

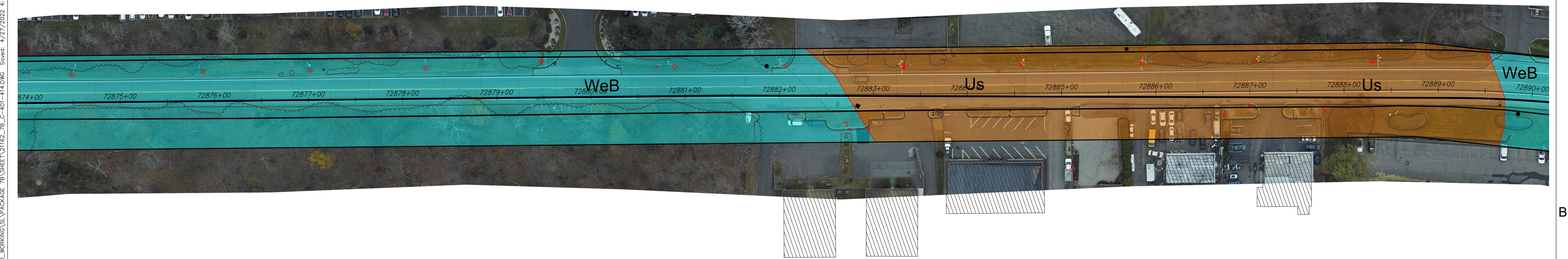
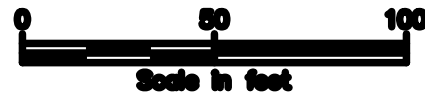
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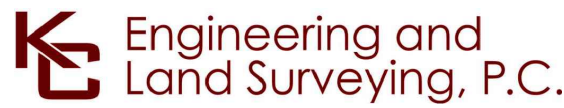
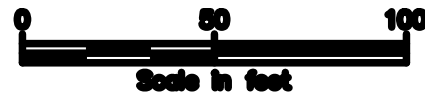
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	B		B/D		100 FT BUFFER
	C		C/D		
	D		NONE		

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SCALE: 1" = 50'



STA. 72875+00.00 TO STA. 72890+00.00 PLAN VIEW
SCALE: 1" = 50'



No.	DATE	SUBMITTAL / REVISION DESCRIPTION					DB	APP	

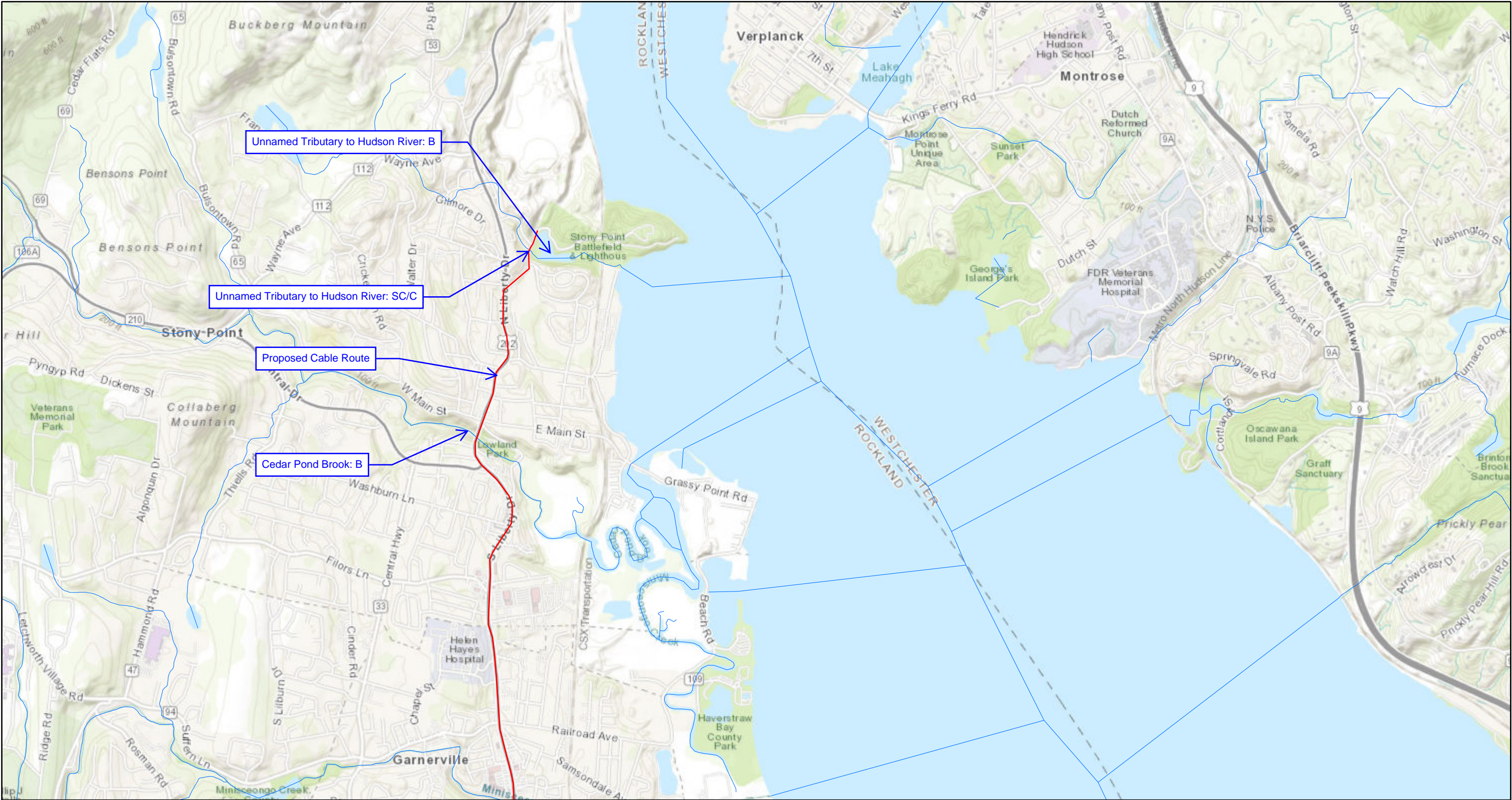
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PACKAGE XX - DESCRIPTION

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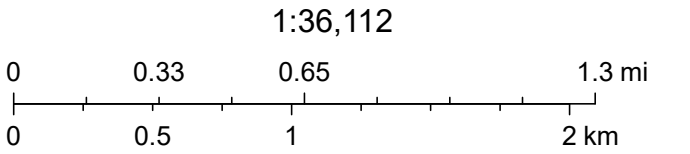
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		06/09/2022
		XX OF XXX

APPENDIX C
RECEIVING WATERS MAP

Stony Point

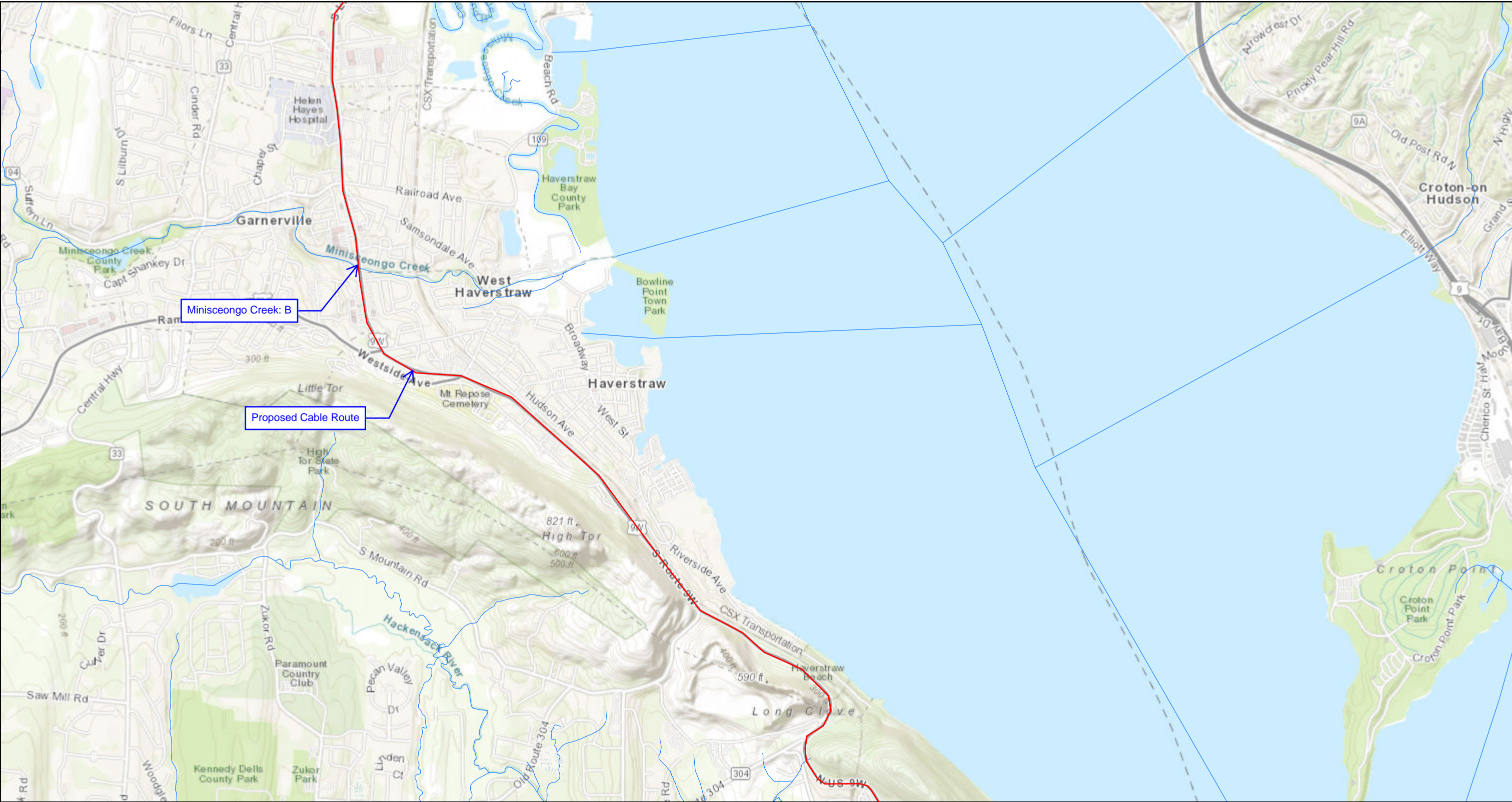


April 7, 2022

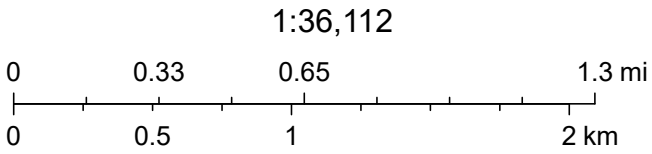


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Haverstraw

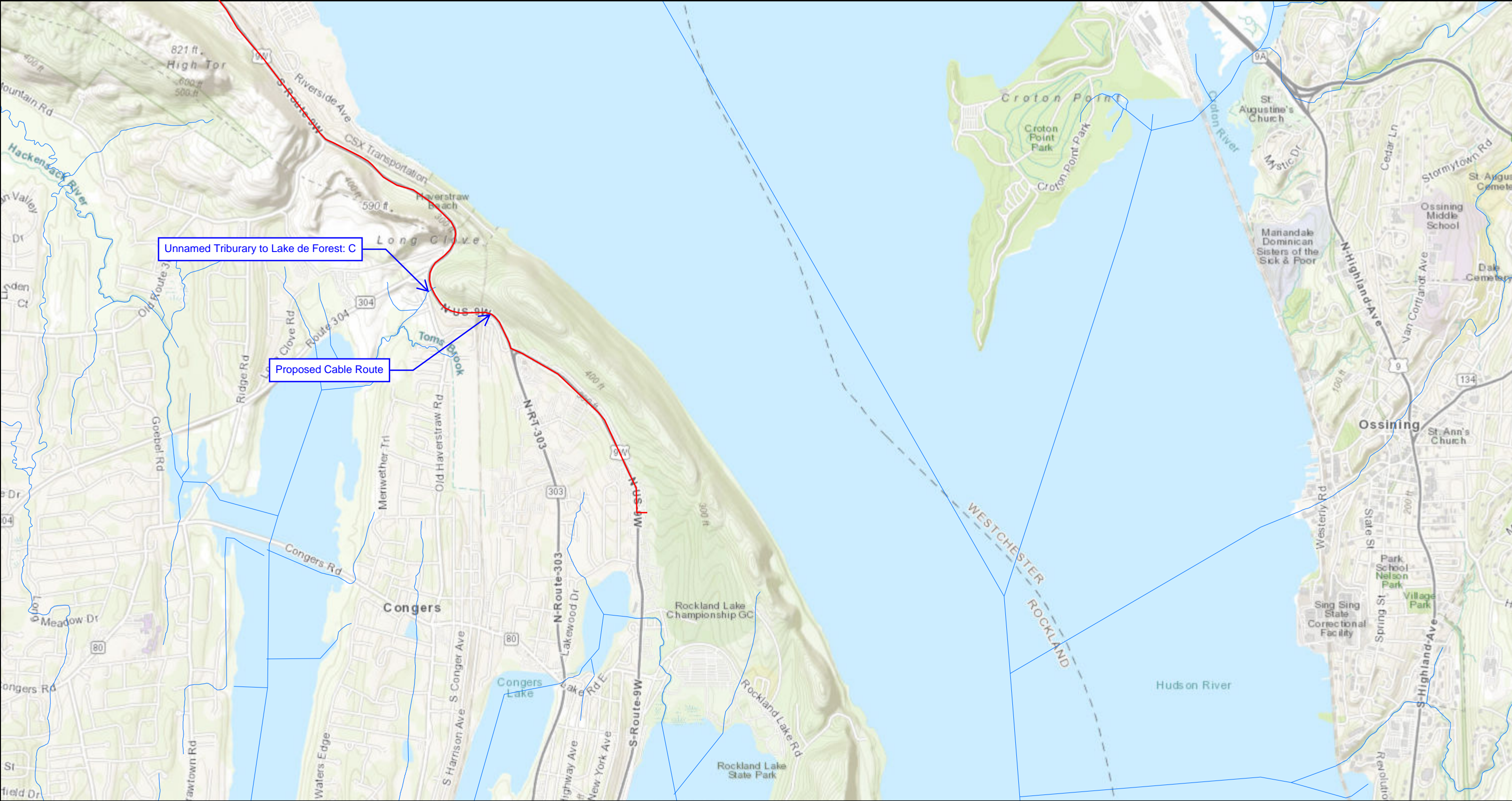


April 7, 2022

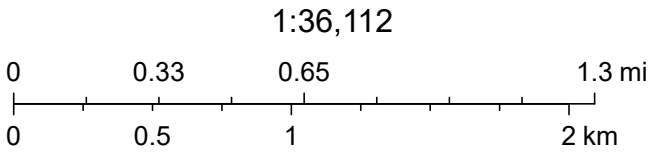


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Clarkstown



April 7, 2022



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

APPENDIX D

FEMA FIRM MAPS

National Flood Hazard Layer FIRMette



73°59'16"W 41°14'37"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

73°58'38"W 41°14'10"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/7/2022 at 8:38 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMMette



73°59'33"W 41°13'55"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

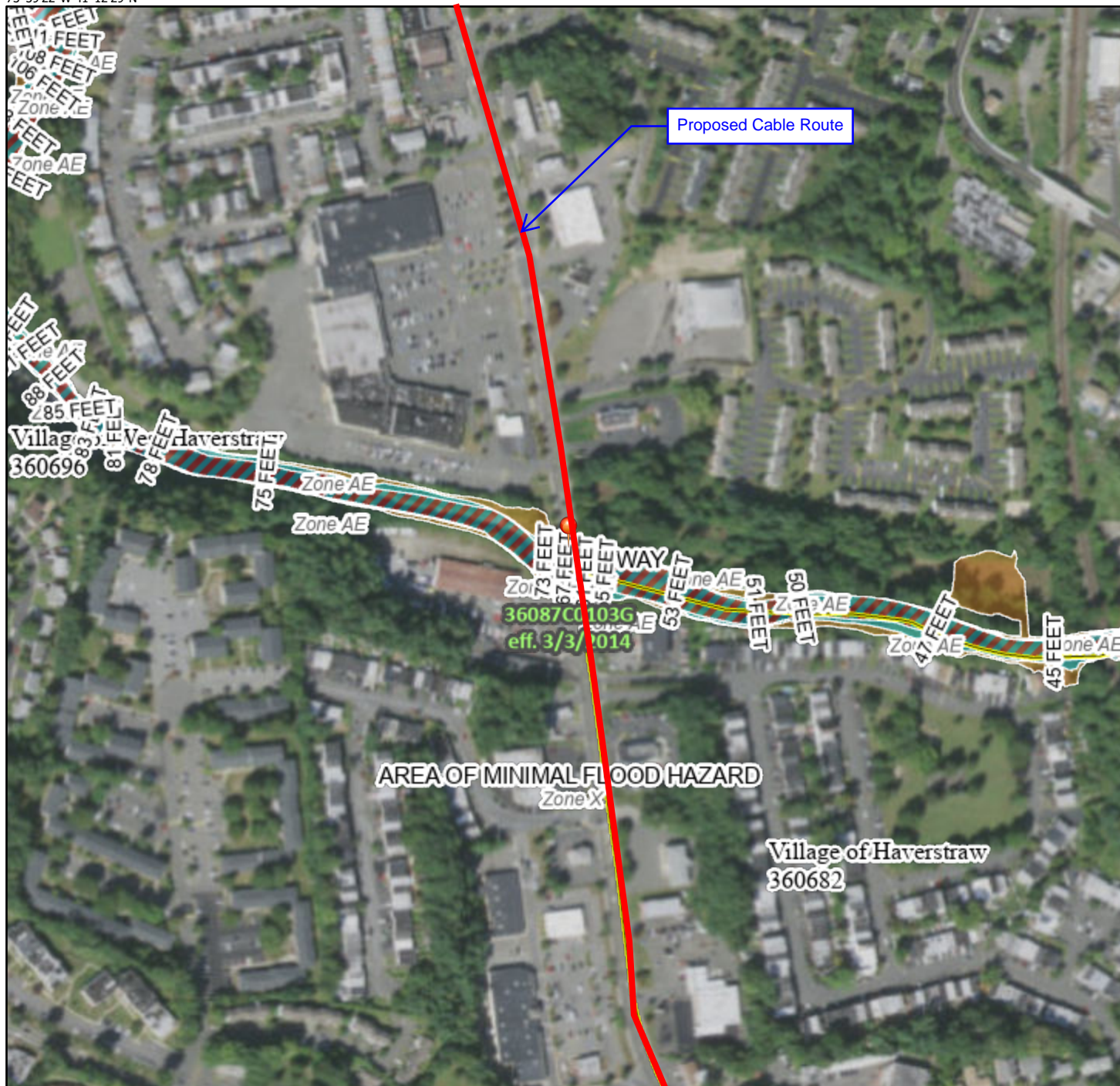
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National Flood Hazard Layer FIRMette



73°59'22"W 41°12'29"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/7/2022 at 8:31 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

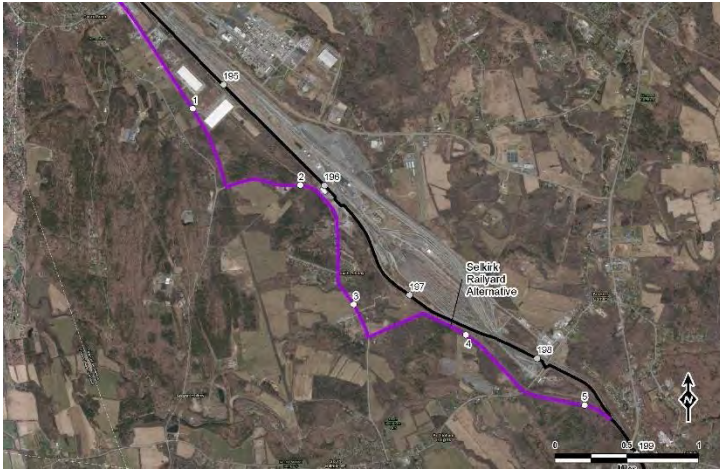
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0 250 500 1,000 1,500 2,000 Feet 1:6,000

73°58'44"W 41°12'2"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

APPENDIX E
HISTORIC RESOURCE DETERMINATION
CORRESPONDENCE



Phase IA Archaeological
Assessment of the
Champlain-Hudson
Alternative Routes, New York
(Project Review: 09PR03910)

Prepared For:

Transmission Developers Inc.

Prepared By:

Jennifer Larlee and Richard Will
TRC
71 Oak Street
Ellsworth, ME 04605

November 7, 2019 revised April 24, 2020

THIS REPORT CONTAINS CONFIDENTIAL INFORMATION
NOT FOR PUBLIC DISTRIBUTION

Management Summary

State and Federal Permits: Amended Certificate of Environmental Capability and Public Need, New York State Public Service Commission; Supplement to Department of Energy Presidential Permit and Department of Army Permit

Phase of Survey: Phase IA

Location of Project: The Champlain Hudson Power Express project is an approximately 330-mile submarine and terrestrial High Voltage Direct Current (HVDC) transmission project that will connect clean power generated in Canada with New York City. As part of their engineering review of the Project, Transmission Developers Inc. is considering alternative routing to be approved by the New York State Public Service Commission for responsible environmental and engineering stewardship utilizing best practices. This report provides a Phase 1A analysis of six (6) Preferred Alternative Routes: Catskill, Fort Ann, Putnam Station, Rockland County, Schenectady, and Selkirk Yard. The Project involves burial of underground electrical transmission line within a 50 feet-wide area of potential effect (APE). Over most of its length, the Project will follow and lie within existing railroad and road rights-of-way.

