

DOE/EIS-0447-SA-1

Supplement Analysis for the Champlain Hudson Power Express Project

April 2021

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1. Introduction and Purpose

1.1 Introduction

The U.S. Department of Energy (DOE) has prepared this Supplement Analysis (SA) to evaluate the August 2014 Final Environmental Impact Statement (FEIS)¹ for the Champlain-Hudson Power Express (CHPE) Project in light of changes that could have bearing on the potential environmental impacts previously analyzed. The Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) regulations direct agencies to prepare a supplement to either a draft or final EIS when a major Federal action remains to occur and either the “agency makes substantial changes to the proposed action that are relevant to environmental concerns” or there are “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts” that would require a supplemental EIS (40 CFR 1502.9(d)(1)(i)–(ii)). In this instance, there is new circumstances or information relevant to environmental concerns, as explained in detail below. DOE’s NEPA regulations state that when it “is unclear whether or not an supplemental EIS is required, DOE shall prepare a Supplement Analysis” (10 CFR 1021.314(c)). This SA provides sufficient information for DOE to determine whether (1) to supplement the existing August 2014 FEIS, (2) to prepare a new EIS, or (3) prepare no further NEPA documentation for the proposed action (10 CFR 1021.314(c)(2)(i)–(iii)).

Existing EIS evaluated in this SA:

- DOE/EIS-0447 Champlain Hudson Power Express Transmission Line Project Final Environmental Impact Statement, August 2014.

The remainder of this SA is organized as follows:

- Section 1.0 contains the introduction, including a description of the proposed modifications to the Project and description of the proposed action;
- Section 2.0 describes resource areas included in and excluded from the SA and comparative environmental impact analyses for included resource areas;
- Section 3.0 discusses potential cumulative impacts;
- Section 4.0 discusses potential mitigation methods; and
- Section 5.0 includes the conclusion and determination.

¹ See FEIS: <https://www.energy.gov/nepa/downloads/eis-0447-final-environmental-impact-statement> and Record of Decision: <https://www.energy.gov/nepa/downloads/eis-0447-record-decision>

1.2 New Circumstances or Information²

On October 6, 2014, DOE issued a Presidential Permit (PP-362)³ authorizing Champlain Hudson Power Express, Inc. (CHPEI) to construct, connect, operate, and maintain the CHPE Project. The CHPE Project as currently permitted is a 1000 megawatt (MW), high-voltage direct current (HVDC), underground and underwater merchant transmission system that would cross the United States-Canada international border underwater near the Town of Champlain, New York; extend approximately 336 miles south through New York State; and interconnect to facilities located in Queens, New York. The terrestrial portions of the transmission line would be primarily buried in existing road and railroad rights-of-way (ROW). The aquatic portions of the transmission line would be primarily submerged in Lake Champlain and the Hudson, Harlem, and East Rivers.

As an administrative matter, on April 6, 2020, CHPEI and CHPE LLC jointly filed an application with DOE requesting that DOE reissue Presidential Permit No. PP-362 to enable the transfer of the permit from CHPEI to its affiliate CHPE LLC. The DOE issued a Presidential Permit to CHPE LLC (PP-481) on July 21, 2020.⁴

On September 25, 2020, CHPE LLC submitted an Amendment Application⁵ to DOE to amend its existing Presidential Permit PP-481 regarding minor modifications in the route and location of the converter station (85 FR 62721; October 5, 2020)⁶. On January 15, 2021, CHPE LLC filed a supplement⁷ to its Amendment Application requesting that the capacity of the Project be increased from 1000 megawatts (MW), as currently permitted, to 1250 MW (86 FR 11960; March 1, 2021).⁸ The New York State Public Service Commission (NYPSC) approved the modified construction method on March 20, 2020 and seven of the route modifications and the relocation of the converter station on August 13, 2020. The eighth modification, the Harlem River Yard, was approved by the NYPSC on January 21, 2021.

1.2.1 Proposed Changes

Since issuance of the original Presidential Permit (PP-362) in 2014, CHPE LLC (or the Applicant), in consultation with stakeholders, has developed modifications to the Current Project Route (referred to as the Current Route), as well as a relocation of the proposed Converter Station in Queens, New York. The eight proposed route modifications represent the addition of approximately 5.1 linear miles, or an overall increase in project length of less than 2%. The Applicant has also identified a modified construction method along overland sections of the route that would reduce environmental impacts and has proposed an upgrade to increase the capacity of the cable from the 1000 MW capacity assessed in the 2014 FEIS to a 1250 MW capacity. The eight proposed modifications to the Current Route (referred to as the Route Modification) and the Current Converter Station relocation; the proposed installation

² Throughout this document, the phrase “changes to the proposed action or new circumstances or information” refers to a substantial change to the proposed action that may be relevant to environmental concerns or significant new circumstances or information that may be relevant to environmental concerns and have bearing on the proposed action or its impacts consistent with 40 CFR 1502.9(d).

³ See PP-363: <https://www.energy.gov/sites/prod/files/2014/10/f18/PP-362%20CHPE%20FINAL.pdf>

⁴ See PP-481: https://www.energy.gov/sites/prod/files/2020/07/f76/PP-481_CHPE%20LLC.pdf

⁵ See: https://www.energy.gov/sites/default/files/2020/10/f79/DOE%20Application%209_25_2020_FINAL%20-%20Part%201%262_v2_0.pdf

⁶ See: <https://www.federalregister.gov/documents/2020/10/05/2020-21936/application-to-amend-presidential-permit-chpe-llc>

⁷ See: https://www.energy.gov/sites/prod/files/2021/01/f82/DOE%20Supplement%201_15_2021_Active_57635652_2.pdf

⁸ See: <https://www.federalregister.gov/documents/2021/03/01/2021-04078/application-to-amend-presidential-permit-chpe-llc>

method modification; and the proposed capacity upgrade are summarized in Table 1, illustrated in Figures 1 through 9, and described in this section.

To evaluate the impact of these proposed changes, DOE considered: information in the 2014 FEIS and Record of Decision (ROD); the Applicant's proposed changes and refinements to the CHPE Project since the 2014 FEIS and ROD were issued as described in their Presidential permit Amendment Application and Supplement to that Amendment Application; the Applicant's response to DOE data requests for additional information; and information received through the National Historic Preservation Act (NHPA) Section 106, Endangered Species Act (ESA) Section 7, and Magnuson Stevens Fishery Conservation and Management Act (MSA) Section 305(b)/ Fish and Wildlife Coordination Act (FCWA) re-initiation of consultations.

Table 1: Proposed Modifications to the Current Route and Current Converter Station Location

#	Change	Current Route Miles	Description / Reason(s) for Change	Proposed Change(s)	Municipalities Affected
1	Putnam Station	96.6 – 101.5 (4.9 miles)	Exit Lake Champlain four miles north of Current Route exit location. Required due to installation barge draft requirements.	Reroute in road ROW within rural/agricultural area.	Putnam, Dresden, Washington County
2	Fort Ann	117.6 – 120.9 (3.3 miles)	Move cable from railroad ROW to road ROW. Reduces rock removal and wetland impacts.	Reroute in road ROW within rural area.	Whitehall, Fort Ann, Washington County
3	Schenectady	169.0 – 177.0 (8.0 miles)	Reroute cable around downtown Schenectady. Avoids impact to Schenectady downtown revitalization project, reduces community impacts.	Reroute primarily in impacted railroad ROW and road ROW within industrial/residential area.	Schenectady, Glenville, Village of Scotia, Rotterdam, Schenectady County
4	Selkirk Rail Yard	194.0 – 197.0 (3.0 miles)	Reroute cable around Selkirk Rail Yard. Avoids conflicts with expanding railyard, reroute requested by railyard owner.	Reroute primarily in impacted railroad ROW and road ROW within industrial/residential area.	Bethlehem, Albany County
5	Catskill Creek	221.0 – 221.5 (0.5 miles)	Utilize horizontal directional drilling (HDD) vs. bridge attachment to cross Catskill Creek; railroad bridge deemed unfit for cable attachment.	Reroute in road ROW and private property in residential area.	Village of Catskill, Greene County
6	Rockland County	295.0 – 302.0 (7.0 miles)	Utilize road ROW vs railroad ROW. Community opposition to railroad route, addition of double tracks in railroad ROW makes installation problematic.	Reroute in highly developed road ROW in residential/commercial area.	Stony Point, Haverstraw, Clarkstown, Villages of W. Haverstraw & Haverstraw, Rockland County
7	Harlem River Yard	330 – 332 (2.0 miles)	Recent construction of new distribution centers and utility infrastructure impact the Current Route.	Reroute from congested rail yard to Randall's Island Park.	New York City, Queens County, New York County

Table 1: Proposed Modifications to the Current Route and Current Converter Station Location					
#	Change	Current Route Miles	Description / Reason(s) for Change	Proposed Change(s)	Municipalities Affected
8	Astoria Rainey Cable	N/A (upgrade to AC system)	Change to underground AC cable route. Reroute of upgrade to avoid underground utilities and residential neighborhoods. The previously proposed modification of the electrical configuration by addition of a switch ring bus would not be affected by the Astoria Rainey Cable Route Modification.	Reroute to different roads within Astoria, Queens neighborhood. As part of the Joint Proposal of Settlement conducted as part of the New York State Article VII process (February 2012), multiple alternative routes were considered for the Astoria Rainey Cable.	New York City, Queens County
Converter Station					
	Converter Station	333	Utilizing alternative site for the Converter Station within the same complex as the Permitted Converter Station location.	Change in Converter Station location within the same industrial complex; the proposed location is approx. 0.3 miles north of the Permitted Converter Station location.	New York City, Queens County
Installation Method Modification					
	Conduit Installation	Entire Line	Conduit trench installation method instead of open trench installation	Reduction in construction impacts related to decreased duration of conduit trench line installation as compared to open trench line installation.	Entire Line
Capacity Upgrade					
	1250 MW Upgrade	Entire Line	The CHPE Project, as currently permitted, is a 336-mile, 1000 MW, HVDC underwater and underground merchant transmission line	Change in the capacity of the transmission line to a 1250 MW HVDC line.	Entire Line

Putnam Station

The Putnam Station modification proposes to exit Lake Champlain near Milepost (MP) 97 (4.5 miles north of the Current Route exit point) and travel 7.5 miles along existing Route 9 ROW until it rejoins the Current Route along State Route 22 in Dresden at MP 101.5. The proposed modification avoids construction of the transmission line in the Federally Maintained Channel in southern Lake Champlain.

Fort Ann

The Fort Ann modification proposes relocating the cable from a Railroad ROW to the Old Route 4 ROW starting near MP 118 for 3.4 miles. This proposed modification would reduce wetlands impacts and rock removal impacts.

Schenectady

The proposed Schenectady modification would depart the Current Route at MP 169 and travel along a railroad ROW for 6 miles through the Village of Scotia, proceed under the Mohawk River via an HDD and then would join another Railroad ROW for 3.5 miles before rejoining the Current Route at MP 177. This modification would avoid construction within the Schenectady city center that would conflict with development plans.

Selkirk Rail Yard

The proposed Selkirk Rail Yard modification would depart the Current Route near MP 194 and travel along New York Route 32 ROW and other public and private road ROWs for 3.6 miles until it rejoins the Current Route within the railroad ROW near MP 197. This modification would avoid construction within Selkirk Railyard at the request of the railyard operator.

Catskill Creek

The proposed Catskill Creek modification would depart the Current Route at MP 221 and use the Allen Road ROW and private property to HDD under Catskill Creek, and then use the New York State Route 9W ROW before rejoining the Current Route at MP 221.5. This modification would avoid using a railroad bridge that is deemed unsuitable for cable construction.

Rockland County

The proposed Rockland County modification would involve relocating the cables from a railroad ROW to the Route 9W ROW and other public road ROWs through an 8 mile section in Rockland County. This modification would depart the Current Route at MP 295 and travel primarily along road ROWs for approximately 8 miles until it rejoins the Current Route at MP 302. There would be an approximate 1,000 foot net decrease of cable construction within the Hudson River as a result of this modification. This modification was proposed to respond to stakeholder opposition to use of the railroad ROW.

Harlem River Yard

The proposed Harlem River Yard (HRY) modification is an approximately 2 mile alternative to the Current Route through HRY. The modified HRY route would avoid construction in an area that has seen significant development since 2014; construction in this section would be extremely challenging as a result of post-2014 development. The Applicant has been working closely with New York City agencies

to utilize a section of Randall's Island Park for the alternative route to avoid HRY. This route relies on HDDs to avoid impacts to waterways.

Astoria-Rainey Cable Modification

The proposed route modification is an alternative approximately 3.5 mile route for the Astoria Rainey Cable (ARC). The ARC is a required upgrade to the New York City grid system that is inherent to the proposed action. The modified ARC route would travel a different route under the streets of Astoria, Queens and is proposed to avoid impacts to existing underground infrastructure and residential areas. Alternative routes for the ARC were reviewed during the local government permitting process.

Converter Station Relocation

The proposed Converter Station relocation is an alternative parcel on an approximately 5 acre site located approximately 0.3 miles north of the Permitted Converter Station Site within the same Astoria Complex. The Astoria Complex is a heavily industrialized area of Astoria, Queens primarily used for electrical generation and distribution. Alternative locations for the Converter Station were reviewed during the local government permitting process.

Capacity Upgrade

CHPE LLC filed an Amendment Application on January 15, 2021 for a proposed upgrade to the transmission line capacity from 1000 MW, as currently permitted, to 1250 MW.¹ The Supplement to the Amendment Application included analyses of potential impacts to magnetic fields, compass deviations, and thermal cable losses, and concluded there would be no material change in construction or operation and maintenance impacts beyond those identified for the permitted 1000 MW project. Overland cable diameter would increase from 4.72 inches to 4.86 inches, and submarine cable diameter would increase from 5.24 inches to 5.36 inches. The approximately 3 percent increase in overland cable diameter would not necessitate an increase in the width of excavated trenches or HDD for installation of the overland 1250 MW HVDC cables (Canadian Border to Astoria) and 1250 MW HVAC cables (Astoria to Rainey). The approximately 3.2 percent increase in submarine cable diameter would not necessitate changes to the jet-plowing, shear plowing installation, and HDD completion methods that would be used for in-water installation or changes to the types of vessels used for in-water installation. The Converter Station to support the proposed 1250 MW capacity modification would occupy a footprint of approximately 5.5 acres, which represents a 20 percent increase in the area necessary from the 4.5 acres needed for the Permitted Converter Station location. Sufficient land is available in the already industrialized Astoria Complex for construction of the 5.5 acre Converter Station.

