueprint and reflected in the Commission's April 22, 2013 and December 16, 2014 Orders, North America's proposed Edic to Fraser route is adjacent to existing transmission lines for over 90% of the alignment. Based on initial public outreach, the preliminary proposed route for Edic to Fraser reflects public input to the extent feasible.

The final selection of preferred routes for the Edic-Fraser transmission line will continue to reflect public and agency input through the Article VII process and the methodology for considering environmental factors, as described below with respect to analysis of alternatives.

1.2 ALTERNATIVES TO BE EVALUATED (§86.4(a)(1))

The preliminary transmission line route selection process identified potential constraints, or specific areas that should be avoided for technical or environmental reasons. For example, North America's initial routing identified a higher density of residential, commercial, and industrial development beginning in the area of the Mohawk River in Oneida and Herkimer counties between Utica and Frankfort. North America explored multiple alternative alignments from the Edic Substation to a point where the proposed Edic to Fraser line would begin to parallel the existing ROW approximately three (3) miles south of the Mohawk River, shown on Figure 1-2. The proposed route was selected based on the routing criteria described in Section 1.1 above. The Part B application will include an expanded alternatives analysis evaluating a number of alternative segments for the route between Edic and Fraser Substations. This expanded alternatives analysis will take into account public and agency input and additional evaluation of environmental resources.

NAT presents the following alternative project components in the vicinity of Edic-Fraser that could enhance transfer capability without requiring any additional lands for rights-of-way:

[5] 16 NYCRR §85-2.4(a)(4).

- the addition of series compensation on the existing Fraser-Gilboa 345 kV circuit at Fraser Substation in the Town of Delhi;
- looping the existing Marcy-Coopers Corner 345 kV circuit to the existing Fraser Substation;
- the addition of series compensation on the existing Marcy-New Scotland 345 kV circuit near Marcy Substation in the Town of Marcy; and
- the addition of series compensation on the existing Edic-New Scotland 345 kV circuit near Edic Substation in the Town of Marcy.

If approved by the Commission, NAT could construct all or any combination of the enhancements described above. Additionally, the enhancements could be constructed whether or not Edic-Fraser is ultimately approved.

1.3. METHODOLOGY FOR EVALUATING ALTERNATIVE ROUTES

The methodology for implementing the analysis of alternatives, including comparative advantages and disadvantages, reflects a systematic evaluation of natural resources, engineering considerations, ROW acquisition, and construction management. The timeline for the analysis is included in Figure 1-1.

For each alternative route, a summary of the factors considered will be presented in tabular form in the Part B submittal, as shown in Table 1-1. Using a custom web-based tool, siting criteria available from GIS databases can be analyzed quickly and accurately. The analysis will consider qualitative factors as well, such as forested wetlands compared to emergent wetlands. The advantages and disadvantages of each alternative route will be described, and the preferred route will be identified.

TABLE 1-1. EXAMPLE SUMMARY OF FACTORS EVALUATED FOR ALTERNATIVES IN THE PART B SUBMITTAL

Criteria	Example of Quantified Comparison Units	Route Segments	
		Preferred	Alternative
Length	Miles		
Land Use			
Residences	Number Within 50'		
	Number Within 250'		
Schools, Churches, Cemeteries	Number Within 500'		
Conservation Easements	Length crossed, miles		
Wildlife and Vegetation			
Habitat for Protected Species	Acres Within 0.5 miles		
	Length crossed, miles		
Hydrology			
Streams	Count		
Waterbodies	Count		
Wetlands			
By type	Acres impacted		
Topography and Soils			
Steep Slopes	Length crossed, miles		
Prime Farmland	Acres		
Cultural Resources			
NRHP Sites	Number Within 0.25 miles		
	Number Within 1 mile		
Archaeological Resources	Number Within 1 mile		
	Number Within 5 miles		
Hazardous Waste Sites			
CERCLIS sites	Number Within 50'		

1.4 EXPANSION OF EXISTING ROW (§86.4(a)(2))

In determining the preliminary proposed route, North America considered the potential for expansion of existing rights-of-way belonging to other applicants.[6] Consistent with the preference of the New York Energy Task Force for new projects to be sited along existing rights-of-way, North America's proposed route for the Edic-Fraser transmission line parallels existing transmission lines to the maximum extent practicable, which will minimize effects on multiple environmental resources and is therefore an important consideration in selecting the final route for the Edic-Fraser transmission line.

[6] Since North America is a new entrant in the New York transmission market, North America has no existing rights-of-way that could be expanded to accommodate the proposed Project.

As mentioned above, one of the evaluation criteria in the alternatives analysis to be submitted in the Part B application will be the alignment of alternatives parallel to existing rights-of-way; thus, the alternatives analysis will be consistent with the requirement in 16 NYCRR §86.4(a)(2) and to consider the potential for expansion of existing rights-of-way.

1.5 ALTERNATE METHODS TO FULFILL ENERGY REQUIREMENTS WITH COMPARABLE COSTS (§ 86.4(A)(3))

16 NYCRR §86.4(a)(3) requires consideration of alternate methods to fulfill energy requirements with comparable costs. North America will evaluate other methods of meeting the need of the Edic-Fraser transmission component, including a) HVDC, b) underground lines, c) voltages other than 345 kV, d) energy efficiency, e) demand side response, and f) generation. The Part B Application will provide a description of these technologies and explain the technical or cost advantages and disadvantages compared to the proposed Edic-Fraser transmission facilities.

Figure 1-1. Schedule for Proposed Studies and Preconstruction Permits

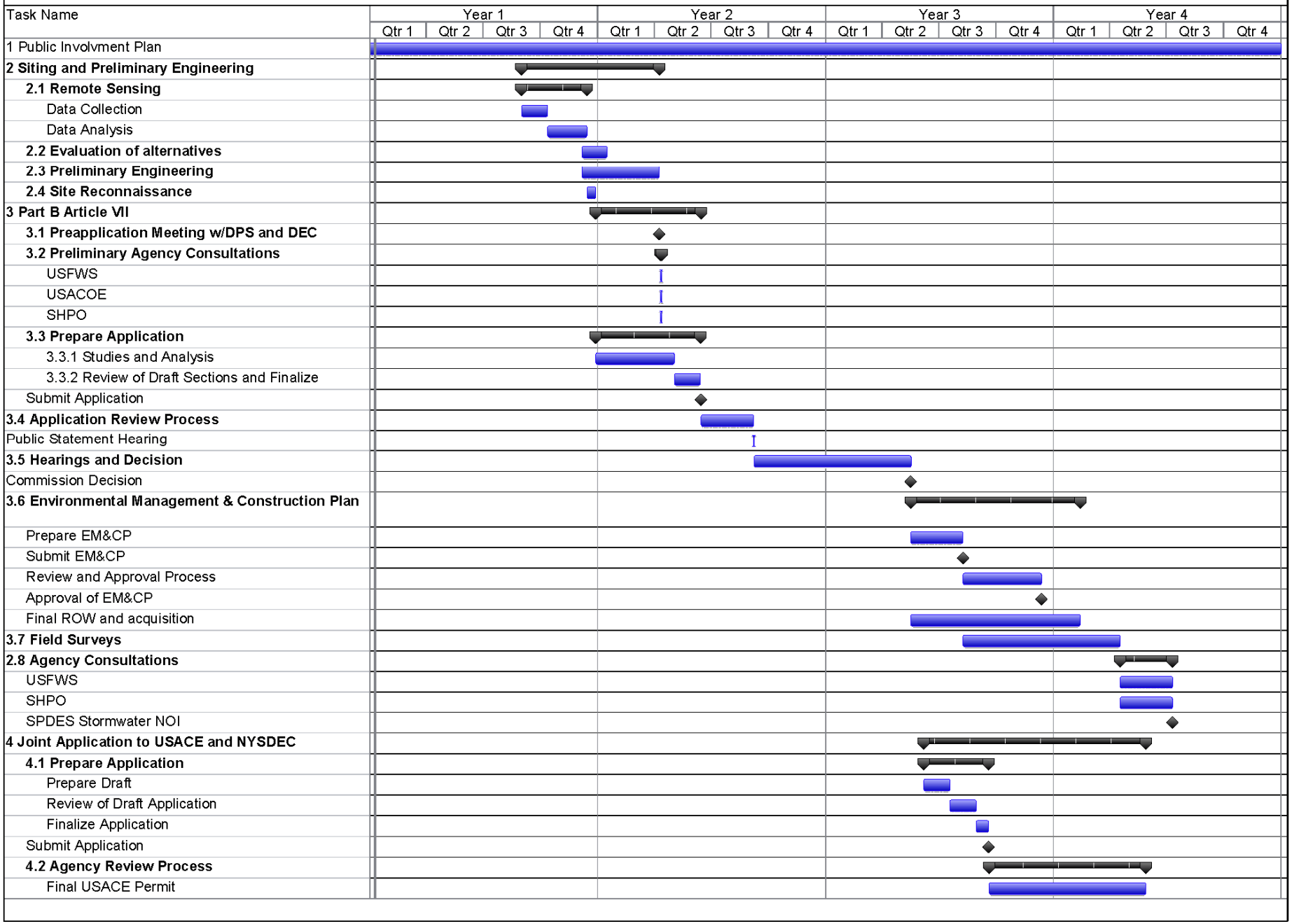
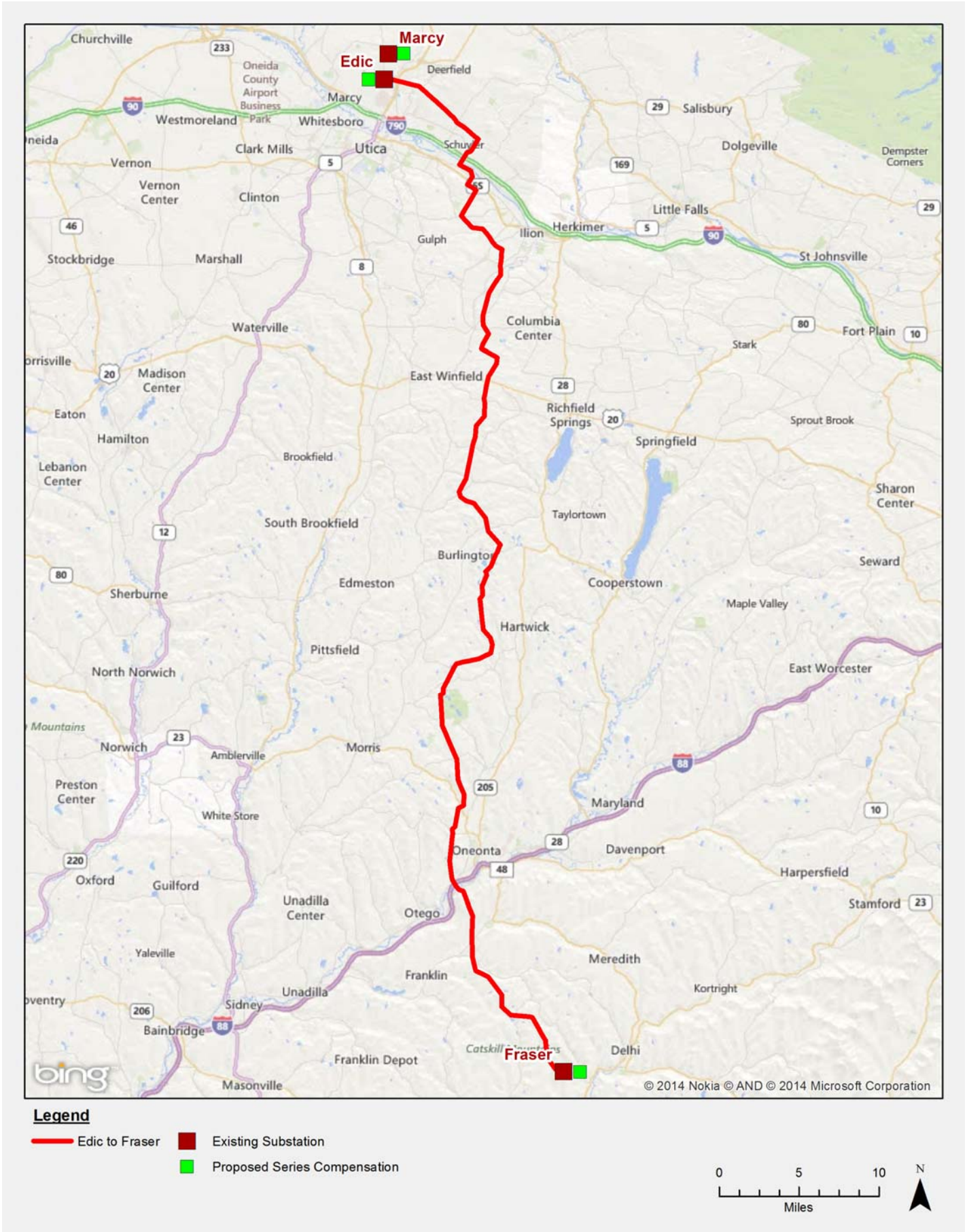


FIGURE 1-2. PROPOSED ROUTE AND ALTERNATIVES



2. ENVIRONMENTAL IMPACT (§86.5 – EXHIBIT 4)

This section provides scoping and schedule information detailing how North America will comply with the provisions of § 86.5, Exhibit 4, including studies to be performed, impact on environmental resources, and avoidance and minimization measures for preventing or reducing impacts of the Edic-Fraser facilities. No underground transmission line segments are proposed; therefore, the following discussions focus on environmental resources in the context of overhead transmission lines.

Per the Commission's Order of December 16, 2014, the Part A submittal must include a scoping statement and schedule describing how and when the applicant will comply with 16 NYCRR §86.5, which includes, in part, "a statement describing any study which has been made of the impact of the proposed facility on the environment. That statement shall include a description of the methods employed in making that study and a summary of its findings."

While the detailed environmental studies described here will be completed during preparation of the Part B application, North America has performed desktop and screening-level studies using publically available GIS information from federal, state and local agencies and other sources and maximized the use of GIS tools to obtain and evaluate environmental, natural, and human resource features. The results of those desktop and screening-level studies are presented in this subsection to enable and support the Administrative Law Judge's or Commission's selection of North America's Edic-Fraser transmission facilities as the optimum solution to the problem of persistent congestion on the New York State electric transmission system.

The GIS data was imported into AlteraVue, a web-based tool to facilitate evaluation of the existing environment and potential impacts, as well as opportunities for avoiding impacts. The GIS data is displayed on base layers, including aerial imagery, U.S. topographical maps, and New York State's National Agricultural Imager Program (NAIP).

The desktop analysis, the proposed project design, and relevant regulatory requirements and guidance were considered together to prepare the description of the studies performed to date, the anticipated future studies, and the analyses to be performed to comply with Article VII application requirements. The results are presented for each resource area in the following subsections:

- Existing Conditions,
- Potential Impacts and Avoidance, and
- Regulatory Framework and Proposed Studies.

For the **Existing Conditions**, the areas encompassing the proposed and alternative ROWs are described in detail based on the information currently available. The GIS databases analyzed for each resource area are listed or described below. The desktop assessment includes quantitative and qualitative analysis of the data gathered and uploaded for viewing in AlteraVue. North America evaluated a 0.5-mile corridor, or 0.25-mile on each side of the preferred route, for land use, wildlife,

vegetation, wetlands and water resources, topography and soils, and noise. For these resources, the study area reflects placement of the proposed Project adjacent to an existing transmission line corridor, which minimizes impacts and will only require widening of that ROW by approximately 80 feet. The 0.5-mile study area is focused on resources most likely to be affected adjacent to the existing ROW and large enough to consider potential alternative routes in most cases. The desktop analysis for cultural and visual resources evaluated a 3-mile corridor on each side of the preferred route. The 6-mile study area reflects the unique aspects of visual and cultural resources and the analysis that will be performed in Part B of the Article VII Application.

Potential Impacts and Avoidance describes the Project's design, construction and operation within the context of the potential impacts on each resource area. Impacts from typical activities relevant to the existing conditions are described based on information obtained from the desktop studies. Further, the proposed or expected measures that may be implemented to minimize or avoid impacts are also described.

The **Regulatory Framework and Proposed Studies** describes potentially relevant regulatory requirements and guidance and outlines North America's proposed studies for each resource area. The identification of regulatory requirements as potentially relevant to the evaluation of impacts is not a determination that those requirements are necessarily applicable. Applicability of any specific requirement will depend on details of design and location and on whether the Commission will choose or refuse to apply any specific substantive requirement.

The proposed studies are expected to be implemented in a sequence determined by the Article VII process and access to properties along the proposed route. In addition, the description of the proposed studies assumes that North America will have reasonable access to portions of the existing ROW per the Commission's Order of September 19, 2013.[7] For Part B of the Article VII Application, the proposed study corridor widths will reflect the information obtained in this desktop analysis, the potential alternative routes, and the reduced environmental impacts that result from development along the existing transmission ROW to the maximum extent practicable. Where access to North America's proposed ROW or alternative ROW is not available, North America will use desktop surveys and remote sensing techniques to the extent feasible to characterize environmental resources for evaluation in the Part B Article VII Application as an alternative to physical ground surveys performed by biologists and technical specialists. Remote aerial survey techniques have become a practical and cost-effective alternative to physical ground surveys where access may be limited due to land ownership or remote location and terrain. Advances in resolution of light detection and ranging (LiDAR) and aerial photography data make photointerpretation of existing conditions a practical alternative to traditional environmental survey methods. Once the Article VII process is complete, North America will prepare and submit for approval an Environmental Management and Construction Plan (EM&CP). The EM&CP will incorporate the environmental protection measures contained in the PSC Opinion and Order Granting Certificate of Environmental

[7] Public Service Commission Case No. 12-T-0502, Proceeding on Motion of the Commission to Examine Alternating Current Transmission Upgrades, *Order Adopting Additional Procedures and Rule Changes for Review of Multiple Projects Under Article VII of the Public Service Law*, September 19, 2013.

Compatibility and Public Need that would be issued for the Project. The EM&CP would also contain a design plan that reflects conformance with the Certificate, applicable federal, state and local regulations; and a discussion of the status of efforts to obtain federal permits necessary for Project construction. The EM&CP would define field studies that can be performed once access is obtained and that may be necessary for federal permitting.

2.1 LAND USE

Land use refers to the activities on and uses for physical property. The following discussions introduce the land use issues relevant to the proposed Edic-Fraser transmission facilities and set forth the studies and efforts to be undertaken during preparation of the Part B submittal.

2.1.1 EXISTING CONDITIONS

Readily available information regarding land use within the above-identified 0.5-mile study corridor is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B Application submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

The National Land Cover Database identifies existing land use within the study area by real property classification codes. Land use codes were based on designations within the parcel data acquired from each county traversed by the Edic-Fraser line. For areas where land use codes were not available, the National Land Cover Database was used for comparative purposes. Real property classification codes, as mandated by the New York State Office of Real Property (NYSORP), are assigned by the local assessor to each parcel of land in a community and will be presented in the following categories:

Agriculture: property used for the production of crops or livestock. Examples of such use include field crops, vacant agricultural land that is part of an operating farm, and orchards.