Survey Areas:

Catskill Preferred Alternative: ~3,695 linear feet (1,126 m); 50 feet (15.2 m) APE

Fort Ann Preferred Alternative: ~18,216 linear feet (5,552 m); 50 feet (15.2 m) APE

Putnam Station Preferred Alternative: ~40,075 linear feet (12,215 m); 50 feet (15.2 m) APE

Rockland County Preferred Alternative: ~47,000 linear feet (14,326 m); 50 feet (15.2 m) APE

Schenectady Preferred Alternative: ~52,000 linear feet (15,850 m); 50 feet (15.2 m) APE

Selkirk Yard Preferred Alternative: ~29,000 linear feet (8,839 m); 50 feet (15.2 m) APE

USGS 7.5 Minute Quadrangle Maps:

Catskill Preferred Alternative: Hudson South, Cementon

Fort Ann Preferred Alternative: Fort Ann

Putnam Station Preferred Alternative: Putnam, Benton

Rockland County Preferred Alternative: Haverstraw

Schenectady Preferred Alternative: Rotterdam Junction, Schenectady

Selkirk Yard Preferred Alternative: Delmar

Archaeological Survey Overview:

Results of Background Survey: The Project APEs are in areas that have received significant archaeological resource study and site documentation. Background research on NY-CRIS demonstrated that 66 CRM studies, 31 NRHP listings, 153 archaeological sites and 63 Historic structures occur within 1 km of the six (6) Project areas. These numbers are conservative as many NRHP undetermined and ineligible Historic structures were not recorded during the study due to the wealth of available data. In addition, many NRHP-listed structures were documented as part of their associated Historic District(s).

Recommendations: A review of previous research and the New York Cultural Resources Information System (NY CRIS) database shows that the Project areas lie within locations sensitive for Precontact and Historic period cultural resources. A large number of CRM studies document the existence of numerous Precontact and Historic archaeological sites, and Historic properties within a 1 km radius of the Project areas. However, the Project APEs are narrow (50 feet) and the majority of the APEs are within the ROWs of long-established railroad lines and roadways.

The Catskill Preferred Alternative is largely in a railroad easement and located in areas that are heavily developed. Archaeological sensitivity for any portions of the route have largely been obliterated by development in the late 19th and 20th centuries with the possible exception of the crossing of Catskill Creek at the Preferred Alternative's northern end. TRC recommended field inspection of the crossing of Catskill Creek portion of the Catskill Preferred Alternative for possible archaeological testing for Precontact period archaeological resources, however, it will be directionally drilled and no further analysis is recommended.

The Fort Ann Preferred Alternative route lies totally within existing roadways. So long as there are no impacts to the Champlain canal during construction, then TRC recommends no further archaeological evaluation of this alternative for either Precontact- or Historic -period archaeological resources.

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

The Rockland County Preferred Alternative route largely travels through extensively developed areas. However, both at its northern terminus and its southern terminus where it enters the Hudson River there are two areas where field walkover and possibly archaeological testing is recommended. The first is at the northern end of the Preferred Alternative near Hudson Quarry and the second is in Hook Mountain State Park at its southern end. Both locations are sensitive for Precontact period archaeological resources, but if Project plans are forthcoming that show direction drilling in these areas then we will recommend no further action.

The Schenectady Preferred Alternative route is mainly proposed for placement in existing railroad bed or roadways. However, it does take an approximately 90 degree turn and heads across the Mohawk River at about Milepost 6. TRC recommended field inspection of this portion of the route for possible archaeological testing for Precontact period archaeological resources. However, like the Catskill Preferred Alternative, this area will be directional drilled. The entrance and exit locations are 300 feet or more back from the River. TRC archaeologists recommended no further study.

The Selkirk Yard Preferred Alternative route mainly follows existing roadways and railways. Beginning around Milepost 4.5, it makes several crossings of Onesquethaw Creek, which TRC archaeologists recommended field inspection for Precontact period resources and possible testing within the Preferred Alternative's APE. However, this area will also be directional drilled, and TRC archaeologists recommended no further study.

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1. PROJECT DESCRIPTION

The Champlain Hudson Power Express project is an approximately 330-mile submarine and terrestrial High Voltage Direct Current (HVDC) transmission undertaking that will connect clean power generated in Canada with New York City. As part of their engineering review of the Project, Transmission Developers Inc. (TDI) is considering alternative routing to be approved by the New York State Public Service Commission for responsible environmental and engineering stewardship utilizing best practices. This report provides a Phase 1A analysis of six (6) of these Preferred Alternative routes: Catskill, Fort Ann, Putnam Station, Rockland County, Schenectady, and Selkirk Yard (Figures 1-6). The Project involves burial of underground electrical transmission line within a 50 feet-wide area of potential effect (APE). Over most of its length, the Project will follow and lie within existing railroad and road rights-of-way (ROW).

The Project will utilize a temporary construction zone 50 feet wide for areas of potential effect (APE) (Figures 1-6). The anticipated depth of construction is up to five (5) feet to allow the cables to be installed to a depth of at least four (4) feet below the surface. The width of the trench will be approximately four (4) feet. Over most of the Project length, this APE will follow within the existing ROW of various railroad lines that cross the Hudson and Mohawk River floodplain and river valley. These portions of the Hudson and Mohawk Valleys have been heavily utilized and significantly modified in the historic era. In addition to impacts caused by railroad construction, the areas are heavily residential and urban industrial. The corridors along the Hudson and Mohawk Rivers have seen a long, intensive commercial and industrial use. Because of these activities, the natural topography and drainage along these rivers has been significantly, if not completely, modified as shown by comparing Figures 1-6 with the historic maps (Figures 7-16). All report figures are provided in Appendix 1 following the References Cited section of the report text. Alternative Route Plans are provided in Appendix 3 of the Amendment to the Certificate of Environmental Compatibility and Public Need (“Amendment”) which is being submitted to the New York State Public Service Commission.

The Phase IA archaeological resource assessment was conducted in accordance with guidelines established by the New York Office of Parks, Recreation and Historic Preservation (OPRHP) and the *Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York State Standards for Cultural Resource Investigations* published by the New York Archaeological Council (2000).

1.1 Catskill Preferred Alternative

The Catskill Preferred Alternative Route begins in a railroad easement just south of State Route 23W in the Town of Catskill, Greene County. This Preferred Alternative would have the cables depart from the Certified Route at MP 221 in Catskill, Greene County and travel west for approximately 0.1 miles underneath undeveloped land owned by the State of New York to reach Allen Street. The route would then follow Allen Street for 0.2 miles, at which point a Horizontal Directional Drill (HDD) will place the cables under Catskill Creek from Allen Street (north side of Creek) to a private property (south side of Creek). From the private property, the cables would travel across Route 9W and proceed onto Willow Lane prior to accessing a private easement prior to rejoining the CSX ROW and the Certified Route at MP 221.6. (Figure 1a, 1b).

1.2 Fort Ann Preferred Alternative

The Fort Ann Preferred Alternative Route begins in the Town of Whitehall at the north terminus of North Old Route 4 adjacent to the Champlain Canal in Washington County. The route would travel south for approximately 3.4 miles underneath Old Route 4 in Whitehall and Fort Ann before rejoining the Certified Route at MP 120.9 via a second HDD. It is adjacent to the west side of the Champlain Canal for its entire length (Figures 2a and 2b).

1.3 Putnam Station Preferred Alternative

The Putnam Station Preferred Alternative Route exits the west side of the Settlement - Submarine Route HVDC approximately 0.7 km south of Mill Bay on Lake Champlain in Washington County. The cables would transition from Lake Champlain to the upland route on private property at the terminus of County Road 3 in the Town of Putnam, Washington County. The route would travel almost one mile within the Country Road 3 ROW to the intersection with Lake Road, at which point the route would follow Lake Road for approximately 2.2 miles to New York Route 22 ("Route 22"). The route then would travel within the Route 22 ROW for approximately 4.2 miles before rejoining the Certified Route at MP 101.5 (Figures 3a and 3b).

1.4 Rockland County Preferred Alternative

The Rockland County Preferred Alternative Route begins in the Hudson River at the Settlement - Submarine Route HVDC and comes ashore just north of Stoney Point State Park and skirts the southern end of Tomkins Cove Quarry. The route then follows an unnamed quarry access road southwest to the Elm Street. Following Elm Street south for 0.3 miles, the route would connect to New York Route 9W and travel south through the Town of Stony Point, the Town of Haverstraw, the Villages of West Haverstraw and Haverstraw, and the Town of Clarkstown for approximately 7 miles. A land-to-water HDD would be launched from a private property located adjacent to Route 9W and extend under lands of the Palisades Interstate Park Commission for 0.3 miles until the cables reach the Hudson River. The route would rejoin the Certified Route at MP 302 (Figures 4a and 4b).

1.5 Schenectady Preferred Alternative

The Schenectady Preferred Alternative Route is located in Schenectady County and begins at the Springfield Railroad Junction located between Maple Street and Alplaus Kill in the Town of Glenville. This Preferred Alternative would have the cables depart from the Certified Route within the CP ROW at MP 169.1 in the City of Schenectady and follow the Pan Am Railways ROW for 6 miles in a western direction. The route would then cross under the Mohawk River via an HDD, beginning from the Scotia Industrial Park on the north side of the River to a NYSDOT roadway ROW on the south side of the River. The cables would then be installed within CSX ROW for 3 miles before rejoining the Certified Route at MP 177.1 in Rotterdam (Figures 5a and 5b).

1.6 Selkirk Yard Preferred Alternative

The Selkirk Yard Preferred Alternative Route begins at the junction of Feura Bush Road and West Yard Road in the Town of New Scotland. After approximately one mile and at the end of West Yard Road, the cables would be installed under a dirt path, crossing approximately 0.5 miles of undeveloped private land owned by CSX Railroad to South Albany Road. The cables would continue in the road ROW for 1.6 miles heading east for 0.4 miles upon private land in order to rejoin the CSX ROW. The cables would then

parallel the Certified Route within the CSX ROW for approximately 1.5 miles, rejoining the Certified Route at MP 198.1 (Figures 6a and 6b).

2. ENVIRONMENTAL DESCRIPTION

The entire Project, including all alternate routes, is located in the Hudson Valley ecoregion, which includes the valley from the Glaciated Reading Prong/Hudson Highlands to the Eastern Adirondack Foothills and Champlain Lowlands in the north. The underlying geology of the Hudson Valley includes mostly Ordovician shales and siltstones. The shales were more easily eroded than the surrounding gneiss, schist, and sandstone-capped shales of the surrounding highlands. During the Pleistocene Epoch, glacial flood waters shaped the Hudson Valley topography, and Glacial Lake Albany filled the valley from Bear Mountain to Glens Falls. Sediments deposited into Glacial Lake Albany cover the valley floor today. The coarser-grained sands deposited in the area surrounding Albany form the dunes and sand plains known as the Pine Bush, where pitch pine and scrub oak predominate. Low elevations and the moderate climate of the Hudson Valley allow Appalachian oak-hickory forest to penetrate northward. Some of the Appalachian species are at the northern extent of their distribution, but as the climate warms, they are expected to expand their range into areas now dominated by northern hardwoods.

The Natural Resources Conservation Survey (NRCS) identifies a large variety of soils in the Project areas. The soils type and drainage within the Project APEs reveal an intricate mosaic of natural and man-made features. These soils units are listed in Tables 1-6.

Table 1. Soils mapped within the Catskill Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
Co	Covington and Madalin soils	8.2	8.0%
HvB	Hudson and Vergennes soils, 3 to 8 percent slopes	19.5	19.0%
HvC	Hudson and Vergennes soils, 8 to 15 percent slopes	3.5	3.4%
HvE	Hudson and Vergennes soils, 25 to 50 percent slopes	5.4	5.2%
HwD3	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	5.2	5.1%
KrA	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	0.6	0.6%
KrB	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	2.5	2.4%
NaC	Nassau channery silt loam, rolling	7.7	7.5%
NrC	Nassau channery silt loam, rolling, very rocky	0.3	0.3%
NrD	Nassau channery silt loam, hilly, very rocky	23.2	22.6%
NrE	Nassau channery silt loam, steep, very rocky	10.8	10.5%
RhA	Riverhead loam, 0 to 3 percent slopes	12.2	11.9%
RhC	Riverhead loam, rolling	0.0	0.0%
Ur	Udorthents, loamy	0.6	0.6%
W	Water	3.1	3.0%
Totals for Area of Interest		102.7	100.0%

Table 2. Soils mapped within the Fort Ann Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
Cv	Covington silty clay loam	23.8	2.5%
FCC	Farmington-Rock outcrop association, nearly level through moderately steep	4.0	0.4%
FL	Fluvaquents	18.6	2.0%
Fr	Fredon silt loam	2.7	0.3%
HLE	Hollis-Charlton association, moderately steep and steep	100.8	10.8%
HNC	Hollis-Rock outcrop association, gently sloping and sloping	315.2	33.8%
HvC	Hudson silt loam, 6 to 12 percent slopes	6.7	0.7%
HWE	Hudson and Vergennes soils, steep and very steep	20.5	2.2%
KbA	Kingsbury silty clay, 0 to 2 percent slopes	13.1	1.4%
KbB	Kingsbury silty clay, 2 to 6 percent slopes	1.2	0.1%
OaC	Oakville loamy fine sand, 5 to 15 percent slopes	0.6	0.1%
OKE	Oakville loamy fine sand, moderately steep and steep	2.3	0.2%
OP	Orthents and Psamments	59.3	6.4%
Ps	Pits, quarry	7.3	0.8%
RPC	Rock outcrop-Vergennes association, gently sloping through moderately steep	11.9	1.3%
Sa	Saco silt loam	11.5	1.2%
SB	Sapristis, Aquepts, and Aquents	75.1	8.1%
VeB	Vergennes silty clay loam, 3 to 8 percent slopes	40.0	4.3%
VeC	Vergennes silty clay loam, 6 to 12 percent slopes	48.4	5.2%
VeD	Vergennes silty clay loam, 12 to 20 percent slopes	51.2	5.5%
W	Water	118.4	12.7%
Totals for Area of Interest		932.6	100.0%

Table 3. Soils mapped within the Putnam Station Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
HLE	Hollis-Charlton association, moderately steep and steep	12.3	21.5%
HNC	Hollis-Rock outcrop association, gently sloping and sloping	3.6	6.4%
HWE	Hudson and Vergennes soils, steep and very steep	18.3	32.1%
ROF	Rock outcrop-Hollis association, moderately steep through very steep	11.3	19.8%
Sa	Saco silt loam	1.0	1.7%
SB	Sapristis, Aquepts, and Aquents	3.1	5.4%
VeB	Vergennes silty clay loam, 3 to 8 percent slopes	5.2	9.1%
W	Water	1.8	3.2%
Totals for Area of Interest		57.0	100.0%

Table 4. Soils mapped within the Rockland County Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
Ad	Alden silt loam	1.2	0.1%
Ca	Catden muck, 0 to 2 percent slopes	0.3	0.0%
CoC	Chatfield-Rock outcrop complex, rolling	9.9	0.6%
CoD	Chatfield-Rock outcrop complex, hilly	27.8	1.7%
HaB	Haven loam, 3 to 8 percent slopes	24.8	1.5%
HcA	Hinckley loamy sand, 0 to 3 percent slopes	88.8	5.3%
HcB	Hinckley loamy sand, 3 to 8 percent slopes	169.1	10.1%
HcD	Hinckley loamy sand, 15 to 25 percent slopes	34.1	2.0%
HdB	Hinckley-Urban land complex, 0 to 8 percent slopes	60.2	3.6%
HIF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	2.5	0.1%
HoC	Holyoke-Rock outcrop complex, rolling	86.3	5.1%
HoD	Holyoke-Rock outcrop complex, hilly	158.4	9.4%
HoF	Holyoke-Rock outcrop complex, very steep	128.4	7.6%
Ip	Ipswich mucky peat, 0 to 2 percent slopes, very frequently flooded	85.7	5.1%
Pt	Pits, gravel	9.6	0.6%
Pv	Pits, quarry	54.6	3.3%
Sa	Sloan silt loam	4.8	0.3%
Us	Udorthents, smoothed	63.0	3.8%
Uw	Udorthents, wet substratum	37.7	2.2%
Ux	Urban land	133.6	8.0%
W	Water	30.8	1.8%
Wa	Wallington silt loam	1.8	0.1%
Wc	Watchaug fine sandy loam	19.8	1.2%
WeB	Wethersfield gravelly silt loam, 3 to 8 percent slopes	216.5	12.9%
WeC	Wethersfield gravelly silt loam, 8 to 15 percent slopes	125.8	7.5%
WeD	Wethersfield gravelly silt loam, 15 to 25 percent slopes	40.0	2.4%
WuB	Wethersfield-Urban land complex, 2 to 8 percent slopes	39.3	2.3%
YaB	Yalesville sandy loam, 2 to 8 percent slopes	1.8	0.1%
YaC	Yalesville sandy loam, 8 to 15 percent slopes	11.3	0.7%
YaD	Yalesville sandy loam, 15 to 25 percent slopes	11.9	0.7%
Totals for Area of Interest		1,679.8	100.0%

Table 5. Soils mapped within the Schenectady Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
AZF	Arnot-Rock outcrop association, very steep	31.2	3.9%
BvA	Burdett-Scriba channery silt loams, 0 to 3 percent slopes	10.0	1.3%
BvB	Burdett-Scriba channery silt loams, 3 to 8 percent slopes	16.8	2.1%
Ce	Cheektowaga fine sandy loam	6.3	0.8%
CoA	Colonie loamy fine sand, 0 to 3 percent slopes	105.2	13.3%
CoC	Colonie loamy fine sand, 3 to 15 percent slopes	40.1	5.1%
CPE	Colonie and Plainfield soils, steep	4.3	0.5%
Cu	Cut and fill land	24.2	3.1%
En	Elnora loamy fine sand	22.8	2.9%
FL	Fluvaquents, loamy	3.8	0.5%
Fr	Fredon silt loam	2.0	0.3%
Gr	Granby loamy fine sand	13.4	1.7%
Gv	Gravel pits	44.0	5.5%
Ha	Hamlin silt loam	18.1	2.3%
HoB	Hornell silt loam, 3 to 8 percent slopes	14.2	1.8%
HoC	Hornell silt loam, 8 to 15 percent slopes	2.4	0.3%
HrA	Howard gravelly silt loam, 0 to 3 percent slopes	111.0	14.0%
HrB	Howard gravelly silt loam, 3 to 8 percent slopes	1.7	0.2%
HrD	Howard gravelly silt loam, 15 to 25 percent slopes	3.1	0.4%
HTF	Howard soils, very steep	7.8	1.0%
Ju	Junius loamy fine sand	8.8	1.1%
LoB	Lordstown gravelly silt loam, 3 to 8 percent slopes	3.7	0.5%
LoD	Lordstown gravelly silt loam, 15 to 25 percent slopes	14.0	1.8%
Ma	Madalin silty clay loam, 0 to 3 percent slopes	0.0	0.0%
Mg	Made land	1.5	0.2%
MPE	Manlius-Rock outcrop association, steep	2.3	0.3%
NaB	Nassau channery silt loam, 0 to 8 percent slopes	39.2	4.9%
NuC	Nunda channery silt loam, 8 to 15 percent slopes	4.7	0.6%
OtB	Otisville gravelly loamy sand, 0 to 8 percent slopes	32.8	4.1%
Pr	Phelps gravelly loam, fan	13.9	1.7%
PsA	Plainfield loamy sand, 0 to 3 percent slopes	47.0	5.9%
PsB	Plainfield loamy sand, 3 to 10 percent slopes	13.8	1.7%
RhA	Rhinebeck silty clay loam, 0 to 3 percent slopes	2.3	0.3%
ScA	Scio silt loam, 0 to 3 percent slopes	5.1	0.6%
Te	Teel silt loam	0.4	0.1%
TvA	Tuller-Brockport complex, 0 to 3 percent slopes	56.7	7.2%
TvB	Tuller-Brockport complex, 3 to 8 percent slopes	7.1	0.9%
UnB	Unadilla silt loam, 0 to 8 percent slopes	4.1	0.5%
W	Water	31.9	4.0%
Wy	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	21.4	2.7%
Totals for Area of Interest		792.9	100.0%

Table 6. Soils mapped within the Selkirk Yard Preferred Alternative area.

Map Unit Symbol	Map Unit Name	Acres in APE	Percent of APE
Ca	Carlisle muck	0.9	0.1%
ChB	Chenango gravelly silt loam, loamy substratum, 3 to 8 percent slopes	7.7	0.9%
CoB	Colonie loamy fine sand, 3 to 8 percent slopes	0.3	0.0%
EIA	Elmridge fine sandy loam, 0 to 3 percent slopes	17.6	2.0%
EnA	Elnora loamy fine sand, 0 to 3 percent slopes	6.0	0.7%
Fx	Fluvaquents-Udfluvents complex, frequently flooded	16.7	1.9%
HuB	Hudson silt loam, 3 to 8 percent slopes	110.4	12.5%
HuC	Hudson silt loam, 8 to 15 percent slopes	13.2	1.5%
HuE	Hudson silt loam, 25 to 45 percent slopes	109.6	12.4%
Ma	Madalin silt loam, 0 to 3 percent slopes	5.3	0.6%
RhA	Rhinebeck silty clay loam, 0 to 3 percent slopes	129.1	14.6%
RhB	Rhinebeck silty clay loam, 3 to 8 percent slopes	33.5	3.8%
ScA	Scio silt loam, 0 to 3 percent slopes	128.9	14.6%
ScB	Scio silt loam, 3 to 8 percent slopes	4.6	0.5%
Sh	Shaker fine sandy loam	9.3	1.0%
Uh	Udorthents, clayey-Urban land complex	264.2	29.9%
VaB	Valois gravelly loam, 3 to 8 percent slopes	0.0	0.0%
W	Water	0.4	0.0%
Wa	Wakeland silt loam	26.3	3.0%
Totals for Area of Interest		884.0	100.0%

3. LITERATURE REVIEW

Archaeologists have divided the precontact period culture history of New York culture history into three (3) general periods: Paleoindian (12,000 to 9500 years before present [BP]); Archaic (9500 to 3000 BP) and Woodland (3000 to 500 BP). These periods are further subdivided into the Early (9500 to 7000 BP), Middle (7000 to 5500 BP) and Late (5500 to 3000 BP) Archaic periods and the Early (3000 to 1700 BP), Middle (1700 to 1200 BP) and Late (1200 to 500 BP) Woodland periods. The Late Woodland period ends with European contact which ushers in the Contact period (500 to 300 BP) and finally the historic period extends from 300 BP to present. These periods are referenced in the literature review of cultural resources presented below. A standard 1 km study area was used to gather background data about the area where each of the alternate routes is located.

3.1 Catskill Preferred Alternative Route

A review of the New York Cultural Resource Information System (CRIS) lists seven (7) cultural resource management (CRM) studies completed within 1 km of the Catskill Preferred Alternative. Eleven (11) National Register of Historic Places (NRHP) listed properties, five (5) historic structures that are eligible for listing on the NRHP, and twenty (20) archaeological sites also occur within 1 km of the Preferred Alternative. Fourteen (14) archaeological sites date to the Precontact Period, five (5) are Historic archaeological sites and one site dates to both the Precontact and Historic periods. One (1) unnamed New York State Museum Area (NYSM 3106), one (1) Precontact archaeological site (03940.001143), and three

(3) CRM studies (15SR00252, 16SR00557, and 18SR56550) appear to overlap the Catskill Preferred Alternative.