Construction Method Modifications

The Applicant is proposing to modify the method for installing the cables along overland sections of the route. This proposed modification to the construction method would apply to all terrestrial segments of the proposed transmission line, including the eight proposed route modifications. The Applicant initially proposed, and the 2014 FEIS assessed impacts from, direct burial of the cables via open trench excavation and direct placement of the cables at the bottom of the trench along the alignment, prior to

¹ See PP-481 Supplement To Pending Application of CHPE LLC To Amend Presidential Permit at Page 5:
https://www.energy.gov/sites/prod/files/2021/01/f82/DOE%20Supplement%2015_2021_Active_57635652_2.pdf

the full restoration of the trench. The Applicant has concluded that installing the cables within a conduit within the established trench along the overland portions of the CHPE Project (referred as the *Series Installation Method*) would reduce construction impacts as compared to the initially proposed direct placement and open trench installation. The proposed width and depths of the trenches for terrestrial segments of the transmission line would remain unchanged from that associated with the initially-proposed open trench and direct burial technique.

The proposed Construction Method Modifications would:

1. Reduce the length of the open trench required at any given time during construction;
2. Reduce the duration of community impacts, as installation within a particular segment of the alignment would progress more quickly;
3. Provide more flexibility in scheduling and sequencing the various construction trades necessary to dig the trench, install the conduit, backfill the trench, and pull the cable; and
4. Reduce thermal impacts to surrounding soils by virtue of the insulating effect of the conduits.

Therefore, the proposed Series Installation Method decreases overall impacts.