Residential: includes any property used for human habitation. These living accommodations may include single family or multi-family dwellings, seasonal residences, and mobile homes.

Vacant Land: property that is not in use, is in temporary use, or lacks any permanent improvements. Types of vacant land may include vacant lots in residential areas, and abandoned agricultural land.

Commercial: property used for the sale of goods or services. Property types under this classification include restaurants, stores, hotels, retail services, offices, and gas stations.

Recreation and Entertainment: property used by groups for recreation, amusement, or entertainment. Examples within this category are theaters, stadiums, arenas, amusement parks, and camping facilities.

Industrial: property used for the production and fabrication of durable and nondurable man-made goods. Examples include manufacturing, mining, gas, and petroleum facilities.

Public Service: property used to provide services to the general public. Examples within this category include water treatment facilities, communications facilities, transportation, electric and gas facilities.

Wild, Forested, Conservation Lands and Public Parks: reforested lands, preserves, and private hunting and fishing clubs. Examples include forest lands, state owned forest lands, public parks, and conservation lands.

The proposed Edic-Fraser corridor is adjacent to existing transmission ROW for more than 90% of its length. Land use categories within the 0.5-mile corridor of the Edic to Fraser route are predominately Vacant/Undeveloped (35.7%), followed by Residential (31.3%) and by Agricultural (20.7%). Wild, Forested Conservation areas are 4.69% and Public Service areas are 2.96%. Highways and roads account for approximately 3.48%. Table 2-1 summarizes the land use codes along the preferred corridor.

TABLE 2-1. LAND USE CODE WITHIN THE 0.5 MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE

Land Use	Acres	Percent of Total
Highways/Roads	871.11	3.48%
Agriculture	5,195.52	20.72%
Residential	7,853.30	31.34%
Vacant Land	8,951.36	35.72%
Commercial	109.20	0.44%
Recreation and Entertainment	91.49	0.37%
Industrial	69.66	0.28%
Public Service	741.13	2.96%
Wild, Forested, Conservation	1,175.01	4.69%
Total Acreage	**25,057.80**	**100.00%**

2.1.2 POTENTIAL IMPACTS AND AVOIDANCE

Generally, the potential impacts associated with construction, operation, and maintenance of a transmission line might include the following:

- Changes in existing land use that require the Commission not to apply the existing zoning ordinances or proposed zoning designations or development standards.
- Conflicts with current land uses, including airports, residential, commercial, industrial, agriculture, existing rights-of-way, and other authorized land uses.
- Impacts on recreation areas.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

The types of land use impacts that may occur during construction include loss of land associated with clearing, pulling and tensioning sites, staging areas, access roads, and structure sites. In some cases, temporary access roads and construction activities may close trail and scenic byways. Similarly, vehicle traffic may increase access into new areas due to new access roads and construction activities. Clearing and crossing with construction vehicles and the surface disturbance would temporarily remove productive cropland within the ROW.

To minimize potential conflicts with present and future land use, the Edic-Fraser transmission line will be sited and constructed adjacent to the existing transmission corridor to the maximum extent practicable. North America would implement measures in order to avoid and minimize adverse land use impacts, such as the following:

- Locate new portions of the proposed alignment away from residential and commercial and scenic, recreational, and historic areas to the maximum extent practicable,
- Use existing roads for transportation of materials and equipment to and from staging and storage areas where practicable,
- Locate transmission structures adjacent to existing structures,
- Locate new access roads, work areas, and facilities away from cultural resources wherever feasible, and
- Consult with the County land use planners to identify additional impact avoidance measures at specific locations.

Operation

General operation activities would include maintenance of the access roads and project structures, vegetation maintenance, and the inspection or repair of any necessary permanent erosion control structures. These activities are not anticipated to impact land use resources.

2.1.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

A preliminary listing of land use plans to be reviewed with respect to the proposed project includes the following:

- New York State Legislative Commission on Rural Resources, 2008
- Central New York Regional Planning and Development Board
- Mohawk Valley Corridor Commission Management Plan

- Oneida County land use plans
- Herkimer County land use plans
- Otsego County land use plans
- Delaware County land use plans and zoning ordinances
- Comprehensive plans/land use plans for cities, towns, and villages along the proposed ROW
- Federal Aviation Administration (FAA) regulations

A more detailed analysis of the specific land use plans and zoning ordinances will be made as the permitting process proceeds. The analysis to be performed in the Part B Application will include a description of land uses along the preferred and alternative routes, including the following:

a) For segments where the proposed Project alignment parallels existing transmission corridors, a map of all existing land uses and zoning within 300 feet of the existing transmission corridor. Segments that do not align with existing utility corridors will have a two-mile study area.

b) A comprehensive land use study within a defined corridor of the Project study area. Existing land uses will be delineated through aerial photography interpretation. Land uses that will be identified include residential, commercial, industrial, agriculture, public/quasi-public, transportation, utility, vacant/undeveloped, parks and designated open space, military facilities, and education. Existing roads, linear facilities, and private residences located within the defined corridor will also be identified and evaluated to determine if the proposed transmission line alignment is compatible with the existing land use and setting.

   Special land uses and special designations, including airports, mechanically irrigated agricultural fields, scenic highways, trails, prime and unique farmland, wildlife management areas, national wildlife refuges, and state forests, will also be identified within the designated corridor. Resource management plans on the state level will be reviewed to determine the consistency of the proposed Project to applicable goals and policies.

c) Compatibility with potentially applicable local land use plans and zoning ordinances will be assessed. North America will assess each village, town, and county's general plans and zoning ordinances to identify compatibility issues pertaining to the siting, permitting, and construction of the proposed Project and substantive compliance with these requirements under Article VII. Details of the applicability of local zoning ordinances will be provided in Exhibit 7 (Local Ordinances).

d) Planners and/or engineers from each local jurisdiction will be contacted to collect information regarding planned projects located within the designated corridors. Planned projects will be mapped, when possible, to assist with route alignment and assessment of potential impacts on planned projects.

e) Documentation will be prepared pursuant to 16 NYCRR §§86.5 (b)(2)(i), (iii), (iv), and (b)(9) regarding efforts to assure the proposed ROW avoids scenic, recreational, historic areas, heavily timbered areas, ridge lines, steep slopes, and preserves the natural landscape to minimize conflict with any present or future planned land use.

2.2 WILDLIFE

Wildlife resources refers to protected animals, birds, and aquatic species, types of land and habitat utilized by wildlife resources, and threatened and endangered species that may be present.

2.2.1 EXISTING CONDITIONS

Readily available information regarding wildlife within the above-identified 0.5 mile study corridor is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

To classify habitat types within the study area, percent land cover was determined from a geographic information system (GIS) database taking into account the following sources:

- New York State Amphibian and Reptile Atlas Project;
- The Second New York State Breeding Bird Atlas(2000-05);
- Fish Atlas Maps of New York;
- U.S. Fish and Wildlife Service Federally Listed Endangered and Threatened Species and Candidate Species in New York.

In addition, North America submitted a request for information regarding the presence of federal and state threatened and endangered (T/E) species within the Edic-Fraser study area to the U.S. Fish and Wildlife Service (USFWS) and the New York State Department of Environmental Conservation (NYSDEC) on September 24, 2013. Federal and state T/E lists for each county traversed by the Edic-Fraser line were reviewed in order to determine species potentially present within the study area.

Deciduous forest, evergreen forest and mixed forest occupy 54.8% of the 0.5-mile wide study corridor. Agricultural land is the second most prevalent land use (pasturelands and cultivated crops) occupying 27.7% of the corridor. Woody wetlands occur in 6.6% of the transmission line corridor. The remaining 10.9% of the study area is composed of shrub/scrub, developed

areas (e.g., residential dwellings and roads), grassland, grasslands and open water. Table 2-2 summarizes the land use and land cover information for the corridor. Table2-3 presents the federal and State listed T/E and candidate species with the potential to occur along the Edic to Fraser corridor.

TABLE 2-2. LAND COVER TYPE PRESENT WITHIN THE 0.5 MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE

Land Cover	Acres	Percent of Total
Deciduous Forest	10,694	42.7%
Pasture/Hay	5,301	21.2%
Mixed Forest	2,092	8.3%
Woody Wetlands	1,662	6.6%
Cultivated Crops	1,624	6.5%
Shrub/Scrub	1,244	5.0%
Evergreen Forest	957	3.8%
Developed, Open Space	591	2.4%
Grassland/Herbaceous	548	2.2%
Open Water	186	0.7%
Emergent Herbaceous Wetlands	72	0.3%
Developed, Low Intensity	66	0.3%
Developed, Medium Intensity	14	0.1%
Developed, High Intensity	9	<0.1%
Total Acreage	**25,060**	**100%**

Source: Fry, J., G. Xian, S. Jin, J. Dewitz, C. Homer, L. Yang, C. Barnes, N. Herold, and J. Wickham. 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, *PE&RS*, Vol. 77(9):858-864.

Table 2-3. Federal and State Listed Wildlife T/E Species Potentially Occurring Along the Corridor for the Edic to Fraser Preferred Route

Common Name	Scientific Name	Counties within the Corridor	Federal Status	State Status	Preferred Habitat
Birds					
Peregrine Falcon	*Falco peregrinus*	Oneida	NL	E	Found on cliff ledges and tall buildings in a variety of habitats, preferring the coast.
Short-eared Owl	*Asio flammeus*	Oneida	NL	E	Open habitat where small mammal prey (especially voles) are abundant, including marshes, agricultural fields, and grasslands.
Loggerhead Shrike	*Lanius ludovicianus*	Oneida	NL	E	Agricultural fields, orchards, and hedgerows.
Pied-billed Grebe	*Podilymbus podiceps*	Herkimer, Oneida, Otsego	NL	T	Wetland and marsh habitat with dense, tall vegetation (e.g., cattails).

Common Name	Scientific Name	Counties within the Corridor	Federal Status	State Status	Preferred Habitat
Least Bittern	*Ixobrychus exilis*	Oneida, Otsego	NL	T	Wetland and marsh habitat with dense, tall vegetation (e.g., cattails).
Bald Eagle	*Haliaeetus leucocephalus*	Delaware, Herkimer, Oneida, Otsego	NL	T	Undisturbed forested habitat near water, including ocean, rivers, or lakes.
Northern Harrier	*Circus cyaneus*	Delaware, Herkimer, Oneida, Otsego	NL	T	Wetlands, marshes, grasslands, and agricultural fields.
Upland Sandpiper	*Bartramia longicauda*	Herkimer, Oneida, Otsego	NL	T	Grassland habitat.
Sedge Wren	*Cistothrous platensis*	Herkimer	NL	T	Wetland and marsh habitat dominated by sedges and grasses.
Henslow's Sparrow	*Ammodramus henslowii*	Otsego	NL	T	Densely vegetated fields absent of woody vegetation, usually saturated; tallgrass prairies.
Fish					
Lake Sturgeon	*Acipenser fulvescens*	Oneida	NL	T	Freshwater lakes and large rivers.
Round Whitefish	*Prosopium cylindraceum*	Herkimer	NL	E	Highly oxygenated lakes. In New York, this species is found in Lake Erie and lakes of the Adirondack mountains.
Insects					
Frosted Elfin	*Callophrys irus*	Oneida	NL	T	Grassland and savannah habitat near forested areas needed for shade and shelter.
Mammals					
Indiana bat	*Myotis sodalis*	Oneida	E	E	Spends the winter hibernating in suitable caves and mines; utilizes trees roosts with exfoliating bark in the summer; riparian stream corridors and upland forests used for summer foraging activities.
Mussels					
Dwarf Wedgemussel	*Alasmidonta heterodon*	Delaware	E	E	Inhabits various sized streams or rivers with slow to moderate flow. Preferred bottom substrate includes silt, sand, and gravel.
Brook Floater	*Alasmidonta varicosa*	Delaware, Otsego	NL	T	Inhabits small rivers and creeks in various flow conditions. Preferred bottom substrate includes sand and gravel.
Green Floater	*Lasmigona subviridis*	Delaware, Otsego	NL	T	Inhabits high water quality small rivers and creeks with slow to moderate flow. Often found in calm parts of the stream, such as pools or eddies. Preferred bottom substrate includes sand and gravel.

Common Name	Scientific Name	Counties within the Corridor	Federal Status	State Status	Preferred Habitat
Reptiles					
Timber Rattlesnake	*Crotalus horridus*	Delaware,	NL	T	South-facing talus piles or rock ledges at high elevations adjacent to deciduous forest.
Bog turtle	*Clemmys muhlenbergii*	Oneida, Otsego	T	E	Semi-aquatic species found in shallow, slow-moving water, deep mud, clumps of herbaceous vegetation, and early successional wetland areas dominated by sedges or sphagnum moss.

Sources:

NatureServe Explorer: An online encyclopedia of life, Version 7.1, 2013. Available online at: http://www.natureserve.org/explorer. Accessed September 9, 2013.

New York State Department of Environmental Conservation (NYSDEC). 2007. *New York State Amphibian and Reptile Atlas Project (1990-1999*), 2007. Available online at: http://www.dec.ny.gov/animals/7140.html. Accessed September 9, 2013.

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New York State Department of Environmental Conservation, *Fish Atlas Maps of New York*, 2013 Available online at: http://www.dec.ny.gov/animals/84622.html. Accessed September 9, 2013.

U.S. Fish and Wildlife Service (USFWS), *Federally Listed Endangered and Threatened Species and Candidate Species in New York (by County),* 2012. Available online at: http://www.fws.gov/northeast/nyfo/es/colistcurrent.pdf. Accessed September 9, 2013.

Key:

E =	Species is listed as endangered.	C	=	Species is a candidate for listing.
T =	Species is listed as threatened.	NL	=	Species is unlisted.
SSC =	Species is listed as a species of special concern.			

2.2.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts to wildlife resources associated with a transmission line might include impacts to wildlife resources such as the following:

- Clearing and tree removal activities through forested areas and wooded riparian corridors to establish a right-of-way that would remove or fragment habitat of federal and/or state listed wildlife species;
- Construction activities (e.g., access roads crossing streams) that would disturb aquatic habitat of federal or state listed aquatic wildlife species;
- Maintenance of a permanent transmission line right of way that will require tree trimming and vegetation control, potentially affecting wildlife habitat, and
- Avian collisions or electrocution with operational transmission lines.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

Potential changes or impacts during construction of the Edic-Fraser facilities may result from mechanized clearing of forested habitat, wooded wetlands and riparian corridors to establish new ROW. This can result in permanent loss of habitat for wildlife species that utilize forested habitat for reproduction (e.g., Indiana bat) resulting in a population decline. Temporary impacts from construction noise and lighting may also occur, potentially causing wildlife species to temporarily abandon their preferred habitat due to disturbance. Temporary and permanent impacts to wildlife habitats found in wetland and surface water (e.g., rivers and streams) may also occur during construction. Surface water crossings include potential impacts to water quality from sedimentation, possible impacts to aquatic and terrestrial species that utilize waterways and wetlands (e.g., mussels, fish, reptiles, amphibians, and some birds), possible disturbance of adjacent wetland and riparian habitat, and stream embankment stability.

North America may implement measures to avoid and minimize impacts to wildlife such as the following (measures to be determined through consultations with USFWS and NYSDEC as appropriate):

- Locate the preferred alignment adjacent to an existing ROW to the extent practicable in order to reduce the amount of forest clearing that will be necessary for the proposed facilities;
- Perform tree clearing activities during the winter hibernation months to minimize disturbance to the federally endangered Indiana bat after consultation with the USFWS;
- Follow power line design and construction standards found in Avian Power Line Interaction Committee ("APLIC")'s Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996 to minimize impacts to avian species to the maximum extent practical;
- Site new structures in upland areas as much as practicable to avoid impacts to wildlife dependent on surface water and wetland habitat;
- Implement best management practices (BMPs) for controlling soil and sediment erosion at stream-crossing to minimize impacts to federally protected mussel and fish species; and

Operation

Environmental concerns associated with operation of the Edic-Fraser line are primarily related to removal of vegetation to maintain a cleared ROW and effects on avian species. Siting adjacent to an existing line to the extent practicable will minimize the potential for

fragmentation of wildlife habitat compared with operation of a transmission line in a separate new right-of-way. Through the implementation of avoidance measures during siting, most operational impacts to avian species can be avoided. In some cases, regular maintenance of the ROW may be beneficial to some federal and/or state protected wildlife species that prefer to reside in early successional forest (e.g., New England Cottontail, Karner Blue Butterfly).

2.2.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

Federally listed threatened and endangered plant and animal species are protected by the Endangered Species Act of 1973, which is administered by the U.S. Fish and Wildlife Service (USFWS). State-listed threatened and endangered plant and animal species are protected by the New York State Environmental Conservation Law, Article 9, and Article 11, which are administered by NYSDEC. The laws and regulations potentially relevant to the evaluation of wildlife resource impacts associated with the Project include the following:

- Endangered Species Act,
- Fish and Wildlife Coordination Act,
- Bald and Golden Eagle Protection Act (BGEPA),
- Migratory Bird Treaty Act (MBTA),
- Magnuson-Stevens Fishery Conservation and Management Act; and,
- New York State Environmental Conservation Law, Article 11, Fish and Wildlife.

Transmission line route selection and construction methods for the proposed Project are designed to minimize impacts to threatened and endangered (T/E) species. However, if the Project may affect an endangered or threatened species or the habitat of such species, field investigations may be required to characterize the affected area. The following biological surveys will be conducted as appropriate to evaluate the presence of potentially impacted wildlife resources within the footprint of the proposed ROW and alternative segments. The analyses to be performed and documented in the Part B Application include the following:

a) Desktop study and coordination with NYSDEC to identify the common wildlife species present in the Project area and a qualitative discussion in the Part B submittal of the likely degree of impact to these species.

b) Coordination with the USFWS and the NYSDEC on the presence of T/E species in the proposed study area and alternative segments to ensure that all target T/E species are identified, and to receive input on survey protocols.

c) Remote Sensing Surveys. Desktop evaluation and remote sensing data will be used to identify potential habitat areas for wildlife, especially potential habitat for T/E species or state protected species. Remote Sensing Data would include 4-band Digital

orthoimagery, oblique color aerial photos, and LiDAR. A qualified biologist will review LiDAR Digital Elevation Model surface and point cloud data to identify potential ranges for protected wildlife species using the data sources discussed for vegetation. Proposed target species for identification are identified in Table 2-3. In addition, North America will request GIS data on recorded locations of protected wildlife species and associated habitat from the New York Natural Heritage Program. Potential protected species habitat areas will be identified by a qualified biologist. For example, areas of deciduous forest and riparian corridors along the proposed transmission line routes, which may provide summer habitat for the Indiana bat (*Myotis sodalis*) or Northern long-eared bat (*Myotis septentrionalis*), will be identified and flagged as tier 1 (high priority) for pre-construction environmental surveys. High quality aerial photographs will be reviewed to identify potential nesting areas for Bald eagles (*Haliaeetus leucocephalus*). The review will also identify Important Bird Areas (IBA) near the project routes (within ½-mile) and species recorded at the IBA, which may fly over the project area and would therefore be evaluated with respect to the potential risk for collision and/or electrocution from transmission structures.