Hundreds of historic structures occur within 1 km of the Preferred Alternative. To narrow the available data, only structures that are NRHP-eligible or listed are documented in this report. The East Side Historic District (90NR00548) includes 530 structures and dates to circa (c.) 1797-1920. This district lies between the Hudson River and Catskill Creek. The Catskill Preferred Alternative's location allowed it to play a large role in the region's development. The Town of Catskill was the original county seat and the commercial and transportation center. This area is the major downtown business district of Catskill, past and present. Commercial, residential, governmental and religious structures all lie in the East Side Historic District. This district has both architectural and historical significance with a wide variety and high concentration of late 18th and 19th century structures.

The Moore-Howland Estate (10NR06129) located at 4 NY385 in Catskill includes eight (8) structures that date c. 1866-1949. This property includes a large estate house (03904.000185) that sits on a high bluff overlooking the Hudson River. Other structures on the property include a carriage house, garden house, pump house, tool shed, gazebo, well house, and the foundation of an original barn. The original Moore cottage was built in 1866-67. This house was 2,600 sq. ft. and had a stone foundation and lower level. In 1900, K.C. Budd incorporated the original cottage into a larger, rambling structure using the same type of building materials. The Moore-Howland Estate is a rare example of building type and time period in the Town of Catskill.

The other NRHP-listed properties include the c. 1881 Hop-O-Nose Knitting Mill (91NR03333), which is the only surviving industrial property associated with West Catskill's mid-19th century industrial development. The David Van Gelder House (97NR01264) is a rare surviving example of the octagon building style. Built in 1860, it is one of 120 octagons identified in New York State and the only one in Greene County. The Van Gelder House has a high degree of architectural integrity and is one of Catskill's most important landmarks. Two structures, the Benjamin DuBois Stone House (91NR03341) and the DuBois Stone House (91NR03342), were built in 1740 and 1774 respectively, and are located at 347 West Main Street in Catskill. Both are considered architecturally and historically significant as rare examples of mid-18th century residential architecture. The DuBois Family, one of the earliest landowners and settlers in Catskill, lived in these properties for four generations. These important local landmarks have a high degree of integrity and contribute to the understanding of 18th century residential life. Finally, the William Lampman House (91NR03337) is an excellent example of second empire style residential architecture. The three-story brick building still contains many of the prominent features of this extravagant style.

Fifteen (15) Precontact archaeological sites occur within 1 km of the Catskill Preferred Alternative, including two (2) unnamed New York State Museum Areas (NYSM 3106 and NYSM 7900) and one (1) unnamed New York State Museum Site (NYSM 3397). The three NYSM locations are described as two (2) villages and one (1) traces of occupations. Two sites, the Willow Site (03940.0011430), which appears to overlap the Preferred Alternative, and the Railroad Avenue Site (03940.001142) are considered not eligible for listing on the NRHP. The remaining sites are undetermined.

All the documented of Precontact sites within 1 km of the Preferred Alternative appear to have been single-component camps/workshops related to lithic procurement and production. Chert raw materials are very plentiful in the Catskill Preferred Alternative area in the form of stream cobbles. Two sites, Greene County

Waste Parcel 2 Archeological Site (03904.000090) and Railroad Avenue Site (03940.001142), contain multiple loci and several sites produced chert artifacts from all stages of lithic production. Site size ranges from 2 chert flakes at the H#122 Precontact Site (03904.000216) to 2,231 chert artifacts at the Catskill Commons 3 Site (03904.000188). Three sites produced diagnostic artifacts from the Late Archaic Period. A Brewerton side-notched point was recovered from the Greene County Waste Parcel 2 Archeological Site (03904.000090). The Catskill Commons 2 Site (03904.000187) produced a Normanskill point made of Onodaga chert, while the Catskill Commons 3 Site (03904.000188) contained a Late-Archaic Snook Kill point. The Burhke Prehistoric Site (603940.001133) is described as a surface collection collected during the 1960s and 1970s that demonstrates repeated occupation during the Archaic and Woodland Periods.

Five (5) Historic archaeological sites occur within 1 km of the Catskill Preferred Alternative. All are undetermined for listing on the NRHP. The 393-401 Main Street Site (03940.001145) included the remains of a 19th century brick and bluestone drain and privy, a foundation of a 20th century food market, and a 19th-20th century privy/trash pit. None of these features survived the completion of the drainage project. The Ferrier & Goldin, Percival Goldin & Sons, and Geo. W. Washburn Brickyards site (03940.001159) consisted of large deposits of brick fragments and waster. No structures from the brickyards were identified during the survey. The West Shore Railroad Bed Site (503904.000025) is an abandoned railroad bed with the ties removed. The Thomas Cole (03904.000180) and Brick Ruin (03904.000179) Sites also date to the early to mid-19th century. Finally, the Vincent Precontact Site (03940.001149) contains both Precontact and Historic material in a plow zone setting. No cultural materials were recovered below the surface. Precontact material consisted of 90 chert artifacts and the Historic material is thought to be scatter associated with the Vincent House.

The Village of Catskill, the county seat of Green County, is located at the confluence of the Hudson River and Catskill Creek. Several Native American tribes including the Munsee and Mahicans settled in the area's valley prior to European arrival, using the surrounding mountains as hunting grounds. According to a journal kept by crew member Robert Juet, Henry Hudson's expedition up the Hudson River arrived at the mouth of Catskill Creek on September 15th or 16th of 1609. There the crew acquired provisions of corn, pumpkins, tobacco and fish from local Native Americans before continuing north past Albany. A historical marker along Main Street identifies the site of the Hop-O-Nose village, a Native America settlement along Catskill Creek.

The first Europeans arrived in the mid-1600s. During this period, agriculture was the main occupation of residents who shipped wheat and other goods to New York City and Albany by way of the Hudson. By the end of the 17th century, the Van Vechten family had settled in the area and opened a mill. Growth was slow. Only five houses are shown in the hamlet on Sauthier's 1779 map, then known as Catskill Landing. The population grew more steadily after the Revolutionary War when the hamlet acquired a newspaper and physician. New Englanders arrived in the community adding to the existing Dutch population. Trade in a variety of goods such as potash, pearl ash, hemlock bark and ice along with agricultural products expanded and a ship building industry developed.

Catskill developed rapidly during the 19th century. In 1800, the community became the county seat and the Susquehanna Turnpike was chartered. The route of the Susquehanna Turnpike traversed the northern portion of Greene County, west from Catskill through Cairo to the town of Durham. Bridge construction connected both sides of the creek, and the main streets were laid out in 1803. Industries took root around this time. Brick making, textiles, papermaking, dairy farming, limestone quarrying, logging and ice

harvesting from the river drove economic development in the village. The area's natural beauty prompted the growth of tourism. Visitors arrived first by river and were then transported west to the Catskill range. In 1825, Thomas Cole, founder of the Hudson River School of landscape painting, arrived in the area drawn by its natural magnificence. His home, studios, and the surrounding grounds were designated a National Historic Landmark in 1965. Most of the area's industries declined in the twentieth century for a variety of reasons including resource depletion, competition, and developing technology. The present-day economy is primarily focused on agriculture.

Table 7. Previous cultural resource studies conducted within approximately 1 km the Catskill Preferred Alternative area.

OPRHP Survey #	Title	Authors
15SR00252	Phase I Archaeological Investigations of the CSXT Catskill Alternative Second Mainline Track Project Mile Posts QR 111.1 to QR 118.9 Flats Road Staging Area, Flats Road Access Road, Flats Road Crane Pad and Browns Crossing Road Access Road Towns of Coxsackie and Catskill Alternative Greene County, New York	Landmark Archaeology, Inc.
19SR00356	Phase 1a Literature Search and Sensitivity Assessment & Phase 1b Archaeological Field Reconnaissance Survey North Catskill Alternative Grid Support Center	Hudson Valley Cultural Resource Consultants, LTD.
19SR00044	Name: Addendum to Phase I Archeological Investigations and Phase II Archeological Site Evaluations, Central Hudson Gas & Electric Corp. H and SB Lines Rebuild Project	Hartgen Archeological Associates, Inc.
18SR56550	Phase IA Literature Review and Archeological Sensitivity Review, Village of Catskill Alternative Water System Improvements	Hartgen Archeological Associates, Inc.
16SR00587	Phase I Archeological Investigation, Catskill Alternative Self Storage	Hartgen Archeological Associates, Inc.
18SR56389	Phase I Archeological Investigation, Central Hudson Gas & Electric Corp. H and SB Lines Rebuild Project	Hartgen Archeological Associates, Inc.
17SR00576	Catskill Alternative Gardens, Phase I Archeological Investigation	Hartgen Archeological Associates, Inc.

Table 8. Archaeological sites located within approximately 1 km of the Catskill Preferred Alternative area.

OPRHP Site#	Name	Distance to APE	Period(s)	NRHP Status
03904.000089	Greene County Waste Parcel 1 Archeological Site	0.22 km east	Precontact	Undetermined
03904.000090	Greene County Waste Parcel 2 Archeological Site	0.12 km east	Precontact	Undetermined
03940.001150	Thomas Cole NHL Prehistoric Site	0.45 km east	Precontact	Undetermined
03940.001143	Willow Site	0.0 km	Precontact	Not eligible
03940.001156	LBD Precontact Site	0.12 km southeast	Precontact	Undetermined
03940.001142	Railroad Avenue Site	0.24 km southeast	Precontact	Not eligible
03904.000216	H#122 Precontact Site	0.62 km northwest	Precontact	Undetermined
03940.001133	Burhke Prehistoric Site 6	0.25 km northwest	Precontact	Undetermined
03904.000186	Catskill Alternative Commons 1	0.52 km southeast	Precontact	Undetermined
03904.000187	Catskill Alternative Commons 2	0.52 km southeast	Precontact	Undetermined
03904.000188	Catskill Alternative Commons 3	0.52 km southeast	Precontact	Undetermined

Table 8. Archaeological sites located within approximately 1 km of the Catskill Preferred Alternative area.

OPRHP Site#	Name	Distance to APE	Period(s)	NRHP Status
NYSM Area 7900	Unnamed	0.65 km southeast	Precontact	Undetermined
NYSM Area 3106	Unnamed	0.0 km	Precontact	Undetermined
NYSM Site 3397	Unnamed	0.91 km northwest	Precontact	Undetermined
03904.000180	Thomas Cole Historic Archaeological Site	0.52 km east	Historic – ca. 1805-1839	Undetermined
03940.001145	393-401 Main Street Site	0.58 km southeast	Historic – ca. early 19th -20 th C.	Undetermined
03940.001159	Ferrier & Goldin, Percival Goldin & Sons, and Geo. W. Washburn Brickyards	0.98 km southeast	Historic – ca. 19th - 20th C.	Undetermined
03904.000179	Brick Ruin Site	0.59 km northwest	Historic – ca. prior to 1895	Not eligible
03904.000025	West Shore Railroad Bed Site 5	0.94 km northwest	Historic	Undetermined
03940.001149	Vincent Precontact Site	0.56 km northwest	Precontact and Historic	Eligible

Table 9. Historic structures located within approximately 1 km of the Catskill Preferred Alternative area.

OPRHP #	Address	Name	Distance to APE	NRHP Status
03940.000992	33 West Bridge Street, Catskill Alternative, New York	Apts. and Comm.	0.61 km southeast	Eligible
03940.001083	345 West Main Street, Catskill Alternative, New York	Catskill Alternative Middle School/High School	0.46 east	Eligible
03940.000867	97 Maple Ave, Catskill Alternative, New York	Apartment	0.18 km southeast	Eligible
03940.000864	85 Maple Ave, Catskill Alternative, New York	D. Warren Residence/Ferrier House	0.18 km southeast	Eligible
03904.000063	227 Landon Ave, Catskill Alternative, New York	Overbaugh House	0.83 km southeast	Eligible

Table 10. NRHP-listed historic properties/districts within approximately 1 km of the Catskill Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
90NR00548	530	c. 1797-1920	East Side Historic District	Town of Catskill Alternative, Greene County, New York
91NR03333	1	c. 1881	Hop-O-Nose Knitting Mill	130 West Main Street, Catskill Alternative, New York
91NR03332 (03940.001081)	1	c. 1855	Joseph Hallock House (Zelasko Residence)	241 West Main Street, Catskill Alternative, New York
03940.000991	1	c. 1870	Comm./Storage	32 West Bridge Street, Catskill Alternative, New York

Table 10. NRHP-listed historic properties/districts within approximately 1 km of the Catskill Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
03940.000989	1	c. 1900	Offices; Former Firehouse	30 West Bridge Street, Catskill Alternative, New York
97NR01264 (03940.000730)	1	c. 1860	David Van Gelder Octagon House ("Spring Side") (John Vaughn Residence)	47 Division Street, Catskill Alternative, New York
91NR03342 (03940.001127)	1	1774; c. 1935	DuBois Stone House	347 West Main Street, Catskill Alternative, New York
91NR03341 (03940.001116)	1	c. 1740-1809; c. 1850	Benjamin DuBois Stone House (Captain Martin Stone House)	347 West Main Street, Catskill Alternative, New York
10NR06129 (03904.000185)	8	c. 1866-1949	Moore-Howland Estate	4 NY 385, Catskill Alternative, New York
90NR00549 (03940.000462)	2	c. 1812	Thomas Cole House	218 Spring Street, Catskill Alternative, New York
91NR03337 (03940.000781)	2	c. 1891	William Lampman House	147 Grandview Ave, Catskill Alternative, New York

3.2 Fort Ann Preferred Alternative

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

Of the six (6) Precontact sites/areas, only one (1), 11517.000066 - Vail Hill Precontact Site, is eligible for listing on the NRHP. The other five (5) have undetermined status. NYSM Area 7501 is described as a trail or traces of occupation. No additional information is available for NYSM Sites 5404 and 5405, other than NYSM 5405 may have a Historic component. NYSM Site 9120 is described as having Late Archaic or Transitional components based on surface finds of Vosberg stemmed and Orient projectile points. Winchell Creek Site (ALB 264), 11505.000025, lies 1000 ft. north of the delta of Winchell Creek and consists of a surface scatter of lithic flakes and debitage. The one (1) NRHP-eligible Precontact archaeological site, Vail Hill Precontact Site - 11517.000066, sits on a small bedrock terrace east of Vail Hill and is described as a camp. One chert bifurcate point base, 1 chert point tang, 1 chalcedony utilized flake/scrapper, 20 flakes, and 1 stone pestle were recovered from the level 2 subsoil. Some disturbance from logging in the early 20th century may have taken place at the site.

All nine (9) Historic archaeological sites are undetermined in their NRHP status. Site #1 (Small Barn Site), 11517.000002, is the remains of a small barn. The Steve Field Site (ALB-64, 11517.000001) contains no foundations, but is heavy concentration of historic materials including ceramics. The House Ruins ALB-82 Site (11505.000007) consists of surface traces. The Fisher Barn Site (ALB-63, 11505.000008) is possibly associated with Fisher Barn, a known 19th century stagecoach tavern site. Smith's Landing Archeological District (11505.000030) consists of 19th century stone foundations adjacent to the "Old Champlain Canal." The Baker House Historic Site (NYSM 11666), 11505.000116, dates to 1820 and appears on numerous Historic maps. Kaolin pipe stems and bowls, yellowwares, ironstones, redwares, kitchen bones, horse shoe nails and a variety of colored glass were recovered from the site during Phase I investigations. The Fort Ann Post Office and Store Historic Site (NYSM 11689), 11505.000117, dates to 1850 and includes the remains of two map documented structures. Kaolin pipe stems and bowls, creamwares, yellowwares, ironstones, redwares, horse shoe nails, lamp glass, a buckle, a clay marble and clear and green bottle glass were recovered from the site during Phase I investigations. The White Site (1505.000149) produced 254 artifacts from soil level 1 in eight STPs. Historic ceramics accounted for 15.25% of the site assemblage including brick, whitewares, porcelain, redware, white earthenware, semi-vitreous china and stoneware. Site size is 36.7m² and includes visible stone features that may be foundations but have not yet been investigated. The site appears intact. Dewey Place, 11505.000006, built in 1788 is described as a reasonably good 2-1/2 story wooden frame house with chimneys. This structure was built after the Revolutionary War but prior to the canal when Dewey's Bridge was an important crossing and the house was used as a tavern.

Of the five Historic structures, three (3) are eligible for the NRHP. Dewey's Bridge (11505.000088), mentioned previously, is part of New York State canal system and significant for its central role in the 19th and 20th century growth and development of New York State and the upper Midwest as well as for its impact on the development of civil engineering as a distinct profession and the development of engineering techniques in the United States. The Great Meadow Correctional Facility (11505.000046), is still an operating prison today. The Fort Ann Cemetery, 11505.000146, spans approximately 140 years from the beginning of Fort Ann in the 1790s to the 1930s and is significant for its distinctive characteristics of type and period. The cemetery has a traditional plan, with graves in north-south rows, facing west to east. The headstones mostly face west. According to town records, there are approximately 134 graves in Fort Ann Cemetery.

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

The town of Fort Ann is rich with history. The town lies on what was known as the "Warpath of the Nation," and was the scene of many early Indian raids through the Burgoyne and Carleton expeditions during the

Revolution. Fort Ann was also the site of a very important Revolutionary War battle that saw the nations new “Stars and Stripes” flown for the first time. The battle, which took place on July 8, 1777, was of great strategic importance and a turning point in the Revolutionary War. This conflict helped to delay General John Burgoyne's arrival in Saratoga, which ultimately led to his defeat. A plaque commemorating the event can be seen along Route 4.

Today, Fort Ann is a farming town, and contains many well-preserved, historic homes, buildings, and old canal locks. The combined population of the Town and Village of Fort Ann is approximately 7,000 (<https://www.adirondack.net/towns/fort-ann/> 2017)..

Table 11. Previous cultural resource studies conducted within approx. 1 km the Fort Ann Preferred Alternative area.

OPRHP Survey #	Title	Authors
02SR52546	Phase IA/IB Cultural Resources Investigation, Adirondack Natural Stone Mine Permit, Town of Whitehall, Washington County, New York	Landmark Archaeology
10SR60397	Phase IA Literature Review and Archaeological Sensitivity Assessment & Phase IB Archaeological Field Survey and Reconnaissance, Fort Ann Quarry Expansion Project, Towns of Fort Ann & Whitehall, Washington County, New York.	Hudson Mohawk Archaeological Consultants, Inc.
11SR61666	Phase I Cultural Resources Survey, Site Assessment, and Site Identification Phases, Proposed Goodsell Mine Site, Town of Fort Ann, Washington County, New York.	Columbia Heritage, Ltd.
07SR57235	CRM Survey PIN 1130.52.101 NY 22 From US 4 to Sheehan Road/NY 40, Town of Fort Ann and Granville, Washington Co.	New York State Museum
14SR62915	PHASE I ARCHEOLOGICAL SURVEY Great Meadows Correctional Facility Electrical Conduit	Hartgen Archeological Associates, Inc.
11SR60679	Cultural Resource Reconnaissance Survey Report, PIN 43387. Great Meadows Correctional Facility, Town of Fort Ann, Washington County, New York.	New York State Museum
19SR00419	PIN 1EST.04.101 SHPO Project Review 19PR01564 Empire State Trail - Quarry Road Hamlet of Fort Ann/Town of Fort Ann Washington County, New York	Barry R Dale
18SR56052	Fort Anne/Battle Hill Revolutionary War Archeological Battlefield Project (GA-2287-16-010)	Brian R. Grills and Michael Jacobson
02SR53346	Phase I Archaeological Investigation of Dewey's Bridge Quarry, Town of Fort Ann, Washington County, New York	Landmark Archaeology
00SR50645	Phase IA Literature Review and Phase IB Archeological Field Reconnaissance, Clay Hill Road Tower, Town of Fort Ann, Washington County, New York	Hartgen Archeological Associates, Inc.
06SR56385	Phase IA Literature Review and Archeological Sensitivity Assessment, North Country Stone (Quarry 1), Town of Fort Ann, Washington Co	Hartgen Archeological Associates, Inc.
00SR50657	Phase IA Literature Review and Phase IB Archaeological Field Reconnaissance, SBA Fort Ann Tower, Town of Fort Ann, Washington County, NY OPRHP 00PR0962, HAA # 1590	Hartgen Archeological Associates, Inc.

Table 11. Previous cultural resource studies conducted within approx. 1 km the Fort Ann Preferred Alternative area.

OPRHP Survey #	Title	Authors
15SR00556	Phase 1 Archaeological Survey, The University at Albany Mesonet Project (Batch #1, Part 1) (#10/Lock C-11 (Whitehall)) See 15SR00064 for survey file	University of Albany

Table 12. Archaeological sites/areas located within approximately 1 km of the Fort Ann Preferred Alternative area.

OPRHP Site#	Name	Distance to APE	Period(s)	NRHP Status
NYS Museum Area 7501	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Site 5405	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Site 5404	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Site 9120	Battle Hill	0.11 km north	Precontact	Undetermined
11517.000002	Site #1 (Small Barn Site)	1.0 km north	Historic	Undetermined
11517.000001	Steve Field Site ALB-64	0.30 km north	Historic	Undetermined
11505.000007	House Ruins ALB-82	0.07 km west	Historic	Undetermined
11517.000066	Vail Hill Precontact Site	0.76 km west	Precontact	Eligible
11505.000008	Fisher Barn Site (ALB-63)	0.0 km	Historic	Undetermined
11505.000030	Smith's Landing Archeological District	0.44 km east	Historic	Undetermined
11505.000116	Baker House Historic Site (NYSM 11666)	0.26 km east	Historic	Undetermined
11505.000117	Fort Ann Post Office and Store Historic Site (NYSM 11689)	0.26 km east	Historic	Undetermined
1505.000149	White Site	0.32 km east	Historic	Undetermined
11505.000025	Winchell Creek Site (ALB 264)	0.61 km east	Precontact	Undetermined
11505.000006	Dewey Place	0.55 km east	Historic	Undetermined

Table 13. Historic structures located within approximately 1 km of the Fort Ann Preferred Alternative area.