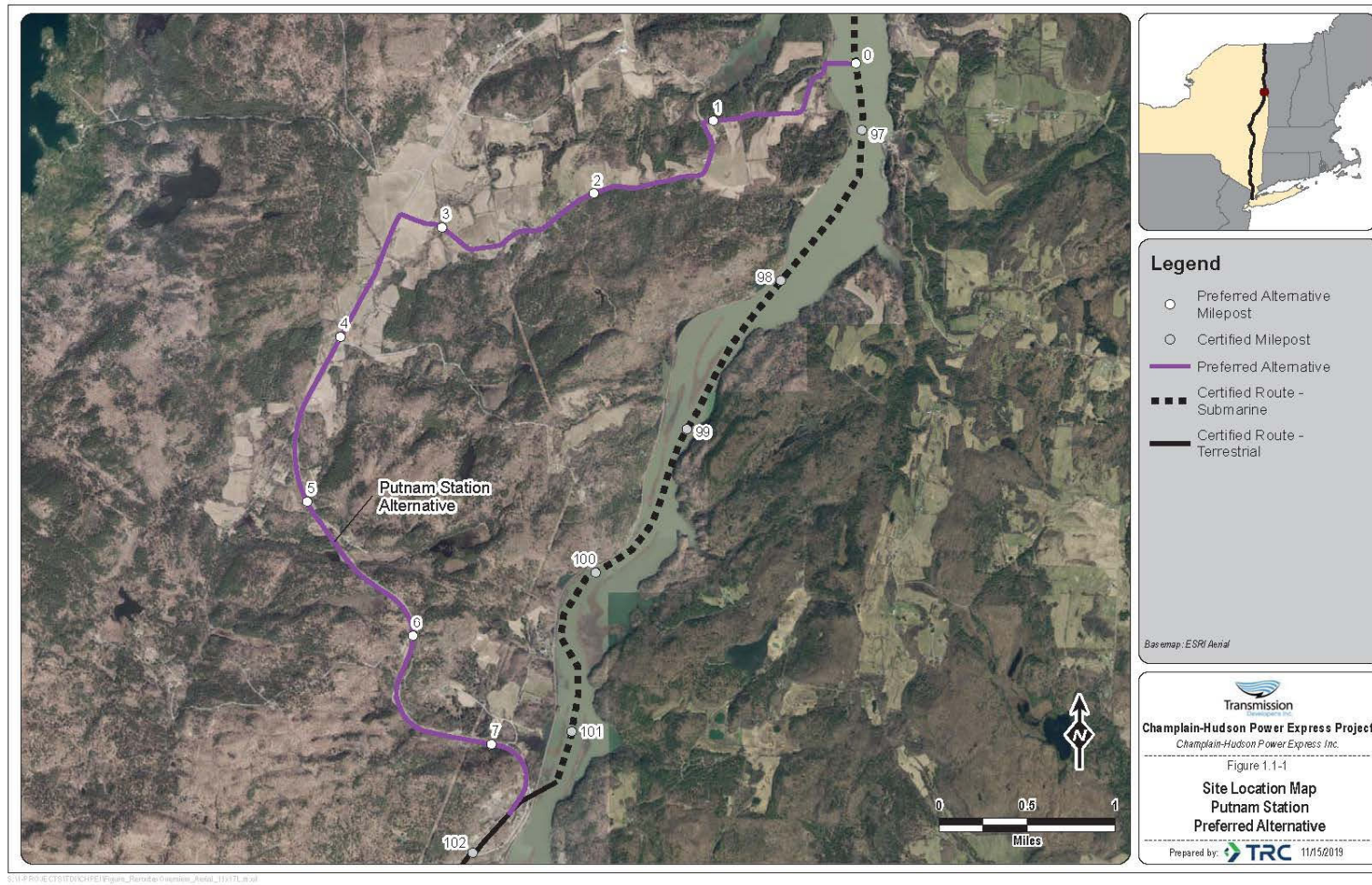


Figure 1 – Putnam Station Route Modification

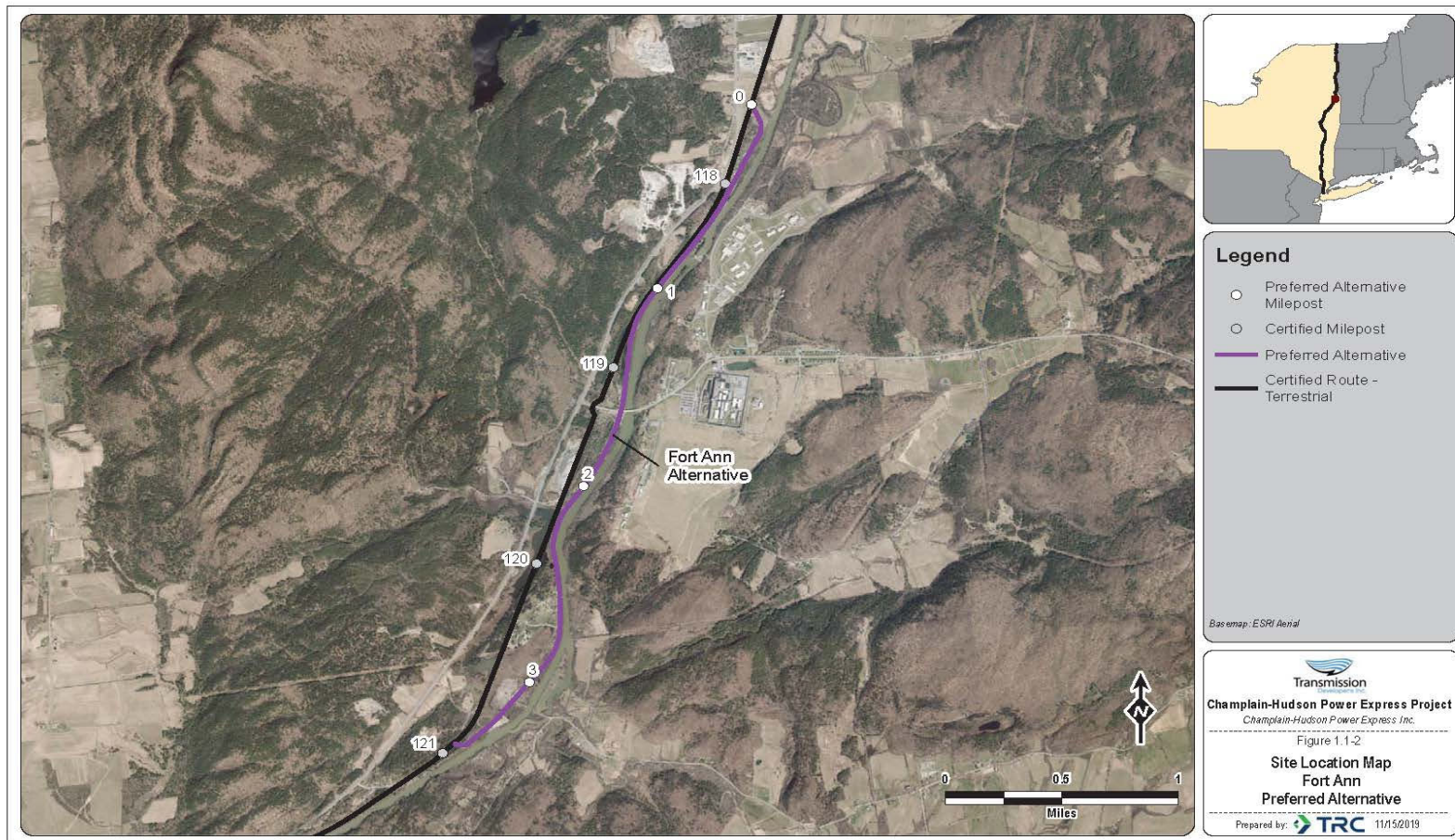


Figure 2 – Fort Ann Route Modification

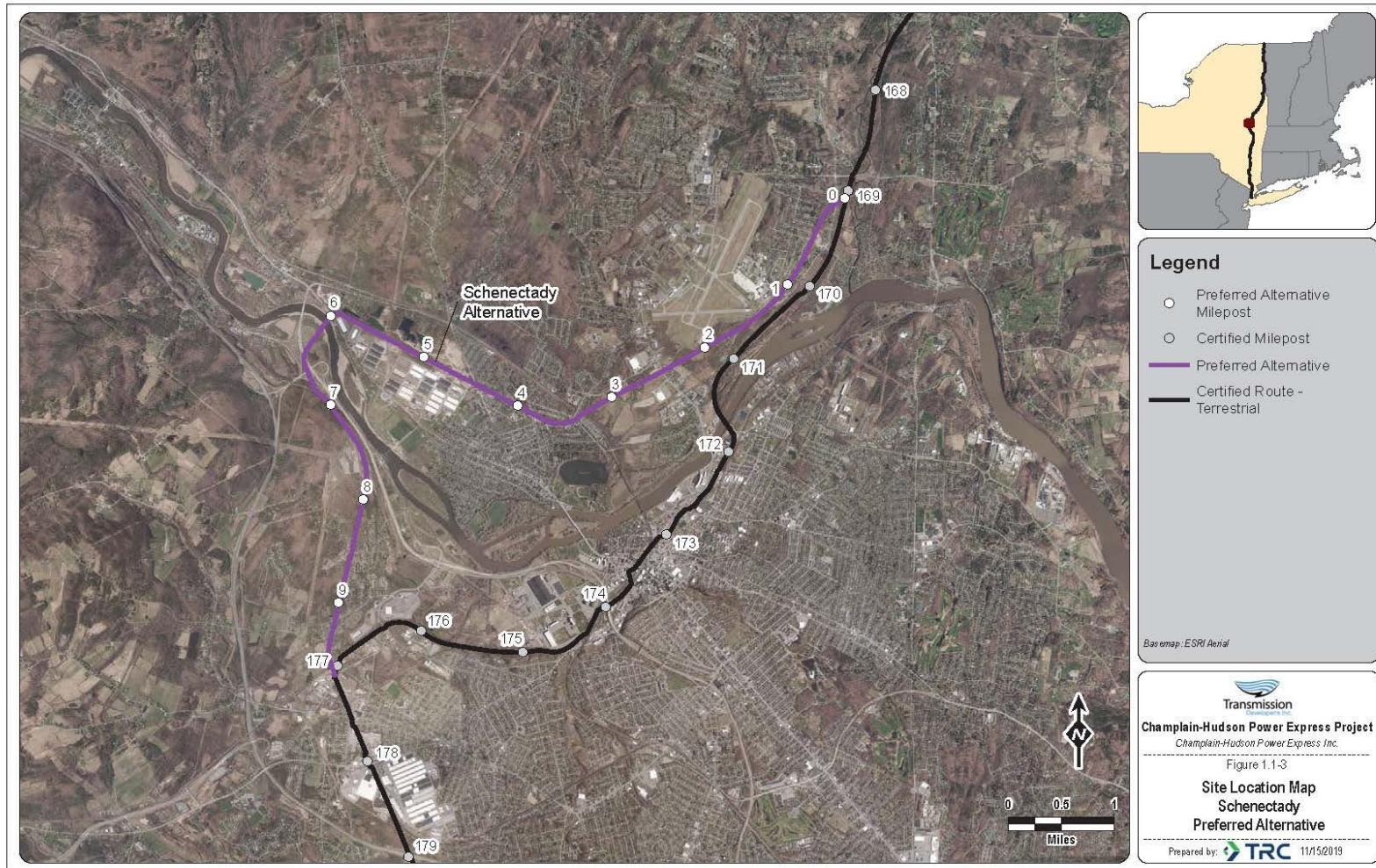


Figure 3 – Schenectady Route Modification

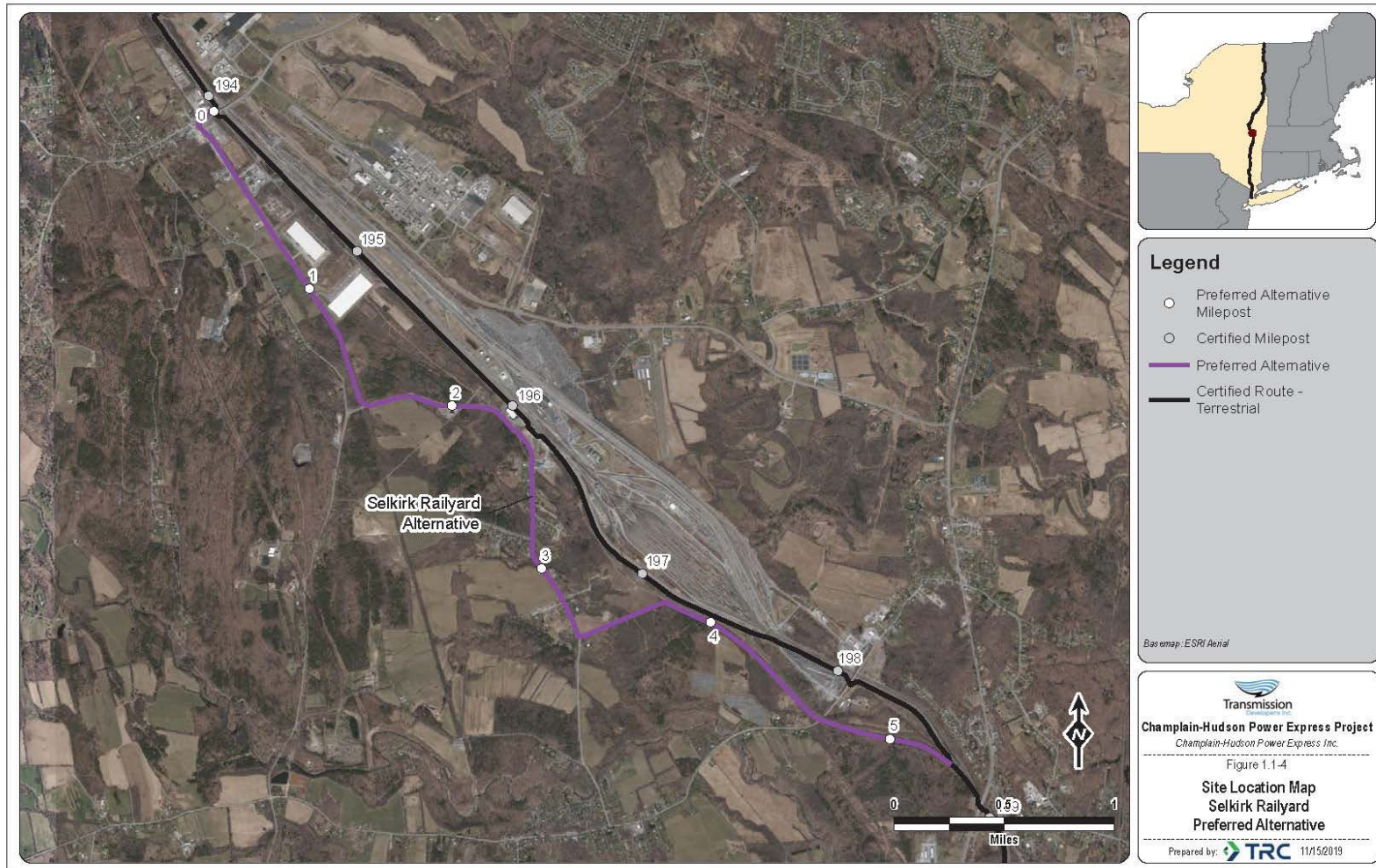


Figure 4 – Selkirk Railyard Route Modification



Figure 5 – Catskill Creek Route Modification

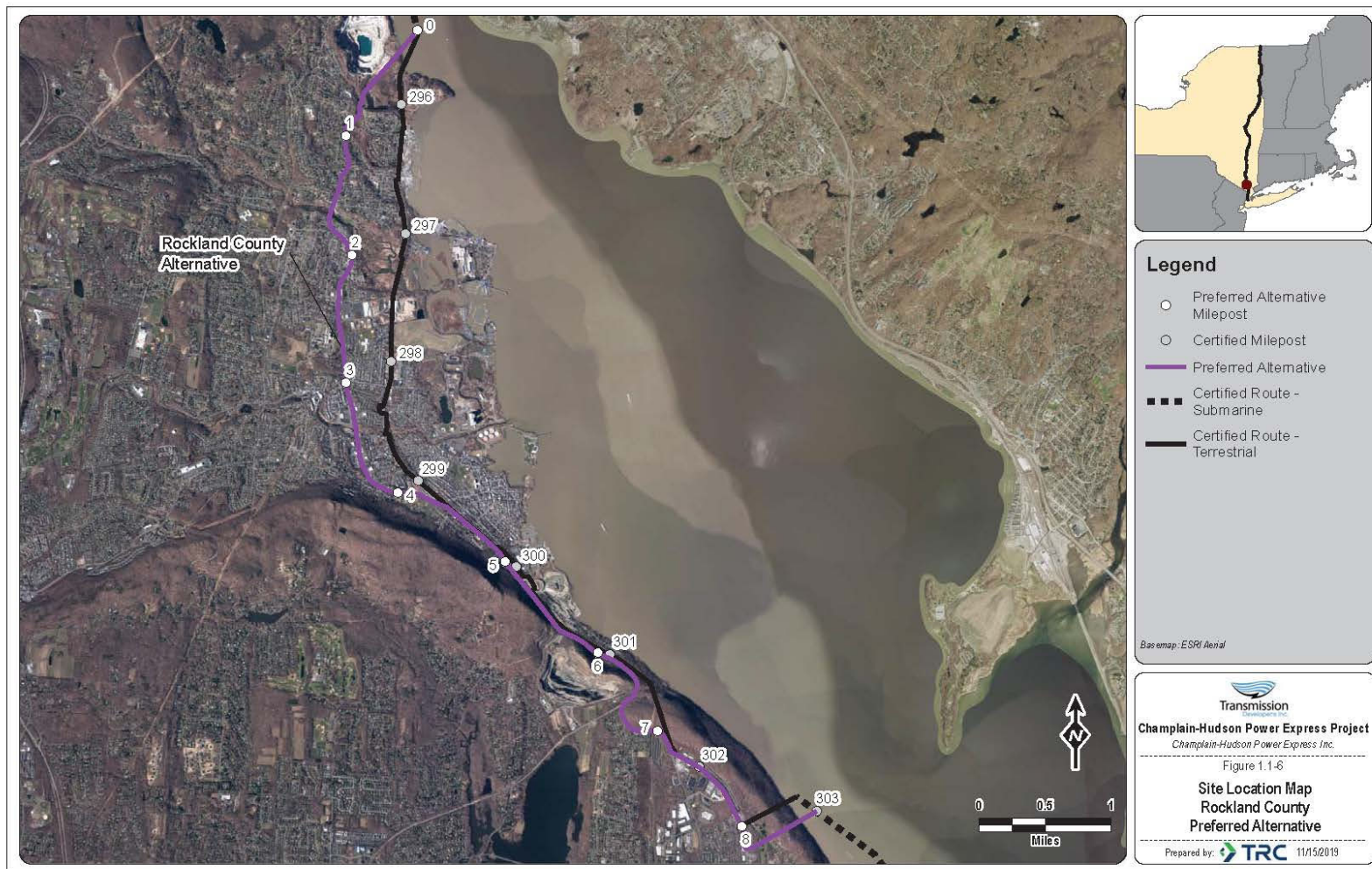


Figure 6 – Rockland County Route Modification

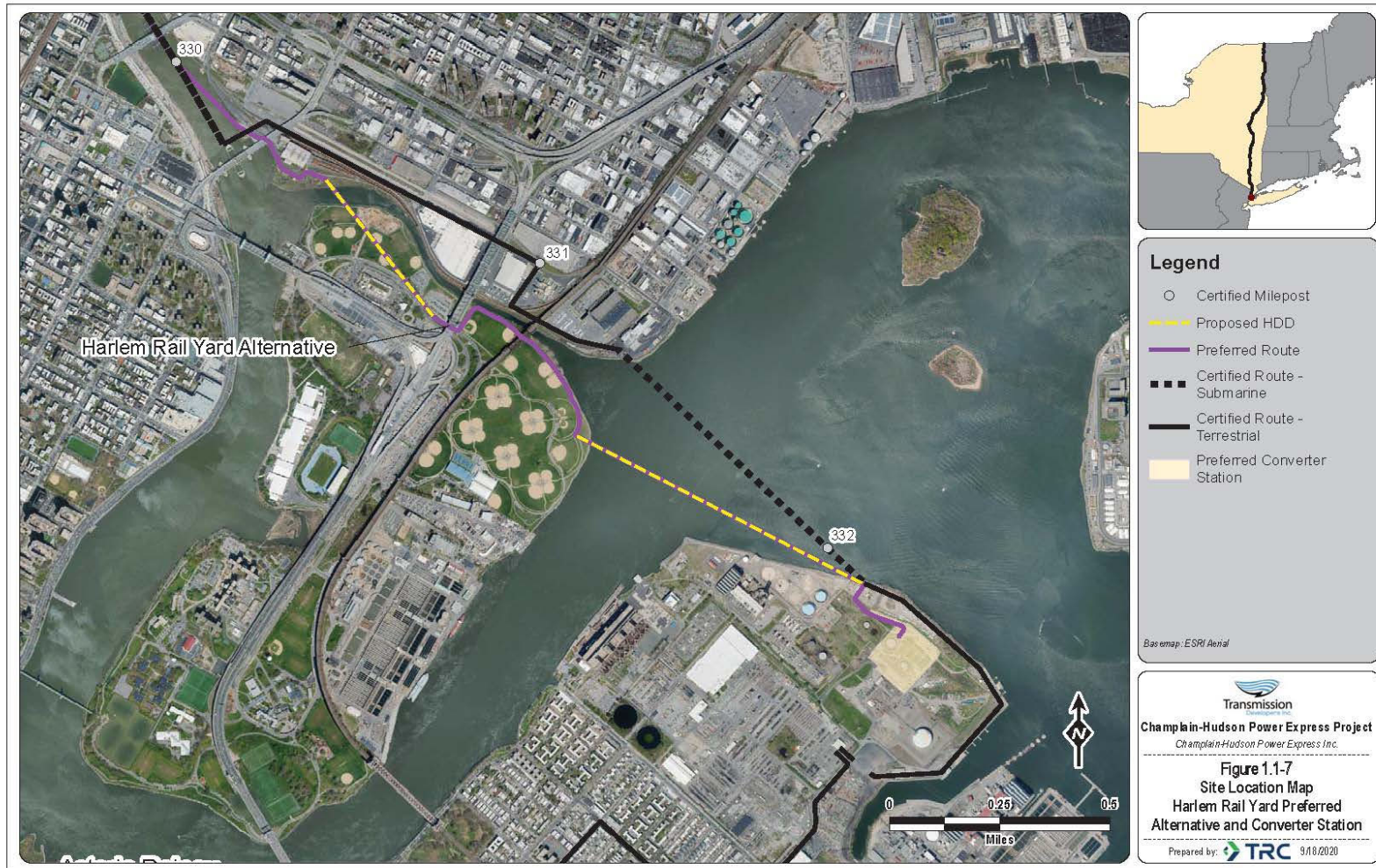


Figure 7 – Harlem River Yard Route Modification

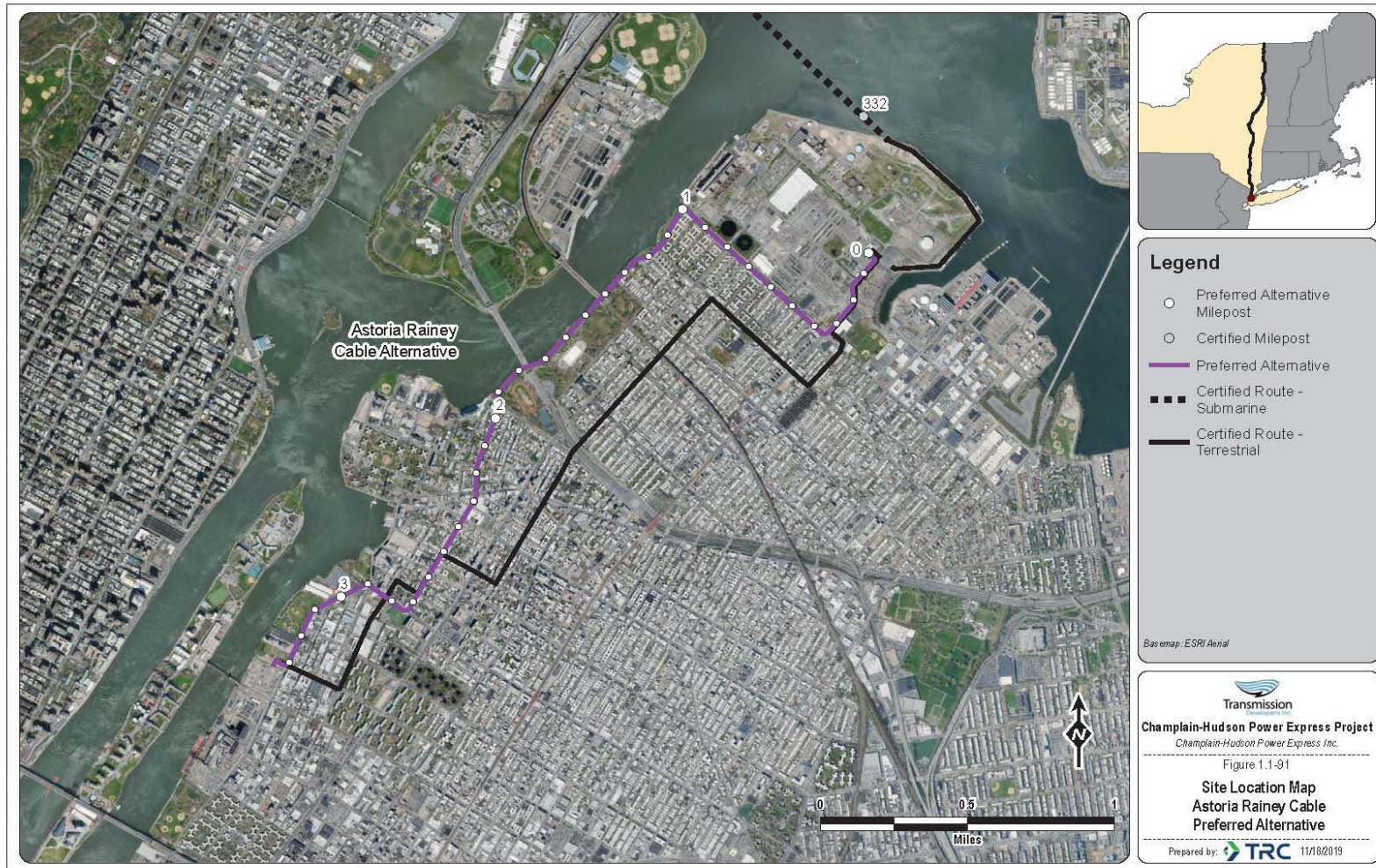


Figure 8 – Astoria Rainey Cable Route Modification



Figure 9 – Converter Station Relocation

1.2.2 Review of Information

In preparing this SA, DOE evaluated whether environmental conditions, requirements, and other changes have occurred to determine whether the baseline natural environment has changed significantly since the FEIS was issued in August 2014. The evaluation focused mainly on those resource areas with potential to be impacted by the proposed design changes to the Current Route. No changes in environmental conditions or requirements were identified for visual resources; hazardous materials and wastes; public and occupational health and safety; air quality; or socioeconomics that were not addressed in the 2014 FEIS. Therefore, no substantial changes or significant new circumstances or information that may be relevant to environmental concerns and have bearing on the proposed action or its impacts are identified for inclusion in this SA for these resource areas.