Potential habitat for other protected species (amphibians, fish, insects, mussels, and reptiles) within a 300-foot wide transmission corridor will also be identified to the extent possible with remote sensing data. For example, large rivers and streams that could provide freshwater mussel habitat will be identified at transmission corridor crossings.

The limitation in this evaluation is that the analysis identifies potential habitat locations and does not identify the wildlife directly. These locations would be evaluated for overall impacts in the Part B Application as an alternative to physical ground surveys performed by biologist and technical specialists. The locations would be targeted for subsequent T/E species surveys of the final selected routes as part of the EM&CP during pre-construction permitting activities as described below.

d) Documentation pursuant to 16 NYCRR 86.5 regarding preservation of the natural landscape, plans to keep any right-of-way clearing to the minimum width necessary to prevent encroachment of vegetation with the proposed facility, protection of natural vegetation, and the protection of adjacent resources (including the protection of any natural habitat for wildlife), and use of pesticide or herbicide during construction or maintenance of the proposed facility (including the volumes and manner of use). The analysis will describe proposed construction, operation and maintenance (O&M) protocols, potential impacts, and impact avoidance measures. Where impacts cannot be avoided, mitigation measures will be proposed in the Part B submittal based on agency consultations.

An EM&CP will be prepared prior to the start of construction, defining field studies that can be performed once access is obtained and that may be necessary for federal permitting. Based on information from North America's desktop studies, the proposed target species and

field survey methodology would include the following during the EM&CP phase of the Project:

Bat Species

Analysis of potential impacts on protected bat species will focus on the proximity of the ROW to known hibernacula (i.e., caves, mines, or other spaces where bats take refuge during the winter season). North America and its consulting biologists will coordinate with the USFWS to determine the presence of known hibernacula. Field surveys would be conducted for the final selected transmission route. These surveys and other activities would be completed prior to the start of construction in affected areas and would be documented in the Project's EM&CP. A Phase 1 summer habitat assessment would be conducted by qualified biologists, in accordance with applicable protocols, to assess the habitat within forest clearing areas of the Project for potential Indiana bat suitability. Any forested area containing live or dead trees greater than 5-inch diameter breast height with exfoliating bark or crevices, will be considered potential suitable Indiana bat habitat. If the Project contains suitable bat habitat, a Phase 2 bat acoustic survey and/or Phase 2 or 3 bat mist-netting surveys may be required to further assess potential bat presence within the Project area. If these surveys become necessary, a work plan would be submitted to the USFWS for approval prior to conducting additional bat surveys.

Aquatic Fish and Mussel Species

If no permanent structures (poles, substations, or access roads) will be located within water bodies, a dedicated mussel or fisheries survey is not anticipated. If a permanent impact becomes unavoidable, North America will consult with the USFWS and NYSDEC to discuss if surveys are necessary within waters of the State or waters of the United States.

Aerial Nest Surveys

Known locations of Bald Eagle and Osprey nests within 0.5 miles of the Project area will be obtained prior to initiation of the survey by consulting with USFWS and NYSDEC. The location and current status of the nests would be confirmed in the field by avian biologists. Two experienced avian ecologists equipped with image stabilization binoculars will conduct aerial raptor nest surveys of the ROW by helicopter, preferably in February or March when visibility in forested areas is not limited by foliage. A survey for Bald Eagle and Osprey nests will be conducted within a 0.5-mile buffer of the proposed Project area to document nest activity. Surveyors will explore all known potential nesting strata in raptor habitat, including rock outcrops, cliffs, ridges, knolls, stream banks, conifers, hardwood trees, and man-made structures.

Prior to any flights, surveyors will review flight routes, trajectories, and areas to be covered with the pilot. Surveys will be conducted on clear days, without heavy precipitation, and with winds less than 20 miles per hour. Flights will occur from approximately two hours after sunrise until about two hours before sunset, to prevent shadows and low-intensity light from compromising visibility.

Nest locations will be recorded on data sheets and topographic maps, as well as Universal Transverse Mercator (UTM) coordinates via on-board or hand-held Global Positioning System (GPS) units. Particular observations regarding nests will include: species, approximate nest site elevation, status (active or inactive), nest condition, substrate, number of eggs/young, and any relevant notes.

Breeding Birds

If tree removal or land clearing is necessary during the migratory bird nesting season, prior to the start of construction, breeding bird surveys will be conducted to characterize bird species usage of the Project area for breeding and nesting. Pre-construction breeding bird surveys would be conducted in areas determined through the remote sensing. The technique would involve surveying 1,000-foot-long line transects within a 20-45 minute period, at representative habitats throughout the proposed route. The locations and number of transects would be selected based upon a review of various access points as well as suitable habitat locations, while ensuring proportional habitat type coverage. Some transects may be moved from their random locations to alleviate access issues and to provide coverage in areas with documented records of special status species. Known nesting locations of listed species would also be targeted during the surveys based on the New York Breeding Bird Atlas and data provided by USFWS and NYSDEC.

The breeding bird surveys described above will be conducted by biologists experienced in survey techniques and field identification of birds in the northeastern U.S. The biologists use binoculars, a spotting scope, and a GPS unit for navigation and to record the locations of any important observations (i.e., nest of a special species). Breeding bird survey datasheets are used to record the species identified along each transect. Surveys are initiated one half-hour before official sunrise and end approximately four to five hours after official sunrise. Surveys would not be conducted in dense fog, moderate to heavy rains, or if the wind is greater than a four on the Beaufort Scale (i.e., dust is raised, small branches move).

Timber Rattlesnakes

Depending on the remote sensing surveys, a site visit may be conducted by an approved timber rattlesnake surveyor to determine the suitability of targeted habitat.

2.3 VEGETATION

Vegetation resources described in this section include typical and protected plant species in the study area and their habitat and invasive species. Wetlands and riparian areas are included in this analysis because they provide a significant diversity of vegetation important to wildlife and the water cycle. Invasive species are non-native species that readily establish and displace native vegetation.

2.3.1 EXISTING CONDITIONS

Readily available information regarding vegetation resources in the 0.5-mile study area is provided in this subsection. Additional information regarding the existing conditions will be

provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

North America identified vegetation communities, including riparian and wetland areas, and acreages using the following sources of information:

- National Gap Analysis Program's (GAP) land cover data, which classifies vegetation based on dominant growth forms and specific plant species that vary geographically;
- National Heritage database on protected species; and
- *iMapInvasives* operated by the Nature Conservancy for information on invasive species.

Vegetation and land cover within the 0.5-mile preferred corridor of Edic to Fraser is predominantly forested land (63%) with agricultural vegetation being the second most prevalent vegetative land cover class. Forested and non-forested wetlands occupy 4 to 5% of the area. Edic to Fraser avoids developed urban areas (3% developed land). Table 2-4 summarizes the vegetation classifications within the study corridor. Many of the invasive plant species present in New York are also present in the counties traversed by the proposed Edic-Fraser line.

Table 2-4. National Vegetation Classification within the 0.5 mile Corridor for Edic to Fraser Preferred Route

Vegetative Land Use Class	Acres	Percent
Cool Temperate Forest	15,805	63.0%
Agricultural Vegetation	6,886	27.5%
Flooded and Swamp Forest	1,006	4.0%
Developed and Urban	656	2.6%
Grassland, Meadow, and Shrubland	246	1.0%
Recently Disturbed or Modified	228	0.9%
Open Water	204	0.8%
Boreal Flooded and Swamp Forest	52	0.2%
Introduced and Semi-Natural Vegetation	4	<0.1%
Total Acreage	**25,087**	100%

Source: US Geological Survey, Gap Analysis Program (GAP). August 2011. National Land Cover, Version 2.

A review of the New York State National Heritage database indicates the following Threatened or Endangered (T&E) plant species under federal or state law may be present within the vicinity of the proposed corridor:

- Riverweed (*Podostemum ceratophyllum*)
- Schweinitz's Sedge (*Carex schweinitzii*)

2.3.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts to vegetation associated with construction, operation, and maintenance activities of a transmission line project might include the following:

- Long-term loss of vegetated habitat;
- Degradation of habitat or interference with the movement of native or migratory terrestrial or aquatic species; and
- Introducing new or invasive species to an area or substantially expanding populations of invasive species.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

Potential impacts to vegetation during construction of the Edic-Fraser line might involve the alteration or removal of vegetative communities during clearing activities required to establish a right-of-way, construction of temporary and permanent access roads; and vegetation clearing and grading for and installation of structures and work areas. North America sited the proposed Edic-Fraser line adjacent to an existing ROW to the maximum extent practicable in order to reduce the amount of forest clearing necessary for the Project; however, some impacts to forested areas and wooded wetlands may occur due to surface disturbances associated with the construction.

North America may implement measures to avoid and minimize vegetation impacts including such measures as the following:

- Use existing roads for transportation of materials and equipment from staging and storage areas to the maximum extent practicable;
- Restore vegetative communities in affected wetlands and/or water bodies to their original ground contours using best management practices; and
- Use native seed mixes and species where reseeding is required in restoration plans.

Operation

Potential changes or impacts to vegetation are not expected to occur during operation of the Edic-Fraser line. However, potential impacts may occur during regular maintenance of the ROW as clearing of vegetative brush may alter vegetative community structure. Regular maintenance is expected to occur every 5 years or as needed using pesticides, controlled mowing, and/or mechanical clearing methods in a manner which minimizes the impact to vegetation.

North America would minimize impacts from invasive species by including a noxious weed management program in the EM&CP and use established best management practices for right-of-way maintenance. For example, the program will identify outbreaks of non-native

invasive species and require the implementation of control measures, such as mechanical removal or use of herbicides, where appropriate.

2.3.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

The guidance and regulatory provisions potentially relevant to the evaluation of vegetative resource impacts associated with the Project include the following:

- Endangered Species Act,
- Fish and Wildlife Coordination Act,
- New York State Environmental Conservation Law, Article 11, Fish and Wildlife.

Transmission line route selection and construction methods are designed to minimize impacts to threatened and endangered (T/E) species and other environmentally sensitive areas. However, if the Project may affect a T/E plant species or the habitat of such species, pre-construction field investigations may be required to characterize the impacted area. The purpose of the survey is to identify and inventory plant species, characterize the ecological communities in the impacted area, and establish the presence or probable absence of T/E plants and plant species of concern. The analyses to be performed and documented in the Part B Application include the following with respect to the Proposed ROW and alternative segments:

a) Desktop review of background information and data from previous environmental surveys, if available, to assist in the initial identification of ecological communities and vegetative cover types located within the environmental survey corridor of the Project components. The initial identification of these features will help determine the likelihood of T/E plant species occurring within the environmental survey corridor. This effort will also include a review of the New York State National Heritage database to provide an indication of the Threatened or Endangered (T&E) plant species under federal or state law in counties present within the vicinity of the proposed corridor.

b) Coordination with the USFWS and the NYSDEC on the presence of T/E species in the proposed study area and alternative segments to ensure that all target T/E species and species of concern are identified, and to receive input on survey protocols.

c) Remote Sensing Surveys. Desktop evaluation and remote sensing data will be used to identify vegetation classes and potential habitat areas for wildlife, especially potential habitat for T/E species or state protected species. Remote Sensing Data would include 4-band Digital orthoimagery, oblique color aerial photos, and LiDAR. A qualified biologist will review LiDAR Digital Elevation Model surface and point cloud data to identify vegetation and habitat. Proposed target species for identification are identified in Table 2-4.

Basic vegetation classes are derived from the classified point cloud data. Existing standards call for categories of: low vegetation, medium vegetation, and high vegetation. The point cloud and/or bare earth surface LIDAR data also provide information on elevation of vegetation classes allowing for identification of tree canopy height and density for differentiation of forested areas from grass lands and scrub/shrub. Further classification of vegetation communities within proposed study areas can be determined with the use of the orthophotography and oblique aerials, including:

- Grasses;
- Shrub/scrub;
- Woody Vegetation;
- Forests (Coniferous, Deciduous, and Mixed), and
- Vacant land / Developed Areas.

Additional discrimination of vegetation communities to habitat types or in some cases to genus or species level will be conducted by review of high quality aerial photography by a qualified biologist. A qualified biologist will also review multiple sources of imagery and map data, both publicly available and data specifically collected for the project. Publicly available data sources include the following: USGS Soil Survey data, New York State forest land and resource management plans, historic aerial imagery from the New York State clearinghouse, Google Earth, and Bing Maps. The Project-specific data includes the highly accurate DEM generated with the LiDAR data as well as the high resolution aerial imagery. Comparison of these data sets will allow narrowing of data gaps regarding types of vegetative communities and improve the quality of the desktop analysis. Specific analyses will be made to identify potential vegetation communities or settings with the greatest potential for the occurrence of T/E species protected under the Endangered Species Act or New York State regulations. The analysis will use GIS data on the location of protected plant species from the New York State Natural Heritage Program to further refine the analysis of vegetation communities.

The analysis identifies potential habitat locations and their extent. These locations would be evaluated for overall impacts in the Part B Application as an alternative to physical ground survey performed by biologists and technical specialists. The locations would be targeted for subsequent T/E species surveys of the final selected routes as part of the EM&CP during pre-construction permitting activities as described below.

d) Documentation pursuant to 16 NYCRR 86.5 regarding preservation of the natural landscape, plans to keep any right-of-way clearing to the minimum width necessary to prevent encroachment of vegetation with the proposed facility, protection of natural vegetation, and the protection of adjacent resources (including the protection of any

natural habitat for wildlife), and use of pesticide or herbicide during construction or maintenance of the proposed facility (including the volumes and manner of use). The analysis will describe proposed impact avoidance procedures and best practices to be employed during construction, as well as during facility operation and maintenance (O&M) activities. Where impacts cannot be avoided, mitigation measures will be proposed in the Part B submittal based on agency consultations.

An EM&CP will be prepared after submittal of the Part B application and prior to the start of construction defining field studies that will be performed once access to North America's ROW is obtained and that may be necessary for federal permitting. These surveys and other activities would be completed prior to the start of construction in impacted areas and would be documented in the Project's EM&CP. Surveys in areas where impacts cannot be avoided would be conducted by qualified field biologists walking parallel transects spaced approximately 30 feet apart throughout the environmental survey corridor and inventorying the plant species found. The study areas would consist of the locations of the new compensation station and new transmission line right-of-way with potential impacts to T/E species, including a 300-foot wide survey corridor (150-feet buffer on transmission centerline).

The surveys will be conducted as close as possible to the optimal seasonal flowering or fruiting time frames of T/E plant species. If a T/E plant species or species of concern is found or suspected, the location of the plant will be documented using a Global Positioning System (GPS) receiver with sub-meter accuracy. Photographs will also be taken of the plant and an estimate of the number of individual plants will be recorded and their locations. No samples would be taken of suspected T/E or species of concern plants to confirm identification.

2.4 WETLANDS AND WATER RESOURCES

Wetlands include areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation adapted for saturated soil. Wetlands maintain water quality, provide habitat for a diversity of plants and animals, and provide flood control. Water resources include surface water features such as rivers, lakes, streams, and smaller water bodies, including those protected by wild and scenic designations or considered navigable.

2.4.1 EXISTING CONDITIONS

Readily available information regarding wetlands in the 0.5-mile study area is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

North America identified wetlands and water resources using the National Wetland Inventory (NWI) wetlands database, the NYSDEC wetlands database, and the NYSDEC streams database. State regulated wetlands are ranked according to their ability to provide wetland

functions and benefits. A total of four rankings (Classes 1 – 4) are associated with NYSDEC wetlands, with Class 1 representing the highest quality wetlands under state protection. The rankings are highly subjective and take into account a multitude of factors detailing the functions, values, and biological integrity of the wetland. NYSDEC streams classification include three classes, with Class A representing the highest quality, including water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. Class A, B, and C waters may also be protected because of their ability to support a trout population (T), or for the ability to support trout spawning (TS).

Most wetlands and all tributary features are hydrologically connected to other water bodies, referred to in total as the watershed. These resources contribute to the overall function and values of the watershed.

The Edic to Fraser preferred route traverses three watersheds. The Mohawk Watershed size is approximately 1.6 million acres. The Edic to Fraser preferred route traverses this watershed for a distance of 23 miles. The prominent surface water feature associated with this watershed is the Mohawk River. This watershed is upstream and connected to the Hudson River. The Upper Delaware Watershed includes portions of New York and Pennsylvania and is approximately 0.75 million acres. The Edic to Fraser preferred route traverses this watershed for a distance of 5 miles. The Upper Susquehanna Watershed includes portions of New York and Pennsylvania and is approximately 1.4 million acres. The Edic to Fraser preferred route traverses this watershed for a distance of 50 miles.

A study corridor spanning the proposed Edic-Fraser route 0.5 miles in width would enclose a total of approximately 26,000 acres. Table 2-5 identifies NWI wetlands[8] within the Edic to Fraser preferred route. By acreage, the most common type of NWI wetlands encountered within the Edic to Fraser preferred route are freshwater, scrub/shrub wetland systems (265 acres), followed by freshwater, forested wetland systems (228 acres), and freshwater, emergent wetland systems (98 acres). A total of 656 acres of NWI wetlands are present within a 0.5-mile corridor enclosing the Edic-Fraser route, which comprises approximately 2.5% of the 26,000-acre area. The presence of wetlands within the 0.5-mile corridor does not translate directly into wetland impacts. The transmission line design process affords substantial flexibility to site transmission structures and access roads outside of wetland areas. Therefore, actual wetland impacts associated with the proposed route would be expected to be orders of magnitude lower than those values listed in Table 2-5.

TABLE 2-5. NWI WETLANDS PRESENT WITHIN THE 0.5 MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE*

Cowardin Classification	Acres*
Palustrine Emergent (PEM)	97.97

[8] The National Wetlands Inventory (NWI) Program was established by the USFWS in 1974 to conduct a nationwide inventory of U.S. wetlands to provide its biologists and others with information on the distribution of wetlands to aid in wetland conservation efforts. NWI wetlands are considered a preliminary indicator of the presence of wetlands within a given area.

Palustrine Forested (PFO)	228.28
Palustrine Scrub/Shrub (PSS)	265.02
Palustrine Unconsolidated Shore (PUS)	0.00
Palustrine Aquatic Bed (PAB)	0.17
Palustrine Unconsolidated Bottom (PUB)	61.70
Riverine (R1)	0.00
Riverine (R2)	0.00
Riverine (R3)	3.13
Lacustrine (L1)	0.00

Source: USFWS NWI dataset

* The presence of wetlands within the 0.5-mile corridor does not translate directly into wetlands impacts. The transmission line design process affords substantial flexibility to locate transmission structures and access roads outside of wetland areas. Therefore, actual wetland impacts associated with the proposed route would be expected to be orders of magnitude lower than those values listed here.