OPRHP #	Address	Name	Distance to APE	NRHP Status
11505.000046	11739 NY 22, Fort Ann, NY	Great Meadow Correctional Facility	0.77 km east	Eligible
11505.000002	NY 22, Fort Ann, NY	Isaac V. Baker House (Warden's House)	0.23 km east	Undetermined
11505.000146	Fort Ann, NY	Fort Ann Cemetery	1.1 km east	Eligible
11505.000088	Fort Ann, NY	Dewey's Bridge	0.33 km east	Eligible
11505.000054	337 Clay Hill Rd, Fort Ann, NY	Residence	0.99 km south	Undetermined

Table 14. NRHP-listed historic properties/districts within approx. 1 km of the Fort Ann Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
14NR06559	Numerous	c. 20 th c.	New York State Barge Canal Historic District - Waterford to Tonawanda, Whitehall, Oswego and Waterloo	New York

3.3 Putnam Station Preferred Alternative

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

Of the ten (10) archaeological site, nine (9) date to the Precontact period and one (1) dates to the Historic period. All ten (10) archaeological sites are undetermined in their NRHP status. All but one (1) Precontact site relates to early NYSM surveys. NYSM Area 6657 and NYSM Area/Site 5106 (11503.000068) are described as traces of occupation. NYSM Area/Site 5107 (11514.000117) is called a camp and NYSM Area/Site 137 is listed as three (3) quarries. NYSM 5086 Area/Site (11514.000118) is described as a Mohawk camp with Late Woodland and possibly Historic affiliations. The Historic archaeological site 11514.000094, the Graham Homestead Site, is the site of one of seven (7) original stone houses in Putnam, NY. The house is no longer standing.

Two Historic structures occur within 1 km of the Preferred Alternative area. Both are undetermined in their NRHP status. Roberts Sawmill Bridge (11514.000028) dates to 1939, is wood construction over an arch, and is in excellent condition. The Bridge/drainage structure (11503.000092) dates prior to 1950. No additional information is available for this site. The one (1) NRHP-listed property, the Hiram Congdon House (96NR01050), was built c. 1848 and is unique to New York State's North Country due to its high level of architectural integrity.

Putnam Station is the northernmost town of Washington County, New York and comprises the lower end of the narrow peninsula between Lake George and Champlain. It is about seven miles long from north to south, with an average width of three miles, and comprises an area of 19,279 acres. The surface is hilly and broken (McArthur 1887).

The town is composed of two tracts, known respectively as Hutton's Bush and Turner's Patent, the former occupying the eastern, the latter the western part of the town. The land was originally granted to provincial troops for services in the French and Indian wars supposedly on the 1st of April 1772. These grants were in some instances abandoned by their owners, and in others transferred for a nominal consideration to third parties (McArthur 1887).

The first settler of the town was Joseph Haskins. He was a native of Connecticut, who enjoyed hunting, trapping and fishing, and came to the area about 1782. He built a log cabin and cultivated a small patch of

land. The next settler, and the first permanent one, was William Hutton, who came in 1784, settling on the shore of Lake Champlain. Descendants of his are still living in the same place (McArthur 1887).

By 1803, the town was settled by about thirty-eight families, divided into the communities known as Hutton Bush, the South Settlement, and the West or Hill Settlement. Most of the land remained uncleared, and wild animals abounded. There were no roads in the town, but bridle paths straggled through the forest, from house to house. Hunting and fishing formed most of the people's occupation (McArthur 1887).

By 1806, the number of families had more than doubled. The limits of the clearings, and the log houses, generally in clusters dotted the hillsides had been extended. Putnam Station originally formed a part of Westfield, now Fort Ann, and was known as Hutton's Bush. It was organized as a separate town on February 28th, 1806, and appropriately called Putnam, in honor of General Israel Putnam, whose most remarkable military exploits were performed within its boundaries. At this time, it included the present town of Dresden, which was set off in 1822. The first town meeting was held at the residence of James Burnett, Esq., on the 4th of April 1806 (McArthur 1887).

The Population of the town according to the census of 1880 was 679. Putnam Station Corners, the only settlement in the town, is a small hamlet consisting of a store, post office, blacksmith shop, carriage shop, hotel and several dwellings. Putnam, or Grahams as it is generally called, is a station on the NY & C.R.R. Railroad where a ferry was maintained to transport passengers and freight across the lake (McArthur 1887). Today, Putnam Station maintains its rural character. Agriculture continues to be the economic mainstay of the region (<https://www.ny.gov/counties/washington> 2017).

Table 15. Previous cultural resource studies conducted within approx. 1 km of the Putnam Station Preferred Alternative area.

Project Number	Title	Authors
19SR00363	Ticonderoga-Republic #2 and Ticonderoga-Whitehall #3 Structure Upgrade Project (19PR02797) Towns of Moriah, Crown Point, Ticonderoga, Essex County, New York Towns of Putnam, Dresden, and Whitehall, Washington County, New York Response to SHPO Information Request	Matthew Victor Weiss

Table 16. Archaeological sites/areas located within approx. 1 km of the Putnam Station Preferred Alternative area.

OPRHP Site #	Site Name	Distance to APE	Period(s)	NRHP Status
NYS Museum Area 6657	Unnamed	0.54 km east	Precontact	Undetermined
NYS Museum Area 5106	Unnamed	0.49 km south	Precontact	Undetermined
11503.000068	NYSM-5106 - PARKER	1.22 km south	Precontact	Undetermined
NYS Museum Area 5107	Unnamed	0.31 km north	Precontact	Undetermined
11514.000117	NYSM 5107 (HAA 100-1) Parker (1920)	0.83 km north	Precontact	Undetermined
NYS Museum Area 5086	Unnamed	0.0 km	Precontact	Undetermined
11514.000118	NYSM 5086 (HAA 100-2) WASH-1	0.0 km	Precontact	Undetermined
11514.000094	Graham Homestead Site	0.40 km south	Historic	Undetermined
NYS Museum Site 1347	Unnamed	0.56 km east	Precontact	Undetermined
NYS Museum Area 1347	Unnamed	0.56 km east	Precontact	Undetermined

Table 17. Historic structures located within approximately 1 km of the Putnam Station Preferred Alternative area.

Site Number	Name	Location	Distance to APE	NRHP Status
11514.000028	Roberts Sawmill Bridge	Lake Rd, Putnam, NY	0.42 km east	Undetermined
11503.000092	Bridge / drainage structure (prior to 1950)	NY	0.80 km northeast	Undetermined

Table 18. NRHP-listed historic properties located within approximately 1 km of the Putnam Station Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
96NR01050	1	c. 1848	Hiram Congdon House	NY Route 22, Putnam, NY

3.4 Rockland County Preferred Alternative

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

The Stony Point Battlefield (90NR02408) marks the site of one the last battles (July 16, 1779) of consequence in the north at the end of Revolutionary War. Stony Point Battlefield and the fortifications at Stony Point are partially preserved in a 45-acre state park. The area remains relatively unchanged from over 200 years ago. Extensive earthen works remain at the site and historical markers show the path of the American forces advance up the steep slope into the British fort. A small museum (08705.000152) built in 1934 houses artifacts and history of the battle. A ca. 1825 lighthouse (90NR02409; 08705.000032) occupies the eastern tip of the point.

Three (3) NRHP-listed properties located in West Haverstraw, New York include the Henry M. Peck House (00NR01648; 08702.000180), the Fraser-Hoyer House (90NR02418; 08744.000007) and the Garner Mansion (08744.000003). The first two properties are located on US 9W. The Peck house is a significant example of Second Empire residential estate architecture and one of the last surviving examples of the suburban villas built during the industrial boom in Rockland County. The Fraser-Hoyer House is described as a country manor built in the vernacular Federal style typical of the area's landed gentry. The Fraser-Hoyer House also has a historical connection to the Revolutionary War as it was built on the site of the William Smith House. Smith was an active British informer during the Revolutionary War who was imprisoned before escaping to England. The Garner Mansion, located at 18 Railroad Ave, is said to be the inspiration for painter Edward Hopper's icon painting, "The House by the Railroad" and the archetype for the modern haunted house (Joshi 282).

The NRHP-listed Rockland Print Works (13NR0643825), located at 55 West Railroad Avenue in Garnerville, New York, consists of approximately 27 different structures and occupies over 20 acres of land in a small valley that includes Minisceongo Creek and its adjacent pond to the west. The original print works was established on this property as early as 1838. Each structure on the property was devised to carry out a specific function of the textile finishing process, consistent with the Waltham-Lowell system of factory development. The Rockland Print Works exhibit aspects of Second Gothic Revival and/or Italianate architectural styles. Slightly-pitched gable roofs over Gothic and segmental-arched window openings result from large-scale building and re-building efforts at the site over a short span of time between 1871 and 1875. The complex forms the center of Garnerville and is surrounded by worker housing and institutions and commercial developments that were historically linked to the Print Works.

Three NRHP-listed properties occur in the Town of Haverstraw, New York. The Homestead (90NR02411; 08740.000156), located at 143 Hudson Avenue, is significant for its relation to early settlement and further development of Haverstraw. The two-frame, wood-story house was built by one of the town's first settlers, the DeNoyelles family, circa. 1800. The Haverstraw Post Office (90NR02412; 08740.000157) is an architecturally significant example of a Colonial Revival public building. Designed in 1934 by Treasury Department Supervising Architect Louis A. Simon, the post office was built in 1935-36. The Haverstraw King's Daughters (Fowler) Public Library (91NR00087; 08740.000139) is two-story building built in 1903 of locally-manufactured Haverstraw brick. The library is architecturally and historically significant as an intact example of a small, turn of the century public library.

Five (5) unnamed New York State Museum Sites, three (3) unnamed New Your State Museum Areas, and two named Precontact sites occur within 1 km of the Preferred Alternative. NYSM Areas 4653 and 7817 are described as having traces of occupation. Three (3) NYSM Areas, 4631, 4632 and 7461 are located on Stony Point. NYSM 4631 consists of village, camp and shell midden remains. NYSM 4632 is described as a camp and NYSM 7461 is labeled a rock shelter. NYSM Site 597, also named Stony Point Park and Village Parker Site #5, is listed as Precontact with human remains. No additional information is available for the other NYSM Areas and Sites.

Nine (9) Historic archaeological sites occur within 1 km of the Preferred Alternative. The Stony Point Battlefield Historic Site 1 (08705.000137) lies within the NRHP-listed Stony Point Battlefield. The R.B. Marks Site, located at 11 North Liberty Dive, Stony Point New York, consists of a moderately dense sheet midden that surrounds a standing structure built between 1790-1800. The site has good integrity and produced many datable ceramics making it eligible for the NRHP. The Stony Point Blacksmith Shop site (08705.000080; NYSM 11695) dates to the mid-19th century and produced numerous nail and horseshoe fragments. The Treason House site (08744.000005) received its name because it was thought to be the location that Major John Andre stayed in 1780 while meeting with Benedict Arnold to arrange the surrender of West Point. It was demolished in 1929 when the New York State Rehabilitation home was built. The Wm. Smith 'The White House' site (08744.000017), a grand country residence built in 1774 by William Smith a significant lawyer and Loyalist, was the actual meeting place for Andre and Arnold. The White House burned in 1808 or 1809 and a later house was built on the site. The Peck Rolling Mills site dates to 1830-1842, but has been demolished. The site forms for the remaining Historic archaeological sites are missing, so no further information is available.

Numerous historic structures occur within 1 km of the Rockland County Preferred Alternative area. To narrow the available data, only structures that are NRHP-eligible or undetermined are documented in this report. Structures ineligible for the NRHP are not reported. The Haverstraw Downtown Historic District (08740.000229) alone contains over 50 eligible structures. This Historic business district is centered on Broadway and Main Streets, dates from the 1850s to the 1950s, and is the direct result of the prosperity brought by the brick making industry. The 104 - 118 Hudson Avenue Building District (08740.000231) also contains six (6) NRHP-eligible structures located between Main Street and Fairmount Avenue in Haverstraw, New York. Five of the six buildings date between the 1860s and 1900 and are likely connected with the prosperous families involved in the brick making industry of Haverstraw. Four of these structures were built of brick in the Second Empire Style. 104 Hudson is a c. 1925 Craftsman Bungalow. Twelve unnamed structures and the Van Houten Inn occur along First Street in Haverstraw. All are undetermined in regards to their NHRP listing.

In 1609, Henry Hudson, an Englishman employed by the Dutch East India Company, sailed up the river that would bear his name as far as what is now Albany and on the return trip, he anchored in what is now Haverstraw Bay, the widest point in the river. The name of Haverstraw is one of the oldest in the geography of North America. The word is Dutch and it first appeared on a map in 1616. It was originally written, Haverstroo, and means "Oat Straw", descriptive of the waving straw of the river meadows (Cobb 2017).

In 1666, the local native Americans, who were part of the Lenni Lenape confederation of the Algonquins, sold a large tract of land along the river to Balthazar de Harte, a New York merchant. In 1671, he received a patent or land grant from the English government, which had taken over the territory from the Dutch in 1666. The precinct of Haverstraw was created in 1719 when it was separated from Orangetown. The Village of Haverstraw was incorporated in 1854 under the name Warren which was changed to Haverstraw in 1874. The Village of West Haverstraw was incorporated in 1883 (Cobb 2017).

The location of Haverstraw was important to the defense of the colonies in the Revolutionary War because of its place on the banks of the Hudson, the main artery of trade between New York City and Albany and the dividing line between New England and other colonies (Cobb 2017).

Between 1771 and 1941, Haverstraw was the greatest center of brick production in the nation. Immense clay beds along the Hudson's shores and beneath its surface formed the raw material for this huge industry. In 1771, Jacob Van Dyke began the industry by making bricks by hand. James Wood started the first brickyard in Haverstraw in 1815. In 1852, a fresh impetus was added to the industry by Richard Ver Valen's invention of the automatic brick machine. In 1883, there were 42 brickyards in the area, which manufactured 148 brands of brick. In a single year over 300 million bricks were shipped out of Haverstraw Bay for the New York City area. At one time, over two thirds of the buildings in New York City were constructed of Haverstraw brick. A combination of the Depression, competition and new building materials brought Haverstraw's brick making industry to an end when the last yard closed in 1941 (Cobb 2017).

In 1828, John Glass founded the textile industry in the town when he bought 45 acres of land along the Minisceongo Creek and built a calico plant. In 1853, the Rockland Print Works was incorporated to print and dye woolen, cotton and linen goods. The company-built houses for its workers and at one time over 800 workers were employed there. Today many of the houses still stand and the Garnerville Holding Company rents space to businesses, artists and craftsmen. The buildings are one of the few examples of 19th century factory architecture still in use in the United States.

From the time of the first settlement in Haverstraw, the Hudson River has been an important route of commerce and transportation. The first steamboat to run from Haverstraw was the Rockland in 1836 followed by the Warren in 1840. The steamboats which made daily trips to Newburgh stopped in Haverstraw to pick up passengers and freight headed for New York City (Cobb 2017).

Railroads were also important to the history of Haverstraw. In 1873, the New York and New Jersey Railroad ran from Jersey City through Mt. Ivy, Thiells and into West Haverstraw. In 1887, the line was extended to the Village of Haverstraw. The West Shore Railroad was opened to travel in 1883, and in West Haverstraw a large depot and restaurant were built (Cobb 2017).

Although the earliest European settlers were Dutch, it was not long before the population trends demonstrated the diversity that has become a hallmark in Haverstraw. English and Scotch Irish followed the Dutch. French Huguenots came at the beginning of the 19th century. Irish and German immigration dominated the middle of the century while the late 19th and early 20th century saw the addition of newcomers from Canada, Austria, Hungary and Italy. African Americans from the south came to work seasonally in the brickyards and many eventually became permanent residents. The 1950's and 60's saw the arrival of people from Puerto Rico and the Dominican Republic. Today, Haverstraw is a diverse community with new residents from Latin America, Russia, India, Pakistan and other countries (Cobb 2017).

Table 19. Previous cultural resource studies conducted within approximately 1 km the Rockland County Preferred Alternative area.

OPRHP Survey #	Title	Authors
11SR61277	Orchard Ridge Development Site, Phase 1A Literature Review and Sensitivity Analysis and Phase 1B Archaeological Field Reconnaissance Survey, County Ridge Road (NYS303) and Meola Road, Town of Clarkstown, Rockland County, New York	CITY/SCAPE
02SR53157	Stage 1B Archaeological Field Reconnaissance Survey, Haverstraw Downtown Waterfront Development Project (Parcel A), Village of Haverstraw, Rockland County, New York	CITY/SCAPE
01SR53156	Phase IA Literature Review and Archeological Sensitivity Assessment, Downtown Waterfront Redevelopment Project, Parcels A, B, C, D, E and DPW, Village of Haverstraw, Rockland County, New York	Hartgen Archeological Associates, Inc.
18SR56696	Phase I Archaeological Investigation for the proposed DPW fueling/supply station Village of Haverstraw, Town of Haverstraw, Rockland County, New York	Alfred G. Cammisa, M.A. with Alexander Padilla (CAD)
15SR00104	ADDENDUM #2 Archaeological and Historic Architectural Properties Overview and Identification Surveys ALGONQUIN INCREMENTAL MARKET (AIM) PROJECT: NEW YORK FACILITIES FERC Docket No. CP14-96-000 NY SHPO Review No. 13PR02820	The Public Archaeology Laboratory, Inc.
99SR61665	Phase I Literature Review and Archeological Sensitivity Assessment, Haverstraw Power Station, Proposed Electrical Generating Facility, Town of Haverstraw, Rockland County, New York - **** Not submitted for SHPO review****	Hartgen Archeological Associates, Inc.
00SR50682	Cultural Resource Reconnaissance Survey Report of IGS#41238/S6578 - Addendum Provide Transitional Living Center Helen Hayes Hospital, Village of West Haverstraw, Town of Haverstraw, Rockland County, NY	New York State Museum/ Andrea Lain
99SR50100	SEQRA Phase 1A Archaeological Survey, Wayne House Corners, Stony Point, Rockland County, New York	Joseph E. Diamond

Table 20. Archaeological sites located within approximately 1 km of the Rockland County Preferred Alternative area.

OPRHP Site#	Name	Distance to APE	Period(s)	NRHP Status
NYSM 6373	Unnamed	0.16 km west	Precontact	Undetermined
NYSM 6372	Unnamed	0.22 km east	Precontact	Undetermined
NYSM 6371	Unnamed	0.61 km west	Precontact	Undetermined
NYSM 597	Stony Point Park	0.60 km east	Precontact	Undetermined
NYS Museum Area 4631	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Area 4633	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Area 7461	Unnamed	0.0 km	Precontact	Undetermined
NYS Museum Area 7817	Unnamed	0.30 km northwest	Precontact	Undetermined
NYS Museum Area 4653	Unnamed	0.0 km	Precontact	Undetermined
08701.000018	Village Site Parker #5	1.0 km southwest	Precontact with Human Remains	Undetermined
08705.000137	Stony Point Battlefield Historic Site 1	0.43 km east	Historic	Undetermined
08705.000081; NYSM 11696	R. B. Marks site	0.78 km west	Historic (ca. mid-19th C.)	Eligible
08705.000080; NYSM 11695	Stony Point Blacksmith Shop site	0.77 km west	Historic (ca. mid-19 th C.)	Undetermined
08744.000005	Treason House Site	0.74 km west	Historic (ca. 18 th C)	Undetermined
08744.000017	Wm. Smith 'The White House'	0.69 km west	Historic (ca. 1774-1809)	Undetermined
08744.000009	Millennium Pipeline-Roc-300, Historic Foundation Remains	0.95 km west	Historic	Undetermined
08744.000004	Peck Rolling Mill Site	0.36 km west	Historic (ca. 1830-1842)	Undetermined
08744.000013	Millennium Pipeline/Disturbed Historic Foundation	0.13 km east	Historic	Undetermined
08740.000161	Millennium Pipeline-Roc-101/500, Historic Scatter & Fill	1.0 km east	Historic	Undetermined

Table 21. Historic structures located within approximately 1 km of the Rockland County Preferred Alternative area.

OPRHP #	Address	Name	Distance to APE	NRHP Status
08705.000079	92 East Main St, Stony Point	c. 1830 vernacular dwelling	0.80 km west	Eligible
08705.000078	88-90 East Main St, Stony Point	c. 1840 vernacular dwelling	0.78 km west	Eligible
08705.000084	74 East Main St, Stony Point	Town Hall, c. 1885-90; Queen Anne; Former high school	0.69 km west	Eligible
08746.000009	39 East Main St, Stony Point	Lustron house, Westchester model, deteriorated	0.38 km west	Undetermined

Table 21. Historic structures located within approximately 1 km of the Rockland County Preferred Alternative area.

OPRHP #	Address	Name	Distance to APE	NRHP Status
08705.000068	35 South Liberty Dr, Stony Point	Unnamed	0.80 km west	Undetermined
08746.000006	80 South Liberty Dr, Stony Point	Gambrel-roofed 3 bay house	0.59 km west	Undetermined
08705.000101	44 River Rd, Stony Point	44 River	1.0 km east	Undetermined
08744.000001	Stony Point Rd, West Haverstraw	Benson's Tavern	0.48 km west	Undetermined
08744.000016	1 Cosgrove Ave, West Haverstraw	Railroad Avenue School	0.43 km east	Eligible
08740.000163	24 Union St, Haverstraw	Unnamed	0.73 km east	Undetermined
08702.000212	91 Broadway, Haverstraw	Unnamed	0.87 km east	Undetermined
08740.000229		Haverstraw Downtown Historic District (over 50 eligible structures)	0.68 km east	Eligible
08740.000222	16 Grant Street, Haverstraw	Haverstraw Elementary School, ca. 1935	0.63 km east	Eligible
08740.000232	19 New Main Street, Haverstraw	19 New Main Street, Haverstraw	0.51 km east	Undetermined
08740.000158	64 New Main St, Haverstraw	Central Presbyterian Church	0.20 km east	Eligible
08740.000231	104 - 118 Hudson Avenue	104 - 118 Hudson Avenue Building District	0.10 km east	Eligible
08740.000141	9 First St, Haverstraw	Unnamed	0.75 km east	Undetermined
08740.000142	10 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000144	14 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000145	20 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000146	24 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000147	26 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000148	28 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000149	34 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000150	41 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000152	44 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000153	48 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000154	52 First St, Haverstraw	Van Houten Inn	0.76 km east	Undetermined
08740.000155	62 First St, Haverstraw	Unnamed	0.76 km east	Undetermined
08740.000228	Riverside Ave, Haverstraw	Tunnel 1904	0.0 km	Undetermined

Table 22. NRHP-listed historic properties and districts within approximately 1 km of the Rockland County Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
90NR02408	10	ca. 1779	Stony Point Battlefield	Battlefield Road, Stony Point
08705.000152	1	ca. 1934	Stony Point Battlefield - Museum	Battlefield Road, Stony Point
90NR02409; 08705.000032	1	ca. 1825	Stony Point Lighthouse	Park Road, Stony Point
08705.000063	1	c. 1917	Commander (sailing vessel)	Haverstraw Marina, Stony Point
08744.000003	1	c. 1825	Garner Mansion	18 Railroad Ave, West Haverstraw
00NR01648; 08702.000180	1	ca. 1865-1910	Henry M. Peck House	US 9W, West Haverstraw
90NR02418; 08744.000007	1	ca. late 18 th and early 19 th C.	Fraser-Hoyer House	US 9W, West Haverstraw
13NR06438	25	ca. 1838-1990	Rockland Print Works	55 West Railroad Avenue, Garnerville
90NR02411; 08740.000156	1	ca. 1800	Homestead	143 Hudson Ave, Haverstraw
90NR02412; 08740.000157	1	ca. 1935	US Post Office-Haverstraw	86 Main St, Haverstraw
91NR00087; 08740.000139	2	ca. 1903	Fowler Building - Haverstraw King's Daughters Public Library	85 Main Street, Haverstraw

3.5 Schenectady Preferred Alternative

A review of the New York Cultural Resource Information System (CRIS) lists 31 cultural resource management (CRM) studies completed within approximately 1 km of the Schenectady Preferred Alternative area. Four (4) National Register of Historic Places (NRHP) listed properties, 13 historic structures that are eligible for listing on the NRHP, and 82 archaeological sites also occur within approximately 1 km of the Preferred Alternative. Of the 82 documented archaeological sites, 54 relate to the Precontact Period, 26 date to the Historic period, one (1) contain both Precontact and Historic cultural materials, and one (1) is unknown due to a missing form. At least six (6) CRM studies overlap the Preferred Alternative area by crossing or running alongside the transmission line. One (1) Historic period archaeological site, the Brumaghim Site (09302.000163) and one (1) NRHP-listed Historic district, the New York State Barge Canal District (14NR06559) also overlap the Schenectady Preferred Alternative area.