1.3 Background

The CHPE Project, including the proposed Route Modifications and upgrades, would be an approximately 341.1-mile (548.9-kilometer [km])-long, 1250 MW, high-voltage merchant electric power transmission system that includes a transmission line that would extend to Astoria, Queens, New York. The system would include the transmission line, a direct current (DC) to alternating current (AC) Converter Station, and high-voltage alternating current (HVAC) interconnections from the proposed Converter Station to the New York Power Authority (NYPA) Astoria Annex and the Consolidated Edison Company of New York, Inc. (ConEd) Rainey substations in Queens.

1.4 Purpose and Need for Agency Action

CHPE LLC has applied to DOE for an Amendment to a previously issued Presidential Permit (Permit PP-481 issued July 21, 2020) that would allow the company to construct, operate, maintain, and connect an approximately 341-mile (548-km), 1250 MW, high-voltage electric power transmission system in the United States that would cross the U.S./Canada border, including proposed modifications to the Current Route and other modifications and upgrades. If DOE issues the Amendment, the Presidential permit would authorize the international border crossing. The purpose of and need for DOE's action is to decide whether or not to issue an amended Presidential permit for the CHPE Project.

1.5 Alternatives included in the 2014 FEIS

1.5.1 No Action Alternative

CEQ and DOE regulations require consideration of the No Action Alternative. The No Action Alternative serves as a baseline against which the potential environmental impacts of a proposed action can be evaluated. Under the No Action Alternative, DOE would not issue a Presidential permit for the CHPE Project, the transmission system would not be constructed, and the potential impacts from the project would not occur.

1.5.2 Preferred Alternative

DOE's Proposed Action (Preferred Alternative) is the issuance of an amended Presidential permit that would authorize the construction, operation, maintenance, and connection of electric transmission facilities at the United States-Canada border.

2. Impact Analyses

DOE conducted a screening of all resource areas that were addressed in the 2014 FEIS to determine which areas could potentially be affected by the proposed changes to the CHPE Project. Section 2.1

summarizes resource areas with no change in impacts and that are not further analyzed in the SA. Section 2.2 summarizes resource areas that are included for analysis in the SA.

2.1 Resource Areas Not Further Analyzed in this SA

The following resource areas in Table 2 below are not analyzed in this SA, because it is clear that they will not be significantly affected by the new circumstances or information.

Table 2. Resource Areas not Further Analyzed in this SA	
Visual Resources	The Route Modification eliminated the need for above-ground cable cooling stations. Therefore, visual impacts of the would be reduced. Temporary visual impacts from construction would occur at different locations for the route modifications. However, the characteristics of the temporary visual impacts would be similar. The relocation of the Converter Station would minimally change the visual impacts; however, the relocated Converter Station would remain within the same industrial complex in Astoria as the Permitted Converter Station location and revision of the visual impacts analysis is therefore not warranted.
Public Health and Safety	Public health and safety impacts from construction would occur at different locations for the route modifications than for the Current Route but would generally have similar characteristics.
Hazardous Materials and Wastes	Hazardous materials and waste impacts from construction would occur at different locations for the route modifications than for the Current Route but would generally have similar characteristics. Temporary construction waste generation would occur from terrestrial construction of the approx. 7.5 mile right-of-way for the Putnam Station Route Modification that would not have occurred for the aquatic construction for the Current Route.
Air Quality	Air quality impacts from construction would occur at different locations for the route modifications than for the Permitted Route but would generally have similar characteristics. Air quality impacts would be reduced from the elimination of construction of the above-ground cable cooling stations. Temporary air quality impacts would occur from terrestrial construction of the approx. 7.5 mile right-of-way for the Putnam Station Route Modification that would not have occurred for the aquatic construction for the Current Route.
Socioeconomics	Socioeconomic impacts / benefits from construction would generally have similar characteristics to socioeconomic impacts / benefits of the Current Route.

2.2 Resource Areas Analyzed in this SA

The following resources areas are analyzed in this SA:

- Cultural Resources
- Land Use
- Transportation and Traffic
- Water Resources and Quality
- Aquatic Habitats and Species
- Aquatic Protected and Sensitive Species
- Terrestrial Habitats and Species
- Terrestrial Protected and Sensitive Species
- Wetlands
- Geology and Soils
- Infrastructure
- Recreation

- Noise
- Environmental Justice

Impact analyses for the resource areas included in the SA are shown in Table 3. The eight proposed route modifications and the proposed relocation of the converter station correspond to the four Project segments assessed in the 2014 FEIS as follows:

- Lake Champlain Segment - Putnam Station
- Overland Segment - Fort Ann , Schenectady, Selkirk Rail Yard, Catskill Creek
- Hudson River Segment - Rockland County
- NYC Metro Segment - Harlem River Yard, Converter Station, Astoria-Rainey Cable Modification

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
Cultural Resources			
	<p>Ground disturbing activities associated with installation of the transmission cables could result in adverse effects on historic properties in the Area of Potential Effects (APE). Analysis conducted for the 2014 FEIS identified terrestrial archaeological sites, underwater sites, 36 National Register eligible or listed architectural properties and 2 historic cemeteries in the APE. A Programmatic Agreement (PA) was developed between the New York State Historic Preservation Office (NYSHPPO) and DOE to manage and resolve adverse effects through avoidance, minimization, or mitigation. The PA was signed by NYSHPO and DOE as executing parties and the U.S. Army Corps of Engineers and CHPE, Inc. as concurring parties in June 2014.</p> <p>A Cultural Resources Management Plan was prepared by the Applicant to specify how historic properties within the APE would be considered and managed and describe the process for resolving adverse effects and determining the appropriate treatment, avoidance, or mitigation of any effects.</p>	<p>The Applicant completed cultural resources studies (Phase IA Archaeological Assessments) related to the proposed Route Modifications, which were submitted to NYSHPO and the concurring parties for concurrence that no further studies be required. NYSHPO concurred with the findings and conclusions of the reports in letters dated April 22, May 5, and October 20, 2020.</p> <p>The Programmatic Agreement was updated to reflect the Amendment Application and was executed on March 10, 2021.</p> <p>The Applicant prepared an Updated Cultural Resources Management Plan, which was submitted by DOE to the NYSHPO for review. NYSHPO approved the plan on February 22, 2021. DOE provided the plan to the concurring parties to the Programmatic Agreement and received no objections, at which time the plan became final.</p>	<p>The Phase IA Archaeological Assessments concluded that no additional studies are necessary for the Route Modifications and potential impacts are similar to those described in the 2014 FEIS. The NYSHPO concurred with the conclusions and signed an amended Programmatic Agreement that addresses potential impacts to cultural and historic properties for the CHPE Project.</p>
Land Use			
	<p>Construction and operation would be consistent with the relevant land use plans and policies. Aquatic cable installation would result in additional vessel traffic immediately surrounding a work area that would be off limits to other vessels. However, construction would be temporary, and commercial and recreational vessels would not be prohibited in adjacent areas. Construction in terrestrial areas would occur primarily in existing road/railroad ROW and would generally be compatible with road and railroad operations, but could result in temporary road lane closures, reduced shoulders, and presence of equipment and construction personnel. During operations and maintenance, there is potential for future limitations on water-based and land-based uses. Emergency repair and maintenance impacts would be similar to construction impacts, but shorter in duration and with more localized disturbance.</p>	<p>The land use impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operations would be conducted in generally the same manner along the Route Modifications. No conflicts with land use plans have been identified along the Route Modifications. Because the cables would be installed primarily within previously disturbed railroad and road ROWs, it is anticipated that the Route Modifications would not directly affect existing or future land uses. In addition, because the cables would be buried, they would not change the character of the neighborhoods traversed and would not adversely affect local or regional land uses, land planning, or any federal, state, or local public lands. The proposed converter station location is in close proximity to the location considered in the 2014</p>	<p>The land use impact types and mechanisms are the same. There would be less aquatic use disturbance, because there would be less transmission line placed in Lake Champlain and the Hudson River under the Route Modifications. There would be more terrestrial land affected under the Route Modifications due to the 10.6 additional miles of transmission line in the terrestrial environment. However, the Route Modifications would not substantively change the affected environment for land use as described in the 2014 FEIS. The Route Modifications would be located in similar land uses as those considered in the 2014 FEIS, and cables would be placed primarily in existing and disturbed road/railroad ROWs.</p>

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
		FEIS and has been utilized for the same purposes as the location considered in the 2014 FEIS.	A few notable, but non-significant, differences include: 1) the route is adjacent to roads for a longer period, such as the stretch along Route 22, 2) the route no longer goes through the downtown area of Schenectady, 3) the proposed Rockland County Route is along a road ROW rather than a railroad ROW, 4) there are no cooling stations, and 5) the converter station would occupy one additional acre of land.
Transportation and Traffic			
<i>Lake Champlain Segment</i>	<p>Construction: Construction would be entirely underwater in this segment. Transmission cable installation would result in additional vessel traffic on Lake Champlain, which could inconvenience and create minor navigational obstacles (e.g., temporary loss of use of portions of waterways) for other commercial and recreational vessels using the lake.</p>	<p>Construction: The Putnam Station Route Modification includes approximately 7.5 miles of new construction in existing road ROW, replacing aquatic construction for the Current Route. The Route Modification moves the CHPE Project out of the Narrows of Lake Champlain, a federally-maintained navigation channel.</p> <p>Section 5.2.2 of the 2014 FEIS describes how construction would be completed along Route 22, including development of a Maintenance and Protection of Traffic Plan.</p> <p>Traffic volumes along this stretch of the road are expected to be consistent with those for the section of Route 22 along the Current Route. The proposed Putnam Station Route Modification would represent an extension of this work and the Maintenance and Protection of Traffic Plan would be applied to the reroute. The Putnam Station route modification may require temporary closure of one lane of Route 22; complete closure of Route 22 is not anticipated to be required for construction.</p>	<p>Construction: Construction of the Putnam Station Route Modification would affect 7.5 miles of road that would not be affected by the Current Route. Application of the Maintenance and Protection of Traffic Plan to the Putnam Station Route Modification would mitigate potential impacts from construction.</p>
<i>Overland Segment</i>	<p>Construction: Trenching operations would be used to install the HVDC cables within the railroad and road ROWs in the Overland Segment. Transmission cables would exit Lake Champlain via HDD and directly connect with the New York State Route 22 ROW, thereby avoiding interfering with existing railroad tracks and a municipal road. Two road-crossing methods</p>	<p>Construction: The Fort Ann Route Modification includes approx. 4 miles of new construction in existing road ROW, replacing construction in an existing railroad ROW for the Current Route.</p> <p>The Selkirk Railyard Route Modification includes approx. 5 miles of new construction in existing road</p>	<p>Construction: Construction of the Fort Ann Route Modification would affect 7.5 miles of road that would not be affected by the Current Route.</p> <p>Construction of the Selkirk Rail Yard Route Modification would affect 5 miles of road that would not be affected by the Current Route.</p>

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
	would be used during construction: trenched (open cut) or trenchless (HDD). The majority of cable installation along New York State Route 22, along city streets in Schenectady, and along Alpha Road in Catskill, would be parallel to the road and within the road ROW.	<p>ROW, replacing construction in an existing railroad ROW for the Current Route.</p> <p>The Schenectady Route Modification would be constructed in primarily existing/expanded railroad ROW. The Schenectady Current Route anticipated construction on (under) existing road ROW. The Schenectady Route Modification crosses the I-890 / I-90 Interchange in Scotia in the vicinity of the Route Modification Mohawk River crossing.</p> <p>The Catskill Creek Route Modification would replace construction of an expanded railroad ROW for the Current Route with construction in an approx. 1-mile existing road ROW and additional construction in existing railroad ROW south of the HDD river crossing.</p>	<p>Construction of the Catskill Creek Route Modification would affect 1 mile of road that would not be affected by the Current Route.</p> <p>For the Schenectady Route, potential impacts of the Current Route would be temporary road closures; potential impacts of the Schenectady Route Modification would include potential interruption of rail service from construction activities in the railroad ROW and also potential temporary construction impacts to the I-890 / I-90 Interchange.</p> <p>Application of the Maintenance and Protection of Traffic Plan to the Route Modifications would mitigate potential impacts from construction.</p>
<i>Hudson River Segment</i>	Construction: Within the terrestrial portion of the Hudson River Segment, the cables would be installed along the railroad ROW and along U.S. Route 9W through the towns of Stony Point, Haverstraw, and Clarkstown between MP 295 and MP 303. HDD technology would be used at the transitions from water to land and at several other locations along the route, including intersections of road and railroad ROWs, which would minimize impacts on traffic.	Construction: The Rockland County Route Modification would replace construction in an expanded railroad ROW for the Current Route with construction in an approx. 7-mile existing road ROW. Temporary construction transportation impacts from construction in an existing road ROW would differ from transportation impacts from expanding an existing railroad ROW. NYS Route 202/9W are major thoroughfares in Rockland County, with potential traffic impacts if temporarily closed for construction.	Construction: Construction of the Rockland County Route Modification would affect approximately 7 miles of road that would not be affected by the Current Route. Temporary lane closures would be required for construction. These effects would be temporary and, in general, most disturbances would last only a brief period of a few days or a week at any particular location.