NYSDEC wetlands are defined as vegetated aquatic resources greater than 12.4 acres in size. Table 2-6 identifies NYSDEC wetlands within a 0.5-mile corridor enclosing the Edic to Fraser preferred route. Table 2-7 summarizes NYSDEC stream resources present within 0.5 miles of the Edic to Fraser preferred route. Navigable waters crossed by the Edic to Fraser preferred route include the Erie Canal and the Mohawk River.

TABLE 2-6. NYSDEC WETLANDS PRESENT WITHIN THE 0.5 MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE*

NYSDEC Classification	Acres*
0	2.71
1	98.87
2	212.29
3	54.99
4	16.35

Source: NYSDEC wetlands

* The presence of wetlands within the 0.5-mile corridor does not translate directly into wetlands impacts. The transmission line design process affords substantial flexibility to locate transmission structures and access roads outside of wetland areas. Therefore, actual wetland impacts associated with the proposed route would be expected to be orders of magnitude lower than those values listed here.

TABLE 2-7. NYSDEC STREAMS PRESENT WITHIN THE 0.5 MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE*

NYSDEC Stream Classification	Miles*
A	0.000
A(Trout)	0.969
B	0.612
B(Trout)	0.589
B(Trout Spawning)	0.000
C	42.279
C(Trout)	13.382
C(Trout Spawning)	22.124

Source: NYSDEC streams

* The presence of streams within the 0.5-mile corridor does not translate directly into stream impacts. The transmission line design process affords substantial flexibility to locate transmission structures and access roads outside of stream areas. Therefore, actual stream impacts associated with the proposed route would be expected to be orders of magnitude lower than those values listed here.

2.4.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, the potential impacts to wetlands and water resources created by a transmission line might include the following:

- Filling of wetlands or otherwise altering local drainage patterns that would affect wetland-dependent species
- Degrading surface water quality by increasing erosion, increasing sedimentation, or introducing contaminants
- Altering a floodway or floodplain or otherwise increasing the potential for floods.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

Impacts to wetlands and water resources could include ground disturbances for access roads, temporary work areas, and vehicle traffic. Mechanical tree clearing and new access roads may change run-off characteristics and increase erosion. Structures placed in wetland areas would result in discharges into surface waters or within wetland boundaries.

North America may minimize impacts to wetlands and water resources by measures that include:

- Place structures outside of wetlands or surface waters to the extent practicable;

- Use of existing roads for transportation of materials and equipment from staging and storage areas to locations where they will be needed along the transmission line ROW, where practicable;
- Locate new access roads, work areas, and facilities away from wetlands and water resources wherever feasible;
- Schedule construction activities around sensitive aquatic life where work may occur within or adjacent to trout (T) and trout spawning (TS) streams, to minimize turbidity or incidental discharges and avoid critical reproductive dates for protected species; and
- Work within stream channels during low flow conditions to the maximum extent practicable, typically between June and September in order to minimize impacts to fisheries and water quality.

The natural vegetation cover of the watersheds is primarily mixed hardwood forest, which has a low coefficient of run-off. Low coefficients of run-off mean that when it rains, much of the water is absorbed directly into the ground, with very little overland flow reaching tributary systems. Measures to avoid impacts to water quality would include such items as the following:

- Implement erosion and sedimentation control practices consistent with NYSDEC guidelines for Storm Water Pollution Prevention Plans to minimize surface water quality impacts;
- Stockpile soil outside of known floodplains;
- Restore temporary construction access roads, temporary culverts and similar facilities to pre-construction conditions; and
- Implement a restoration plan to maintain the landscape contours reestablish vegetation and prevent erosion.

Operation

Maintenance of access roads and vegetation management in the ROW would create the potential for minor erosion from vehicle traffic and reduction in vegetation; however, such effects will be avoided and minimized by the Storm Water Pollution Prevention Plan (SWPPP) for the Edic-Fraser transmission facilities. When ground disturbances occur, best management practices for storm water runoff and restoration will be implemented in accordance with the SWPPP to avoid impacts to surface water quality.

2.4.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

The regulatory requirements potentially relevant to the evaluation of wetland and water resources impacts associated with the Project include the following:

- Section 10 of the Rivers and Harbors Act of 1899;
- Clean Water Act Section 401;
- USEPA, Clean Water Regulations, 40 CFR Parts 401 and 404, et seq.;

- Freshwater Wetlands Permit: Article 24 – Environmental Conservation Law Implementing Regulations – 6NYCRR Part 663, Part 664, and Part 665;
- Protection of Waters Permit, including stream impacts and Section 401 Water Quality Certification: Article 15 – Environmental Conservation Law Implementing Regulations – 6NYCRR Part 608; and
- NYSDEC permits for streams classified as C(T) or higher quality (ECL Article 15-0501) and navigable bodies of water (ECL Article 15-0505).

Section 10 of the Rivers and Harbors Act requires permits for power transmission lines crossing navigable waters of the US. The permits address minimum clearances with respect to bridges and navigation. Section 401 of the CWA requires state water quality certification or waiver for any federally permitted action involving discharges into waters of the United States to ensure that the permitted action will not violate the state's water quality standards or impair designated uses. Section 404 of the CWA requires that a permit be obtained for the discharge of dredged or fill material into waters of the United States, including wetlands and streams. Waters of the United States are defined under 33 Code of Federal Regulations (CFR), and wetlands are specifically defined under 33 CFR Part 328.3(b). The permitting agency responsible for Section 404 permits is the U.S. Army Corps of Engineers (USACE). The Edic to Fraser component of the Project falls within the jurisdictions of the USACE Buffalo District and Region 6 of NYSDEC (Oneida and Herkimer Counties) and the USACE New York District and Region 4 of NYSDEC (Otsego and Delaware Counties).

The New York State "Protection of Waters" Program is designed to regulate any activities that could impact protected watercourses within New York State. Protected waters include all waters classified as C(t), C(ts), B, or A, as well as all navigable waters. Article 15 of the Environmental Conservation Law ("ECL") covers disturbances of streambeds and within 50 feet of the top of banks, and disposal of fill material and excavation in protected waterbodies. Application for a permit under Article 15 is completed jointly with the USACE permit application. Article 24 of the New York State ECL provides for regulation of certain activities that could adversely affect wetlands of 5 hectares (12.4 acres) or more as well as smaller wetlands identified as having an unusually significant local value. Activities that occur within 30.5 meters (100 feet) of the wetland boundary are also regulated.

Transmission line route selection and construction methods are designed to minimize impacts to wetlands and water resources. However if impacts cannot be avoided, pre-construction field investigations may be required to characterize the impacted area. The purpose of the investigation is to identify and inventory all wetland and water resources within the impacted area. The Part B Application will incorporate and document the following studies:

a) Coordination with the US Army Corps of Engineers and the New York State Department of Environmental Conservation (NYSDEC) on the presence and

delineation of known and previously mapped wetlands in the proposed study area and alternative segments.

b) Studies by remote sensing to determine the extent of wetlands and waterbodies within the project area. Remote Sensing Data would include 4-band Digital orthoimagery, Oblique color aerial photos, and LiDAR. To identify waterbodies, a Waterbody Extraction Model will be utilized that relies principally on the high resolution, project-specific, LiDAR data to delineate the waterbody drainage networks. Currently, the very best LiDAR data is capable of being captured at an accuracy of up to six centimeters. This data can enable the extraction of highly precise digital elevation models (DEM) and drive a flow accumulation process for delineating dendritic stream networks. However, it should be noted that LiDAR data of such high accuracy is not absolutely required to create a Waterbody Extraction Model, less accurate data can be utilized, which in turn will affect the accuracy of the model. The accuracy of the data is also proportional to the cost of obtaining the data, and as such, six centimeter accuracy data is the most expensive. It is North America's first priority to consult directly with the agencies to determine what level of accuracy is needed in the Waterbody Extraction Model. This will facilitate the actual level of accuracy of the LiDAR data which will be collected for the project.

   The remote sensing of probable wetlands will be a manual process conducted by an experienced wetland biologist. The wetland biologist will review all available desktop data, both publically available data and data specifically collected for the project. Publically available data sources include: USGS Soil Survey data, historic aerial imagery from the New York State clearinghouse, Google Earth, and Bing Maps. Of particular usefulness to this process is to review a series of historic aerial photographs to determine changes over time, as well as review the landscape at various times of year. Aerial photography collected during the late fall or early spring is of particular importance due to the leaf-off landscape, which would be collected during the flyover for the project-specific high resolution aerial imagery. The leaf-off landscape images increase the visibility of standing surface water or saturated soil conditions. Additionally, having access to high resolution aerial imagery improves the accuracy of determinations of specifically what is on the ground. A good example would be that the biologist could observe a dark area in a forested setting on typical aerial imagery with only moderate resolution and not be able to tell whether it was a vernal pool or a lone hemlock in a deciduous stand. With the addition of the high resolution aerial imagery, it becomes much easier to either confirm a vernal pool is present or dismiss the site as being only a single hemlock tree.

   Having multiple years of imagery available will allow determination of whether the "wetland signature" is consistent over time, or if it was an anomaly when only one of the photos were taken. These areas can then be compared to existing soil survey data and the DEM data to determine if the combined data indicate the presence of

a wetland. For example, if a potential wetland location is situated on a hilltop or convex landform, and is also mapped as being "well drained" soil, the combined data indicate it is likely not a wetland. On the other hand, an area in a concave landscape position, which is mapped as "somewhat poorly drained" soil would indicate it is likely a wetland.

If the photo interpretation and review of the other available datasets finds the area to likely be a wetland, the workflow concludes with "heads-up- digitizing" of the wetland polygon boundary. The border of each probable wetland is hand-digitized based on the most plausible conservative estimate of the actual wetland extent. For contiguous forested areas, or areas that have questionable hydrology, probable wetland boundaries are typically digitized to encompass a conservatively larger area so as to not underestimate the actual wetland acreage on the ground.

This overall process gives the most realistic evaluation of wetland and stream impacts for the Part B application as an alternative to physical ground survey performed by biologist and technical specialists. The limitations in this process would be Type I errors, or false positives (calling upland areas wetlands), and Type II errors, or false negatives (calling wetland areas uplands). False positives would increase the conservatism of the analysis for potential impacts. As such, wetland areas will be digitized as accurately as possible and questionable areas which are likely "borderline" wetland or upland, will be included in the digitized wetland model.

c) Documentation pursuant to 16 NYCRR §86.5(b), 1; 3; 4; 5; 6; and 9, and (c)(1), (i-iv) regarding preservation of the natural landscape, plans to keep any right-of-way clearing to the minimum width necessary to protect hydrology resources with the proposed facility. The analysis will describe proposed impact avoidance procedures and best practices to be employed during construction, as well as during facility operation and maintenance (O&M) activities. Where impacts cannot be avoided, mitigation measures will be proposed based on agency consultations.

After the Part B submittal and prior to the start of construction, an EM&CP would be prepared to define field studies that will be performed once access is obtained and that would be necessary for federal permitting. After issuance of the Article VII Certificate and at a time when North America has obtained the requisite rights to access the properties traversed by the ROW, field surveys in areas where impacts cannot be avoided would be performed by qualified scientists delineating wetland boundaries and characterizing wetland functions and values. Delineation would follow applicable USACE Regional Supplements for wetland delineation. The surveys would provide sufficient data about individual wetlands within the study area to allow for a complete assessment of potential impacts; characterize all waterbodies; and classify the vegetation cover types into distinctive upland, wetland, and aquatic ecological communities. This level of information will allow for the required wetlands

and waters permitting evaluations to be completed by NYSDEC and the Corps prior to the start of construction. The anticipated field methodology would be as follows:

- Conduct on-site wetland delineation along the entire corridor representing the maximum right-of-way width required for temporary and permanent easement access. The wetland survey will also include all proposed new temporary or permanent access roads attending the right-of-way. Delineation would follow applicable USACE Regional Supplements for wetland delineation.
- Complete general stream assessments for all tributaries encountered within the wetland survey corridors. The stream assessments should address the ability for a stream to support (T) or (TS) usage.
- Complete general wetland functions and values assessment for all wetlands proposed to be impacted that would be regulated by the state (i.e., those greater than 12.4 acres). This data could be used by NYSDEC to assign an appropriate Class ranking (1 – 4) based on current, on-site conditions.
- Map the general locations of large populations of noxious weeds encountered during wetland field surveys. This baseline data could then support a noxious weed management plan to be implemented during construction and operation.

2.5 TOPOGRAPHY AND SOILS

Topography and soils includes the landforms, surface, and subsurface materials in the 0.5-mile study corridor. Specifically, the landforms are described with respect to their geomorphology, elevation, and relief; the surface and subsurface materials are described with respect to their areal extent and physical characteristics. This analysis also considers potentially contaminated soils.

2.5.1 EXISTING CONDITIONS

Readily available information regarding topography and soils in the 0.5-mile study area is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

Topographic, geologic, and soils information resources consulted include county soil surveys, publications of the New York State Geological Survey within the New York State Museum, and water well surveys from the New York State Department of Environmental Conservation.

North America evaluated areas with potential for soil contamination using EPA and New York State-listed hazardous waste or materials sites (either active or in remediation) and New York State-listed bulk storage sites (i.e., petroleum and chemical storage sites). The numbers, names, and identifying information for such sites were obtained from EPA's Facility Registry Service (a component of EPA's multi-system Envirofacts database) and the NYSDEC Remedial Site Database and Bulk Storage Database.

Topography

Edic-Fraser lies primarily within the Appalachian Plateau province, within the Mohawk Valley, Allegheny Plateau, and Catskill sections. Most of the Edic-Fraser study area is located within the Allegheny Plateau and Catskill sections. These sections are dissected plateaus, once-flat regions subsequently uplifted and eroded into sharp relief by watercourses. Portions of the Allegheny Plateau were glaciated, resulting in lower relief and gentler slopes. The Catskill section forms the northeastern end of, and highest-elevation portion of, the Allegheny Plateau. A northernmost portion of the corridor is located in the Mohawk Valley section, which includes the Mohawk River Valley. Elevations along the corridor range from approximately 400 feet above mean sea level (amsl) within the Mohawk River Valley in Herkimer County to approximately 7,000 feet amsl in the Catskill Mountains in Delaware County. The greatest relief in the area is approximately 2,700 feet and is located in the vicinity of the Susquehana River Valley, near the Otsego and Delaware county line, within a 0.5-mile of the corridor centerline.

Soils

The predominant soil association in the Edic-Fraser study area is the Volusia-Mardin-Lordstown, covering approximately 40% of the corridor. These soils are present on glaciated upland areas; form in glacial till derived from sandstone, siltstone, and shale; and range from loams to silt loams. For construction purposes, wetness may be a limitation for the Volusia and Mardin soils due to a high seasonal water table; erosion may be a limitation for the Lordstown soil in areas of excessive slope. The other predominant soil association in the Edic-Fraser study area is the Ontario-Lima-Lansing-Honeoye-Conesus, covering about 22.9% of the corridor. These soils are present on glaciated upland areas, till plains, and drumlins; form in glacial till derived from limestone and shale; and range from loams to gravelly silt loams. Table 2-8 summarizes the soil units in the region and Table 2-9 summarizes the characteristics of the individual soil units.

TABLE 2-8. SOIL ASSOCIATIONS WITHIN THE 0.5-MILE CORRIDOR FOR THE EDIC TO FRASER PROPOSED ROUTE

Soil Association	Acres	Percent of Corridor
Volusia-Mardin-Lordstown (s5975)	10,056.04	40.13
Ontario-Lima-Lansing-Honeoye-Conesus (s5977)	5,750.57	22.95
Willowemoc-Vly-Onteora-Lewbeach (s5978)	2,469.74	9.86
Vly-Oquaga-Lackawanna (s5981)	1,919.22	7.66
Nunda-Darien-Cazenovia (s5980)	972.96	3.88
Wurtsboro-Wellsboro-Oquaga-Morris-Lackawanna (s5985)	825.89	3.30
Wayland-Palmyra-Howard-Chenango (s5983)	673.50	2.69
Lima-Kendaia-Hilton-Appleton (s5890)	608.19	2.43
Wayland-Teel-Hamlin (s6008)	572.90	2.29
Wayland-Teel-Herkimer (s5949)	428.66	1.71

Soil Association	Acres	Percent of Corridor
Tunkhannock-Barbour (s5954)	321.10	1.28
Palmyra-Howard-Alton (s5950)	268.24	1.07
Willowemoc-Onteora (s5905)	190.77	0.76
Total	25,057.78	100.00

Source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. U.S. General Soil Map (STATSGO2) Accessed September 2013 http://soils.usda.gov/survey/geography/ssurgo/description_statsgo2.html

TABLE 2-9 . CHARACTERISTICS OF INDIVIDUAL SOIL UNITS WITHIN COMMON SOIL ASSOCIATIONS WITHIN THE 0.5-MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE

Soil Unit	Soil Depth	Drainage	Slope	Hydric	Erosion Factor (Kf)*
Volusia	Very deep	Somewhat poorly drained	0%-15%	N	0.32
Mardin	Very deep	Moderately well drained	2%-25%	N	0.32
Lordstown	Moderately deep	Well drained	2%-70%	N	0.32
Ontario	Deep to very deep	Well drained	0%-35%	N	0.32
Lima	Very deep	Moderately well drained	0%-15%	N	0.32
Lansing	Very deep	Well drained	3%-45%	N	0.32
Honeoye	Very deep	Well drained	2%-45%	N	0.32
Conesus	Very deep	Moderately well drained	0%-15%	N	0.32

*Erosion Factor Kf is used in the Revised Universal Soil Loss Equation Version 2 (RUSLE2) and indicates the erodibility of the fine-earth fraction, and is based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69; the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Source: Natural Resources Conservation Service, United States Department of Agriculture. New York Soil Survey Manuscripts for Oneida, Herkimer, Otsego, and Delaware counties, and Web Soil Survey (WSS). Accessed September 2013 http://soils.usda.gov/survey/online surveys/new york/ http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Beneath the soils, Quarternary geologic units (unconsolidated deposits) vary within the Edic-Fraser study area. In the Edic-Fraser study area, unconsolidated deposits are predominantly glacial in nature. Water well records indicate depths to bedrock ranging from 0 to 190 feet below ground surface (bgs). In addition to the presence of recent alluvium near the northern end of the corridor, colluvium is also present and consists of a mixture of sediments typically

deposited by mass wasting (slope failure). Bedrock formations along the Edic-Fraser corridor range from Ordovician to Devonian in age, and also vary in composition, including limestones, shales, siltstones and sandstones. Karst areas are present along the corridor, specifically in Herkimer and Otsego counties, where carbonate units are present. Faults are present along the entire corridor; however, the area is considered seismically stable, with a 2% probability of exceeding peak ground acceleration of 8% of gravity in 50 years.

As shown in Table 2-10, no federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or New York State remedial sites were identified within the designated 0.5-mile corridor. The sole leaking underground storage tank site located within the 0.5-mile corridor of Edic-Fraser consists of a petroleum tank (Marcy, NY) about 1,200 feet from the centerline.