Of the 82 archaeological sites, five (5) Precontact sites and one (1) Historic site are eligible for listing on the NRHP and seven (7) Precontact Period sites and three (3) Historic period sites are not eligible for listing. The remaining archaeological sites are undetermined in their NRHP status. The NRHP-eligible sites will be discussed further below.

The McMichaels Site (09302.000031) is a multicomponent Precontact (Archaic through Woodland) and historic (colonial and nineteenth century) site previously documented as NYSM 955. In 2013, Landmark Archaeology excavated 470 shovel tests and 15 1x1-meter units. This study identified two distinct loci within the site and APE boundaries. Undisturbed, temporally discrete cultural deposits with evidence of features were documented at each locus. Additionally, both loci had evidence of stratified cultural deposits marking stable and older buried surfaces. Both loci yielded culturally diagnostic artifacts with evidence of the Transitional and Woodland cultural periods found at Locus 1 and the late Middle Woodland/early Late Woodland cultural periods found at Locus 2. The Precontact cultural deposits at this site yielded additional information about the above cultural periods and the use and occupation of the area. Therefore, both loci meet Criterion d of the NRHP.

The Collins Lake Site (09341.000016, NYSM 2677) lies on a submerged shoreline after Collins Lake was dammed in 1946. All artifacts to date have been recovered from four (4) dredging operations. Precontact artifacts recovered include 1205 net sinkers, more than 34 flakes, 14 pitted stones, 8 ground stone tools, 5 projectile points, 2 ceramic sherds, 3 hammer stones, a soapstone pendent fragment, and 3 bone/antler tools. A Woodland Period temporal affiliation has been assigned to the site based on the pottery sherds and a Levanna (Madison) projectile point. The most recent monitored dredging (1990) suggested the presence of intact deposits. All artifacts have a high degree of preservation.

Riverstone Manor Sites 1 and 2 (09302.000132, 09302.000133) were uncovered during Phase IB excavation of two trenches by Hartgen Associates at the Riverstone Manor Banquet Facility in 2002. Both trenches revealed undisturbed, intact Precontact features and cultural material buried in alluvial deposits. Feature 2 deposits in Trench 1, large broken cobbles piled together in thick layer of sandy silt, appeared analogous to the roasting platforms identified at the nearby Bent Site and attributed to the River Phase of the Late Archaic. Small bits of mussel shell, calcined bone and charcoal were interspersed with the fire-cracked cobbles. Trench 2 produced two (2) concentrations of chert debitage that were closely associated with a hearth feature.

The Putnam Station Village Precontact Site (09305.000260) contained evidence of Late Archaic Period occupation in the form of a Vosberg and a Brewerton projectile points. A variety chert flakes suggest all stages of lithic production was going on at the site. The artifact distribution and high density suggest this site was a residential settlement, not short-term occupation associated with resource gathering. A hearth feature further suggests long-term occupations at the site.

The Erie Canal Aqueduct (09305.000004) was built in 1845 to carry the water of the Erie Canal over Flat Stone Creek. In 1891 the aqueduct collapsed. The wooden trunk, 3 span of masonry arches, and stone piers were demolished. Today the site is abandoned and in fair condition. Only the stone wall supports are still standing.

The 13 eligible Historic properties date primarily to the 19th and 20th centuries. The two exceptions are the Van Slyke House (09305.000001, c. 1790) and the Art Samuelse Bradt House (09305.000003, c. 1717-1736). Both these properties relate to early Dutch settlement of the area by original founding families.

Four (4) properties or districts within 1 km of the Preferred Alternative area are listed on the NRHP. The New York State Barge Canal Historic District (14NR06559) is a twentieth-century network of canals, canalized rivers, and lakes that allows commercial and pleasure vessels to pass from the Atlantic Ocean to the Great Lakes. It is composed of four branches: the Erie Canal, 340 miles; the Champlain Canal, 60 miles;

the Oswego Canal, 24 miles; and the Cayuga-Seneca Canal, 17 miles. Constructed between 1905-1918, these waterways are direct successors to the canals that New York State first built during the 1820s. The Barge Canal was designed for self-propelled vessels, barges towed by tugboats or motorized canal boats, and did not require the towpaths of earlier canals. The Barge Canal has 57 locks and the system remains in operation with almost all of its original early twentieth century structures and machinery in service. It is the most extensive canal system in North America and is of national significance for the pivotal and varied roles it has played in not only the historical growth and development of New York State, states of the upper Midwest, and the nation. NRHP-listed sites Lock E-8 and cabins (09305.000240) and the Enlarged Lock No. 23, Old Erie Canal (09305.000271) are structures directly related to the New York State Barge Canal Historic District.

The Joseph C. Yates Summer House (09302.000005) is located at 133 Maple Avenue in Glenville, NY. Some people think this house is actually the permanent residence of Governor Yates due to a cemetery near the home containing grave stones for members of the Yates family. It is generally thought that this house was built in 1737 by Joseph C. Yates as part of a large plantation.

In 1661, Arendt Van Curler, the eventual founder of Schenectady, and fourteen others applied to Governor Stuyvesant for permission to purchase a tract of land on the lower Mohawk River called the “Great Flat.” The cities of Schenectady and Rotterdam presently occupy this land. When permission was granted for the purchase, house lots were soon divided up and streets laid out in a grid pattern. In 1684, the settlers in Schenectady, who numbered approximately 400, obtained a patent for 128 square miles that included the present day city of Schenectady and the towns of Rotterdam, Princetown, Glenville and a portion of Niskayuna. Schenectady’s strategic location on the Mohawk River resulted in frequent attacks during the French and Indian War that discouraged settlement for decades. However, Schenectady owes its existence and much of its prosperity to its location on the Mohawk River. In 1798, the city of Schenectady was incorporated and Schenectady County was divided from Albany County in 1809 (Macpherson 2002).

After the Revolutionary War, the Inland Navigation Company constructed several short canals and locks along the Mohawk River and its tributaries. These transportation improvements led to the construction of wharves, docks and storehouses along Main Binne Kill and by 1795, the area became known for its boatbuilding capabilities. The 1800’s saw continued improvement in local transportation infrastructure. The Erie and Champlain canals were dug through the towns of Schenectady, Rotterdam and Colonie in 1825 and the first two railroads in the state were centered in Schenectady, the Mohawk and Hudson in 1831 and the Schenectady and Saratoga in 1832 (Macpherson 2002).

By 1860, the area’s fertile river valleys supported intensive agriculture and dairy farming. Census records show large quantities of grain, hay, apples, potatoes, butter and cheese being produced in the area. Although agriculture remained strong in the area, in 1887 Thomas Edison moved his Edison Machine Works to Schenectady bringing with it jobs and a strong economic engine for the region. Other large companies operating in the Schenectady area have included the American Locomotive Company, the United States Army Depot and the United States Navy Depot. More recently, the city of Schenectady has seen its population and industry decline as residents moved to the suburbs of Glenville and Rotterdam (Macpherson 2002).

Table 23. Previous Cultural Resources Studies Conducted within 1 km of the Schenectady Preferred Alternative area.

Project Number	Title	Authors
00SR51055	Cultural Resources Reconnaissance Survey Report of PIN 1261.05.101, Route 147, Town of Scotia, Schenectady County, New York.	Hartgen Archaeological Associates
01SR52328	Phase IB Archeological Field Reconnaissance, Glenville Energy Park, Water Supply Line, Towns of Glenville and Rotterdam, Schenectady County, New York	Hartgen Archaeological Associates
01SR52335	Phase IA Literature Review, Glenville Energy Park DTI Natural Gas Lateral Route, Towns of Glenville and Rotterdam, Schenectady County, New York	Hartgen Archaeological Associates
01SR52338	Phase IA Literature Review, Glenville Energy Park, NMPC Natural Gas Lateral Route, Towns of Glenville and Rotterdam, Schenectady County, New York	Wheeler
02SR52658	Phase 1A/1B Archaeological Survey, Proposed Water District No. 4 Watermain Extension, Town of Rotterdam, Schenectady County, New York	Curtin Archaeological Consulting
06SR56665	Phase I Archeological Survey of the Proposed Runways art Glenville Development Project at 144 Freeman's Bridge Road in the Town of Glenville, Schenectady Co.	Basa
07SR57861	Phase IA Literature Review and Archeological Sensitivity Assessment, Scotia-Glenville Industrial Park, Town of Glenville, Schenectady, New York.	Hartgen Archaeological Associates
10SR60747	Phase 1A Literature Search / Sensitivity Assessment and Phase 1B Archaeological Survey, Proposed Glenville Senior Housing Project, Town of Glenville, Schenectady County, New York.	Curtin Archaeological Consulting
12SR61187	Cultural Resources Survey and Evaluation of the Stratton Air National Guard Base, New York Air National Guard, Scotia, New York	HDR
13SR61822	Phase I and II Archaeological Investigations of the Maalwyck Park Additions and Improvements Project, Town of Glenville, Schenectady County, New York	Landmark Archaeology
14SR63040	Report Addendum: Phase IB Archaeological Investigations of the Maple Avenue Realignment - Additional Survey, Stratton Air National Guard Base.	AMEC
16SR00802	Phase IA and IB Archeological Investigation, 122 Freeman's Bridge Road.	Kirk
93SR53570	PIN 1016.20, Draft Cultural Resources Survey, Exit 26/Mohawk River Crossing, NYSU. Towns of Rotterdam and Glenville, Schenectady Co	Werner
99SR62208	Proposed Rotterdam Senior Housing Princetown Road Town of Rotterdam, Schenectady County, New York Phase IA and Phase IB Archaeological Surveys	Curtin Archaeological Consulting
06SR56735	Phase II Site Evaluation, Townhouses at Yates Farm, Town of Glenville, Schenectady Co	Hartgen Archaeological Associates 2006
15SR00396	Cultural Resources Reconnaissance Survey Report of the Brumaghim Site, Town of Glenville, Schenectady County, New York	New York State Museum
13SR62553	Phase IB & Limited Phase II Archaeological Investigations of the Maple Avenue Realignment, Stratton Air National Guard Base, Schenectady County, New York	Scholl

Table 23. Previous Cultural Resources Studies Conducted within 1 km of the Schenectady Preferred Alternative area.

Project Number	Title	Authors
04SR55035	Phase I Archaeological Investigations of the Proposed Reserve at Glenville Project and Phase II Archaeological Testing of Sites A09302.000139, A09302.000140, A09302.000141 and A09302.000142, Town of Glenville, Schenectady Co	Landmark Archaeology
06SR56667	Phase IA Literature Review and Archeological Sensitivity Assessment and Phase IB Archeological Field Reconnaissance, Schenectady County Airport, Perimeter Rd, Town of Glenville, Schenectady Co	Hartgen Archaeological Associates
18SR56428	Phase 1 Archaeological Survey, Dutch Meadows Lane Mixed Use Community, Dutch Meadows Lane, Town of Glenville, Schenectady County, New York	Curtin Archaeological Consulting
10SR59912	Phase 1A Literature Search / Sensitivity Assessment and Phase 1B Archaeological Survey, Proposed Baptist Health Offsite Water and Sewer Routes, Town of Glenville, Schenectady County, New York.	Curtin Archaeological Consulting
01SR51450	Cultural Resources Assessment for the Defense Logistics Agency, Defense National Stockpile Center, Scotia, New York	Miller, Whetsell, and McLeod
01SR52339	Phase IA Literature Review and Sensitivity Assessment, Glenville Energy Park Project Site, Town of Glenville, Schenectady County, New York	Hartgen Archaeological Associates
19SR00370	Phase III Data Recovery, Maalwyck Park Improvement Park	Hartgen Archeological Associates
06SR56756	Phase IA/IB Cultural Resources Survey, Homeland Security Public Safety Training Center, Town of Glenville, Schenectady County, New York	Birchwood Archaeological Services
06SR56722	Cultural Resources Reconnaissance Survey Report, PIN 1306.50.121, I-890 and Exit 26 of I-90, Wetland Mitigation Area for Exit 6 of I-87, Town of Rotterdam, Schenectady Co	New York State Museum
17SR00927	Phase IA/IB Archaeological Assessment of the National Grid Rotterdam – Curry Rd #11 and Rotterdam – Woodlawn #35 115 kV Transmission Line Reconductoring Project Schenectady County, New York (NY SHPO Project Review #17PR06482)	TRC
03SR53403	Report Addendum: Phase IB Supplemental Survey, Niagara Mohawk E-36 Pipeline Project, Rotterdam, Glenville and Charlton, New York	Public Archaeology Laboratory
15SR00437	Proposed Transmission Line, General Electric	Hartgen Archeological Associates
05SR55573	Phase IA Cultural Resource Investigation for Von Roll Isola USA, Town of Rotterdam, City of Schenectady, Schenectady Co	Collamer & Associates
02SR53305	Technical Report: Phase IA Sensitivity Assessment and Phase IB Archaeological Field Investigation, Niagara Mohawk, A National Grid Company, E-36 Pipeline Project, Rotterdam, Glenville, and Charlton, New York	Public Archaeology Laboratory

Table 24. Archaeological sites located within approximately 1 km of the Schenectady Preferred Alternative area.

OPRHP Site #	Site Name	Distance to APE	Period	NRHP Status
09302.000031	McMichaels Precontact Site (NYSM 955)	0.52 km east	Precontact	Eligible
09302.000071	Unnamed (NYSM 6254)	0.13 km north	Precontact	Undetermined
09302.000072	Unnamed (NYSM 6255)	0.45 km southeast	Precontact	Undetermined
09302.000123	Glenville Wal-Mart Precontact Site	0.36 km north	Precontact	Undetermined
09302.000145	Yates Farm Precontact Site 1	0.18 km east	Precontact	Not Eligible
09302.000146	Yates Farm Precontact Site 2	0.18 km east	Precontact	Not Eligible
09302.000073	Freeman's Bridge Road Site 1/ (NYSM 6256)	0.18 km south	Precontact	Undetermined
09302.000149	Freeman's Bridge Road Site 2	0.38 km southeast	Precontact	Undetermined
09302.000150	Freeman's Bridge Road Site 3	0.39 km southeast	Precontact	Undetermined
09302.000151	Freeman's Bridge Road Site 4	0.39 km southeast	Precontact	Undetermined
09302.000153	Freeman's Bridge Road Site 6	0.91 km south	Precontact	Undetermined
09302.000154	Freeman's Bridge Road Site 7	0.39 km southeast	Precontact	Undetermined
09302.000188	Freeman's Bridge Road Precontact Site (Locus A and B)	0.32 km south	Precontact	Undetermined
09305.000115	Platterkill Flats Site	0.18 km east	Precontact	Undetermined
09305.000118	Unnamed Site (NYSM 6258)	0.61 km east	Precontact	Undetermined
09305.000119	Unnamed (NYSM 6264)	0.07 east	Precontact	Undetermined
09305.000120	Unnamed (NYSM 6265)	0.52 km east	Precontact	Undetermined
09305.000122	Unnamed (NYSM 6267)	0.45 km east	Precontact	Undetermined
09305.000123	Unnamed (NYSM 6268)	0.31 km east	Precontact	Undetermined
09305.000131	Unnamed (NYSM 6276)	0.06 km east	Precontact	Undetermined
09305.000132	Unnamed (NYSM 6277)	0.35 km east	Precontact	Undetermined
09305.000133	Unnamed (NYSM 6278)	0.46 km east	Precontact	Undetermined
09305.000134	Unnamed Site (NYSM 6279)	0.68 km east	Precontact	Undetermined
09305.000136	Unnamed (NYSM 6288)	0.44 km east	Precontact	Undetermined
09305.000257	GEP Locus 1	0.32 km east	Precontact	Undetermined
09305.000258	GEP Locus 2	0.68 km east	Precontact	Undetermined
09305.000259	GEP Locus 3	0.48 km east	Precontact	Undetermined
09305.000262	Burl Precontact Site	0.5 km west	Precontact	Undetermined
09302.000009	Yates Family Plot	0.1 km east	Historic with Human Remains	Undetermined
09302.000114	Durham Project 74	0.23 km southwest	Historic	Undetermined
09302.000144	Alplaus Schoolhouse Historic Archeological Site	0.25 km east	Historic	Not Eligible
09302.000152	Freeman's Bridge Road Site 5	0.19 km south	Historic	Undetermined
09302.000162	East Glenville Shack Historic Archaeological Site (NYSM 11673)	0.0 km	Historic	Undetermined
09302.000165	Oliver Historic Archaeological Site (NYSM 11679)	0.25 km west	Historic	Undetermined
09302.000186	e2M 1 Historic Site	0.69 km northwest	Historic	Not Eligible

Table 24. Archaeological sites located within approximately 1 km of the Schenectady Preferred Alternative area.

OPRHP Site #	Site Name	Distance to APE	Period	NRHP Status
09302.000187	e2M 2 Historic Site	0.45 km northwest	Historic	Not Eligible
09302.000190	Stevens Farm Historic Site	0.11 km southeast	Historic	Undetermined
09302.000198	Alplaus Kill Midden	0.02 km east	Historic	Undetermined
09305.000004	Erie Canal Aqueduct	0.33 km northeast	Historic	Eligible
09305.000058	Alb-61	0.44 km northeast	Historic	Undetermined
09305.000246	Durham Project 219	0.18 km east	Historic	Undetermined
09305.000247	Durham Project 102		Historic	Undetermined
09305.000252	Durham Project 103	0.32 km northeast	Historic	Undetermined
09305.000256	MS Van Patten Historic Foundations	0.37 east	Historic	Undetermined
09341.000010	The Old Fort (Demolished)	0.27 km north	Historic	Undetermined
09305.000168	NYSM 1941	0.61 km northeast	Form Missing	Undetermined
09302.000024	Old Brummaghim Mill Site	0.14 km east	Historic	Undetermined
09302.000163	Brumaghim (NYSM 11674, CHPE Site 15)	0.0 km	Historic	Undetermined
09302.000161	W. Cooper Historic Archaeological Site (NYSM #11641)	0.58 km west	Historic	Undetermined
09302.000164	Cozy Dale Precontact and Historic Archaeological Site (NYSM #11675)	0.35 km east	Precontact and Historic	Undetermined
09302.000069	Unnamed Site (NYSM 6251)	0.6 km east	Precontact	Undetermined
09302.000074	Unnamed Site (NYSM 6257)	1.0 km east	Precontact	Undetermined
09302.000070	Unnamed Site (NYSM 6253)	0.67 km southeast	Precontact	Undetermined
09302.000012	Van Voast Family Burial Plot	0.22 km south	Historic with Human Remains	Undetermined
09303.000127	Unnamed Site (NYSM 4751)	0.92 km southeast	Precontact	Undetermined
09302.000178	Baptist Health Precontact Site 22/11	0.92 km northwest	Precontact	Not Eligible
09302.000176	Baptist Health Precontact Site 18/12	0.91 km northwest	Precontact	Not Eligible
09302.000177	Baptist Health Precontact Site 43/2	0.76 km northwest	Precontact	Not Eligible
09302.000174	Baptist Health Precontact Site 29/14	0.91 km northwest	Precontact	Not Eligible
09302.000175	Baptist Health Precontact Site 32/9	0.76 km northwest	Precontact	Not Eligible
09302.000139	Glenville Reserve 1	0.85 km southeast	Precontact	Undetermined
09302.000140	Glenville Reserve 2	0.85 km southeast	Precontact	Undetermined
09302.000141	Glenville Reserve 3	0.64 km southeast	Precontact	Undetermined
09302.000142	Glenville Reserve 4	0.62 km southeast	Precontact	Undetermined
09341.000016	Collins Lake Site (NYSM 2677)	0.71 km south	Precontact	Eligible
09341.000017	Collins Park Site (NYSM 2678)	0.89 km south	Precontact	Undetermined
09302.000138	Route 5 Terrace Precontact Site	0.54 km southwest	Precontact	Undetermined
09302.000132	Riverstone Manor Site 1	0.61 km southwest	Precontact	Eligible
09302.000133	Riverstone Manor Site 2	0.79 km southwest	Precontact	Eligible
09305.000326	Erie Canal Old Lock 24	0.19 km east	Historic	Undetermined
09305.000260	Putnam Station Village Precontact Site	0.70 km east	Precontact	Eligible
09305.000087	Campsites Site	0.90 km east	Precontact	Undetermined

Table 24. Archaeological sites located within approximately 1 km of the Schenectady Preferred Alternative area.