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<i>NYC Metro Segment</i>	<p>Construction: Approx. 3 miles of transmission cable would be installed beneath city streets in Queens from the Astoria Annex Substation to the Rainey Substation in this segment. Installation of the transmission line within the ROW of city streets would partially close the streets with traffic restricted to narrower travel lanes resulting in a temporary impact during construction. Sidewalks could be closed temporarily; however, one side of the street would be open at all times. Some on-street parking spaces would be temporarily lost during this time. A Maintenance and Protection of Traffic Plan would be submitted to the City of New York for approval prior to commencement of construction activities.</p>	<p>Construction: The Astoria-Rainey Cable Modification proposes construction on/under 20th Avenue and Shore Blvd to 14th Street in Astoria (modification from 21st Avenue and 23rd Street to 12th Street for the Current Route).</p>	<p>Construction: Construction of the Astoria Route Modifications would affect approximately the same distance of road as would be affected by the Current Route. Temporary lane closures would be required for construction. These effects would be temporary and, in general, most disturbances would last only a brief period of a few days or a week at any particular location.</p> <p>Application of the Maintenance and Protection of Traffic Plan to the Route Modifications would mitigate potential impacts from construction.</p>
Water Resources and Quality			
	<p>Localized turbidity and contaminant introduction impacts on surface quality during transmission line installation in lakebed and river bottoms, and stream crossings, from constructing near water resources and in water resources (i.e., water-jetting, shear plow, trenching, HDD, and blasting). Localized increases in suspension of sediments in groundwater and nearby wells. Temporary clearing, ground disturbance, and construction activity would occur in floodplains. Similar impacts would occur for operations due to disturbances from emergency repairs. Transmission line operation would also result in negligible temperature/thermal increases in surface waters in the immediate vicinity of the cable.</p> <p>The 2014 FEIS Section 3.2.4 states that the Overland Segment Region of Influence (ROI) crosses through more than 230 open water features. The 2020 Presidential Permit Amendment Application provides an updated number of stream crossings for the Current Route - 362 streams crossed.</p> <p>101 miles of transmission line placed in Lake Champlain.</p>	<p>Surface water delineations were performed along the Route Modifications. The water resources and quality impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operations would be conducted in generally the same manner along the Route Modifications. One notable difference is the Applicant's addition of another cable installation option called Series Installation Method. This method would reduce surface disturbance and lessen the duration of impact compared to the direct burial technique; this method also slightly reduces the cable's thermal impacts by virtue of the insulating effect of the conduit it is placed in during installation.</p> <p>361 total stream crossings</p> <p>100.98 miles of transmission line placed in the Hudson River.</p> <p>96.31 miles of transmission line placed in Lake Champlain.</p> <p>303(d) impaired waters affected: Lake Champlain, South Bay, Hudson River, Harlem River, East River</p>	<p>The water resources and quality impact types and mechanisms are the same, and overall, there would be less streams crossed and a smaller distance of Lake Champlain lakebed and Hudson River bottom affected with the Route Modifications. In addition, there would be less floodplain crossed.</p> <p>One less stream crossing.</p> <p>1,000 feet less transmission line placed in the Hudson River.</p> <p>4.69 miles less transmission line placed in Lake Champlain.</p> <p>303(d) impaired waters: same impaired waters affected, but with less potential for impact to Lake Champlain and the Hudson River due to the reduced length of transmission line in these surface waters.</p> <p>Floodplains: 4.8 acres less</p>

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	<p>88 miles of transmission line placed in the Hudson River.</p> <p>303(d) impaired waters affected: Lake Champlain, South Bay, Hudson River, Harlem River, East River</p> <p>Floodplains: 17.89 acres potentially affected (note: this number is based on a new geospatial analysis and not from the 2014 FEIS)</p> <p>Cable Heat Loss: 43.1 Watts per meter (W/m)</p>	<p>Floodplains: 13.09 acres potentially affected</p> <p>Cable Heat Loss: 25 W/m</p>	<p>Cable Heat Loss: Thermal impacts significantly less, because heat loss (25 W/m) is significantly less than the previously assumed 43.1 W/m.</p>
Aquatic Habitats and Species			
	<p>Localized disturbance of lake bottom, river bottom, and stream beds during construction resulting in habitat degradation, avoidance, or loss; noise and vibration impacts (including any blasting); impacts on benthic communities; and potential for accidental exposure to hazardous materials. Potential non-significant mortalities of individuals among non-mobile aquatic species could occur from inability to adapt to new sediment conditions.</p> <p>Non-significant generation of magnetic fields and induced electric fields detectable, and potentially avoided, by some fish and shellfish species. Sediment temperatures increase above the cables might lead to localized habitat avoidance of benthic infauna.</p> <p>Emergency repair effects expected to be less than construction, because they would be shorter-term and more localized.</p> <p>612 acres of Lake Champlain lake bottom disturbance.</p> <p>533 acres of Hudson River river bottom disturbance.</p> <p>36 acres of Harlem River river bed disturbance.</p> <p>362 streams crossed.</p>	<p>The aquatic habitats and species impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operations in aquatic habitats would be conducted in the same manner along the Route Modifications.</p> <p>584 acres of Lake Champlain lake bottom disturbance.</p> <p>532 acres of Hudson River river bottom disturbance.</p> <p>36 acres of Harlem River river bed disturbance.</p> <p>361 streams crossed.</p> <p>5 Significant Coastal Fish and Wildlife Habitats (SCFWH) crossed.</p> <p>3 total miles of concrete mats in Lake Champlain, Hudson River, and Harlem River.</p> <p>Magnetic Field: 70.2 mG in the Hudson River and Harlem River at river bed. Note that a more detailed magnetic field analysis was performed for required burial depths for the CHPE Project compared to the analysis performed for the 2014 FEIS (which made some assumptions and used a shallower burial depth than required). In addition, the Applicant</p>	<p>The aquatic habitats and species impact types and mechanisms are the same, and overall, there would be less streams crossed and a smaller area of Lake Champlain lakebed and Hudson River bottom affected with the Route Modifications.</p> <p>28 acres less of Lake Champlain lake bottom disturbance.</p> <p>1 acre less of Hudson River river bottom disturbance.</p> <p>Same acreage of disturbance of Harlem River river bed.</p> <p>1 less stream crossed.</p> <p>Same number of Significant Coastal Fish and Wildlife Habitats (SCFWH) crossed.</p> <p>Same miles of concrete mats in Lake Champlain, Hudson River, and Harlem River.</p> <p>Magnetic Field: generally less.</p> <p>Cable Heat Loss: Thermal impacts significantly less, because heat loss (25 W/m) is significantly less than the previously assumed 43.1 W/m.</p>

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	<p>5 Significant Coastal Fish and Wildlife Habitats (SCFWH) crossed.</p> <p>3 total miles of concrete mats in Lake Champlain, Hudson River, and Harlem River.</p> <p>Magnetic Field: 162 milliGaus (mG) at lake/river bed; 77 mG 10 feet above lake/river bed; up to 600 mG at concrete pads.</p> <p>Cable Heat Loss: 43.1 Watts per meter (W/m)</p>	<p>notes that magnetic fields in the aquatic environment were determined primarily for federally threatened and endangered aquatic species, and because there are none in Lake Champlain, a magnetic field determination was not made for that waterbody. However, the Applicant has stated that there is no indication that magnetic fields generated in Lake Champlain would cause any significant effects.</p> <p>Cable Heat Loss: 25 W/m</p>	
Aquatic Protected and Sensitive Species			
Aquatic Protected and Sensitive Species	<p>Construction and operations impacts on aquatic protected and sensitive species are the same as described above for aquatic habitats and species. Protected and sensitive species may be more sensitive to these impacts. In addition, potential vessel collisions with shortnose and Atlantic sturgeon were identified as a potential impact.</p> <p>The quantitative aquatic habitat impacts are described above under Aquatic Habitats and Species.</p> <p>Endangered Species Act Section 7: NOAA concurred with DOE's <i>Not Likely to Adversely Affect</i> determination for those species potentially affected by the CHPE Project.</p> <p>State Listed Aquatic Species: 4 species in Lake Champlain and 1 species in Hudson and Harlem Rivers potentially affected by the construction and operations impacts described.</p>	<p>The aquatic protected and sensitive species impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operations in aquatic habitats would be conducted in the same manner along the Route Modifications.</p> <p>The quantitative aquatic habitat impacts are described above under Aquatic Habitats and Species.</p> <p>Endangered Species Act Section 7: Critical Habitat was designated in the Hudson River for Atlantic sturgeon in 2017. DOE reinitiated consultation for the Route Modifications and to address this Critical Habitat. On March 31, 2021, NOAA concurred with DOE's determination that the proposed changes do not alter DOE's effects determination of <i>Not Likely to Adversely Affect</i> for any ESA-listed species under NOAA's jurisdiction. NOAA also concurred with DOE's <i>Not Likely to Adversely Affect</i> determination for the Atlantic sturgeon designated critical habitat.</p> <p>Magnuson-Stevens Fishery Conservation and Management Act Section 305(b)/Fish and Wildlife Coordination Act: DOE reinitiated consultation for the Route Modifications. On March 31, 2021, NOAA determined that no additional EFH consultation was required.</p>	<p>The aquatic protected and sensitive species impact types and mechanisms are the same, and overall, there would be less in-water construction due to the smaller area of Lake Champlain lakebed and Hudson River bottom affected with the Route Modifications.</p> <p>The quantitative aquatic habitat impact differences are described above under Aquatic Habitats and Species.</p> <p>There is no difference in the outcome of the Endangered Species Action Section 7 consultation or the Magnuson-Stevens Fishery Conservation and Management Act consultation for EFH.</p> <p>The use of HDD technology would avoid impacts to the two state-listed freshwater aquatic species (the banded sunfish and brook floater).</p>

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		State Listed Aquatic Species: 2 additional threatened species potentially affected by the Route Modifications in Rockland County based on NY Natural Heritage Program review – banded sunfish (<i>Enneacanthus obesus</i>) and brook floater (<i>Alasmidonta varicose</i>).	
Terrestrial Habitats and Species			
	<p>Construction and operation would generally affect terrestrial habitats by the permanent removal and crushing of vegetation, soil compaction, and dust generation. Noise would temporarily increase, which could result in impacts on wildlife (e.g., reduced communications ranges, habitat avoidance). Species displacement would occur during vegetation removal; however, habitat fragmentation and permanent displacement of entire breeding populations would not occur, because construction activities would be in fringe habitat within or along existing ROWs. Potential non-significant mortalities could occur of individuals among less-mobile species from inability to avoid equipment. Impacts on terrestrial habitats would occur primarily along existing road/railroad ROW, where most vegetation is already maintained/disturbed. Some forest would be temporarily and permanently impacted.</p> <p>236 acres of existing forest temporarily disturbed.</p> <p>48 acres of forest permanently converted to managed grasses or shrub habitat.</p>	<p>The terrestrial habitats and species impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operation would be conducted generally in the same manner along the Route Modifications. One notable difference is the Applicant’s addition of another cable installation option called the Series Installation Method. This method would reduce surface disturbance and lessen the duration of impact compared to the direct burial technique.</p> <p>Habitats and vegetation along the Route Modifications are no different than those described in the 2014 FEIS, as the transmission line would be placed primarily in existing and already disturbed road/railroad ROWs. No unique or notable habitats were identified during field work.</p> <p>235 acres of existing forest temporarily disturbed.</p> <p>46 acres of forest permanently converted to managed grasses or shrub habitat.</p>	<p>The terrestrial habitats and species impact types and mechanisms are the same. The Route Modifications would result in about 10.6 additional miles of transmission line in the terrestrial environment, primarily in existing and already disturbed road/railroad ROW.</p> <p>1 acre less of existing forest temporarily disturbed.</p> <p>2 acres less of forest permanently converted to managed grasses or shrub habitat.</p>
Terrestrial Protected and Sensitive Species			
	<p>Construction and operation impacts on terrestrial protected and sensitive species are similar to those described above for terrestrial habitats and species. Protected and sensitive species may be more sensitive to these impacts.</p> <p>The quantitative terrestrial habitat impacts (i.e., forests) are described above under Terrestrial Habitats and Species.</p>	<p>The terrestrial protected and sensitive species impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operation in aquatic habitats would be conducted in the same manner along the Route Modifications. One notable difference is the Applicant’s addition of another cable installation option called the Series Installation Method. This method would reduce surface disturbance and</p>	<p>The terrestrial protected and sensitive species impact types and mechanisms are the same. The Route Modifications would result in about 10.6 additional miles of transmission line in the terrestrial environment, primarily in existing and already disturbed road/railroad ROW.</p>

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	<p>Endangered Species Act Section 7: USFWS concurred with DOE's <i>Not Likely to Adversely Affect</i> determination for those species potentially affected by the CHPE Project, which included Indiana bat, northern long-eared bat, and Karner blue butterfly.</p> <p>State listed terrestrial species: 14 plants and animals potentially affected by the construction and operations impacts described.</p>	<p>lessen the duration of impact compared to the direct burial technique.</p> <p>The quantitative terrestrial habitat impacts (i.e., forests) are described above under Terrestrial Habitats and Species.</p> <p>Endangered Species Act Section 7: DOE reinitiated consultation with USFWS under Section 7 for the Route Modifications. USFWS concurred with DOE's determination that the proposed changes do not alter its effects determination that the CHPE project <i>May Affect, but is Not Likely to Adversely Affect</i> the endangered Indiana bat (<i>Myotis sodalis</i>), the endangered Karner blue butterfly (<i>Lycaeides melissa samuelis</i>), or the threatened northern long-eared bat (<i>Myotis septentrionalis</i>) or critical habitat on March 29, 2021.</p> <p>State Listed Terrestrial Species: 1 additional threatened species potentially affected by the Route Modifications based on NY Natural Heritage Program review – northern long-eared bat (<i>Myotis septentrionalis</i>). This species is also federally listed and was covered in the Endangered Species Act Section 7 consultation.</p>	<p>The quantitative terrestrial habitat impact differences are described above under Terrestrial Habitats and Species.</p> <p>There is no difference in the outcome of the Endangered Species Action Section 7 consultation. There are no new impacts to State Listed Terrestrial Species.</p>
Wetlands			
	<p>Temporary wetland impacts from transmission line construction. Wetland vegetation in the corridor would be cleared, transmission line buried, and wetland restored in areas that do not need to be permanently maintained; re-establishment anticipated to occur naturally. Permanent wetland impacts from clearing and maintaining (during operations) corridor. Forested wetlands would be converted to non-forested wetland and maintained, and non-forested wetlands would be cleared and maintained.</p> <p>Temporary impacts to 16.2 acres of forested wetlands and 51.2 acres of non-forested wetlands.</p>	<p>Wetland delineations were performed along the Route Modifications. The wetland impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operation would be conducted generally in the same manner along the Route Modifications. One notable difference is the Applicant's addition of another cable installation option called Series Installation Method. This method would reduce surface disturbance and lessen the duration of impact compared to the direct burial technique.</p>	<p>The wetland impact types and mechanisms are the same, and overall, there would be less permanent and temporary wetland impacts with the Route Modifications.</p> <p>Temporary impacts on forested wetlands are nearly 10 acres less; a slightly greater impact (2.3 acres) on non-forested wetlands.</p> <p>The same amount of permanent impact on forested wetlands and one acre less of impact on non-forested wetlands.</p>