TABLE 2-10. LISTED HAZARDOUS WASTE/MATERIALS SITES WITHIN 0.5-MILE CORRIDOR FOR THE EDIC TO FRASER PREFERRED ROUTE

Site Category	Edic-Fraser	
	Number of Sites	General Distance from Corridor Centerline (feet)
New York State Remedial Sites	0	—
EPA CERCLA sites	0	—
EPA Leaking Underground Storage Tank Sites	1	1,200

Source: EPA Facility Registry Service, Envirofacts accessed July 2013; NYSDEC Remedial Site Database and Bulk Storage Database, September 2013.

2.5.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts of a transmission line related to the topography, soils, and geology might include the following:

- Alteration of unique topographic or geologic features
- Temporary or permanent disturbance to soils during the construction process;
- Disturbance to soils with moderate to very severe potential for surface erosion
- Disturbance to soils on hazardous waste remediation sites

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

General construction activities affecting topography, soils, and geology include construction of temporary and permanent access roads; vegetation clearing and grading for and installation of project structures; and cleanup and restoration. Excavations for structure foundations would be made with power drilling equipment using a vehicle mounted power auger or backhoe where soils permit. The structure base or an anchor bolt cage would be placed in the hole and encased in concrete.

In general, North America may avoid impacts to topographic, soil, and geologic conditions by:

- Locating transmission structures adjacent to existing structures to the extent practicable, which minimize disturbances from excavation of footings. Blasting is not anticipated to be necessary.
- Siting new structures to avoid high relief areas, unstable soil characteristics, and shallow bedrock that may affect structure placement.

The wetness and slope characteristics of soils within the Edic-Fraser corridor may increase surface runoff and surface erosion rates. North America would generally avoid impacts by implementing measures such as the following:

- Implementing erosion and sedimentation control practices consistent with NYSDEC guidelines for Storm Water Pollution Prevention Plans to minimize erosion, such as netting, silt fences, and mulch.
- Using excavated soil for fill where suitable and to support restoration of the site.
- Stockpiling soil outside of known floodplains.
- Minimizing the width of clearings to the preferred corridor adjacent to the existing ROW.
- Clearing of vegetation to leave root masses in place, reducing erosion potential. Cleared vegetation would be left in place depending on location and landowner preferences.
- Minimizing construction activities, where practicable, on soil types at risk to impacts. Access to wet soil areas would be conducted with equipment suited for that purpose (e.g., wide flotation tires, temporary mats, etc.).
- Restoring disturbed areas, including breaking up compacted soils caused by heavy equipment and blading to level rutted soils where possible. Careful stockpiling and selective replacement of excavated soil, combined with appropriate grading and revegetation practices, would be conducted to facilitate stabilization of disturbed areas and limit erosion potential once construction activities are complete.

No adverse impacts are anticipated to occur on EPA CERCLA or New York State remedial sites as none are listed within a 0.5-mile corridor surrounding the proposed Edic-Fraser route.

Operation

General operation activities would include maintenance of the access roads and project structures, and the inspection/repair of any necessary permanent erosion control structures. These activities are not anticipated to impact topography, soils, or geology.

2.5.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

A preliminary listing of soil conservation standards relevant to the proposed project includes the following:

- New York State Standards and Specifications for Erosion and Sediment Control
- New York State Pollution Discharge Elimination System (Environmental Conservation Law Article 17, Titles 7, 8 and Article 70)
- USEPA, Clean Water Regulations, 40 CFR Part 401, et seq.; and
- DEC, 6 NYCRR Parts 703, 704, 750-56.

The analysis to be performed in the Part B Application will include a description of the topography and soils present in the preferred and alternative routes and will document the following studies:

a) A map delineating soil acreages, soil types and descriptions, soil thickness (depth to bedrock), slopes, erodibility, and drainage areas. A description of soil characteristics and suitability for construction purposes of each type of soil will also be identified.

b) A site plan to illustrate existing contours, disturbed areas where temporary access roads and support structures will be constructed, along with any area to be disturbed for roadways to be constructed, as well as any other types of off-site interconnections or improvements at a scale sufficient to show all proposed buildings, structures, paved, vegetative and construction areas.

c) Analysis of the construction and restoration methodology for potential impacts taking into account soil stability, protection of natural vegetation, and the protection of adjacent resources.

d) Documentation pursuant to 16 NYCRR 86.5 regarding preservation of the natural landscape, plans to keep any right-of-way clearing to the minimum width necessary to account for soil stabilization, and plans to protect top soil not cleared from damage during construction and operation. The analysis will describe proposed impact avoidance procedures and best practices to be employed during construction, as well as during facility operation and maintenance (O&M) activities. Where impacts cannot be avoided, mitigation measures will be proposed in the Part B submittal based on agency consultations.

An EM&CP will be prepared after submittal of the Part B application and prior to the start of construction defining field studies that will be performed once access is obtained and that may be necessary for federal permitting and final design. After issuance of the Article VII Certificate and prior to the start of construction, North America will complete the development of an Erosion and Sediment Control Plan to minimize and reduce the impact of soil loss from construction activities to receiving water bodies and adjacent properties. The plan will be based on information obtained from soil surveys following the survey protocols established by the U.S. Department of Agriculture (USDA).

Similarly, prior to the start of construction, an evaluation of subsurface conditions for foundation design of the new transmission structures will be conducted. Boring locations would emphasize areas where variations in the predominant soil conditions might be present, such as at stream crossings, or according to published literature or maps. The results of these investigations will be incorporated into the final engineering designs for the Project.

2.6 NOISE

Noise can be characterized as unwanted sound that disrupts normal human activities or diminishes the quality of the human environment. The "A-weighted" scale is the most common weighting network used to characterize and evaluate noise. An "A-weighted" decibel value ("dBA") is measured in the sound level meter after the ambient sound passes through a set of internal filters that simulates the frequency sensitivity of the human hearing mechanism.

2.6.1 EXISTING CONDITIONS

Readily available information regarding noise levels within the Edic-Fraser study corridor is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

The Edic-Fraser line will parallel existing transmission corridors through rural areas and open spaces. In such settings, ambient noise levels are often lower than those found in suburban or urban areas and are typically composed of such sources as motor vehicle traffic; farming equipment; agricultural activities such as plowing and irrigation; local roadways; periodic aircraft flyovers; and natural sounds such as birds, insects, and leaf and vegetation rustle during windy conditions. Weather conditions such as wind and precipitation may also be primary drivers of ambient sound levels in rural areas and open spaces. Rural area sound levels are typically lower during the night compared to the daytime, except when nighttime insect noise may dominate during the summer season.

Background noise in the vicinity of the proposed Edic-Fraser route reflects rural farmlands, suburban areas, and residential neighborhoods. Table 2-11 presents a characterization of potential background noise in the vicinity of the proposed route using land use categories

that approximate the typical ambient noise levels. The noise levels represent L50 data, which is the sound level exceeded 50% of the time during a measurement period.

Table 2-11. Typical Ambient Noise Levels Based on Land Use Category within the 0.5 mile Corridor for the Edic to Fraser Preferred Route

Description	Approximate Land Use within the 0.5 mile Corridor, %	Typical Ambient Noise Level (dBA)	
		Day	Night
Rural	61	30	--
Low-density urban residential, open space park, suburban	31	40 - 50	35 - 45
Average urban residential, quiet apartment and hotels, open space, suburban residential, or occupied outdoor area near busy streets	<1	45 - 55	40 - 50
High-density urban residential, average semi residential/commercial areas, parks, museum and noncommercial public building areas	3	50 – 60	45 – 55
Commercial areas with office buildings, retail stores, etc., primarily daytime occupancy; central business district	<1	50 - 70	
Industrial areas or freeway and highway corridors	4	Over 60	

Source: Handbook of Environmental Acoustics, Cowan, J.P., 1994.

2.6.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts from noise associated with a transmission line project are minor and may include noise or vibration at nearby noise-sensitive areas.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

Potential temporary changes or noise impacts may occur from use of heavy equipment during construction at noise sensitive areas in the vicinity of the transmission line or substations. Excavations for structure foundations would be made with power drilling equipment using a vehicle mounted power auger or backhoe.

North America may implement measures such as the following in order to avoid and minimize noise impacts:

- Locate the preferred alignment away from residential, commercial, and industrial areas to the maximum extent practicable;
- For diesel-fired construction equipment, only use equipment with a functional muffler as applicable to minimize equipment noise;
- Limit construction activities to daylight hours
- Avoid construction and operating noise levels above those required by local noise codes or ordinances; and
- Any other noise abatement measures identified during the Part B noise analysis.

Operation

During inclement weather, transmission lines, connections, and buswork may generate low-level noise, which is created by a mechanism known as "corona." Corona is the partial electrical breakdown of the insulating properties of air in immediate proximity to a transmission line, which may be heard as a hissing or crackling sound accompanied by a hum under certain conditions. This audible noise is typically most apparent during wet weather conditions, when water drops collect on the conductor and increase corona activity.

North America would design the transmission line to minimize corona noise associated with conductors, connectors, and buswork during operation. The substation modifications and series compensation station are not expected to generate noise during the operating phase of the project.

Temporary sources of noise will occur during the operation and maintenance phase associated with equipment such as pickup trucks, bucket trucks, chainsaws, and wood chippers. These activities would be limited to daylight hours.

2.6.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

A preliminary listing of noise guidelines and requirements relevant to the proposed project include the following:

- DEC Program Policy *Assessing and Mitigating Noise Impacts, Revised 2001;*
- Local codes applicable to construction activities at the substations, along the ROW, and at the converter station; and
- American National Standards Institute

The NYSDEC guidelines, Assessing and Mitigating Noise Impacts, revised June 2003, recommend a noise impact analysis that includes the future noise level for the Project, taking into account the existing ambient background noise levels.

A more detailed analysis of the specific noise requirements will be made as the permitting process proceeds. The analysis to be performed in the Part B Application will include a

description of the noise requirements and impacts of the Project, including the following studies:

a) A screening-level assessment of noise from construction and operation that will estimate noise impacts at near-field and far-field distances. This screening analysis will be conducted using the Federal Highway Administration Roadway Construction Noise Model or another functionally equivalent screening model. Ambient pre-construction baseline noise conditions, day and night time residual sound levels, will be determined via measurement or estimated at the property line of a substation or series compensation station location and at locations along the ROW boundary and at 500 feet from the centerline. As access allows, actual measurement data will be recorded as a function of time and frequency using a Type 1 or 2 precision real-time sound level meter (SLM) and octave band frequency spectrum analyzer, with a single season measurement being sufficient.

b) A detailed noise analysis for sensitive receptors identified during the public outreach process where the screening-level analysis indicates the potential for noise impacts above DEC guidelines. The analysis will incorporate site-specific ambient monitoring data where North America will have reasonable access to portions of the existing ROW per the Commission's Order of September 19, 2013 (or estimated ambient data if necessary due to property access constraints) in conjunction with three-dimensional predictive noise modeling consistent with International Standard ISO 9613 Part 2 (e.g., the SPM9613™ computer model by Power Acoustics, Inc.) or another functionally equivalent 3-dimensional model. Noise modeling will use manufacturers' equipment noise emission data and the distance to the nearest noise receptors from the sources.

c) Documentation pursuant to 16 NYCRR §§ 85-2.8 and 86.5 (b)(8) regarding conductor noise due to corona effects; noise associated with operation of terminal facilities including: (i) transformers; (ii) power converter facilities; and, (iii) substation facilities; considering existing, planned and proposed uses and adopted land use plans. The analysis will describe proposed impact avoidance procedures and best practices to be employed during construction. The noise modeling analysis will determine whether additional mitigation measures will be necessary to reduce noise levels. Any such proposed mitigation measures will be documented in the Part B submittal.

2.7 ELECTROMAGNETIC FIELDS (EMF)

All devices that conduct or use electricity produce electromagnetic fields (EMF), which consist of two components: magnetic and electric fields. Current, the flow of electricity in a conductor (e.g., a wire), produces the magnetic field component of the EMF. Voltage, the difference in electric potential that drives the current, creates the electric field component of the EMF.

Electric fields are measured in units of volts per meter ("V/m") or kilovolts per meter ("kV/m"). Electric fields in the home typically range from 0 to 10 volts per meter. Electric fields from transmission lines rapidly become weaker with distance and can be greatly reduced by walls and roofs of buildings.[9] Magnetic fields are measured in units of gauss ("G") or milligauss ("mG"), with 1 G being equal to 1,000 mG. Average magnetic field strength in most homes is typically less than 2 mG. However, commonly used items such as hair dryers or electric shavers can produce magnetic fields of hundreds of mG in the area of use.[10] As with electric fields, the magnetic fields from transmission lines rapidly dissipate with distance from the line.

2.7.1 EXISTING CONDITIONS

Readily available information regarding EMF is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

Humans are exposed to a wide variety of natural and man-made magnetic and electric fields. The Earth's electric fields are produced by air turbulence and atmospheric activity. The Earth's magnetic field is considered to be produced by electric currents flowing in the planet's core.

Magnetic fields are present in the vicinity of common electric appliances. Table 2-12 shows examples of typical magnetic fields depending on the distance from the sources.

TABLE 2-12. COMMON SOURCES AND TYPICAL MAGNETIC FIELD LEVELS (MILLIGAUSS)

Equipment	Magnetic Field Strength at 6 Inches from Source
Hair dryer	300
Electric Shaver	100
Microwave Oven	200
Vacuum	300

Source: National Institute of Environmental Health Sciences, National Institutes of Health, *Electric and Magnetic Fields Associated with the Use of Electric Power*, pp. 33-35, June 2002.

Field strengths in the Edic-Fraser study corridor would vary widely depending on proximity to existing substations or electrical lines and intervening landscape, walls, or topographical features. Electric fields directly beneath power lines may vary from a few volts per meter for

[9] National Institute of Environmental Health Sciences, National Institutes of Health, *Electric and Magnetic Fields Associated with the Use of Electric Power*, p. 31, June 2002.

[10] *Ibid*, p. 32-33.

some overhead distribution lines to several thousands of volts per meter for high voltage power lines. The existing 0.5-mile study corridor contains multiple transmission lines. Table 2-13 shows typical EMF levels for transmission lines depending on the distance from the sources. The magnitude of the magnetic field is proportional to the current, not the voltage of the line, and may vary over time.[11] The strength of the electric field is relatively constant and does not vary significantly with use of the line. Electric fields rapidly become weaker with distance and can be greatly reduced by walls and roofs of buildings. As with electric fields, the magnetic fields from transmission lines rapidly dissipate with distance from the line; however, magnetic fields are less affected by walls or roofs of buildings.

TABLE 2-13. TYPICAL ELECTRIC AND MAGNETIC FIELD LEVELS FOR TRANSMISSION LINES

Type	Lateral Distance from Source		
	At Source	100 feet	200 Feet
230 kV (1)			
Electric Field, kV/m	2	0.3	0.05
Magnetic Field, mG	58	7	1.8
345 kV (2)			
Electric Field, kV/m	4	0.7	0.2
Magnetic Field, mG	73	10	2.3
500 kV (1)			
Electric Field, kV/m	7	1	0.3
Magnetic Field, mG	87	12.6	3.2

Notes:

(1) National Institute of Environmental Health Sciences, National Institutes of Health, *Electric and Magnetic Fields Associated with the Use of Electric Power*, p. 37, June 2002.

(2) CapX2020, Electric and Magnetic Fields (EMF): the Basics, p. 3, January 2009.

2.7.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, the operation of a transmission line results in some public exposure to EMF levels generated. When multiple transmission lines are constructed proximate to one another, the resulting EMF strength measured at locations near the lines may be higher or lower than the EMF that would be measured from any one of the lines constructed alone due to field canceling or enhancement effects, which depend on the design and operating parameters of each line. The Part B submittal will specify the anticipated degree of EMF strength due to the proposed Edic-Fraser facilities and will include avoidance and mitigation measures intended to minimize exposure.

[11] Public Service Commission of Wisconsin, *Electric and Magnetic Fields, Electric 12*. May 2013. Accessed on September 12 at http://psc.wi.gov/thelibrary/publications/electric/electric12.pdf.

The preferred Edic-Fraser route is adjacent to existing transmission lines for over 90 percent of its length. In order to avoid and minimize EMF exposure in the Edic-Fraser area, North America may implement measures such as:

- Locate the proposed transmission facilities' alignment away from residential, commercial, and industrial areas to the maximum extent practicable;
- Design the transmission line and ROW such that the Project meets the Commission's EMF standards;
- Implement any other EMF abatement measures identified as necessary based on the proposed studies to be performed for the Part B Application.

2.7.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

The EMF guidelines relevant to the proposed project include the following:

- New York State Public Service Commission *Opinion No. 78-13* issued June 19, 1978, which set an interim standard of 1.6 kV/m for Article VII 345-kV electric transmission lines, at the edge of the right-of-way, one meter above ground level, with the line at the rated voltage.

- New York State Public Service Commission *Interim Policy Statement on Magnetic Fields* issued September 11, 1990, which set a magnetic field strength interim standard of 200 mG, measured at one meter above grade, at the edge of the right-of-way, at the point of lowest conductor sag, based on the expected circuit phase currents at the winter normal conductor rating.

- American Conference of Governmental Industrial Hygienists (ACGIH), which has set a maximum limit for magnetic field exposure of 10,000 mG.

The analysis to be performed in the Part B Application will include a description of EMF associated with the Project and potential effects on nearby communication infrastructure, including the following:

a) Pre- and post-construction EMF levels will be calculated using PLS-CADD EMF Calculator based on the Electric Power Research Institute (EPRI) Red Book[12] methods or computer algorithms developed by the BPA[13] or other functionally equivalent methods. The studies will take into account data such as voltage, current flow, circuit phasing, and conductor configuration and estimates of electric and magnetic field strength at the following locations:

[12] Institute of Electrical and Electronics Engineers (IEEE), *Recommended Practice for Instrumentation: Specifications for Magnetic Flux Density and Electric Field Strength Meters- 10Hz to 3 kHz*. IEEE Standard 1308-1994.

[13] Bonneville Power Administration (BPA), Corona and Field Effects Computer Program, 1991

- Perimeter of the series compensation station
- Centerline of the proposed transmission lines
- 37.5 feet lateral distance on either side of the transmission line centerline
- 75 feet lateral distance on either side of centerline

b) EMFs will be calculated at a height of one (1) meter above ground level consistent with the interim EMF standards. Predicted EMF levels will be presented in the Part B submittal and compared with the interim standards.

c) For other communication infrastructure, such as underground or aboveground cables, cellular communications towers, radio towers, television transmitters, radar installations, and other communication equipment identified as a potential concern during the public outreach process, North America will evaluate the location of any such nearby infrastructure with respect to the proposed transmission line and will coordinate with owners of potentially affected infrastructure as appropriate to identify any measures necessary to prevent adverse impacts to communications. Such measures will be documented in the Part B submittal.