OPRHP Site #	Site Name	Distance to APE	Period	NRHP Status
09305.000121	Unnamed Site (NYSM 6266)	1.0 km east	Precontact	Undetermined
09305.000114	Poentic Site	0.37 km west	Precontact	Undetermined
09305.000091	Campbell Mansion/Vedder House Site	0.99 km east	Historic	Undetermined
09305.000093	Long Mound Site	1.0 km east	Historic	Undetermined
09305.000092	Barn/Forge Site	1.0 km east	Historic	Undetermined
09305.000124	Unnamed Site (NYSM 6269)	0.98 km east	Precontact	Undetermined
09102.000077	Historic Foundation 1 Site	0.52 km west	Historic	Undetermined
09302.000076	Unnamed Site (NYSM 6260)	0.67 km east	Precontact	Undetermined
09302.000075	Unnamed Site (NYSM 6259)	0.68 km east	Precontact	Undetermined
09302.000077	Unnamed Site (NYSM 6261)	0.89 km east	Precontact	Undetermined

Table 25. NRHP-eligible properties within approximately 1 km of the Schenectady Preferred Alternative area.

OPRHP Site #	Name	Location	Distance to APE	NRHP Status
09302.000076	Unnamed Site (NYSM 6260)	0.67 km east	Precontact	Undetermined
09302.000075	Unnamed Site (NYSM 6259)	0.68 km east	Precontact	Undetermined
09302.000077	Unnamed Site (NYSM 6261)	0.89 km east	Precontact	Undetermined
09305.000001	Van Slyke House (c. 1790)	NY 5S, Rotterdam NY	0.41 km west	Eligible
09305.000002	Shermerhorn House (c. 1857)	34 Shermerhorn Road, Rotterdam NY	0.35 km east	Eligible
09305.000003	The Art Samuelse Bradt House (c. 1717-1736)	22 Shermerhorn Road, Rotterdam NY	0.37 km east	Eligible
09302.000159	B&M RR concrete bridge over Schenectady Railway Co. Trolley (1904)	Glenridge Rd, Glenville, NY	0.37 km east	Eligible
09302.000160	B&M RR Stone Arch Bridge (1879)	Alplaus Kill, Glenville, NY	0.31 km east	Eligible
09302.000157	Cooper-Kohring House (ca. 1850)	10 Hetcheltown Rd, Glenville, NY	0.16 km west	Eligible
09302.000156	John Oliver House (1850)	187 Maple Ave, Glenville, NY	0.31 km west	Eligible
09302.000155	Glenridge Sanatorium (1927)	79 Glenridge Rd, Glenville, NY	0.71 km east	Eligible
09302.000179	2.5 story front gable, conical tower, carriage barn extant	1 Swaggerton Rd, Glenville, NY	0.66 km north	Eligible
09302.000131	Beukendaal School (1914)	500 Sacandaga Rd (NY 147), Glenville, NY	0.25 km north	Eligible
09302.000168	Sacandaga Elementary School (1931/1954/1965/1999)	300 Wren St., Glenville, NY	1.0 km southwest	Eligible
09302.000127	William Dalton House (1911)	7 Spring Rd, Glenville, NY	0.52 km north	Eligible
09302.000092	Moveable Dam 4 - Lock E-8	Glenville, NY	0.43 km east	Eligible

Table 26. NRHP-listed properties within approximately 1 km of the Schenectady Preferred Alternative area.

Site Number	Name	Location	Distance to APE	NRHP Status
14NR06559	New York State Barge Canal Historic District	Waterford to Tonawanda, Whitehall, Oswego Waterloo Albany	0.0 km	Listed
09302.000005	Joseph C. Yates Summer House	133 Maple Avenue, Glenville NY	0.20 km east	Listed
09305.000240	Lock E-8 and cabins	Rotterdam, NY	0.32 km east	Listed
09305.000271	Enlarged Lock No. 23, Old Erie Canal	Old Rice Rd, Rotterdam NY	0.71 km east	Listed

3.6 Selkirk Yard Preferred Alternative

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

Six of the seven Precontact period archaeological sites are undetermined in their NRHP status. One, Bethlehem Solar Stray Find (00102.000916) is ineligible. This Late Archaic period findspot was located in an upland setting approximately 700 ft north of Coeymans Creek and consisted of a chert, Normanskill type projectile point that is .5 cm long, 1.6 cm wide and .6cm thick.

Selkirk Solar Sites 1-3 (00102.000955, 00102.000956, 00102.000957) are three (3) small precontact sites. The excavation of 24 radial STPs around each site found only one (1) additional Precontact artifact, suggesting that these are low density sites with little potential to yield additional information. One (1) chert flake and a projectile point base were recovered from the plow zone at Selkirk Solar Site 1, which is located on the south side of a small, sandy hill and measures approximately 150 square meters in size. It may date to the Late Archaic, possibly Normanskill. Selkirk Solar Site 2 is located at the edge of a terrace overlooking the Vloman Kill and measures approximately 87 square meters. Three (3) chert flakes were recovered from the plow zone at Selkirk Solar Site 2. Selkirk Solar Site 3 produced six (6) chert flakes from the modern plow zone. A buried historic plow zone was also present just above the subsoil. This site is located at the base of a large sandy hill and measures approximately 250 square meters. No additional information outside of Table 24 is available for the remaining three (3) Precontact period archaeological sites.

Of the eight (8) historic structures identified, four (4) are eligible for listing on the NRHP. The Albertus W. Becker Homestead (00102.000656), located 73 Bridge St. in Bethlehem, NY, consists of a sizable brick farmhouse dating c. 1800 and a barn complex. The Vanderzee-Tryon House (00102.000563), located on Old Quarry Road in the Town of Bethlehem, is a one and one-half story house constructed in the vernacular tradition of the mid and upper Hudson Valley region during the pre-Revolutionary War period. It is likely the house was constructed by Peter Houghteling prior to 1770. The Gerrit Houghteling “stone house” (00102.000699) is located at 190 Old Quarry Rd, Bethlehem, NY, dates to the late 1700s and includes 3 barns. Property 00102.000654, located at 281 NY 396, Bethlehem, NY, is part of the NRHP-Listed

Defreest-Rowe Farm (11NR06281). The remaining (4) historic structures are undetermined in NRHP status.

The Defreest-Rowe Farm (11NR06281) includes 16 contributing structures, buildings and features. A large Italianate farmhouse and timber-frame hay barn that date to the mid-late 1870's are the principal buildings with two distinct clusters of outbuildings on either side of Bridge street. The out-kitchen and cattle barn represent an earlier building period and display characteristics of "New World Dutch" building practices. A frame carriage barn and small blacksmith shop also occur on site. The Rowe farm is significant as a remarkably intact collection of structures that document the area's agricultural history.

The Dr. John Babcock House (03NR05097, 00102.000565), located at 101 Lasher Rd Bethlehem, NY, includes two (2) structures, house and frame carriage barn, dating c. 1851-1871. The house is a remarkable example of pattern-book-inspired "Tuscan style" architecture. The Bethlehem Grange No. 137 (01NR01855) was built in 1921 and expanded in 1936. The Grange is architecturally significant as intact example of grange hall design. Bethlehem Grange Hall No. 137 is important as an early example of granges established in New York and one (1) of only two (2) surviving in Albany County.

The Town of Bethlehem was incorporated in 1793. European settlement in the area that is now Bethlehem began in the 1600s along the fertile flatlands adjacent to the Hudson River. In the 18th century, settlement expanded inland along the tributaries of the Hudson River. The local economy centered around agriculture and corn, rye, potatoes, oats and apples were all grown. Grain and lumber were exported to New York and Europe via the Hudson River. Hamlets then developed along with roads, railroads and industry. By the 19th century, organized turnpikes and developed roads were maintained by residents. In 1804, the construction of the first turnpike in Bethlehem began and toll roads were operated by several companies allowing for stagecoaches to run through Bethlehem. The 20th century saw the development of suburbs as Bethlehem became a center for industry. Selkirk Yard construction began in 1922 and some major corporations like GE, Airco Industrial Gas, and Owens Corning all called the Bethlehem area home.

Table 27. Previous cultural resource studies conducted within approximately 1 km of the Selkirk Yard Preferred Alternative area.

Project Number	Title	Authors
03SR53268	Phase I (Phase IA & IB) Cultural Resource Investigations for the Frueh Mine Site, Old Quarry Road, Town of Bethlehem, Albany county, NY [03PR00682 marked on report]	Arch Tech
19SR00421	Phase IA/IB Cultural Resources Survey, Creble Road Truck Center Development, Town of Bethlehem, Albany County New York	Birchwood Archaeological Services
17SR00153	Phase I Archeological Investigation, Selkirk Solar Project	Hartgen Archeological Associates, Inc.
15SR00069	Phase I Archeological Investigation Proposed Photovoltaic Panel Array Field, Bridge Street, Town of Bethlehem, Albany County, New York	Hartgen Archeological Associates, Inc.
98SR61480	Stage I Cultural Resource Survey of the Proposed 2.7 Mile Niagara Mohawk Pipeline, Town of Bethlehem, Albany County, New York	TRC Garrow Associate, Inc.
99SR52741	Cultural Resource Reconnaissance Survey, PIN 1347.07.122 Addendum, Selkirk Bypass: NY 396 from US 92 to NY 144, Town of Bethlehem, Albany County, New York (2 volumes)	New York State Museum

Table 28. Archaeological sites located within approximately 1 km of the Selkirk Yard Preferred Alternative area.

OPRHP Site #	Site Name	Distance to APE	Period(s)	NRHP Status
00102.000955	Selkirk Solar Site 1	0.63 km northeast	Precontact	Undetermined
00102.000956	Selkirk Solar Site 2	0.63 km northeast	Precontact	Undetermined
00102.000957	Selkirk Solar Site 3	0.63 km northeast	Precontact	Undetermined
00102.000916	Bethlehem Solar Stray Find	0.48 km west	Precontact	Not Eligible
00102.000019	ALB-40 Cass Site	0.65 km southwest	Precontact	Undetermined
NYSM 1948	Cass	0.65 km southwest	Precontact	Undetermined
NYSM 5924	Gottschalk Rockshelter	0.92 km southwest	Precontact	Undetermined

Table 29. Historic structures located within approx. 1 km of the Selkirk Yard Preferred Alternative area.

Site Number	Name	Location	Distance to APE	NRHP Status
00102.000656	Albertus W. Becker Homestead	73 Bridge St., Bethlehem, NY	0.62 km northwest	Eligible
00102.000654	Defreest-Rowe Farm	281 NY 396, Bethlehem, NY	0.75 km southwest	Eligible
00102.000657	Conrad Soop House	305 NY 396, Bethlehem, NY	0.66 km southwest	Undetermined
00102.000673	Unnamed	368 S. Albany Rd, Bethlehem, NY	0.06 km east	Undetermined
00102.000698	Unnamed	313 Quarry Rd, Bethlehem, NY	0.04 km west	Undetermined
00102.000561	Frueh Residence and Barn	68 Old Quarry Rd, Bethlehem, NY	0.42 km west	Undetermined
00102.000563	Vanderzee-Tryon House and Barns	190 Old Quarry Rd, Bethlehem, NY	0.24 km west	Eligible
00102.000699	Gerrit Houghteling deeded owner	190 Old Quarry Rd, Bethlehem, NY	0.24 km west	Eligible

Table 30. NRHP-listed historic properties located within approximately 1 km of the Selkirk Yard Preferred Alternative area.

NRHP #	Structure(s)	Date(s)	Name	Address
01NR01855	1	1921-1936	Bethlehem Grange No. 137	Beckers Corners, Albany County
03NR05097 (00102.000565)	2	c. 1851-1871	Dr. John Babcock House	101 Lasher Rd Bethlehem, NY
11NR06281 (00102.000044)	16	c. 1790, 1800, 1875, 1879, and 1910	Defreest-Rowe Farm	281 NY 396, Bethlehem, NY

4. ARCHAEOLOGICAL SENSITIVITY

Our models for determining Precontact period archaeological sensitivity and Historic period archaeological sensitivity are presented in this section.

4.1 Precontact Period

Just as people differentially inhabit the landscape today, groups in the Precontact period did not uniformly occupy the landscape either as noted in the tables presented above. Some of the decisions made in the past that informed land use are known, but more are not. Not surprisingly, some areas were more attractive than others to people deciding where to establish camps and villages. Some locations were used more often than others, because of the availability of unique resources (e.g., edible and medicinal plants, food animals, and raw materials, such as stone for tool making), or perhaps even through historical accident. And, some areas may simply not have been frequented or ever used, because the locations possessed no value to the people living on the landscape at that time. Against this backdrop is the reality that not all human behavior leaves archaeologically visible traces. Additional problems confounding understanding of Precontact period land use happens when the environment in which archaeological deposits are buried degrades them and when more recent human activity destroys the archaeological evidence for older land use.

A hundred years or more of archaeological data collection and analyses do confirm some patterns demonstrating decisions people made in the Precontact period regarding where to settle, at least in northeast North America. For example, locational data from a sample of more than 5,000 Precontact period sites in Maine show that proximity to water (streams, rivers, lakes, and wetlands) was a determining factor for locating human activity (Spiess 1994). Funk (1993) drew a similar conclusion with site location information he gathered from the Susquehanna River Valley and this is largely true for Precontact period sites listed in the six alternatives described above.

More recently archaeologists from TRC Environmental Corporation reviewed several large data sets they have collected from various parts of New York. They document a similar finding and here as some of those results based on cultural resources studies of wind projects, solar projects, and hydroelectric projects completed during the last decade or so.

The Cape Vincent Wind Project was located along the St. Lawrence Seaway in northwest New York and it included approximately 407 acres. It was tested with 4,101 shovel test pits (STPs) using a standard testing interval of 15 m. Although some historic archaeological sites were discovered, only a single piece of lithic debitage was uncovered during testing yielding a positive Precontact period STP ratio of 4,101/1 or .024%. The lone flake was located adjacent to a wetland and 110 m distant from a known Precontact period site located outside the Project's boundaries.

The nearby St. Lawrence Wind Project, which is situated west of Cape Vincent, produced similar results. Its 200-plus acre disturbance zone was tested with 3,298 STPs on a 15 m interval. Like the Cape Vincent project a few historic-period artifact scatters were uncovered, and only a single Precontact period artifact was discovered, which consisted of a weathered pottery sherd. It was not associated with any nearby water body. Testing around this archaeological spot find failed to produce additional artifacts. The positive Precontact period STP ratio of 3,298/1 or .030% is no more encouraging for finding Precontact period site locations than that for Cape Vincent.

These under-performing results are not restricted just to wind power projects. Similar findings have recently been corroborated with investigations completed at solar projects in New York. TRC completed Phase IB archaeological field investigations at 32 proposed solar projects dispersed across New York State during 2017 and 2018 using essentially the same approach as that employed on wind projects. A cumulative total of 11,999 STPs was excavated in projects throughout New York. Of these, 29 were positive for Precontact period artifacts, providing a positive Precontact STP ratio of 11,999/29 or 0.24%. Of the 29 positive STPs, 3 included only a single flake and were classified as spot finds and were located within 200 m of water or wetlands. Fifteen of the positive STPs were associated with Precontact period sites less than 100 m distant from water or a wetland. The remainder were excavated into a single site discovered on a proposed solar project located in Ulster, New York (Mack et al. 2018). About half of the lithic artifacts were discovered within 100 m of water while the others were not. The distance of the remaining artifacts was about 300 m from water. Significantly, they were associated with a special-purpose lithic quarry site rather than a campsite.

Archaeological surveys of hydroelectric projects up for licensing offer quite different data. Results from archaeological Phase IB testing of the relicensing of the Niagara Power Project contrast remarkably when compared with results reported from wind and solar projects noted above (Will et al. 2006). Located in western New York on the Niagara River, the investigation area for the project was defined as all areas within 50 feet of the Project's boundary where observable water erosion was occurring. This included sections along the Niagara River between Lake Ontario to the north and beyond the downriver end of Grand Island to the south along with several creeks including Ellicott, Two Mile, Six Mile and Spicer. A total of 625 STPs were excavated within 50 feet (approximately 15 m) of a waterbody. One hundred and ten (110) of the STPs were positive for Precontact period artifacts or 17.6% of the STPs. The positive STPs came from seven previously unknown Precontact period archaeological sites (Will et al. 2006:4-76). That percentile is orders of magnitude greater when compared with STP/positive STP ratios obtained by TRC archaeologists from solar and wind projects that they have investigated in New York. Results obtained from numerous Phase IB archaeological studies of other hydroelectric projects are comparable with the Niagara findings (e.g., Clark et al. 1996, Will et al. 2000, Will and Moore 2002).

The conclusion that proximity to water is a deciding factor when locating Precontact period sites in the Northeast does not appear to be a sampling bias. The studies above demonstrate that archaeological sites are predictably near water unless other environmental factors, such as the location of valuable lithic resources for tool making are present. Most predictive models are based on scoring and/or ranking of environmental variables; however, testing the validity of such models has been uneven. One project where such a model was well tested was on the Maritimes & Northeast (M&N) Natural Gas Pipeline, which traversed more than 300 miles of diverse terrain across Maine (Will et al. 1998). After resource sensitivity had been determined, ranking water as the most significant variable followed by soil type and slope, equal amounts of field testing were completed in high, medium, and low sensitive areas. The total number of STPs excavated on the M&N project was 3,058. Field results produced an excellent correlation between sensitivity and number of sites discovered. For example, 86% of all Precontact period sites were located in areas scored as "high sensitivity" (n=19), while 14% of sites were found in "medium sensitivity" areas. No sites were found in areas scored as "low sensitivity" (Will et al. 1998:39).

Based on analytical results obtained from numerous studies concluding that proximity to water is a significant predictor of Precontact period site location, we considered its nearby presence or absence as a

determining factor when deciding where to place our archaeological testing, but with several caveats. First, it does not require a meta-analysis of field data to reach consensus that people generally did not camp on steep slopes or utilize such areas unless they contained a resource, such as fine-grained stone resources useful for tool making that would otherwise attract their attention. Consequently, we eliminated areas of greater than 12% slope for field testing unless surficial geologic maps indicated a potential resource that we should consider unless geologic mapping data suggested testing.

Second, although soils data are generally presented in archaeological reports, their value as predictors of site locations has not been substantiated. A causal relationship between soil and sediment type has never been verified in the Northeast, except in one instance where a correlation has been shown to exist between Paleoindian site locations and sandy locations (Spiess and Wilson 1990). The Paleoindian period is an exception to the settlement pattern described above. Paleoindian period sites dating from 11,500-9,000 years before present are often located on relic Late Pleistocene/Early Holocene landforms that provided unobstructed views of the surrounding landscape below them. This is true throughout northeastern North American including New York (Ritchie 1980). These locations were rarely occupied during later cultural periods and are often strategically located above some form of low-lying terrain that may have been suitable habitat for caribou and other tundra and grassland-adapted game animals. Their campsites are typically indicative of short-term habitations by small groups of people, perhaps in some cases by even a single or extended family (Spiess, Wilson, and Bradley 1998). Therefore, erring on the side of caution, we considered well drained locations near a break in slope overlooking an area as sensitive for Paleoindian period archaeological resources and tested them accordingly.

Third, wetlands were considered as sensitive waterbodies in those situations where a break in slope was also present to provide an overlook or dry place for camping.

Finally, and unlike some methodologies, we did not include disturbances in our sensitivity calculations. We treated it as an independent variable. An area may or may not be sensitive for Precontact period archaeological resources based on its proximity to water, topography and geology, and soil type. A sensitive area, however, can have its status changed at any point in the past or present when a disturbance may have caused its archaeological value to have been diminished or destroyed. Both natural and cultural factors can play a role (Schiffer 1987). Natural processes include such things as when water erosion washes away an archaeological site. Cultural processes include the myriad of human activities (even archaeological excavation) that cause ground disturbance to an area where an archaeological site may have been or was present. Disturbances were carefully considered for the Preferred Alternatives by examining historic documentation of human activity in the area through mapped data. Types of disturbance noted in the Preferred Alternative areas rail and road construction, residential and commercial construction, and utilities construction, among others.

It is important to note that, while the area in direct proximity to a waterbody may be considered sensitive, the location of the actual disturbance may serve as a mitigation measure. For the proposed project, the use of HDDs to cross major waterbodies results in the disturbance being separated from the sensitive shorelines (see Table 31). For each HDD, two separate drill holes would be installed. The ducting diameter to facilitate each HDD will vary from about 8 to 30 inches depending on which HDD, its length location, transition point and site installation requirements. The expected working area to facilitate the launch and receiving of the HDD will be within an approximate 30ft by 100 ft footprint area. The optimum footprint can be customized based on site specific restrictions or requirements.

Table 31: Horizontal Directional Drill Use near Culturally Sensitive Areas

Culturally Sensitive Area	Mitigation	Archaeological Testing Recommended
Catskill Alternative		
North side of the Catskill Creek	HDD will be used to cross Catskill Creek. The HDD pad/boring will be placed near the intersection of Allen Street and Main Street, approximately 150 ft north of the shoreline near milepost 0.3.	No
Fort Ann Alternative		
N/A		
Putnam Station Alternative		
N/A		
Rockland County Alternative		
West side of the Hudson River south of a large quarry and north of Stony Point State Park	HDD will be used to exit the Hudson River. The HDD pad/boring will be a minimum of 350 feet to the southwest of the shoreline.	No
West side of the Hudson River west of Hook Mountain State Park	HDD will be used to re-enter the Hudson River. The HDD pad/boring will be a minimum of 2,100 feet to the southwest of the shoreline.	No
Schenectady Alternative		
East side of the Mohawk River (Erie Canal)	HDD will be used to cross the Mohawk River. The HDD exit point will be placed approximately 300 ft northeast of the shoreline near milepost 6.0.	No
West side of the Mohawk River (Erie Canal)	HDD will be used to cross the Mohawk River. The HDD pad/boring will be placed near a dirt road approximately 470 ft southwest of the shoreline near milepost 6.2.	No
Selkirk Railyard Alternative		
West side of Onesquethaw Creek between South Albany Road and the railyard	HDD will be used to cross Onesquethaw Creek and associated wetlands. The HDD pad/boring will be placed approximately 210 ft west of the Creek to the north of milepost 3.5	No
East side of Onesquethaw Creek between South Albany Road and the railyard	HDD will be used to cross Onesquethaw Creek. The HDD exit point will be placed approximately 1,092 ft east of the Creek, to the north of milepost 3.8.	No

4.2 Historic Period

The sensitivity assessment for Historic archaeological resources is based mainly on cartographic evidence gathered from 19th to 20th century maps. These cartographic resources pinpoint the location of dwellings, schools, mills, churches, cemeteries, roads, and railroads providing the archaeologist with a ready point of comparison between past and present landscapes. In this, the sensitivity assessment differs greatly from those conducted for Prehistoric period archaeological resources. Historical archaeologists can also review secondary sources such as town histories, photographs, and newspapers to provide a larger historical context for a project area. The sensitivity assessment also includes a site file search for known archaeological sites within the project area, or sites that might serve as analogs for the project area. Using known site types and distributions, historical archaeologists develop settlement models to make predictive statements about where to anticipate finding sites.