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	<p>Permanent impacts to 0.6 acre of forested wetlands and 9.7 acres of non-forested wetlands.</p> <p>U.S. Army Corps of Engineers (USACE) Section 404 Permit Issued on April 20, 2015.</p>	<p>Temporary impacts to 6.4 acres of forested wetlands and 53.5 acres of non-forested wetlands.</p> <p>Permanent impacts to 0.6 acres of forested wetlands and 8.7 acres of permanent impact on non-forested wetlands.</p>	
Geology and Soils			
	<p>Construction impacts on soils and geology include short-term increases in soil erosion, soil compaction, and bedrock blasting. In the aquatic environment, construction would result in localized modification of lakebed and river microtopography; suspension, transport, and resettlement of sediments. No impacts to soils and geology are anticipated in the aquatic environment during operations. In the terrestrial environment, operations could result in short-term soil erosion and sedimentation due to periodic mowing, tree clearing activities, or emergency repairs.</p> <p>127,000 cubic yards of temporary disturbance of Lake Champlain sediment.</p> <p>646 acres of temporary terrestrial upland disturbance.</p> <p>229,000 cubic yards of temporary disturbance of Hudson River sediment.</p> <p>11,000 cubic yards of disturbance in the Harlem River.</p> <p>460 feet of rock blasting in Harlem River.</p> <p>Prime farmland mapped in ROI, but most impact would occur in already disturbed road and railroad ROW and not available for agricultural use.</p>	<p>The soils and geology impact types and mechanisms are the same as described in the 2014 FEIS, because construction and operation would be conducted generally in the same manner along the Route Modifications. One notable difference is the Applicant's addition of another cable installation option called Series Installation Method. This method would reduce surface disturbance and lessen the duration of impact compared to the direct burial technique.</p> <p>105,000 cubic yards of temporary disturbance of Lake Champlain sediment.</p> <p>645.2 acres of temporary terrestrial upland disturbance.</p> <p>228,997 cubic yards of temporary disturbance of Hudson River sediment.</p> <p>11,000 cubic yards of disturbance in the Harlem River.</p> <p>460 feet of rock blasting in Harlem River.</p> <p>Prime farmland mapped in ROI, but most impact would occur in already disturbed road and railroad ROW and not available for agricultural use.</p>	<p>The soil and geology impact types and mechanisms are the same. The Route Modifications would result in less transmission line in Lake Champlain and Hudson River and about 10.6 additional miles of transmission line in the terrestrial environment, primarily in existing and already disturbed road/railroad ROW.</p> <p>22,000 less cubic yards of temporary disturbance of Lake Champlain sediment.</p> <p>0.8 acres less of temporary terrestrial upland disturbance.</p> <p>3 cubic yards less of temporary disturbance of Hudson River sediment.</p> <p>Same cubic yards of disturbance in the Harlem River.</p> <p>Same linear feet of rock blasting in Harlem River.</p> <p>No difference in the prime farmland that would be affected.</p>
Infrastructure			
<i>Lake Champlain Segment</i>	Construction: No subsurface infrastructure is identified in the 2014 FEIS for the Lake Champlain	Construction: Terrestrial subsurface infrastructure may be encountered for construction of the Putnam	Construction: The greater terrestrial distance for the Route Modification than for the Current Route

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	Segment in aquatic areas that would be replaced by the Putnam Station Route Modification.	<p>Station Route Modification. The Current Route included no terrestrial construction in this segment.</p> <p>The Putnam Station Route Modification replaces aquatic construction with terrestrial construction within an existing road ROW. Infrastructure impacts, including potential crossings of subsurface infrastructure, would therefore occur along the approx. 7.5 mile Putnam Station Route Modification that would not have occurred for the Current Route.</p>	and the modification from construction in a railroad ROW to construction in road ROWs would increase the potential for infrastructure crossings during construction. Construction methods and mitigation methods for infrastructure crossings would be similar for construction of the Route Modification as for construction of the Current Route.
<i>Overland Segment</i>	<p>Construction: There are many instances of aboveground electrical infrastructure within the Current Route in this segment; specific subsurface locations are not reported in the 2014 FEIS. Infrastructure within this segment includes overhead electrical power transmission and distribution facilities. Impacts on existing underground electrical lines would occur where they would be crossed by the proposed Current Route in a road or railroad ROW due to potential temporary interruptions of services.</p>	<p>Construction: The Fort Ann, Schenectady, Selkirk Rail Yard, and Catskill Creek Route Modifications would encounter different subsurface infrastructure systems and line intersections than would the Current Route.</p> <p>The Fort Ann route modification includes approx. 4 miles of new construction in existing road ROW, replacing construction in an existing railroad ROW for the Current Route.</p> <p>The Schenectady Route Modification would be constructed primarily in existing/expanded railroad ROW. The Current Route anticipated construction primarily in existing ROW.</p> <p>The Selkirk Railyard Route Modification includes approx. 5 miles of new construction in existing road ROW, replacing construction in an existing/expanded railroad ROW for the Current Route.</p> <p>The Catskill Creek Route Modification would be constructed in existing road ROW. The Current Route anticipated construction primarily in existing / expanded railway ROW.</p>	<p>Construction: The slightly greater terrestrial distance for the Route Modifications than for the Current Routes would slightly increase the potential for infrastructure crossings during construction. The modification from construction in road ROW to construction in railroad ROW for the Schenectady Route Modification and modification from railroad ROW to road ROW for the Fort Ann, Selkirk Rail Yard, and Catskill Creek ROW would result in different infrastructure being affected by construction. Construction methods and mitigation methods for infrastructure crossings would be similar for construction of the Route Modification as for construction of the Current Route.</p>
<i>Hudson River Segment</i>	<p>Construction: Thirty-two commercial and known but unspecified infrastructure systems and line intersections with the Current Route (i.e., crossings) in the Hudson River Segment were identified. Impacts on</p>	<p>Construction: The Rockland County Route Modification would encounter different terrestrial subsurface infrastructure systems and line intersections than would the Current Route.</p>	<p>Construction: The greater terrestrial distance for the Route Modification than for the Current Route and the modification from construction in a railroad ROW to construction in road ROW would</p>

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	<p>existing electrical services would occur during construction where the Current Route would cross buried electrical infrastructure.</p> <p>The 2014 FEIS identifies specific infrastructure that would be affected by the Current Route, see Section 3.3.12. Thirty-two commercial and known but unspecified infrastructure systems and line intersections with the CHPE Project ROI (i.e., crossings) in the Hudson River Segment were identified.</p>	<p>The Rockland County Route Modification would be constructed in (under) existing road ROW, including NYS Route 202 / 9W. The Current Route anticipated construction primarily in existing/expanded railroad ROW.</p> <p>The Route Modification would have no effect on the submarine infrastructure crossings in the Hudson River as described in the 2014 FEIS.</p>	<p>slightly increase the potential for infrastructure crossings during construction. Construction methods and mitigation methods for infrastructure crossings would be similar for construction of the Route Modification as for construction of the Current Route.</p>
<i>NYC Metro Segment</i>	<p>Construction: Approx. 4.5 acres of previously disturbed upland area would be disturbed by cable installation beneath railroad or road ROWs and the construction at the Permitted Converter Station location.</p> <p>The 2014 FEIS identifies specific infrastructure that would be affected by the Current Route, see Section 3.4.12.</p> <p>Fourteen commercial and known but unspecified infrastructure systems and line intersections with the Current Route (i.e., crossings) in the New York City Metropolitan Area Segment. Impacts on existing electrical services would occur during construction where the Current Route would cross buried electrical infrastructure.</p>	<p>Construction: Approx. 5.5 acres of previously disturbed upland area would be disturbed by cable installation beneath railroad or road ROWs and construction at the proposed Converter Station relocation. The Astoria AC Route Modification, Astoria-Rainey Cable Modification Route Modification, and converter station would be conducted in areas in Astoria adjacent to / within existing electric power generating facilities in addition to being adjacent to other industrial facilities.</p> <p>The Route Modifications would have no effect on the submarine infrastructure crossings in the NYC metro segment as described in the 2014 FEIS.</p> <p>The Harlem River Yard Route Modification, Astoria-Rainey Interconnection Route Modification, and Converter Station relocation would encounter different subsurface terrestrial infrastructure systems and line intersections than would the Current Route.</p>	<p>Construction: The greater distance between the converter station and the substation for the Converter Station and Astoria Route Modifications would slightly increase the potential for infrastructure crossings during construction. Construction methods and mitigation methods for infrastructure crossings would be similar for construction of the Route Modification as for construction of the Current Route.</p>
Recreation			
<i>Lake Champlain Segment</i>	<p>Construction: Construction would be entirely underwater in this segment. There would be increased vessel activity along the transmission line route through Lake Champlain, including short-term closure of the immediate area around the cable installation vessels. Access to shoreline recreational areas (i.e., boat</p>	<p>Construction: Construction would be underwater in this segment with the exception of the Putnam Station Route Modification. Impacts within Lake Champlain would be reduced from the 2014 FEIS; the Putnam Station Route Modification would replace approx. five miles of underwater</p>	<p>Construction: Application of the Maintenance and Protection of Traffic Plan to the Putnam Station Route Modification would mitigate potential recreation impacts from construction of the Putnam Station Route Modification.</p>

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
	<p>launches and piers) could be partially restricted for a short period of time during construction for safety reasons when the cable-laying operation is close to shore.</p>	<p>construction. No recreational or other impacts to Lake Champlain would occur in the area replaced by the Route Modification.</p> <p>The Putnam Station Route Modification would be constructed in part on New York State Bicycle Route 9, a designated recreational route. The New York State Bicycle Route is identified in the 2014 FEIS Appendix F Table F-2 Land Use Within the Overland Segment of the Proposed CHPE Project but is not described in Appendix K Visual and Recreational Resources along Proposed CHPE Project Route with respect to impacts to recreation.</p> <p>Temporary closure for line construction would result in short-term impacts to recreation.</p> <p>Traffic volumes along this stretch of the road are expected to be consistent with those for the section of Route 22 along the Permitted Route. The proposed Putnam Station Route Modification would represent an extension of this work and the Maintenance and Protection of Traffic Plan would be applied. The Putnam Station Route Modification may require temporary closure of one lane of Route 22; complete closure of Route 22 is not anticipated to be required for construction.</p>	
<i>Lake Champlain Segment</i>	<p>Operation: Underwater cable maintenance would result in short-term operation of vessels in Lake Champlain. Emergency repair activities required to recover, splice, and install a new cable section, if necessary, would result in similar impacts as those that would occur during installation.</p>	<p>Operation: No recreational or other impacts to Lake Champlain would occur in the area replaced by the Route Modification.</p> <p>The Putnam Station Route Modification would be constructed in part on New York State Bicycle Route 9, a designated recreational route. Temporary closure for line maintenance would result in short-term impacts to recreation.</p>	<p>Operation: Temporary / short-term lane closures would occur periodically for maintenance of the line, resulting in potential short-term / temporary impacts to the designated recreational route.</p>
<i>Overland Segment</i>	<p>Construction/Operation: Recreational areas within 100 feet of the transmission line in the Overland Segment are Bertha E. Smith Park, Gansevoort Town Park, Hillhurst Park, Roger Keenholtz Park, Jim Nichols Park, and Mosher Park.</p>	<p>Construction/Operation: The Schenectady Route Modification would avoid impacts to Hillhurst Park in Schenectady. Impacts to other parks in the Overland Section would not be affected by the Route Modifications.</p>	<p>Construction/Operation: The Schenectady Route Modification would avoid impacts to recreational areas in Schenectady.</p>

Table 3. Comparison of Potential Environmental Impacts			
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<i>Hudson River Segment</i>	<p>Construction/Operation: Recreational areas within 100 feet of the transmission line in the Hudson River Segment are Tivoli Bay WMA, Hudson State Historic Park, Stony Point Battlefield State Park, Haverstraw Beach State Park, Hook Mountain State Park, and Rockland Lake State Park.</p>	<p>Construction/Operation: The Rockland County Route Modification would result in a 1,000 foot net decrease of cables within the Hudson River. This modification also would avoid construction under Stoney Run Battlefield Historic Site, and approx. 0.5 mile of HDD construction in Hook Mountain State Park avoided by Route Modification. The Rockland County Route Modification would cross Hook Mountain / Nyack Beach Bikeway at a different location.</p>	<p>Construction/Operation: The Rockland County Route Modification would avoid temporary construction and operation impacts to recreational areas that would be affected by construction and operation of the Current Route.</p>
<i>NYC Metro Segment</i>	<p>Construction: Construction of the Converter Station and Astoria to Rainey HVAC interconnection could be visible and audible from at least 15 recreational resources, depending on the viewsheds of the resources.</p> <p>Construction of the Astoria to Rainey interconnection from the Astoria Annex Substation would occur adjacent to Chappetto Square, Triborough Bridge Playgrounds, and Astoria Health Playground, and approx. two blocks from Astoria Park and Rainey Park. Construction activities could be visible from these parks, but the parks would not be directly affected by construction. Noise from construction equipment at the construction site could affect use of portions of the parks near the transmission line route during the short period of time construction is occurring. Other parks in the ROI but further away from the transmission line would not be affected by construction activities.</p>	<p>Construction: The HRY Modification goes through Randall's Island Park / Sunken Meadow Loop that includes recreation fields. Randall's Island Park is not identified in 2014 FEIS Appendix F Table F-2 Land Use Within the Overland Segment of the CHPE Project but is listed in Appendix K -- Visual and Recreational Resources along CHPE Project Route.</p> <p>The Converter Station would be further away from recreation areas than the Permitted Converter Station location, and impacts to recreation areas would therefore be reduced by the relocation.</p> <p>Construction of the Astoria-Rainey interconnection would occur on Shore Blvd., adjacent to Astoria Park; Broadway (Astoria), adjacent to Long Island City HS athletic fields; and Vernon Blvd., adjacent to Socrates Sculpture Garden and Rainey Park. The relocated Astoria-Rainey interconnection would be approx. 1,500 feet from Chappetto Square, Triborough Bridge Playgrounds, and Astoria Health Playground. Astoria Park and Rainey Park are not identified in the 2014 FEIS Appendix F Table F-2 Land Use Within the Overland Segment of the Proposed CHPE Project but are listed in Appendix K -- Visual and Recreational Resources along Proposed CHPE Project Route.</p> <p>The expected installation time adjacent to the Long Island City HS is expected be the same as</p>	<p>Construction: Construction for the entire length of the HRY Alternative has been estimated as consuming the same amount of time or less as construction of the corresponding section of the Current Route. The HRY Alternative involves an additional HDD. However, the existing infrastructure, traffic, and land uses along the Current Route would slow down construction as compared to the Route Modification. The HRY Route Modification was proposed due to practical difficulties that would be encountered to install the cables along the Current Route.</p> <p>On Randall's Island, the Applicant has committed to ensuring that public access is maintained throughout the Park during construction. This would be done by creating bypasses around construction for any pathways or roads used by the public. The Applicant has committed to working with the NYC Parks Department to schedule construction during off-peak periods at the Park. In addition, as requested by NYC Parks Department, the initial HDD would terminate within a single lane of the Bronx Shore Road.</p> <p>Recreationalists and occupants of Randall's Island Park may experience temporary disturbance and traffic inconvenience associated with construction activities. These effects would be temporary and, in general, most disturbances</p>