2.8 CULTURAL RESOURCES

Cultural resources typically consist of archaeological and architectural resources. Archaeological resources in New York can consist of prehistoric and historic archaeological sites and isolated finds and the remains of buildings and structures (such as railroad beds, canals, etc.). Architectural resources in New York are associated with the built environment, typically consist of existing buildings and structures (such as roads, bridges, etc.), and for the purposes of cultural resources analysis, are usually 50 years old or older. Those cultural resources that meet the eligibility criteria at 9 NYCRR Part 427 are eligible for listing in the State Register.[14]

Historic properties are a subset of cultural resources, and are defined as any prehistoric or historic district, site, buildings, structure or object that is included (listed) in, or determined eligible for inclusion (listing) in the National Register of Historic Places (NRHP) (in accordance with National Register criteria found in 36 CFR Part 60). The term historic properties includes artifacts, records, and remains that are related to and located within such properties. Historic properties may also include landscapes, including designed landscapes, cultural landscapes and rural historic landscapes.[15,16,17] The term also includes properties that are of traditional

[14] New York State Office of Parks, Recreation and Historic Preservation. 14.09 Regulations: Part 427, State Register of Historic Places. Available online at http://www.nysparks.com/shpo/environmental-review/state-regulations.aspx?p=427. Website accessed September 9. 2013.

[15] Timothy and Genevieve P. Keller. Undated. *National Register Bulletin No. 18: How to Evaluate and Nominate Designed Historic Landscapes*. Prepared by J. Timothy Keller and Genevieve P. Keller, Land and Community Associates, Charlottesville, Virginia. Publication of the U.S. Department of the Interior, National Park Service, Interagency Resources

religious and cultural important to an Indian tribe and that meet the National Register criteria. National Historic Landmarks (NHLs) are also listed in the NRHP, but are specially designated properties that have been determined to be of exceptional value to the nation as a whole (in accordance with National Register criteria found in 36 CFR Part 65).[18] All properties listed in, or determined eligible for listing in the NRHP are automatically listed in the State Register.[19].

2.8.1 EXISTING CONDITIONS

Readily available information regarding cultural resources within the Edic-Fraser 3-mile study corridor is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

To obtain information for State and NRHP-listed historic properties, publicly available databases were reviewed, including databases maintained by the U.S. Department of the Interior's National Park Service (NPS) for NRHP-listed historic properties and NHLs and databases maintained by the NYSOPRHP.[20,21,22,23] To determine the nature of information available for cultural resources, additional online databases for historic structures and

Division. Available online at http://www.nps.gov/history/nr/publications/bulletins/pdfs/nrb18.pdf. Website accessed September 11, 2013.

[16] *National Register Bulletin No. 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes*. Prepared in 1989, and revised in 1999, by Linda Flint McClelland, National Park Service, and J. Timothy Keller, Genevieve P. Keller and Robert Z. Melnick, Land and Community Associates. U.S. Department of the Interior, National Park Service, Cultural Resources, National Register, History and Education. Available online at http://www.nps.gov/history/nr/publications/bulletins/pdfs/nrb30.pdf. Website accessed September 11, 2013.

[17] *National Register Bulletin No. 38 : Guidelines for Evaluating and Documenting Traditional Cultural Properties*. Prepared in 1990, and revised in 1992 and 1998, by Patricia L. Parker, Cultural Anthropologist and Archeologist, American Indian Liaison Office, Parker, Patricia L. and Thomas F. King. 1998.

[18] Advisory Council on Historic Preservation. 2004. 36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004). Available online at http://www.achp.gov/regs-rev04.pdf (website accessed August 29, 2013).

[19] New York State Office of Parks, Recreation and Historic Preservation. 14.09 Regulations: Part 427, State Register of Historic Places. Available online at http://www.nysparks.com/shpo/environmental-review/state-regulations.aspx?p=427. Website accessed September 9. 2013.

[20] National Park Service. 2013a. List of National Historic Landmarks (New York). Available online at http://www.nps.gov/history/nhl/designations/listsofNHLs.htm. Website accessed September 5, 2013.

[21] National Park Service. National Register of Historic Places, NPS Focus: Delaware, Dutchess, Columbia, Greene, Herkimer, Oneida and Otsego Counties. Available online at http://nrhp.focus.nps.gov/natreghome.do?searchtype=natreghome. Website accessed September 5 and 6, 2013.

[22] New York State Office of Parks, Recreation and Historic Preservation. SHPO Online Tools Disclaimers, SPHINX Access Disclaimer/ The Appropriate Use of SHPO SPHINX Database in Environmental Review. Available online at http://www.nysparks.com/shpo/online-tools/disclaimer.aspx?pgm=spx. Website accessed September 11, 2013.

[23] New York State Office of Parks, Recreation and Historic Preservation. Cultural Resource Information System. Available online at http://www.nysparks.com/shpo/online-tools/cris.aspx. Website accessed September 11, 2013.

archaeologically sensitive areas maintained by the NYSOPRHP were also reviewed.[24,25] The NYSOPRHP maintains lists of properties listed in, or eligible for listing in the State Register and the National Register, including archaeological and architectural resources. Additional publicly available information was examined as a preliminary identification of cultural resources. The cultural resources described below consist of properties listed or designated as:

- State Register - listed in the State Register of Historic Places,
- NRHP - listed in the National Register of Historic Places, and
- NHL - designated as National Historic Landmarks.

The general vicinity of each of the proposed routes was occupied by Native Americans from at least the Archaic Period through contact with European explorers and Euro-American explorers and settlers, and would be considered sensitive for the presence of prehistoric through contact period archaeological resources. Historically, these areas were also occupied by various Euro-American groups, including the Dutch, the British, the French and, following the Revolutionary War, Americans, and would be considered sensitive for the presence of historic (typically 17th through 20th century) archaeological and architectural resources.

There are a total of 27 previously recorded State Register/NRHP-listed historic properties within three miles of the Edic to Fraser Line, although none are within the proposed right-of-way for the Edic to Fraser Line.[26,27] No NHLs are located within three miles of the Edic to Fraser Line.[28]

Of the 27 previously recorded State Register/NRHP-listed historic properties, three are historic districts and 24 are individually listed properties comprised of buildings and/or structures.[29,30] Three State Register/NRHP-listed historic properties are also components of two thematic resources (TRs):

[24] New York State Office of Parks, Recreation and Historic Preservation. SHPO Online Tools Disclaimers, SPHINX Access Disclaimer/ The Appropriate Use of SHPO SPHINX Database in Environmental Review. Available online at http://www.nysparks.com/shpo/online-tools/disclaimer.aspx?pgm=spx. Website accessed September 11, 2013.

[25] New York State Office of Parks, Recreation and Historic Preservation. SHPO Online Tools Disclaimers, GIS Access Introduction, The State and National Registers of Historic Places/Archaeological Sensitivity GIS Database/The Appropriate Use of SHPO GIS Database in Environmental Review. Available online at http://www.nysparks.com/shpo/online-tools/disclaimer.aspx?pgm=gis. Website accessed September 11, 2013.

[26] National Park Service. 2013a. List of National Historic Landmarks (New York). Available online at http://www.nps.gov/history/nhl/designations/listsofNHLs.htm. Website accessed September 5, 2013.

[27] New York State Office of Parks, Recreation and Historic Preservation. Cultural Resource Information System. Available online at http://www.nysparks.com/shpo/online-tools/cris.aspx. Website accessed September 11, 2013.

[28] New York State Office of Parks, Recreation and Historic Preservation. 14.09 State Regulations: Part 428. Available online at http://www.nysparks.com/shpo/environmental-review/state-regulations.aspx?p=428 (website accessed August 28, 2013).

[29] New York State Office of Parks, Recreation and Historic Preservation. Federal & State Preservation Legislation. Available online at http://www.nysparks.com/shpo/environmental-review/preservation-legislation.aspx (website accessed August 28, 2013).

- Central Plan Dairy Barns of New York TR: the LunnMusser Octagon Barn in Otsego County; and,
- US Post Offices in New York State – 1858-1943 – TR: the US Post Offices in Frankfort and Ilion, Herkimer County.

A total of 48 cultural resources investigations have been conducted within three miles of the Edic to Fraser Line.[31] Two of these surveys intersect portions of the Edic to Fraser Line: a Phase IA cultural resources survey for a segment of a canalway trail and a Phase I cultural resources survey for a natural gas pipeline, both of which intersect the Edic to Fraser Line.

2.8.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts to cultural resources associated with a transmission line project might include the following:

- Changes to those qualities of cultural resource that make it historically significant (i.e., those qualities of significance that make a cultural resource eligible for listing on the State Register or the NRHP). Changes to those qualities would result in the property losing its historical significance and would adversely affect the historic property.

- Loss of cultural resources or properties listed in, or eligible for listing in, the State Register or NRHP, through demolition or destruction.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser transmission facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction

The types of cultural resources impacts that may occur during construction include ground disturbing construction activities in the transmission line right-of-way and at substation and series compensation station locations, and at the locations of permanent and temporary access roads, construction lay-down areas, storage areas, additional temporary workspace, etc. Indirect, temporary, negative impacts may occur at the settings of cultural resources (primarily architectural resources, but occasionally archaeological resources) during construction activities resulting from the temporary introduction of additional traffic or visual features (construction vehicles, the construction footprint, etc.).

[30] New York State Office of Parks, Recreation and Historic Preservation. Cultural Resource Information System. Available online at http://www.nysparks.com/shpo/online-tools/cris.aspx. Website accessed September 11, 2013.

[31] New York State Office of Parks, Recreation and Historic Preservation. Cultural Resource Information System. Available online at http://www.nysparks.com/shpo/online-tools/cris.aspx. Website accessed September 11, 2013.

To avoid or minimize impacts on cultural resources, including properties listed, or eligible for listing in the State Register and the NRHP, North America may implement measures such as the following:

- locate the proposed Edic-Fraser transmission facilities away from cultural resources or properties listed in, or eligible for listing in, the State Register or NRHP to the maximum extent practicable,
- locate transmission structures adjacent to existing structures where disturbances may have occurred in the past,
- use existing roads, where possible, and locate new access roads, work areas, and facilities away from cultural resources wherever feasible.
- consult with the NYSOPRHP and other consulting parties during the early stages of planning so that additional impact avoidance measures may be identified, such as vegetative screening at specific locations.

Operation

General operation activities would include maintenance of the access roads and project structures, vegetation maintenance, and the inspection or repair of any necessary permanent erosion control structures. These activities are not anticipated to impact cultural resources.

2.8.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

The regulatory requirements and guidance relevant to the evaluation of cultural resource impacts associated with the Project include the following:

- Section 14.09 of the New York State Historic Preservation Act of 1980;
- Implementing regulations for compliance with Section 14.09 of the NYSHPA at 9 NYCRR Part 428; and,
- New York State Archaeological Council's *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* (1994).

The New York State Historic Preservation Act of 1980 established as a state law similar to the National Historic Preservation Act, requires state agencies to consult with the SHPO if it appears that any project being planned may or will cause any change, beneficial or adverse, in the quality of any historic, architectural, archeological or cultural property that is listed on the National Register of Historic Places (NRHP) or listed on the State Register or that is determined to be eligible for listing on the State Register. It also requires state agencies, to the fullest extent practicable consistent with other provisions of the law, to avoid or mitigate adverse impacts on such properties, to explore all feasible and prudent alternatives, and to

give due consideration to feasible and prudent plans that would avoid or mitigate adverse impacts on such properties.[32]

Regulations for implementing Section 14.09 of the NYSHPA can be found at 9 NYCRR Part 428, and specify the types of projects that are subject to compliance with Section 14.09 of the NYSHPA and procedures for determining eligibility of properties for inclusion in the State Register of Historic Places; the assessment of impact of a project on properties listed or eligible for listing in the State Register and NRHP-listed or -eligible historic properties; and the process of consultation to avoid or mitigate adverse impacts on properties listed or eligible for listing in the State Register and NRHP-listed or -eligible historic properties; and documentation of the resolution of impacts, issued in a Letter of Resolution between the Commissioner of the NYSOPRHP and state agency, which ends the consultation process for compliance with Secton1 4.09 of the NYSHPA.[33]

The New York Archaeological Council (NYAC) issued *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State* in 1994. The purpose of these standards was to ensure a degree of uniformity in the approach taken by archaeologists in New York State to cultural resources investigations. The NYAC membership developed and published the series of basic standards in 1994, with the intention that all archaeologists, private developers, local, state and federal agencies would make use of these standards toward the fulfillment of their preservation obligations under a variety of federal, state and local laws and preservation ordinances. The NYSOPRHP/SHPO adopted these standards and used them as guidelines for submitting acceptable reports documenting cultural resources investigations for over 10 years.[34,35]

The NYSOPRHP has issued additional guidance for cultural resources investigations. This includes guidance for conducting and reporting on Phase I cultural resources investigations (*State Historic Preservation Office Phase I Archaeological Report Format Guidance*, effective May 30, 2005); conducting cultural resources investigations for wind farms (*Guidelines for Wind Farm Development Cultural Resources Survey Work*, dated March 8, 2006; guidance for consulting with the appropriate federal and state-recognized Indian tribes (The Indian Nation

[32] New York State Office of Parks, Recreation and Historic Preservation. Federal & State Preservation Legislation. Available online at http://www.nysparks.com/shpo/environmental-review/preservation-legislation.aspx (website accessed August 28, 2013).

[33] New York State Office of Parks, Recreation and Historic Preservation. 14.09 State Regulations: Part 428. Available online at http://www.nysparks.com/shpo/environmental-review/state-regulations.aspx?p=428 (website accessed August 28, 2013).

[34] New York Archaeological Council. 1994. Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State. Available online at http://nyarchaeology.org/assests/standards/NYACStandards.pdf (website accessed August 29, 2013).

[35] New York Archaeological Council. 2013. Standards. Available online at http://nyarchaeology.org/mainpages/about/standards.htm (website accessed August 29, 2013).

Areas of Interest Map);[36] and guidance for the inadvertent discovery of human remains during construction or operation of a project (The Human Remains Discovery Protocol).[37] This guidance would be incorporated into developing the methodology for cultural resources investigations conducted for the proposed Project as applicable and/or appropriate.

The above discussion of the regulatory framework for the proposed Project assumes compliance with state regulations only, requiring consideration of the effect of the Project on cultural resources pursuant to Section 14.09 of the NYSHPA and its implementing regulations at 9 NYCRR 428. For any federal permits or approval, such as Nationwide Permits from the USACE or review of the project by the USACE under Section 10 of the Rivers and Harbors Act, the lead federal agency would be responsible for considering the effect of the project on historic properties pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA). Compliance with Section 106 of the NHPA would be conducted by the lead federal agency in accordance with implementing regulations for Section 106, found at 36 CFR Part 800, and would include identifying the area of potential effect (APE) for the proposed project, identifying cultural resources and historic properties (cultural resources included, or determined eligible for inclusion in the NRHP) within the APE, evaluating the potential effects of the proposed project on historic properties, and developing measures to mitigate adverse effects of a project on historic properties.[38] It is likely that the results of cultural resources investigations conducted for the Project would be used by the USACE or other appropriate federal agency for the Section 106 process.

The methodology for proposed cultural resources investigations would follow state regulatory requirements and guidance summarized above. The purpose of these investigations will be to identify all cultural resources, including those resources that are included in, or eligible for inclusion in the National Register of Historic Places (NRHP) within the area of potential effects. The results of cultural resources investigations will be used to support the demonstration of compliance with Section 14.09 of the NYSHPA and its implementing regulations at 9 NYCRR 428.

The analysis to be performed in the Part B Application will include a description of the cultural resources impacts of the Project and alternative segments, based on the following studies:

[36] New York State Office of Parks, Recreation and Historic Preservation. Undated. Indian Nation Areas of Interest for Tribal Consultation Purposes Only. Available online at http://www.nysparks.com/shpo/environmental-review/documents/IndianNationAreasofInterest.pdf (website accessed August 28, 2013).

[37] New York State Office of Parks, Recreation and Historic Preservation. 2008. Human Remains Discovery Protocol (November 28, 2008). Available online at http://www.nysparks.com/shpo/environmental-review/documents/HumanRemainsProtocol.pdf (website accessed August 28, 2013).

[38] Advisory Council on Historic Preservation. 2004. 36 CFR Part 800 – Protection of Historic Properties (incorporating amendments effective August 5, 2004). Available online at http://www.achp.gov/regs-rev04.pdf (website accessed August 29, 2013.

a) Phase IA cultural resources investigations consisting of identification of all known cultural resources within the area of potential effects (APE) for the Project, including previously recorded cultural resources that are archaeological, architectural (built), and/or another type (Native American, Rural Historic Landscape, Traditional Cultural Property, etc.). Phase IA cultural resources investigations will address the direct and indirect APEs, as appropriate per resource type.

   The Phase IA cultural resources investigation will consist of site file searches, background research and literature review to develop environmental and cultural contexts for the proposed Project. It will identify previously recorded cultural resources and historic properties within a defined study area for each Project area and alternative segment. The proposed study areas for the Phase IA cultural resources investigations would consist of an area within 3 miles of the proposed right-of-way, consistent with 16 NYCRR §§86.3 (a)(1)(iii), and would include the locations of the new series compensation station, transmission line ROW and alternative segments for the proposed project, and would include a 150 foot radius around all modified substations and on each side of the transmission line ROW for the proposed project (assuming a 300-foot wide survey corridor).

   The Phase IA cultural resources investigation will identify areas that have been previously surveyed for cultural resources and areas that can be documented as having been previously disturbed such that no survey is necessary. It will develop a methodology for implementing subsequent field investigations (Phase IB) when the locations of transmission pole foundations and the compensation station have been defined.

b) Documentation pursuant to 16 NYCRR §§86.5 (b)(2)(i) regarding efforts to assure that the ROW avoids historic areas.

After the Part B submittal and prior to the start of construction, an EM&CP will be prepared to define the field studies that will be performed once North America ROW access is obtained. Phase IB cultural resources investigations would be conducted after North America receives a Certificate pursuant to Article VII and North America obtains the requisite rights of property access and documented in the EM&CP. Based on information from the desktop studies, the analysis to be performed after certification of the proposed project would be expected to include the following:

- Phase IB cultural resources investigations consisting of field surveys to identify previously unrecorded cultural resources that may be eligible for listing in the State or National Registers. Once North America has defined the locations of construction footprint and the aboveground design elements, the results of the Phase IA will be used for consultation with the NYSOPRHP/SHPO to refine the boundaries of the APE for the Phase IB field investigations. The purpose of consultation at this point will be to identify the portions of the APE that will require archaeological field investigations

(e.g., shovel testing at specified intervals) to identify subsurface cultural resources and the portions of the APE that will require architectural surveys. Phase IB field investigations will be implemented per the methodology developed in consultation with the NYSOPRHP/SHPO.

Subsurface archaeological testing within the Direct APE, including shovel testing at systematic intervals and any deep testing requirements; and surveys for aboveground architectural/built resources within the Indirect APE, including the use of computer modeling to develop zones of visual influence (ZVI), presented as 'heat' maps, that indicate the number of project elements that would be visible (e.g., the number of poles) and whether new transmission line ROW will be visible, and visual simulations of the proposed project from various vantage points within the Indirect APE. Phase IB archaeological field investigations will consist of subsurface testing (e.g., shovel testing) to identify archaeological resources within the Direct APE (the construction footprint, including workspaces, pole locations, substation locations, access roads, etc.). Phase IB architectural field investigations will consist of reconnaissance surveys to identify architectural or built resources (e.g., buildings and structures) that are 50 years old or older in those portions of the APE within which the Project components will be visible. The Phase IB will result in recommendations regarding NRHP-eligibility or the need for further investigations to make recommendations regarding NRHP-eligibility.