Locations that are considered sensitive for Historic resources are associated with the following variables:

- documented existence of sites (e. g., homesteads, farmsteads, schools, churches, town halls, cemeteries) through primary, secondary, or cartographic resources
- presence of known sites (whether extant, aboveground representations of early architecture, or documented archaeological site)
- proximity to transportation systems (roads, railroads, major rivers and streams) and potable water sources
- linkage to other resources (such as stone for quarrying, clay sources for brick or ceramics, or metal ores)

Historic archaeological resources typically exist along transportation corridors, specifically roads and rivers. Environmental conditions, such as water power and land suitable for agriculture, also affect site location. Nineteenth- and twentieth-century maps of the project area confirm that most buildings and structures were located along roads, which followed streams, rivers, or ponds, because these areas were the most level and easiest to access. Euroamerican archaeological resources are commonly found where former buildings or structures stood, where people lived and have left a trace of their lives in the form of artifacts and features.

5. CONCLUSIONS AND RECOMMENDATIONS

This final section considers the various data sources described above to draw conclusions and recommendations whether additional archaeological study is necessary in any of the six alternatives proposed by the Project.

5.1 Catskill Preferred Alternative

The Catskill Preferred Alternative is largely in a railroad easement and located in areas that are heavily developed. Archaeological sensitivity for any portions of the route have largely been obliterated by development in the late 19th and 20th centuries with the possible exception of the crossing of Catskill Creek at the Preferred Alternative's northern end. TRC would recommend field inspection of the crossing of Catskill Creek portion of the Catskill Preferred Alternative for possible archaeological testing for Precontact period archaeological resources (Figure 17) if direct disturbance of this area was anticipated. However, installation in this area will be directionally drilled as shown on the Project plans presented in Appendix 3 of the Amendment, with the disturbance being located 150 feet or more back from the Creek. Therefore,

TRC archaeologists recommend no further archaeological evaluation of this alternative for either Precontact- or Historic -period archaeological resources

5.2 Fort Ann Preferred Alternative

The Fort Ann Preferred Alternative route lies totally within existing roadways. So long as there are no impacts to the Champlain canal during construction, then TRC recommends no further archaeological evaluation of this alternative for either Precontact- or Historic -period archaeological resources.

5.3 Putnam Station Preferred Alternative

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

5.4 Rockland County Preferred Alternative

The Rockland County Preferred Alternative route largely travels through extensively developed areas. However, its northern terminus (near Hudson Quarry) and southern terminus (Hook Mountain State Park) are sensitive for Precontact period archaeological resources (Figure 18). A field walkover and possibly archaeological testing would be recommended if direct disturbance adjacent to the Hudson River was anticipated. However, installation in this area will be directionally drilled as shown on the Project plans presented in Appendix 3 of the Amendment, with the entrance and exit locations 350 feet or more back from the River. Therefore, TRC archaeologists recommend no further archaeological evaluation of this alternative for either Precontact- or Historic-period archaeological resources.

5.5 Schenectady Preferred Alternative

The Schenectady Preferred Alternative route is mainly proposed for placement in existing railroad bed or roadways. However, it does cross the Mohawk River at about Milepost 6 (Figure 19). A field inspection of this portion of the route for possible archaeological testing for Precontact period archaeological resources would be recommended if direct disturbance to the shoreline was anticipated. However, installation in this area will be directionally drilled as shown on the Project plans presented in Appendix 3 of the Amendment, with the entrance and exit locations 300 feet or more back from the River. Therefore, TRC archaeologists recommend no further study no further archaeological evaluation of this alternative for either Precontact- or Historic-period archaeological resources.

5.6 Selkirk Yard Preferred Alternative

The Selkirk Yard Preferred Alternative route mainly follows existing roadways and railways but between Milepost 3.5 and 3.8 the route it crosses Onesquethaw Creek (Figure 20). Field inspection for Precontact period resources would be recommend if there was a direct disturbance of the shoreline of the Onesqethaw Creek. However, installation in this area will be directionally drilled as shown on the Project plans presented in Appendix 3 of the Amendment, with the entrance and exit locations 210 feet or more back from the waterway. Therefore, TRC archaeologists recommend no further archaeological evaluation of this alternative for either Precontact- or Historic-period archaeological resources.

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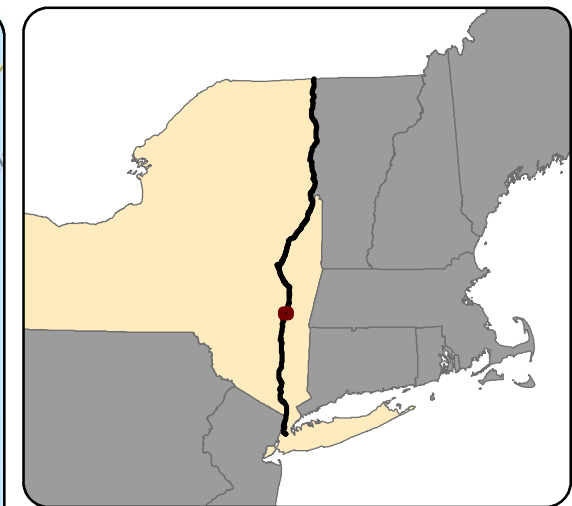
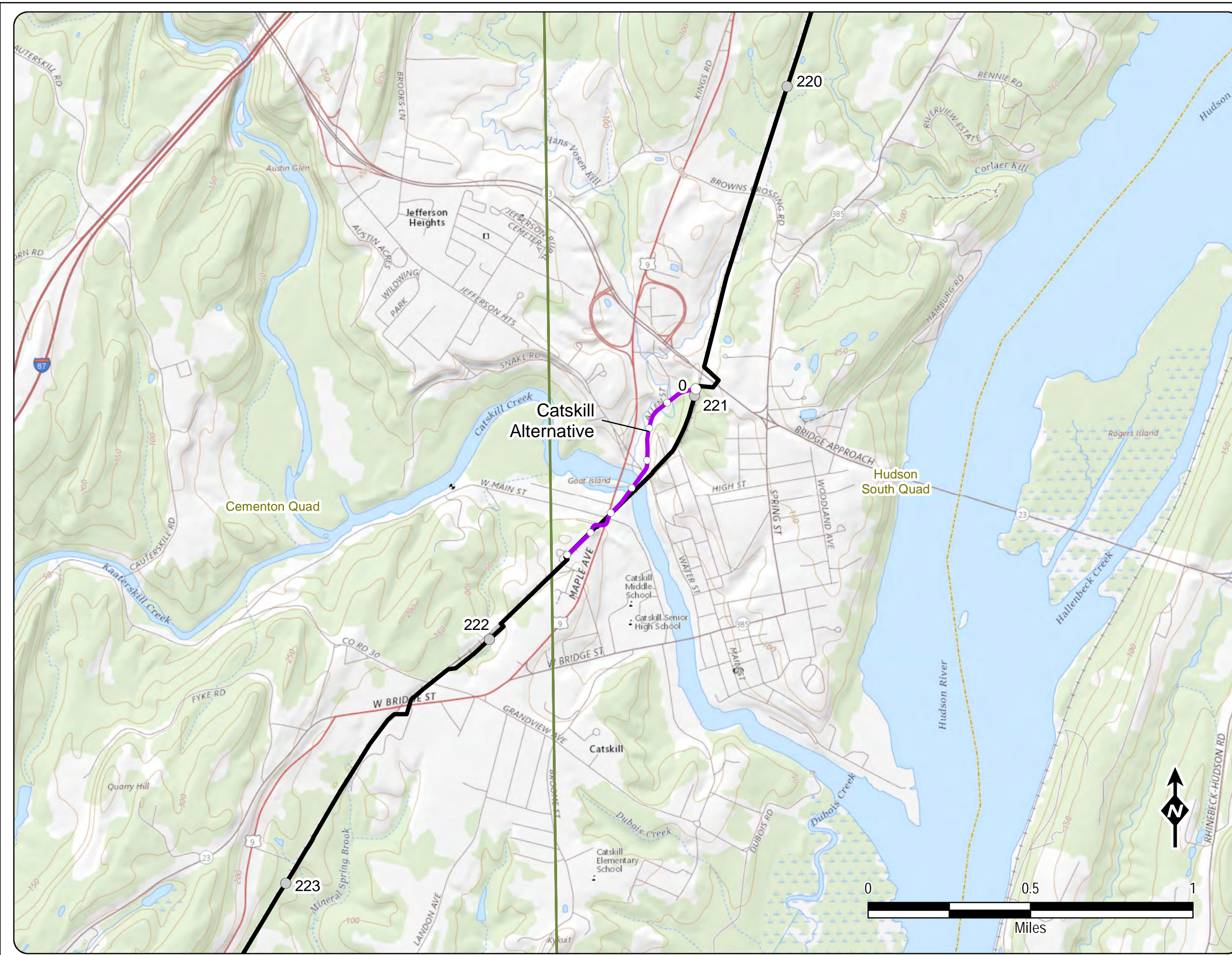
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APPENDIX 1
Report Figures

APPENDIX 1
Report Figures



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo

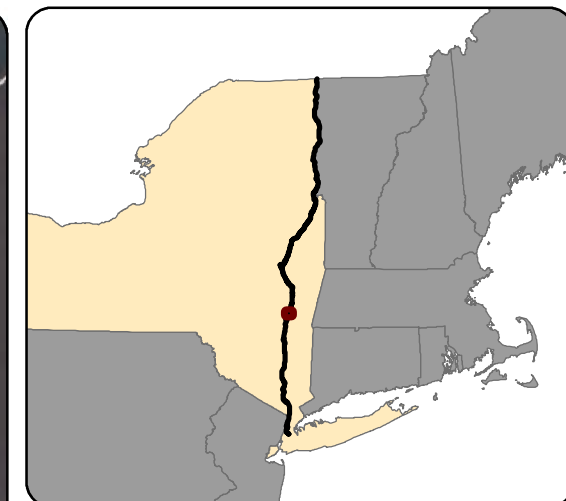
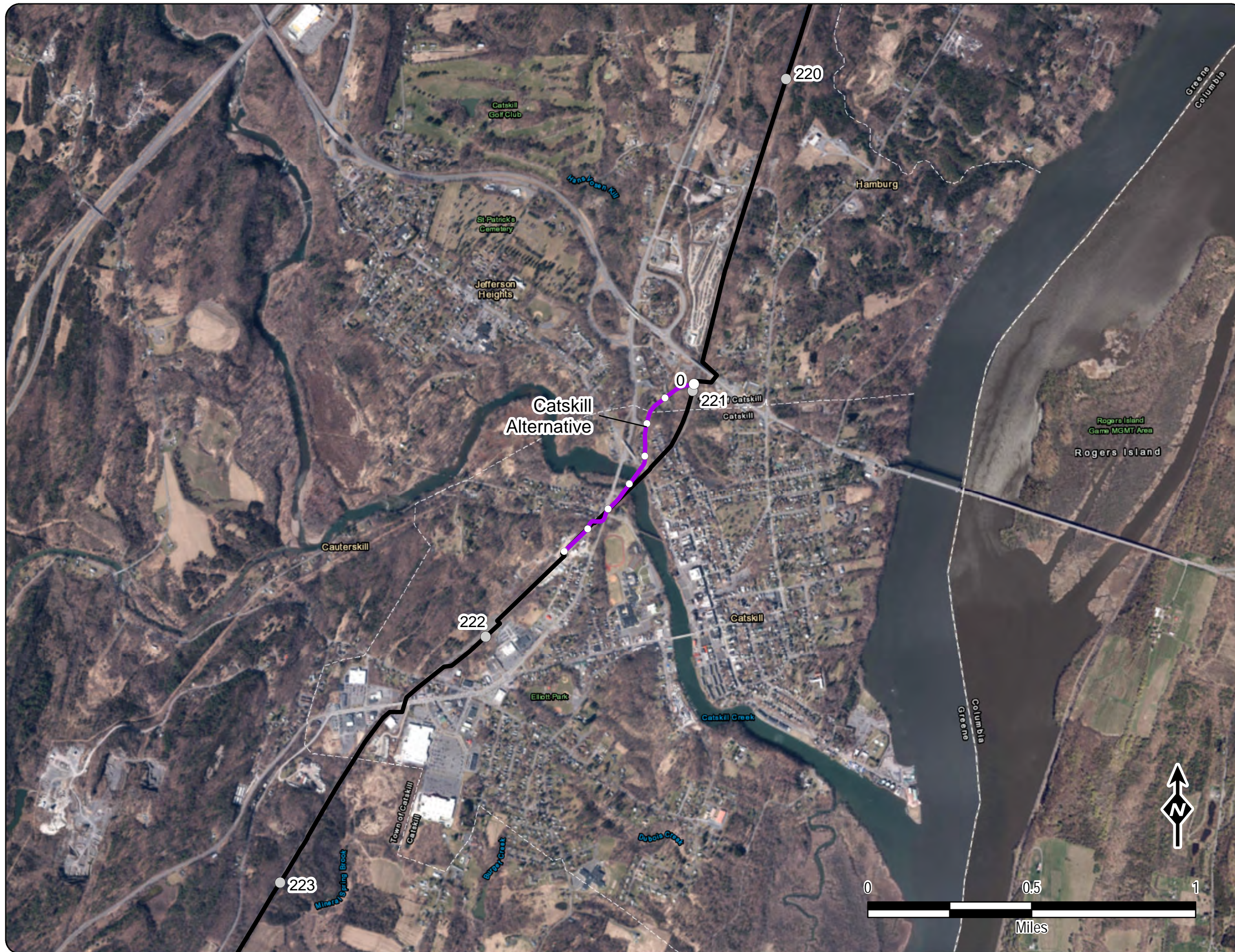


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 1a

Overview of Facility Location
USGS Topo
Catskill Alternative

Prepared by: 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC

Basemap: ESRI Aerial

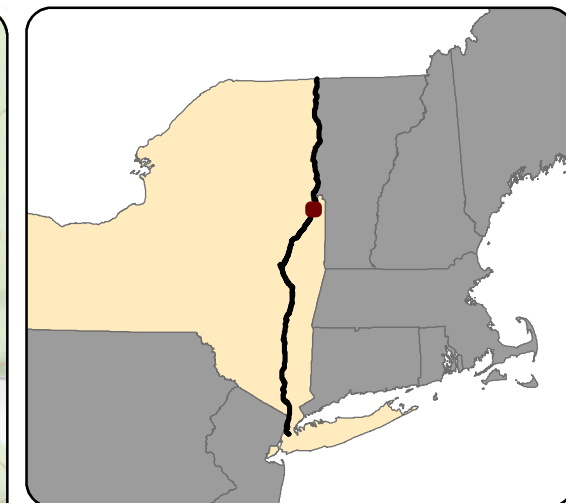
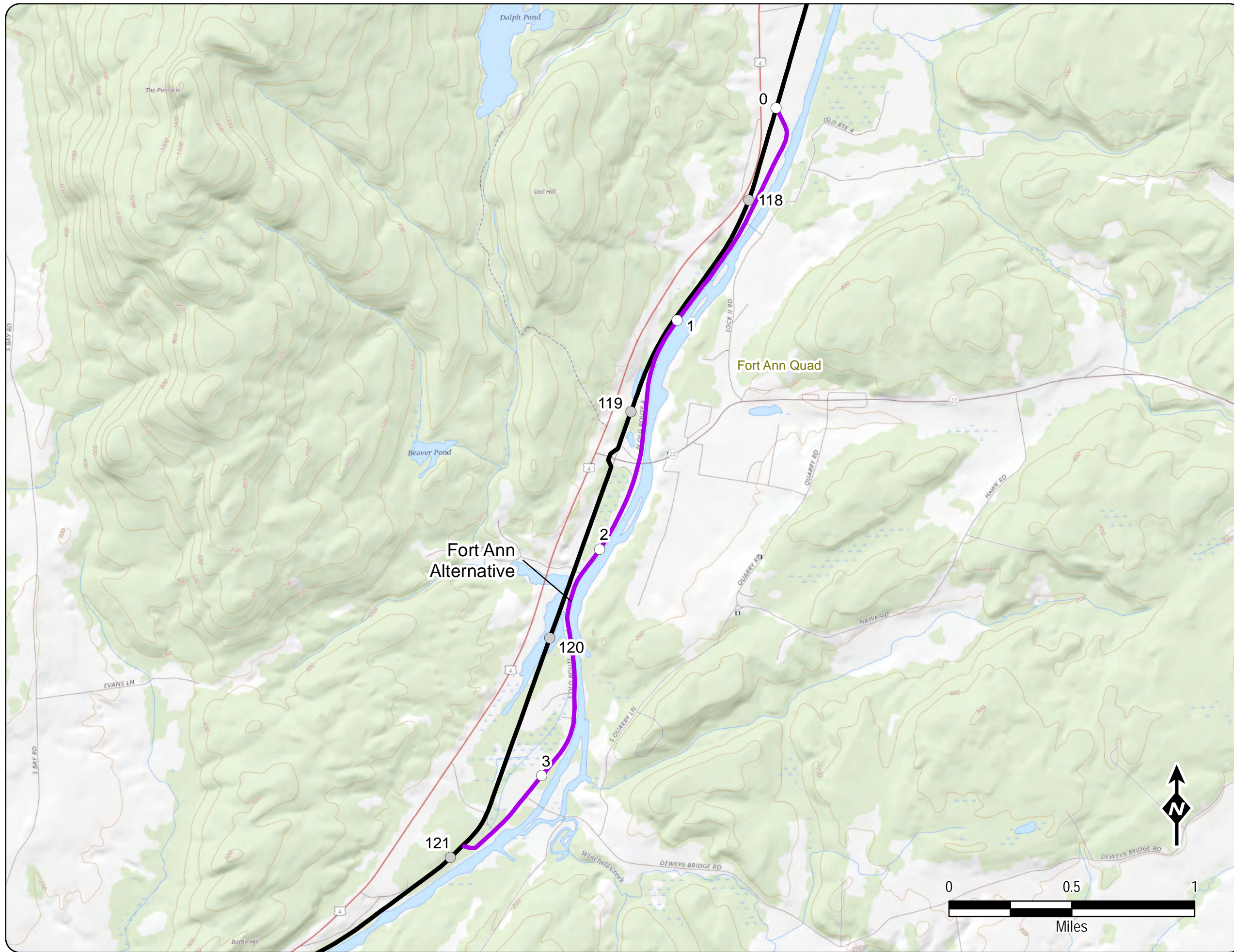


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 1b

Overview of Facility Location
Aerial
Catskill Alternative

Prepared by:  11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo

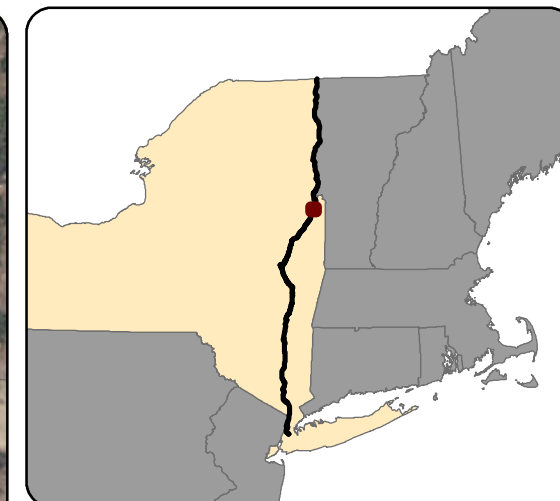
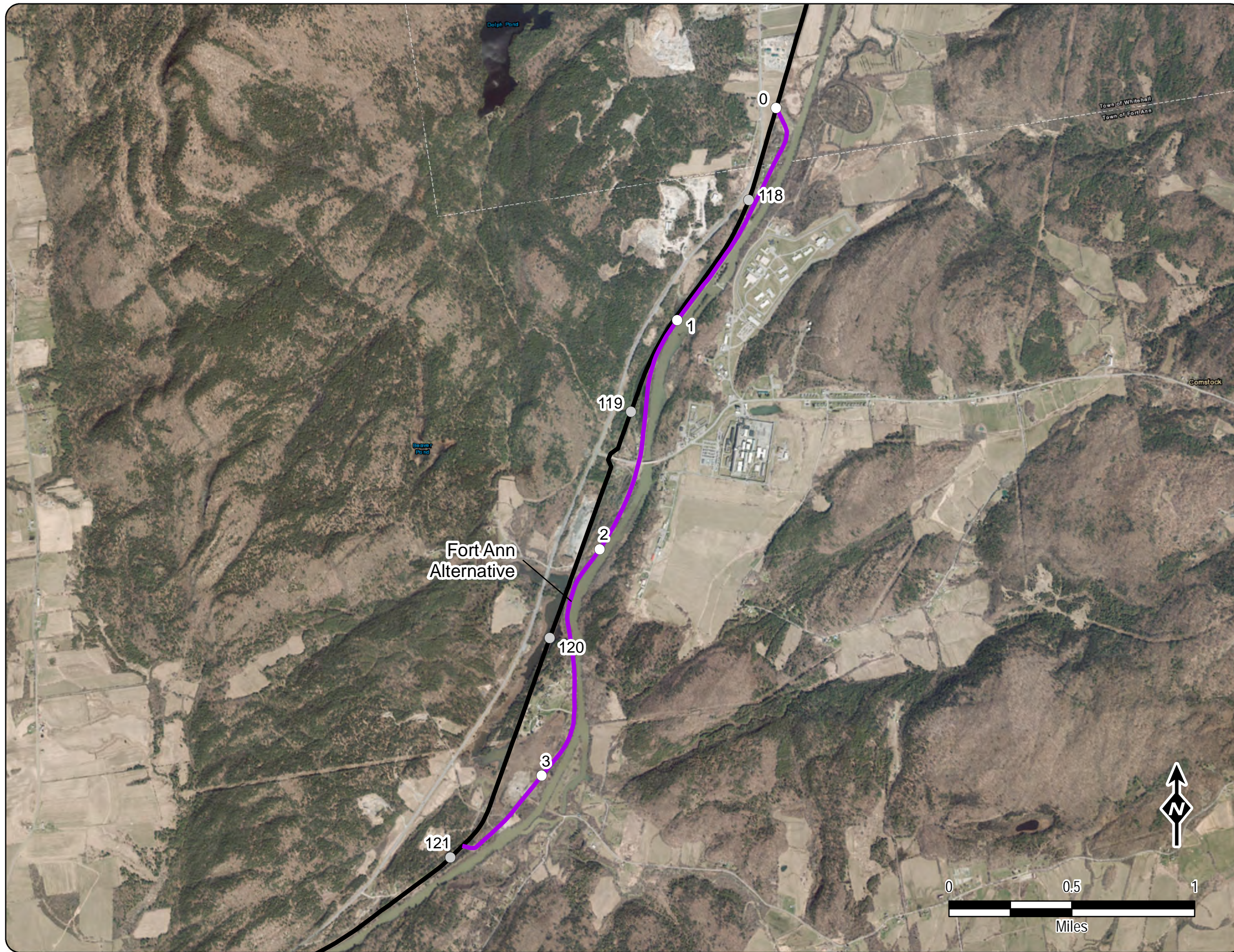