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		<p>assumed for installation adjacent to such features located along the Current Route.</p> <p>The expected temporary recreational impacts for the Route Modification would be the same as described in Section 5.4.13 of the 2014 FEIS but affecting different recreational areas than those that would be the Current Route. The expected installation time adjacent to the Astoria Park / Rainey Park is expected be the same as assumed for installation adjacent to similar recreational features located along the Current Route. Temporary recreational impacts to Chappetto Square, Triborough Bridge, and Astoria Health playgrounds during construction would be comparable to those that would be affected by the Current Route. Impact mitigation methods for recreational impacts would be the same for the Route Modification than for the Current Route.</p>	would last only a brief period of a few days or a week at any particular location.
<i>NYC Metro Segment</i>	<p>Operation: Emergency repairs of the Astoria-Rainey Interconnection or Converter Station would not impact access to or use of recreational resources, because these activities would last a few hours in any one location and access to recreation areas would be maintained at all times in accordance with a Maintenance and Protection of Traffic Plan.</p>	<p>Operation: Impacts of line maintenance for the Route Modification would be similar to impacts for line maintenance for the Current Route. Potential impacts to use/access to Astoria Park, Rainey Park, LIC H.S. athletic fields, and other recreational resources would be similar to impacts to recreational resources affected by the Current Route. Mitigation measures applied for impacts to recreational resources would be the same for the Route Modification as for the Current Route.</p>	<p>Operation: Temporary / short-term lane closures would occur periodically for maintenance of the line. Access to recreation areas would be maintained at all times in accordance with a Maintenance and Protection of Traffic Plan.</p>
Noise			
<i>Lake Champlain Segment</i>	<p>Construction: Construction activities would generally occur at distances greater than 500 feet from noise-sensitive land uses. Localized temporary noise level increases on the water and at land staging areas. The HDD cofferdam location at MP 101 would also be approximately 300 feet from shore. At this distance, noise level would be approx. 62 dBA, below the NYSDEC 65 dBA noise assessment guideline for new noise sources in a non-industrial setting. Work at the cofferdam site would be restricted to daylight hours,</p>	<p>Construction: The HDD Cofferdam at MP 101 would not be constructed and noise impacts would be avoided; aquatic construction at MP 101 would be replaced by terrestrial line construction for the Putnam Station Route Modification.</p> <p>Temporary noise impacts would occur from terrestrial line construction of the Putnam Station Route Modification; the Lake Champlain Segment did not include terrestrial construction.</p>	<p>Construction: Additional receptors in the Putnam Station area would be exposed to short-term noise impacts from construction of the Route Modification than from construction of the Current Route due to the additional terrestrial construction distance for the Route Modification. Construction methods and construction duration would be similar for the Route Modification as for the Current Route.</p>

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
	and construction equipment would be equipped with appropriate mitigation.		
<i>Lake Champlain Segment</i>	Operation: Noise levels generated from emergency repair activities would be similar to those expected during construction, except the work would be restricted to a discrete area where repairs would be made and would be shorter in duration.	Operation: Temporary noise impacts would occur from terrestrial line maintenance of the Putnam Station Route Modification; the Lake Champlain Segment did not include terrestrial construction.	Operation: Noise impacts from inspections and maintenance for the Route Modifications would be similar to noise impacts from inspections and maintenance for the Current Route.
<i>Overland Segment</i>	Construction: Noise-sensitive receptors in this segment include residences, schools, churches, libraries, and hospitals. Areas in which a quiet setting is a basis for recreational use of the area might also be considered noise-sensitive. There are numerous noise-sensitive receptors within the ROI that could be impacted by construction activities. Sensitive land uses along the Current Route are identified in the 2014 FEIS Appendix F.2.	Construction: Noise receptors in Scotia and adjacent areas have not been modeled for the Schenectady Route Modification. Based on available land use data, the proposed Schenectady Route Modification would be located in proximity to a greater percentage of residential land use (21.67%) than would the Current Route (6.3%). However, these impacts would be consistent with those expected for the Overland Route as a whole, as described in Section 5.2.17 of the 2014 FEIS. Land use in downtown Schenectady (the Current Route) is broadly classified as commercial / industrial / transportation. However, this area also includes residential use in addition to the shops and offices typically found in a downtown setting.	Construction: Additional residential receptors in Scotia and adjacent areas would be exposed to short-term noise impacts from construction of the Route Modification than from construction of the Current Route. Construction methods and construction duration would be similar for the Route Modification as for the Current Route.
<i>Overland Segment</i>	Operation: Short-term noise level changes during inspections and maintenance of the ROW.	Operation: Noise receptors in Scotia and adjacent areas have not been modeled for the Schenectady Route Modification. Temporary noise impacts would occur from terrestrial line maintenance of the Route Modifications.	Operation: Noise impacts from inspections and maintenance for the Route Modifications would be similar to noise impacts from inspections and maintenance for the Current Route.
<i>Hudson River Segment</i>	Construction: For this segment, portions of the transmission line route would be installed on land in railroad and road ROWs around Haverstraw Bay, which has similar natural and man-made sound sources as the Overland Segment. Noise-sensitive receptors in the Hudson River Segment include residences, schools, libraries, and hospitals primarily along the Haverstraw Bay bypass area. Areas in which a quiet setting is a basis for recreational use of the area can also be considered noise-sensitive. Given the high development / population density, there are numerous potential noise-sensitive receptors within the ROI that could be impacted by construction activities. Sensitive	Construction: Noise receptors in W. Haverstraw and adjacent areas have not been modeled for the Rockland County Route Modification. Based on available land use data, noise impacts from the Rockland County Route Modification construction within road ROWs could affect more residential receptors than would construction of the Current Route within railroad ROW. Route Modification construction would occur within the ROW of Route 202 and Route 9W in Rockland County.	Construction: Slightly more residential receptors in W. Haverstraw and adjacent areas would be exposed to short-term noise impacts from construction of the Route Modification than from construction of the Current Route. Construction methods and construction duration would be similar for the Route Modification as for the Current Route.

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Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
	land uses along the Current Route are identified in the 2014 FEIS Appendix F.2.		
<i>Hudson River Segment</i>	Operation: Short-term noise level changes during inspection and maintenance of the ROW.	Operation: Noise receptors in W. Haverstraw and adjacent areas have not been modeled for the Rockland County Route Modification. Temporary noise impacts would occur from terrestrial line maintenance of the Route Modification.	Operation: Noise impacts from inspection and maintenance for the Route Modifications would be similar to noise impacts from inspection and maintenance for the Current Route.
<i>NYC Metro Segment</i>	Construction: Construction of the aquatic transmission line in this segment would cause a temporary increase in the noise environment surrounding active construction activities. The HDD cofferdam location at MP 330 would be at least 100 feet from the shoreline. Cable installation activities would comply with the New York City 79 dBA noise guidelines for industrial and commercial areas. There are parks located along the Harlem River in Manhattan and the Bronx that could experience an increase in noise levels from transmission line installation activities. However, ambient noise levels in these areas are elevated due to traffic noise from adjacent highways. Given the average daily rate of progress of construction activities during continuous installation, it is unlikely that shoreline receptors would be subject to noticeable sound increases from the CHPE Project for more than a few hours at a time.	Construction: The blasting area in the Harlem River would not be affected by the Harlem Rail Yard Route Modification. The proposed relocation of the Converter Station is within the same Census Tract as the Permitted Converter Station; there is no residential population within this Census Tract. Different noise receptors would be affected by HDD construction (Randall’s Island) and Astoria-Rainey cable construction (various parks in Astoria, Long Island City HS) than would be affected by the Current Route.	Construction: Construction / traffic management methods within Queens for the Route Modification are expected to remain the same as for the Current Route. The expected installation time for the Route Modification adjacent to Long Island City HS is expected to be the same as assumed for installation adjacent to such features located along the Current Route. Overall, the Route Modification is 3.38 miles in length compared to the Current Route length of 3.39 miles. Therefore, there would be essentially the same expected temporary noise impacts but involving different receptors. There is no expected change to the previously adopted noise mitigation measures as described in the 2014 FEIS.
<i>NYC Metro Segment</i>	Operation: A noise-simulation computer model (Cadna-A) was used to estimate noise at nearby residential and industrial areas due to operation of the proposed Converter Station. All residences located to the southwest of the proposed Converter Station site are outside of the 50-dBA operational noise contour line, which means levels are below 50 dBA and below the New York City Noise Code thresholds for these types of noise sources. Short-term noise level changes would occur during inspection and maintenance of the cable and the Converter Station.	Operation: The proposed Converter Station location would be further from residential noise receptors than the Converter Station location evaluated in the 2014 FEIS; noise impacts would be reduced for the proposed Converter Station relocation from the Permitted Converter Station location. As for construction, different noise receptors would be affected by cable O&M in Astoria for the Route Modification than for the Current Route. Noise impacts from maintenance of the Route Modification would affect Astoria Parks, Long Island City HS, and other receptors that would not be affected by the Current Route.	Operation: Noise impacts from the Converter Station operation are expected to be consistent with those described in the 2014 FEIS Section 5.4.17 for similar facilities. Noise receptors would be more distant from the Modified Converter Station location than from the Permitted location, resulting in lower noise impacts for the Modification location. Noise impacts from inspection and maintenance for the Route Modification would be similar to noise impacts from inspection and maintenance for the Current Route but affecting different receptors.

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
Environmental Justice¹			
<i>Lake Champlain Segment</i>	Construction: The 15 census tracts that compose the ROI reported minority or low-income populations that were generally lower than those for New York State. Impacts for all populations, including minority and low-income populations, would be small, and occur on a transitory and temporary schedule, solely in aquatic environments and would not be in close proximity to populations residing on land.	Construction: Putnam Station: The Route Modification would affect the same Census Tracts as the Current Route (820.02). However, the Route Modification shifts from an aquatic route, for which there are no human receptors in the vicinity of the construction impacts, to a terrestrial route for which there are potentially human receptors in the vicinity.	Construction: Putnam Station: The potentially affected population in census tract 820.02 is approximately 5 percent minority; median household income in Census Tract 820.02 is approximately 85 percent of the statewide median household income. Census Tract 820.20 population is not defined as minority or low income, and therefore, there are no Environmental Justice impacts.
<i>Lake Champlain Segment</i>	Operation: Operation would occur entirely underwater within this segment. Air emissions and noise from vessel traffic and construction equipment would have a small effect on all populations, including minority and low-income populations, and would occur on an intermittent, temporary schedule, solely in aquatic environments, and at a duration and frequency less than that required for construction.	Operation: The proposed Putnam Station Route Modification would affect the same Census Tracts as would the Current Route.	Operation: Census Tract 820.20 population is not defined as minority or low income, and therefore, there are no Environmental Justice impacts.
<i>Overland Segment</i>	Construction: There are 44 census tracts in the ROI, with various minority and low-income population levels that are generally lower than those for New York State. Effects would be expected to occur equally among all populations along this segment and primarily in existing railroad and road ROWs. Therefore, potential effects from construction on all populations, including minority and low-income populations would be small, and would occur on a transitory and temporary schedule. Noise generated from construction equipment usage, blasting, and detouring traffic around work sites would occur on a temporary basis as the transmission line is installed. Work areas would only be present in a given location for 2 weeks or less at a time.	Construction: Fort Ann: The Current Route and the Route Modification are within the same Census Tracts (810 & 820.01); therefore, the environmental justice characteristics and impacts would not be affected by the Route Modification.	Construction: Fort Ann: There are no major changes to the Route Modification based on Census Tracts or impacts, therefore, the Route Modification would not cause a difference in Environmental Justice impacts.
<i>Overland Segment</i>		Schenectady: The Schenectady Route Modification would affect different Census Tracts than would the Current Route.	Schenectady: The potentially affected minority and low income EJ populations for the Route Modification are lower than the potentially affected EJ communities for the Current Route. There would be less population disturbance for the

¹ All data from the U.S. Census Bureau, *American Community Survey 5-year estimates*, 2019.