- Documentation of efforts conducted in accordance with 16 NYCRR §§86.5 (b)(2)(i) as part of efforts to assure that the ROW avoids historic areas.

Subsequent phases of investigation would be implemented as necessary and appropriate. The need for additional cultural resources investigations would be determined based on conclusions and recommendations made during the Phase I and in consultation with the NYSOPRHP and other consulting parties, consistent with Section 14.09 of the NYSHPA and its implementing regulations at 9 NYCRR 428. If necessary, additional cultural resources investigations could consist of Phase II archaeological site evaluations and architectural evaluations and Phase III archaeological data recovery investigations and architectural recordation. Phase II archaeological site evaluations and architectural evaluations will consist of investigations as needed to make recommendations regarding NRHP-eligibility (Phase II archaeological investigations or architectural evaluations). Phase II will be conducted after issuance of the Article VII Certificate and prior to the start of construction and will address only those cultural resources that need additional investigations to determine NRHP-eligibility. Phase III archaeological data recovery investigations and architectural recordation will consist of treatment investigations for those cultural resources that are (1) determined to be NRHP-eligible and (2) cannot be avoided. Treatment typically consists of data recovery investigations for archaeological sites and documentation (HABS/HAER or other) for architectural/built resources. Phase III will address only those historic properties that would be adversely impacted by construction or operation of the Project and adverse impacts

cannot be avoided. These investigations, if necessary, will be conducted after issuance of the Article VII Certificate and prior to the start of construction.

2.9 VISUAL RESOURCES

Visual resources are those natural and cultural features of the environment which can potentially be viewed. A landscape's character may be defined by the arrangement of features and elements in an area that give it a distinctive appearance and quality. Visual quality is the significance given to a landscape based on its intrinsic physical properties and cultural values and perspectives.

Cultural resources, summarized in Section 2.8 above are also considered visual resources. Visual resources of local concern include residences or residential neighborhoods where people have frequent and long-term views of the surrounding landscape and areas where people gather and engage in recreation, leisure, or ceremonial activities. This latter category generally consists of local recreation areas, such as local parks, but may also consist of schools, cemeteries, golf courses, fair grounds, nature preserves, conservation areas, and local trails.

2.9.1 EXISTING CONDITIONS

Readily available information regarding visual resources within the 3-mile Edic-Fraser study corridor is provided in this subsection. Additional information regarding the existing conditions will be provided in the Part B submittal, informed by the studies conducted as described in the Regulatory Framework and Proposed Studies section below.

Visual resources of state and local concern were inventoried within three miles of the proposed Edic-Fraser transmission facilities. Visual resources of statewide significance were inventoried for the relevant categories identified in the NYSDEC Program Policy for Assessing and Mitigating Visual Impacts. Visual resources of local concern (e.g., local parks, schools, and trails), to the extent known, were also inventoried. Publically available databases were reviewed, including those discussed below.

A total of 41 visual resources were identified within three miles of the Edic to Fraser line. Table2-14 lists the visual resources of state and local concern and the relevant categories of statewide significance and local concern. One state park, two state reforestation areas, and one state Wildlife Management Area are located within three miles of the Edic to Fraser line. The Edic to Fraser line would cross the Revolutionary Trail, a designated NYS scenic byway. One bike path designated as a NYS trail was identified within three miles. Visual resources of local importance include eight county and municipal recreation facilities, including parks, a local bike path, and a county forest.

TABLE 2-14. VISUAL RESOURCES WITHIN 3 MILES OF THE EDIC TO FRASER LINE

Name of Resource	Location (County)	Category	Distance from Centerline (Miles)
Utica Marsh State Wildlife Management Area	Oneida	State Recreation and Wildlife Management Area	2.5
State Reforestation Area	Herkimer	State Recreation	2.9
State Reforestation Area	Otsego	State Recreation	0.0
Gilbert Lake State Park	Otsego	State Recreation and Office of Historic Preservation	0.1
Revolutionary Trail	Herkimer Oneida	A site, etc designated as scenic (NYS Scenic Byways)	0.0
Bike Path	Oneida	State or federally designated trail (NYS Trail)	2.5
Bike Route 5	Herkimer Oneida	Bike Route (Local)	0.0
County Forest	Otsego	County Recreation (Local)	2.7
Hem Street Memorial County Park	Otsego	County Recreation (Local)	1.1
Wilderness Park	Oneida	Municipal Recreation (Local)	1.3
Town Park	Otsego	Municipal Recreation (Local)	2.6
Toby Road Park	Oneida	Municipal Recreation (Local)	2.4
Schuyler Town Park	Herkimer	Municipal Recreation (Local)	2.2
F T Proctor Park	Oneida	Municipal Recreation (Local)	3.0
Neck Canal of 1730, the	Oneida	State Register (Historic Places)	2.9
First Baptist Church of Deerfield	Oneida	State Register (Historic Places)	2.5
Weaver, Gen. John G., House	Oneida	State Register (Historic Places)	2.4
Utica Parks and Parkway Historic District	Oneida	State Register (Historic Places)	3.0
Balloon Farm	Herkimer	State Register (Historic Places)	1.8
Frankfort Town Hall	Herkimer	State Register (Historic Places)	1.9
US Post Office--Frankfort	Herkimer	State Register (Historic Places)	2.0
Frankfort Hill District No. 10 School	Herkimer	State Register (Historic Places)	2.7
Palatine German Frame House (Wilder House)	Herkimer	State Register (Historic Places)	2.5
Richardson, Thomas, House	Herkimer	State Register (Historic Places)	2.0
US Post Office--Ilion	Herkimer	State Register (Historic Places)	2.3
First United Methodist Church	Herkimer	State Register (Historic Places)	2.2
Remington Stables	Herkimer	State Register (Historic Places)	2.3
Remington House	Herkimer	State Register (Historic Places)	0.2
Brace Farm	Herkimer	State Register (Historic Places)	2.8
Meetinghouse Green Road Cemetery	Herkimer	State Register (Historic Places)	3.0
The White House	Otsego	State Register (Historic Places)	2.0

Name of Resource	Location (County)	Category	Distance from Centerline (Miles)
Hartwick Historic District	Otsego	State Register (Historic Places)	1.6
Old Hartwick Village Cemetery	Otsego	State Register (Historic Places)	1.4
Lunn-Musser Octagon Barn	Otsego	State Register (Historic Places)	1.1
Otsdawa Baptist Church	Otsego	State Register (Historic Places)	2.0
Swart--Wilcox House	Otsego	State Register (Historic Places)	3.0
West Meredith Cemetery	Delaware	State Register (Historic Places)	2.9
Franklin Village Historic District	Delaware	State Register (Historic Places)	2.6
West Delhi Presbyterian Church, Manse and Cemetery	Delaware	State Register (Historic Places)	1.1
Schoolhouse No. 5	Delaware	State Register (Historic Places)	2.9
Sherwood Family Estate	Delaware	State Register (Historic Places)	2.7

2.9.2 POTENTIAL IMPACTS AND AVOIDANCE

In general, potential impacts of a transmission line on visual resources might include aesthetic impacts. The NYSDEC Program Policy states[39] that "aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure" and that an impact would be significant if it:

- causes diminishment of the public enjoyment and appreciation of an inventoried resource, or
- impairs the character or quality of an inventoried resource.

The Part B submittal will specify the anticipated degree of such impacts due to the proposed Edic-Fraser transmission facilities and will include avoidance and mitigation measures intended to minimize such impacts.

Construction and Operation

The types of impacts to cultural resources that may occur include placement of new structures or changes to existing structures and landscape that affect aesthetics or visibility. NYSDEC's Program Policy document, *Assessing and Mitigating Visual Impact*, defines the term "aesthetic impact" as follows:

> *"Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a project proposal, should not be a threshold for decision making. Instead a project, by virtue of its visibility, must clearly interfere with or reduce the public's enjoyment and/or*

[39] NYSDEC, *Assessing and Mitigating Visual Impacts*, Program Policy document, p. 5, July 31, 2000.

appreciation of the appearance of an inventoried resource (e.g. cooling tower plume blocks a view from a State Park overlook)."[40]

In addition, the NYSDEC (2000) document defines the term "visual impact" as follows:

"Visual impact occurs when the mitigating effects of perspective do not reduce the visibility of an object to insignificant levels. Beauty plays no role in this concept. A visual impact may also be considered in the context of contrast. For instance, all other things being equal, a blue object seen against an orange background has greater visual impact than a blue object seen against the same colored blue background. Again, beauty plays no role in this concept."[41]

Clearing of trees and other vegetation for new rights-of-way could create straight vertical and horizontal edges that contrast strongly with the existing forms and lines in the landscape and cause visual impacts for views from inventoried resources or local roads crossed by the line. In addition, some new structures could be placed at higher elevations than existing structures and therefore be more visible. New structures may increase contrast and conductors could create glare and contrast for viewers.

Clearing and grading for construction, operations, and maintenance (e.g., access roads, pulling and stringing sites, construction pads, lay-down areas, and construction yards) may be visible to the community, from inventoried resources, or from vehicle traffic. Construction and operation of the new series compensation station may be visible and could potentially impact views. The compensation station would introduce new sources of lighting or glare.

In general, North America may avoid and minimize visual impacts caused by the proposed project with measures such as the following:

- Locate the proposed alignment away from residential and commercial areas and scenic, recreational, and historic areas to the maximum extent practicable.
- Site the series compensation station in an area compatible with such use and that would not create significant visual impacts.
- Use alternate structure finishes, such as dull galvanized or self-weathering steel to minimize visual contrast.
- Use existing roads for transportation of materials and equipment from staging and storage areas to locations where they will be needed along the transmission line ROW where practicable. Siting temporary construction yards and lay-down areas in locations where they are not easily visible from visual resources or paved roads to the extent practicable. In some cases, fencing or other similar materials may fully or mostly screen views of the interiors of these features from visual resources.

[40] NYSDEC, *Assessing and Mitigating Visual Impacts*, Program Policy document, p. 9, July 31, 2000.

[41] NYSDEC, *Assessing and Mitigating Visual Impacts*, Program Policy document, pp. 10-11, July 31, 2000.

- Use the minimum temporary and permanent night lighting necessary for safety and security, orient lighting downward, fully screen bare bulbs from view from inventoried resources, and use on-demand lighting and/or timers to minimize visual impacts of lighting.
- Apply other visual impact minimization measures identified for the Part B visual impacts analysis as appropriate and necessary.

2.9.3 REGULATORY FRAMEWORK AND PROPOSED STUDIES

A preliminary listing of guidelines for visual impacts assessment potentially relevant to the proposed transmission line includes the following:

- NYSDEC's Program Policy *Assessing and Mitigating Visual Impacts*.[42]
- U.S. Department of Agriculture, Forest Service. Landscape Aesthetics: A Handbook for Scenery Management, Agriculture Handbook Number 701.[43]
- Visual Resources Assessment Procedure for U.S. Army Corps of Engineers, Instruction Report EL-88-1 Basic Visual Impact Assessment Procedure, prepared by State University of New York, Syracuse, for US Army Engineer Waterways Experiment Station, Vicksburg, MS.[44]

In addition, the visual impacts assessment will consider relevant criteria for impacts on aesthetic resources and visibility identified for review under the New York State Environmental Quality Review Act (i.e., Full Environmental Assessment Form, Part 2 – Identification of Potential Project Impacts, and 617.20 Appendix B, Visual EAF Addendum).

The analysis of the visual resources and impacts to be performed in the Part B Application will include the following:

a) A visual resource inventory that will list and describe all significant scenic and aesthetic resources within three (3) miles of the proposed alignment and alternative segments. Significant resources will be determined based on 1) NYSDEC's listing of categories of aesthetic resources of statewide significance identified on pp. 3-4 in NYSDEC's (2000) Program Policy document, *Assessing and Mitigating Visual Impacts* and 2) identification of locally important scenic and aesthetic resources. This inventory will be conducted using available desktop resources, including information derived from local planning documents. The inventory will identify potential important viewing locations (e.g., Scenic Areas of Statewide Significance, state parks, roads, trails, overlooks, local public parks, and residences) and describe the general visibility of the project within the area.

[42] NYSDEC, *Assessing and Mitigating Visual Impacts*, Program Policy document, July 31, 2000.

[43] U.S. Department of Agriculture, Forest Service, *Landscape Aesthetics: A Handbook for Scenery Management. Agricultural Handbook Number 701*, 1995.

[44] State University of New York, Syracuse, *Visual Resources Assessment Procedure for U.S. Army Corps of Engineers, Instruction Report EL-88-1 Basic Visual Impact Assessment Procedure*, 1988. Smardon, R. C., et al.

b) A digitally-generated general viewshed, or zone of visual influence (ZVI), map for the project produced on an aerial base with an extent of three miles in all directions from the proposed alignment and alternatives. The viewshed map will provide an indication of areas of potential visibility based on topography, the top of the structure with the highest peak elevation, and the potential screening effects of existing vegetation and buildings. The map will be based on available terrain data, generalized vegetation data to the extent available, and site specific data where North America will have reasonable access to portions of the existing ROW per the Commission's Order of September 19, 2013.

c) Viewer sensitivity in the area of the alignment based on identification of general viewer groups and their anticipated concerns for visual resources and aesthetics within the area. Assessment of visual sensitivity will be based on the types of users, activities they may be engaged in, and the anticipated level of public interest and concern.

d) Key observation points (KOPs) that represent important and significant views within the area and will be identified through public outreach, agency consultation, and site reconnaissance in areas that do not require permission for access or where North America will have reasonable access to portions of the existing ROW per the Commission's Order of September 19, 2013. Identification of KOPs will consider visibility of the proposed line from important viewing areas, viewer sensitivity, and viewer exposure (e.g., amount of use and view duration and frequency).

e) Assessment of visibility and impacts to visual character and quality within the study area at the KOPs for Project phases of construction (short-term impacts) and operation (long-term impacts), including the following:

- Photograph views that would include the alignment from the selected KOPs and prepare visual simulations of the transmission line for each of these.
- Visual character and quality of the region and the immediate project area based on views from the selected KOPs.
- Effects on scenic and aesthetic resources identified in the visual resource inventory and for other important viewing locations and viewers in a visual assessment based on project visibility, using digital viewshed (ZVI) mapping and photo simulations from selected KOPs; viewer sensitivity, including the types of users, the amount of use, the frequency and duration of views, and the anticipated level of public interest; and evaluation of project contrast based on elements of form, line, color, and texture, as appropriate.
- Illustration of mitigation measures, if applicable, which reduce or eliminate the visibility of the transmission line at the resource in question or alter the line's effect on the scenic or aesthetic resources.

f) Documentation pursuant to 16 NYCRR § 86.5(b)(2)(i), (ii), and (8) regarding avoiding scenic, recreational and historic areas and minimizing visibility from areas of public view. The documentation will describe proposed impact avoidance incorporated in the facility design. Where impacts cannot be avoided, mitigation measures will be proposed in the Part B submittal based on agency consultations.

3. COASTAL ZONE CONSISTENCY

The Commission's December 16 order requires that the scoping and schedule discussion address coastal zone consistency, including local waterfront revitalization programs and designated inland waterway areas. No such areas occur along the Edic-Fraser route; thus, these resource areas do not need to be evaluated in the Part B submittal.

4. GHG AND RESILIENCY TO POTENTIAL EFFECTS OF CLIMATE CHANGE

Per the September 19, 2013 Procedural Order, the scoping discussion of environmental impact under 16 NYCRR §86.5 (Exhibit 4) in the Part A submittal must include the following items:[45]

(1) What efforts, if any, have been made to minimize the emissions of greenhouse gases (GHG) during the construction, operation and maintenance of the proposed facility;

(2) If any portion of the proposed facility is to be constructed underground, the applicant shall state what, if any, plans have been made to ensure system resilience to rising water tables, including potential salt water intrusion in coastal areas;

(3) If any portion of the proposed facility is to be constructed in the 0.2 (1 in 500 year storm) percent floodplain, the applicant shall state what, if any, plans have been made to ensure system resilience to flooding, including enhanced storm surge in coastal areas;

(4) What, if any, plans have been formulated to ensure that the proposed facility is resilient to severe snow and/or ice storms; and

(5) What, if any, plans have been formulated to ensure that the proposed facility is resilient to periods of extreme heat.

Scoping discussions for these items are included in the following subsections.

4.1 MINIMIZING GHG EMISSIONS

The proposed line is expected to significantly reduce overall GHG emissions in the State of New York due to the cleaner mix of generating resources that would be better able to serve downstate New York as a result of the congestion relief the proposed line will bring.

[45] State of New York Public Service Commission, Case 12-T-0502, *Order Adopting Additional Procedures and Rule Changes for Review of Multiple Projects Under Article VII of the Public Service Law*, pp. 18-19, Appendix A: p. 4, September 19, 2013.

During construction, operation, and maintenance of the proposed line, GHG emissions associated with the project are expected primarily to be the result of the combustion of gasoline or diesel fuel in project vehicles and equipment (e.g., delivery trucks, cranes, etc.). These GHG emissions would primarily be emitted during the construction process since the operations phase of the Project will only involve periodic vehicle travel for maintenance activities. The Part B application will detail the efforts proposed to minimize GHG emissions from project vehicles and equipment during construction, operation, and maintenance of the line. Such measures may include limiting engine idle time and using equipment with electric motors at locations where electricity is available.

Circuit breakers insulated with sulfur hexafluoride ("SF6", a GHG) are an additional potential source of GHG emissions associated with the project. The Part B application will detail the measures proposed to minimize GHG emissions from the Project's circuit breakers, such as utilizing sealed circuit breakers equipped with low pressure alarms to indicate the occurrence of leaks and taking corrective action as soon as practicable if a leak occurs.

4.2 RESILIENCE TO RISING WATER TABLES

No underground transmission line segments are proposed; thus, it is not expected that resilience to rising water tables is a potential concern for the Project. In the event that Project plans change such that one or more underground segments are proposed, the Part B application would include engineering/design specifications ensuring that the proposed underground segment(s) would be resilient to the effects of rising water tables.

4.3 RESILIENCE TO FLOODING

Based on evaluation of the proposed and alternative routes, North America anticipates that no Project structures will be constructed within the 0.2 (1 in 500 year storm) percent floodplain. In the event that Project plans change such that any proposed structures would be constructed within the 0.2 percent floodplain, the Part B application would include engineering/design specifications requiring that the potentially affected structures would be resilient to flooding.

4.4 RESILIENCE TO SNOW / ICE STORMS

Design specifications for the proposed line are discussed in Exhibit E-1. Criteria to be addressed in the detailed engineering design exercise for the Project during preparation of the Part B submittal will include ice loadings (which are worst-case compared with snow loadings). The design specifications for the Project provided in the Part B application will document that North America will construct the line utilizing structural loading criteria that meet or exceed all national and regional loading requirements. Therefore, the Part B submittal will demonstrate that North America's designs have been formulated to ensure that the proposed facility is resilient to severe snow and/or ice storms.

4.5 RESILIENCE TO COSTAL STORM SURGES

The Edic-Fraser transmission line is not located in a coastal zone or an area subject to coastal storm surges under any foreseeable scenario. Therefore, no additional analysis will be provided in the Part B application.

4.6 RESILIENCE TO PERIODS OF EXTREME HEAT

Design specifications for the proposed line are discussed in Exhibit E-1. Criteria to be addressed in the detailed engineering design exercise for the Project during preparation of the Part B submittal will include system performance under high-temperature thermal conditions representative of periods of extreme heat. The design specifications for the Project provided in the Part B application will document that North America will construct the line utilizing thermal criteria that meet or exceed all national and regional requirements. Therefore, the Part B submittal will demonstrate that North America's designs have been formulated to ensure that the proposed facility is resilient to periods of extreme heat.

4. ECONOMIC EFFECTS (§86.7 – EXHIBIT 6)

Per the December 16 Order, scoping of the economic effects evaluation under 16 NYCRR § 86.7 is included in the Part A submittal. This scoping statement describes the evaluation to be conducted during preparation of the Part B application to disclose any anticipated effects the construction or operation of the proposed facility may induce in the residential, commercial or industrial land-use patterns of any area adjacent to any portion of the proposed facility.

5.1 CONSTRUCTION

An Economic Impact Study was completed for Edic to Fraser in January 2013 by Appleseed, included as Attachment A, which estimated construction related economic effects from the Edic to Fraser Project component. This study found that taking into account both direct and indirect/induced effects, spending on the construction of the proposed line would be expected to generate the following effects:

- $138.8 million in economic output in Delaware, Herkimer, Oneida and Otsego counties;
- 605 person-years of employment;
- $89.3 million in employee compensation; and
- $9.7 million in state and local tax payments during construction.

The Part B application will identify any anticipated effects (including economic effects) that construction of the proposed facility may induce in the residential, commercial or industrial economic patterns of any area adjacent to any portion of the proposed facility.

5.2 OPERATION

The Economic Impact Study completed for Edic to Fraser in January 2013 by Appleseed, included as Attachment A, estimated operation-related economic effects from the Edic to Fraser Project component. The study found the primary effects of operation are related to real property tax revenues for school districts, townships, and counties:

- School district property tax revenue of $4.4 million in the first year of operations and $60.6 million over the first 20 years of operation;
- Township property tax revenue of $1.6 million in the first year of operations, and $21.8 million over the first 20 years of operation; and
- County property tax revenue of $7.3 million in the first year of operations, and $99.3 million over the first 20 years of operation.

The Part B application will identify any anticipated effects (including economic effects) that operation of the proposed facility may induce in the residential, commercial or industrial economic patterns of any area adjacent to any portion of the proposed facility.

6. LOCAL ORDINANCES (§ 86.8(1), (3), (5), (6) – EXHIBIT 7)

Per the Commission's December 16, 2014 Order, the Part A Application must address how and when North America will comply with 16 NYCRR § 86.8(1), (3), (5) and (6), as these sections have been modified by the April 22, 2013 Order, in the Part B Application submission. Compliance with those sections is discussed in the following subsections.

6.1 CONSULTATION WITH MUNICIPALITIES/OTHER AGENCIES

As set forth in the Commission's April 22, 2013 and December 16, 2014 Orders, North America will consult with all municipalities or other local agencies whose procedural and substantive requirements are the subject of Exhibit 7 to: (a) determine whether North America has correctly identified all such requirements; and, (b) to determine whether any potential request that the Commission refuse to apply any such local substantive requirement could be obviated by design changes to the proposed facilities or otherwise.

In mid-December 2012, North America began its initial consultation with municipalities in which its proposed facilities will be located and with local agencies that may have an interest in the proposed routes. North America anticipates that this consultation will continue through the coming months until the determinations set out in the Commission's various Orders can be made.

6.2 IDENTIFICATION OF CERTAIN MUNICIPALITIES AND/OR STATE AGENCIES

North America is in the process of identifying each city, town, village, county, or State agency qualified by the Secretary of State that shall (a) review and approve any applicable

building plans, (b) inspect the construction work, and (c) certify compliance with the New York State Uniform Fire Prevention and Building Code, the Energy Conservation Construction Code of New York State and the substantive provisions of any applicable local electrical, plumbing or building code with respect to the proposed facilities. In its statement to be submitted as part of its Part B Application, which will include this identification, North America will also describe any preliminary arrangements that may be made between North America and such municipalities or State agencies, including arrangements for payment of costs for such review, approval, inspection and compliance certification.

North America has already commenced the process of identifying these municipalities, local and State agencies and anticipates that it will complete such identification during preparation of the Part B Application submittal. During that same time frame, North America will make any necessary arrangements with such municipalities or State agencies, including any arrangements for payment of costs.

6.3 SUMMARY OF LOCAL REQUIREMENTS AND FEASIBILITY OF COMPLIANCE

North America is in the process of preparing a summary table of all local substantive ordinances, laws, resolutions, regulations, standards and other requirements applicable to the proposed facilities, as required by the Commission's December 16, 2014 Order. In that table, North America will also discuss or otherwise demonstrate the degree with which the proposed facilities will comply with each such substantive provision, including either a statement that the proposed facilities shall conform to the substantive requirement or a request that the Commission refuse to apply such substantive requirement because it is unreasonably restrictive in view of the existing technology, factors of cost or economics, or the needs of consumers, along with a statement justifying that request, as required in 16 NYCRR § 86.8(b). North America will also compile a copy, or link to, each such applicable substantive provision of local law, to the extent that technology used by the municipalities allows such link.

North America has already commenced the process of preparing this summary table of local substantive requirements and anticipates that it will complete such table, along with the statements regarding conformance, during preparation of the Part B Application submittal.

6.4 ZONING/PERMITTED USE

North America is also in the process of identifying the zoning designation or classification of all lands constituting the site of the proposed facility, as required in the Commission's December 16, 2014 Order. North America is also developing a summary of the language in each applicable zoning ordinance or local law that indicates whether the proposed facilities are an allowed use at the proposed sites. If the language of the zoning ordinance or local law indicates that the proposed facilities are an allowed use at the proposed sites, subject to the grant of a special exception, North America will also develop a summary of the

criteria in the applicable zoning ordinance or local law by which qualification for such a special exception is determined.

North America has already commenced the process of identifying these zoning designations and summaries regarding permitted use, and anticipates that it will complete such identification and summaries during preparation of the Part B Application submittal.

6.5 LIST OF STATE AUTHORIZATIONS

North America is in the process of developing a list of all State approvals, consents, permits, certificates, or other conditions for the construction or operation of the proposed facilities of a substantive nature, as required by the December 16 Order. Together with that list, North America is also in the process of preparing a statement that the proposed facilities conform to all such State substantive requirements.

North America has already commenced the process of preparing this list of State substantive requirements and anticipates that it will complete such list, along with the statement regarding conformance, during preparation of the Part B Application submittal.

7. OTHER PENDING FILINGS (§ 86.9 – EXHIBIT 8)

Per the December 16 Order, the Part A Application must address the analysis to be completed during preparation of the Part B application regarding other pending filings by the applicant and other entities pursuant to 16 NYCRR § 86.9. Those pending filings are discussed in the following subsections.

7.1 APPLICANT'S FILINGS

North America's filings are available in Commission Docket 13-T-0454. The Part B submittal will include any analysis required to be completed associated with North America's other filings in this docket.

7.2 FILINGS BY OTHER ENTITIES

Multiple transmission providers have submitted Part A filings to the Commission as part of the Energy Highway AC transmission upgrade initiative. Later in the process, the Commission will make a comparative evaluation of multiple projects on a common record prior to selecting one or more projects and issuing a Certificate. On or before March 30, 2015, North America will provide a discussion of filings by other entities based on the Part A applications submitted to the Commission by January 20, 2015 and March 2, 2015 in accordance with the Commission's letter ruling of December 30, 2014. Additionally, to the extent required, such filings by other applicants will be evaluated and addressed in the Part B submittal.

8. COST OF PROPOSED FACILITY (§ 86.10 – EXHIBIT 9)

Per the Commission's December 16, 2014 Order, the scoping evaluation must address the cost estimates to be prepared during preparation of the Part B application pursuant to 16 NYCRR § 86.10. Those cost estimates are discussed in the following subsections.

8.1 CAPITAL COSTS

North America's binding capital cost estimate for the project is shown in Table 2-15 below.

TABLE 2-15. ESTIMATED CAPITAL COSTS

Component	Capital Cost ($ Millions)
Edic-Fraser	260
Series compensation on Fraser-Gilboa 345 kV circuit	17.6
Loop existing Marcy-Coopers Corner 345 kV to Fraser substation;	8.0
Series compensation on Marcy-New Scotland 345 kV circuit;	16.8

Note that the cost estimates do not include any potential system upgrades and improvements beyond those directly required by the interconnection of the facilities to the system, as the scope of any such improvements is not known. These cost estimates also do not include AFUDC and financing costs, as such costs are not direct capital costs and do not appear to be included in the total capital cost estimates requested in the December 16 Order.

More detailed cost estimates will be provided on or before March 2, 2015. Additionally, in complying with the provisions of 16 NYCRR §86.10, North America will provide in its Part B application a detailed estimate of the total capital costs of the proposed Project, including the estimated cost of the following items:

(1) Right-of-way;

(2) Surveys;

(3) Materials;

(4) Labor;

(5) Engineering and inspection;

(6) Administrative overhead;

(7) Fees for legal and other services;

(8) Interest during construction; and

(9) Contingencies.

North America's Part B application will include a brief statement of the source of the information used as the basis for the estimates listed above. Further, to the extent available, North America will include data on preliminary bids, if any, for the proposed Project, and recent experience on costs for similar facilities.

8.2 FINANCIAL STRUCTURE SUPPORTING PROPOSED FACILITY

North America is currently funded entirely with equity provided by its affiliate, LS Power. At this time, North America expects to finance construction of the Edic-Fraser component of the Project (as well as other components of the Project) on a non-recourse project finance basis with a combination of equity and debt. The final proportions of equity and debt will be determined in accordance with North America's approved capital structure, estimated at 45-55% equity at this time, and 45-55% debt. North America will finalize its construction financing plan after receipt of all approvals required for construction, including approval under Article VII.

North America will rely on its affiliate, LS Power, to arrange for its debt and equity financing. LS Power has excellent relationships with debt providers and investors. Since 2005, LS Power has raised over $22 billion of debt and equity for investment into its projects and portfolio of subsidiary companies. In 2011, LS Power raised over $900 million for the construction of two large-scale overhead transmission line projects, each on a non-recourse stand-alone basis.

North America would not proceed with financing of the Edic-Fraser component without an identified method of cost recovery. Per the Commission's December 16, 2014 Order, cost recovery would be achieved via FERC-approved tariffs, with the mechanism determined via coordinating the comparative evaluation phase with the NYISO's public policy planning process. The Edic-Fraser component has also been submitted to NYISO for review under the CARIS process. If the Edic-Fraser line receives approval in CARIS, it would receive cost recovery under the NYISO tariff at rates set by the Federal Energy Regulatory Commission.

9. DESCRIPTION OF PROPOSED TRANSMISSION LINE (§88.1(e) AND (f) – EXHIBIT E-1)

Per the Commission's April 22, 2013 and December 16, 2014 Orders, the Part A Application must address the description of the construction materials and the design standards for the poles and the pole foundations comprising the proposed transmission line to be submitted as part of the Part B application pursuant to 16 NYCRR §88.1(e) and (f). Those descriptions are discussed in the following subsections.

9.1 CONSTRUCTION MATERIALS FOR THE POLES AND FOUNDATIONS

The poles will be constructed of steel or concrete, or possibly a combination of the two. Steel poles will be finished in galvanized or weathering steel. The Part B submittal will provide detailed information regarding the construction materials for the poles based on additional engineering work to be conducted and public input received.

9.2 DESIGN STANDARDS FOR POLES AND POLE FOUNDATIONS

North America proposes to construct the line utilizing structural loading criteria that meet or exceed all national and regional loading requirements which will create an additional, robust path of power flow through the congested region. During preparation of the Part B application, additional engineering work will be performed, during which a complete set of design standards will be developed. Those design standards will be documented in the Part B submittal.

10. OTHER FACILITIES (§88.2 – EXHIBIT E-2)

Per the Commission's April 22, 2013 and December 16, 2014 Orders, the scoping evaluation must address the information regarding other facilities, including switching stations, substations, or terminal facilities associated with the proposed Edic-Fraser transmission line, that will be prepared during preparation of the Part B application pursuant to 16 NYCRR § 88.2. The evaluation and information to be developed regarding these other facilities is discussed in the following subsections.

10.1 NEED FOR ANY PROPOSED SWITCHING STATION AND EQUIPMENT DESCRIPTION

The Edic-Fraser 345 kV transmission line is not expected to require an additional switching station. Should Project plans change such that a switching station is proposed, the Part B submittal will describe in detail any proposed switching station and equipment and will explain the necessity for that equipment.

10.2 DETAILS OF ANY TERMINAL FACILITY TO BE PART OF THE TRANSMISSION LINE

Details of terminal facilities are identified in North America's January 7, 2015 filing. Additional details are not expected to be required for the Part B filing.

11. UNDERGROUND CONSTRUCTION (§ 88.3 – EXHIBIT E-3)

The Edic-Fraser 345 kV transmission line is proposed as an eighty (80) mile single circuit overhead transmission line between the Edic Substation in Oneida County and the Fraser Substation in Delaware County. No portion of the project is being proposed as underground and no details of underground construction are necessary. In the event that Project plans change to include underground construction, any underground segments will be evaluated in the Part B in accordance with 16 NYCRR 88.3 to provide the following required information:

(a) the type of cable system to be used;

(b) the design standards for that system;

(c) the number and size of conductors to be used; and

(d) on a profile of the line:

  (1) the depth of the cable; and

(2) the location of oil pumping stations and manholes.

While all components of the Project are proposed as aboveground, North America would be willing to construct any or all of the Project components underground if directed or approved by the Commission. If any underground components are incorporated into the Project plans, North America will provide the information listed above in the Part B application.

12. EFFECT ON COMMUNICATIONS (§ 88.5 – EXHIBIT E-5)

In accordance with the Commission's April 22, 2013 and December 16, 2014 Orders for the Part A Application, this section provides scoping information regarding the evaluation of the anticipated effects of the proposed line and related facilities on television, radio and other communications systems pursuant to 16 NYCRR § 88.5.

High voltage, electrical transmission lines have the potential to cause radio and telecommunication noise and television interference. North America's preferred route for the Edic-Fraser 345 kV transmission line is adjacent to existing transmission line ROW for more than 90% of the proposed route. The proposed Edic-Fraser Line is not anticipated to impact or interfere with telecommunication services or broadcast signals because existing transmission facilities are already present in the area. For components of the project that are not adjacent to an existing transmission ROW, North America would minimize impacts based on the siting criteria identified above and implement additional impact avoidance measures, that may include the following:

- Design the route in compliance with the National Electrical Safety Code standards on spacing requirements for power and communication cables; and
- Contact owners of communication cables within or adjacent to the ROW to determine impacts and avoidance measures.

In accordance with 16 NYCRR §88.6, the full analysis of potential impacts on communication will be included in the Part B Application as part of the EMF analysis as outlined in Section 2.7. Therefore, the studies to be prepared during preparation of the Part B application to address effects on communications are those specified in Section 2.7.3. The analysis will identify potential utility and communication equipment with the potential to be affected by high voltage AC transmission lines and evaluate the presence or absence of interference from the Edic-Fraser transmission facilities. If necessary, mitigation measures will be implemented to address adverse impacts.

13 EFFECT ON TRANSPORTATION (§ 88.6 – EXHIBIT E-6)

In accordance with the Commission's April 22, 2013 and December 16, 2014 Orders for the Part A Application, this section provides scoping information regarding the evaluation of the anticipated effects of the proposed Edic to Fraser line and related facilities on airports, railroads and other transportation systems pursuant to 16 NYCRR § 88.6.

Transmission lines are able to span over roads, railways, and other transportation infrastructure without directly impacting the infrastructure; however, construction may temporarily affect operation of transportation services. Deliveries of materials to work areas and construction traffic will increase use of existing roads. Construction occurs on segments of the route in a sequence including ground surveys to mark ROW boundaries, pole locations, access roads and temporary work areas; clearing of vegetation; installation of poles; and restoration of temporarily disturbed areas. Construction impacts are short-term, with activity at one location generally lasting a few days to a few weeks; thus, the impacts within a given area will generally be short in duration and periodic in nature.

The height of the proposed steel monopole structures is expected to be approximately 115 feet. Overhead transmission lines and supporting structures must be sited and constructed so that interference with air space and air traffic does not occur, which is dependent on proximity to airports. No public use airports are located within two miles of the proposed ROW, and all constructed structures are anticipated to be less than 200 feet high. Therefore, the proposed structures are not expected to constitute a hazard to air navigation, and no lighting is expected to be required to meet Federal Aviation Administration (FAA) standards.

Because North America's preferred alignment is adjacent to existing transmission line ROW for more than 90% of the proposed route, impacts to transportation systems will be minimized. North America expects that short portions of the Edic-Fraser transmission line may not be adjacent to the existing transmission ROW in order to avoid other impacts. For those portions, North America would minimize impacts based on the siting criteria identified in Section 1.1 and may implement the following additional impact avoidance measures:

- Design new access roads and improvements according to New York State Department of Transportation (NYSDOT) standards;
- Place new poles in locations that comply with the National Electrical Safety Code for railroad crossings and Federal Aviation Administration standards for tall structures;
- Consider the scenic, historic, and cultural associations with proposed transportation routes during construction;
- Provide notice to adjacent landowners when construction would take place;
- Coordinate deliveries of major equipment to minimize impact on the local community; and
- Contact NYSDOT representatives to discuss potential traffic impacts and avoidance measures.

In accordance with 16 NYCRR § 88.6, the analysis of potential impacts on airports, railroads and other transportation systems will be included in the Part B Application. The evaluation will document the following:

a) **Identification of airports and FAA notification.** For any proposed structures exceeding 200 feet in height; located within two miles of a public use airport; or otherwise identified as a potential air navigation hazard during the public outreach process, the proposed structures will be evaluated with

FAA's Notice Criteria Tool to ascertain the need for a determination of no hazard to air navigation from the FAA.

b) **Consultation with DOT.** North America will consult with NYSDOT to ensure that proposed aerial transmission crossings, roads, and improvements comply with applicable design standards.

c) **Consultation with railroads.** For any proposed rail crossings, North America will consult with railroad owners to ensure that proposed aerial transmission crossings, roads, and improvements within a railroad ROW comply with applicable design standards.

ATTACHMENT A – APPLESEED ECONOMIC IMPACT REPORT FOR EDIC-FRASER