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		<p>The Current Route would affect Census Tracts: 324.02, 202, 203, 335, 326.02.</p> <p>The Route Modification would affect Census Tracts: 324.02, 324.03, 322, 326.02.</p> <p>The Route Modification circumferences Scotia village, whereas the Current Route affects Schenectady City and Rotterdam directly but does not affect Scotia village. Scotia village has a population of 7,642 (in comparison to 65,273 in Schenectady and 29,973 in Rotterdam). Minority populations are much lower in Scotia (5.40%) in comparison to Schenectady City (43.5%) and Rotterdam (10.7%). Poverty levels are about the same level at about 9.10% in Scotia and 7.4% in Rotterdam and higher (19.4%) in Schenectady. There is one roughly half mile segment in which the route crosses Interstate 890 loop, which may cause some temporary construction disturbance.</p>	<p>Route Modification, as more than half of the road segment falls along rural road (non-highway / residential). Construction noise impacts would remain temporary and minimal. Construction disturbance may occur during construction across the Interstate 890 loop. Potential impacts to EJ communities (and population in general) would be lower for the Route Modification than for the Current Route. Poverty and minority population levels are lower in the Route Modification areas compared to the Current Route areas.</p> <p>Poverty levels were much higher along the Current Route in census tracts 202 and 203 at 21.95% and 15.16% in comparison to 4.94% in Census Tract 322, and 4.8% in Census Tract 324.03. Populations are much greater in Census Tract 322 at 4,838 compared to 1,995 in Census Tract 202 and 798 in Census Tract 203. There are lower levels of minorities present in Census Tract 322 at 6.28% when compared to Census Tract 202 at 36.34% and Census Tract 203 at 25.81%, and 2.4% in Census Tract 324.03. Given poverty, population, and demographic differences, the potentially affected minority and low-income population for the Route Modification would be less than for the Current Route.</p>
<i>Overland Segment</i>		<p>Selkirk Rail Yard: The Selkirk Route Modification shifts to NYS Routes 32, 54, 53, cuts through vegetation and through NYS Route 396. There are no major population changes between the Current Route and Route Modification, and they are within the same Census Tract (143.02).</p>	<p>The Selkirk Rail Yard Route Modification impacts and mechanisms would be similar to those for the Current Route. There are no significant changes to the Route Modification based on Census Tracts or impacts, therefore, the Route Modification would not cause a difference in Environmental Justice impacts.</p>
<i>Overland Segment</i>		<p>Catskill Creek: The Catskill Creek Route Modification would have minimal effect with respect to Environmental Justice impacts. The Census Tracts for the Current Route and the Route Modification are similar in population size, poverty levels, and minority population. The Current Route is located in Census Tract 810, whereas the Route</p>	<p>The Catskill Creek Route Modification impacts and mechanisms would be similar to those for the Current Route. The density of human receptors would be slightly higher for the Current Route than for the Route Modification, and potentially affected minority and low income population for the Route Modification would be lower than for the Current</p>

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Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
		Modification is located in Census Tract 811.02. The population in Census Tract 810 is greater than in Census Tract 811.02 at 4,396 compared to 2,871. There is a 2% difference in racial demographics (75.86% white in Census Tract 810 and 73.70% white in Census Tract 811.02). Poverty levels are lower in the Route Modification area at 11,77% compared to 19.70% in Census Tract 810 for the Current Route.	Route. Therefore, the Route Modification would not cause a difference in Environmental Justice impacts.
<i>Overland Segment</i>	Operation: Maintenance and emergency repairs impacts would include air emissions and noise from equipment and would impact all populations, including minority and low-income populations, but would be small because they would occur on an intermittent, temporary schedule primarily in existing railroad and road ROWs, and over durations and frequencies less than required for construction.	Operation: Temporary noise and traffic and transportation impacts would be similar for the Route Modifications as for the Current Route, in some areas affecting different receptors.	Operation: Temporary noise and traffic and transportation impacts from maintenance of the Route Modification would be low and of short duration and would not differ between the Current Route but would affect different receptors. Mitigation methods for noise, traffic, and transportation impacts would not differ between the Route Modification and the Current Route. Low and short-duration impacts from operations do not represent Environmental Justice impacts.
<i>Hudson River Segment Rockland County</i>	Construction: The 56 census tracts in the ROI predominantly border the Hudson River and reported minority or low-income population levels that were generally lower than those for New York State. Effects from construction on all populations, including minority and low-income populations, including air emissions and noise from vessels, traffic, and construction equipment, would be small and occur on a transitory and temporary schedule; these effects would occur primarily in aquatic environments removed from populations residing on land and primarily in existing roads and railroad or road ROWs.	Construction: Rockland County: The Rockland County Route Modification would affect different Census Tracts than would the Current Route. The Current Route would affect Census Tracts 101.01, 102, 106.02, 107.01 & 109.02. The Route Modification would affect Census Tracts 101.01, 102, 101.02, 106.01, 106.02, 107.01, 109.01 & 109.02. The Route Modification would affect three Census Tracts that would not be affected by the Current Route. There are no significant demographic differences between the Current Route Census Tracts and the Route Modification Census Tracts. Census Tract 106.01, which would be affected by the Route Modification but not by the Current Route, is approximately 45 percent Hispanic;	Construction: Temporary noise, traffic, and transportation impacts from construction of the Rockland County Route Modification would be low and of short duration and would not differ from the Current Route but would affect different receptors. Demographics of affected areas differ for the Rockland County Route Modification and the Current Route. Construction of the Route Modification would impact Census Tracts with minority/low-income populations and could affect a higher number of receptors. However, construction impacts would be low and temporary for either the Route Modification or the Current Route. Mitigation methods for noise, traffic, and transportation impacts would not differ between the Route Modifications and the Current Route. Low and short-duration impacts from construction do not represent high and adverse Environmental Justice impacts.

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		<p>Census Tract 106.02, which would be affected by both the Route Modification and Current Route is approximately 55 percent Hispanic. The median household income in Census Tract 106.02 is approximately 60 percent of the County average; median household income in Census Tract 106.01 is approximately 90 percent of the County average.</p> <p>The Rockland County Route Modification moves the route from a sparsely populated segment along a railroad ROW, to a densely populated segment along a road ROW. There is roughly a half a mile (0.54) difference between the Current Route and the Route Modification segment. The Current Route segment may cause temporary disruption of traffic along Route 202/Route 9W and residential areas. These impacts would not occur for the Current Route segment constructed through the railroad ROW. Rockland County population estimate (2019) is 325,789; 22.10% minority population and 12.50% below poverty line.</p>	
<i>Hudson River Segment</i>	<p>Operation: Maintenance and emergency repairs impacts would include air emissions and noise from equipment and would impact all populations, including minority and low-income populations, but would be small, because they occur on an intermittent, temporary schedule primarily in existing railroad and road ROWs, and over durations and frequencies less than required for construction.</p>	<p>Operation: Temporary noise, traffic, and transportation impacts would be similar for the Route Modifications as for the Current Route, in some areas affecting different receptors.</p>	<p>Operation: Temporary noise, traffic, and transportation impacts from maintenance of the Route Modification would be low and of short duration and would not differ between the Route Modification and the Current Route but would affect different receptors. Mitigation methods for noise, traffic, and transportation impacts would not differ between the Route Modification and the Current Route. Low and short-duration impacts from operations do not represent Environmental Justice impacts.</p>
<i>NYC Metro Segment HRY</i>	<p>Construction: The 26 census tracts in the ROI generally reported higher percentages of minority and low-income populations than for New York State, particularly in Astoria. Transmission line construction would not cause minority or low-income populations to experience disproportionately high and adverse effects, because construction activities would be underwater, or underground in existing railroad or road ROWs or industrial areas, and would be temporary and transitory</p>	<p>Construction: Harlem Railyard: The HRY Route Modification would affect different Census Tracts than would be affected by the Current Route.</p> <p>The Current Route would affect Census Tracts: 242, 19, 107.01.</p>	<p>Construction: Harlem Railyard: The Route Modification would cross over an additional Census Tract (240 – Randall’s Island) that would not be affected by the Current Route. However, there would be no substantive changes to impacts between the Current Route and Route Modification, as there is only one census tract difference, which is located</p>

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Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
	<p>in nature. The Converter Station would be constructed in an industrial area that has no permanent residents in its Census Tract or within 500 feet of the route; therefore, no impacts on minority and low-income populations would occur from construction. Impacts of Astoria-Rainey interconnection construction would be similar to routine installations of water, sewer, natural gas, telephone, and electric distribution lines in city streets. Construction noise and dust from pavement removal, trenching, blasting, detouring traffic around work sites, cable installation, and surface restoration would temporarily affect adjacent areas; work areas would only be present in a given location for 2 weeks or fewer at a time.</p>	<p>The Route Modification would affect Census Tracts: 242, 19, 240, 107.01.</p> <p>The HRY Route Modification crosses over a bridge and the Harlem River and crosses a major highway connecting Randall's Island to Port Morris. The Current Route crosses the same body of water, bridge, and highway at different points. There would be no substantive differences in impacts between the two routes surrounding HRY.</p>	<p>in a sparsely populated area (parkland area on Randall's Island).</p>
<p><i>NYC Metro Segment Astoria AC Line / Astoria Rainey Cable</i></p>	<p>Construction: The 26 census tracts in the ROI generally reported higher percentages of minority and low-income populations than for New York State, particularly in Astoria. Transmission line construction would not cause minority or low-income populations to experience disproportionately high and adverse effects, because construction activities would be underwater, or underground in existing railroad or road ROWs or industrial areas, and would be temporary and transitory in nature. The Converter Station would be constructed in an industrial area that has no permanent residents in its Census Tract or within 500 feet of the route; therefore, no impacts on minority and low-income populations would occur from construction. Impacts of Astoria-Rainey interconnection construction would be similar to routine installations of water, sewer, natural gas, telephone, and electric distribution lines in city streets. Construction noise and dust from pavement removal, trenching, blasting, detouring traffic around work sites, cable installation, and surface restoration would temporarily affect adjacent areas; work areas would only be present in a given location for 2 weeks or fewer at a time.</p>	<p>Construction: Astoria AC Line/Astoria Rainey Cable: The Astoria Rainey Route Modification would affect different Census Tracts than would be affected by the Current Route.</p> <p>The Current Route would affect Census Tracts: 107.01, 111, 103, 101, 97, 95, 69, 71, 73, 79, 77, 45, 85, 39, 37.</p> <p>The Route Modification would affect Census Tracts: 107.01, 105, 103, 99, 91, 83, 79, 77, 45, 39, 37.</p> <p>The Route Modification would affect fewer Census Tracts than the Current Route. Approximately 0.92 miles of the segment would be moved to a less densely populated area within Census Tracts 105, 103, and 99.</p> <p>Poverty Differences: Poverty levels are similar for Census Tracts affected by the Current Route and the Route Modification. The only exception being in Census Tract 83, where the poverty level is slightly higher at 18.50% compared to 16.89% in Census Tract 97. In comparing Census Tracts 99, 91, 83 affected by the Route Modification to Census Tracts 97, 95, 69, 71 and 73 affected by the</p>	<p>Construction: Astoria AC Line/Astoria Rainey Cable: Temporary noise and traffic and transportation impacts from construction of the Route Modifications would be low and of short duration and would not differ between the Route Modifications and the Current Route but would affect different receptors. Demographics of affected areas differ for the Route Modifications and the Current Route. Construction of the Route Modification would impact Census Tracts that have higher minority/low income populations than for the Current Route, and could affect a higher number of receptors. However, construction impacts would be low and temporary for both the Route Modification or the Current Route. Mitigation methods for noise, traffic, and transportation impacts would not differ between the Route Modifications and the Current Route. Low and short-duration impacts from operations do not represent high and adverse Environmental Justice impacts.</p>

Table 3. Comparison of Potential Environmental Impacts			
Resource Area/Segment	Summary of Potential Impacts in the CHPE Transmission Line Project 2014 FEIS	Summary of Potential Impacts as a Result of New Circumstances or Information	Difference in Potential Impacts
		<p>Current Route, the poverty level is below 19% for all affected Census Tracts. There is no substantive difference in poverty levels between the Census Tracts affected by the Route Modification and Current Route.</p> <p>Minority Populations: There are slightly higher minority populations levels in Census Tracts 99, 91, 83 that would be affected by the Route Modification in Census Tracts 69, 71, 71, 95, and 97 that would be affected by the Current Route. For the Current Route, the lowest level of minority population was in Census Tract 73 at 11.82%. The highest level of minority population for the Route Modification is Census Tract 83 at 41.89%. The average poverty level for the Census Tracts affected by the Current Route is 21.18%, compared to 35.61% in Census Tracts affected by the Route Modification. This indicates a substantive change in poverty levels between the Census Tracts affected by the Current Route and the Route Modification.</p>	
<i>NYC Metro Segment</i>	<p>Operation: Human health and environmental effects in this segment would be limited to operation of the Converter Station and maintenance and emergency repairs of the transmission line. Effects on all populations, including minority and low-income populations, from the operation of the Converter Station would be small, because effects would primarily occur in an industrial area with no residential population.</p> <p>Effects on all populations, including minority and low-income populations, from maintenance or emergency repairs, which include air emissions and noise from equipment used for repairs, would be small, because such activities would be temporary and transitory in nature and would occur in aquatic environments, industrial areas, and existing railroad and road ROWs at durations and frequencies less than that required for construction.</p>	<p>Operation: Temporary noise, traffic, and transportation impacts would be similar for the Route Modification as for the Current Route, in some areas affecting different receptors.</p>	<p>Operation: Temporary noise, traffic, and transportation impacts from maintenance of the Route Modification would be low and of short duration and would not differ between the Route Modification and the Current Route but would affect different receptors. Mitigation methods for noise, traffic, and transportation impacts would not differ between the Route Modification and the Current Route. Low and short-duration impacts from operations do not represent Environmental Justice impacts.</p>

3.0 Cumulative Impacts

Cumulative Impacts were discussed in Chapter 6 of the 2014 FEIS. No further analysis of cumulative impacts is warranted for this SA, because the proposed route modifications reduce the overall impacts of the CHPE Project.

4.0 Mitigation

No changes to mitigation are proposed from the mitigation methods described in the 2014 FEIS.

5.0 Conclusion and Determination

In accordance with NEPA and CEQ's and DOE's implementing NEPA regulations, DOE prepared this supplement analysis to evaluate whether the new circumstances or information require no further NEPA analysis, require supplementing the existing EIS, or require preparing a new EIS. DOE concludes that the proposed changes, including the proposed route modifications and the proposed converter station relocation, would result in an overall net reduction in all areas of impact. The impacts of the proposed changes would not be substantially different from the impacts analyzed in the FEIS. DOE concludes that the proposed changes relevant to environmental concerns are not significant, and therefore, do not require a supplement to DOE/EIS-0447 Final Champlain Hudson Power Express Transmission Line Project Environmental Impact Statement, consistent with 40 CFR 1502.9(d)(4) and 10 CFR 1021.314(c)(2)(i)–(iii). No further NEPA documentation is required.