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 2a

Overview of Facility Location
USGS Topo
Fort Ann Alternative

Prepared by: TRC 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC

Basemap: ESRI Aerial

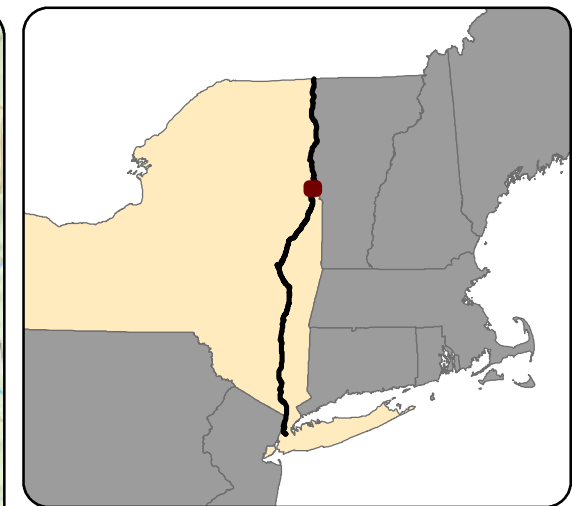
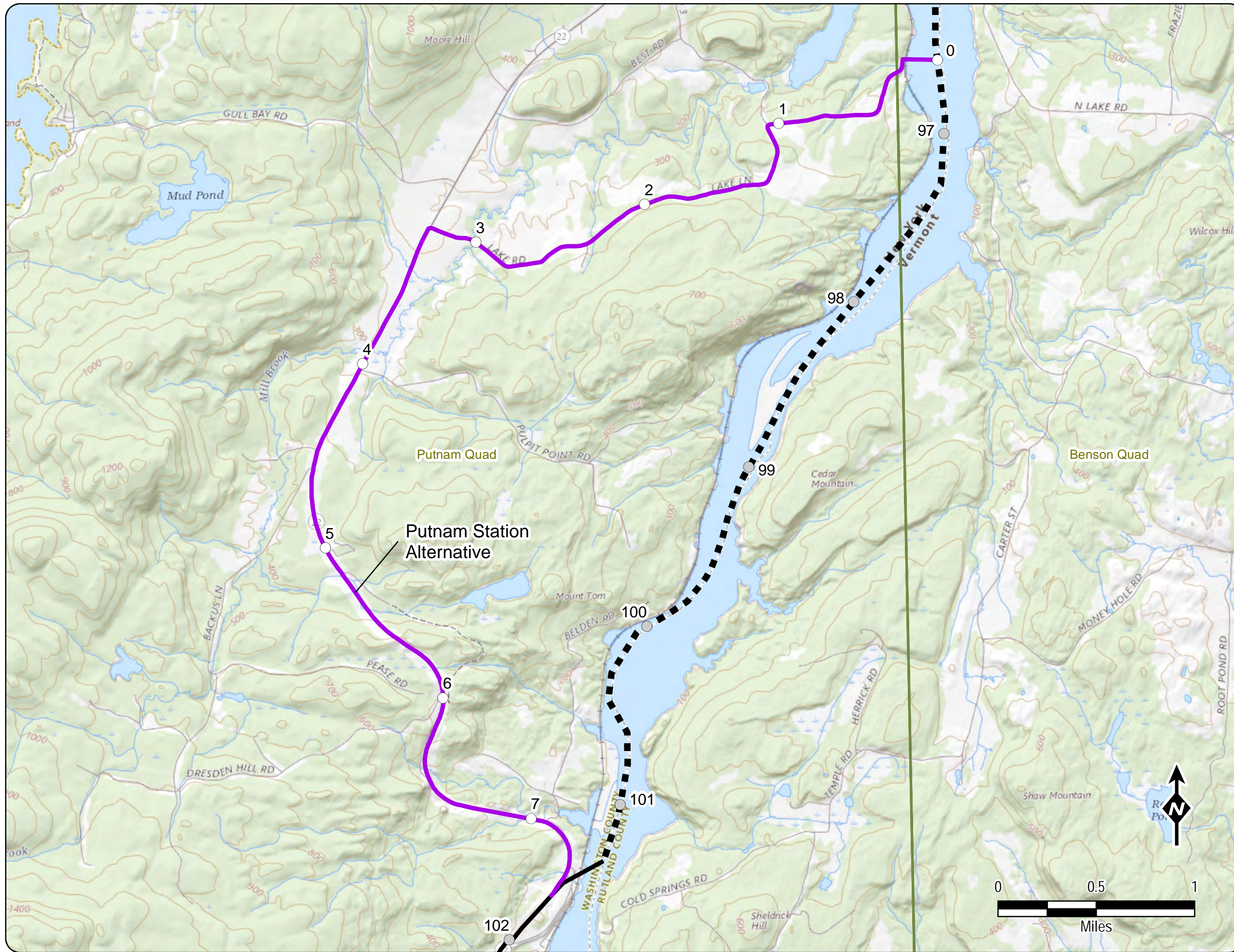


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 2b

Overview of Facility Location
Aerial
Fort Ann Alternative

Prepared by: 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- - - Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo

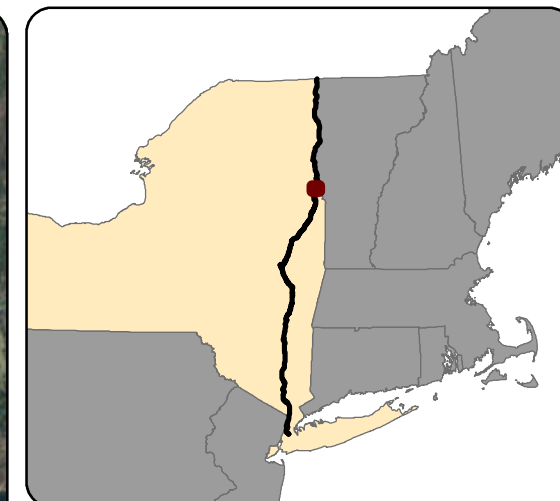
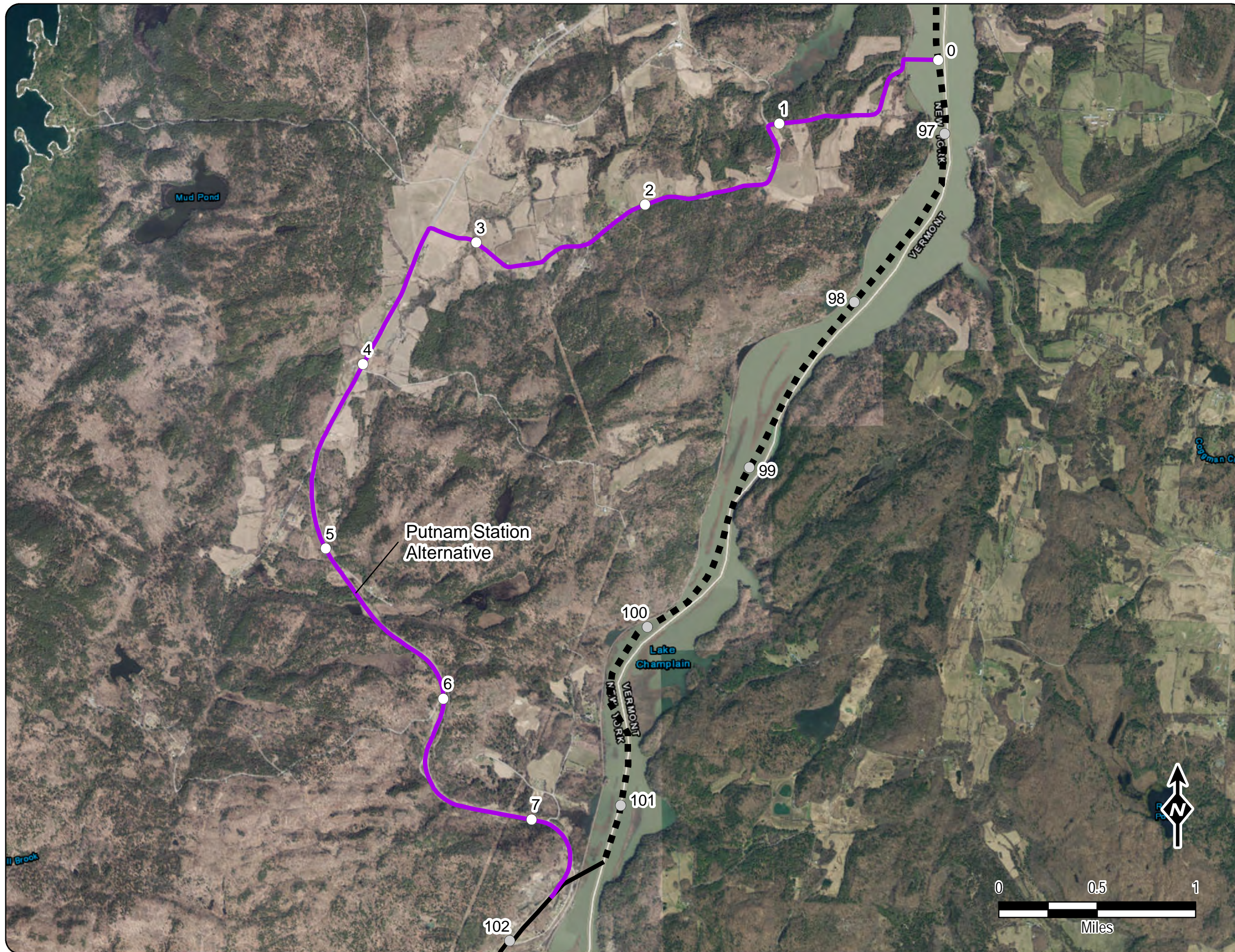


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 3a

Overview of Facility Location
USGS Topo
Putnam Station Alternative

Prepared by: 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- - - Settlement - Submarine Route HVDC
- Terrestrial Route HVDC

Basemap: ESRI Aerial

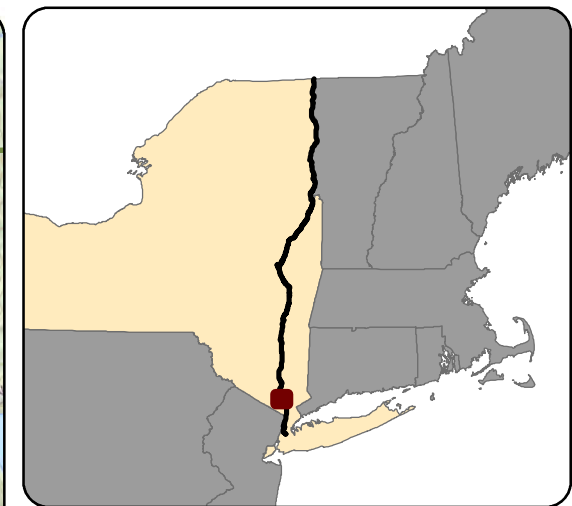
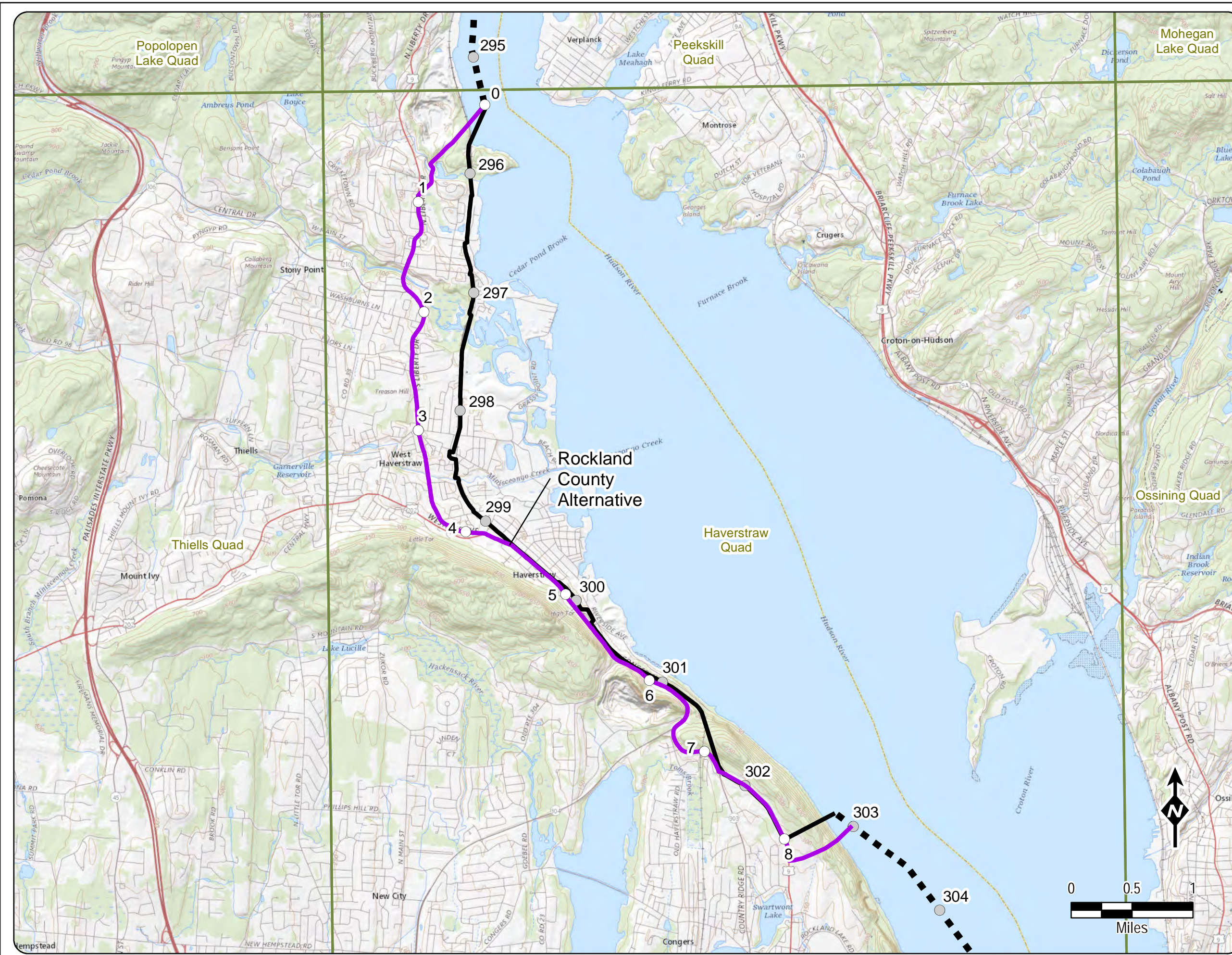


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 3b

Overview of Facility Location
Aerial
Putnam Station Alternative

Prepared by: 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo

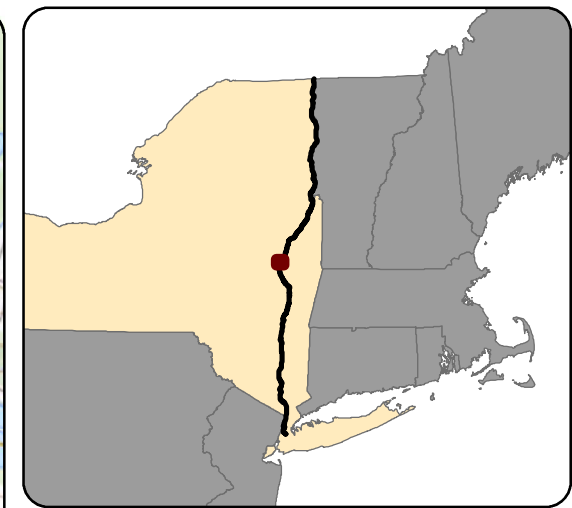
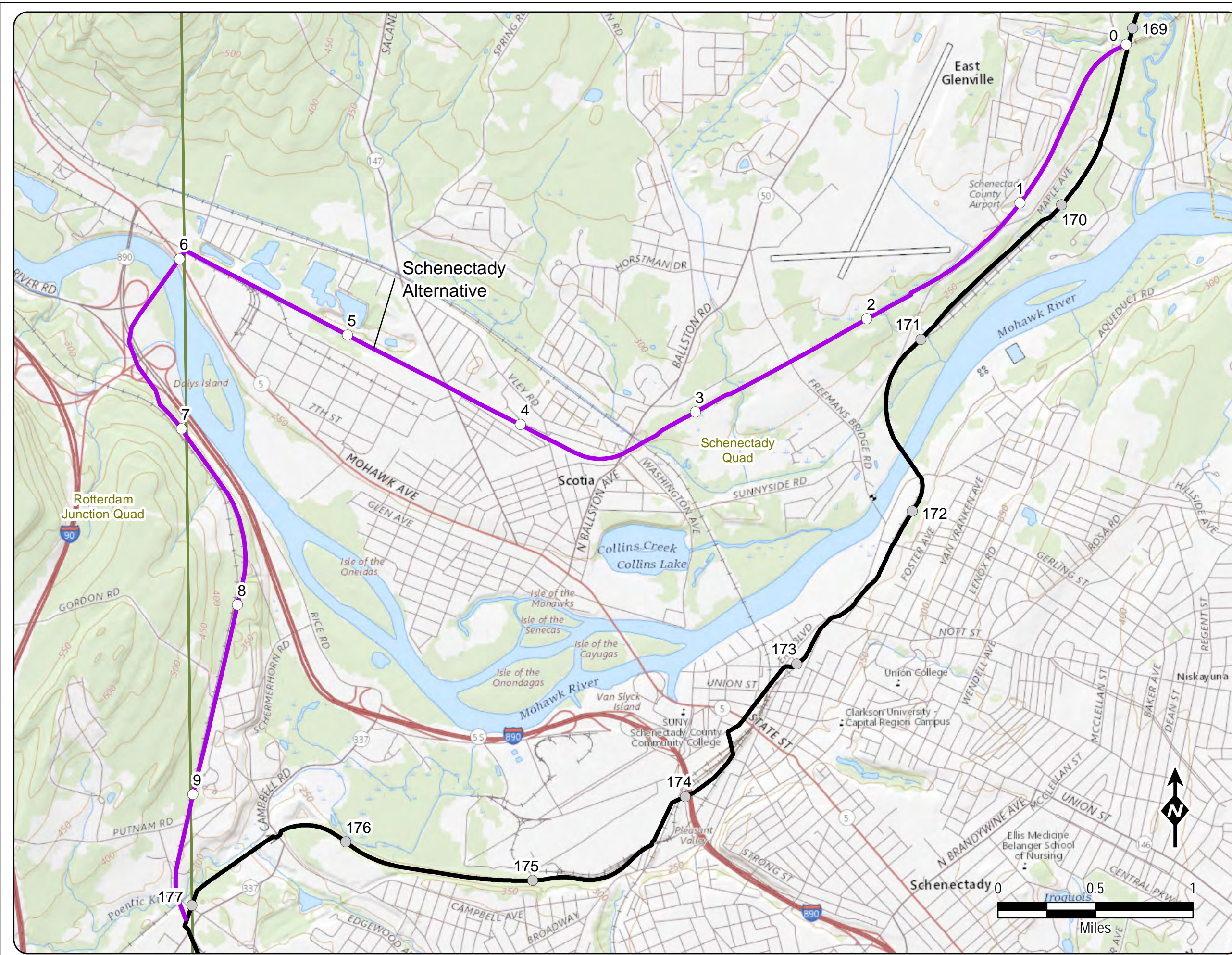


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 4a

Overview of Facility Location
USGS Topo
Rockland County Alternative


Prepared by: 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo




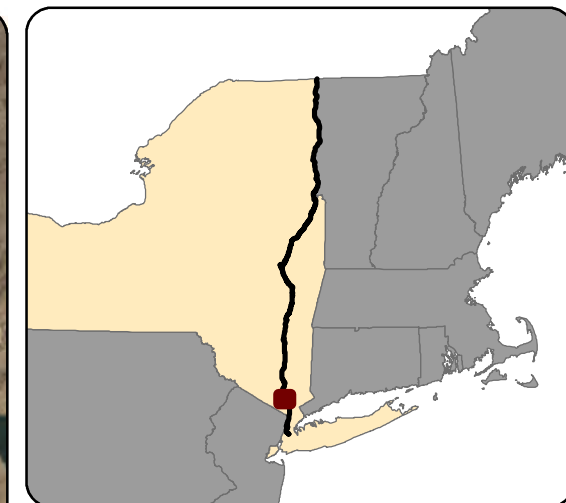
Transmission
Developers Inc.

Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 5a

Overview of Facility Location
USGS Topo
Schenectady Alternative

Prepared by:  11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- - - Settlement - Submarine Route HVDC
- Terrestrial Route HVDC

Basemap: ESRI Aerial

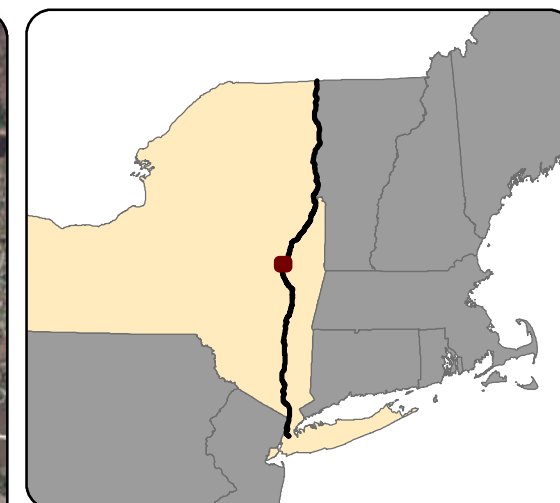
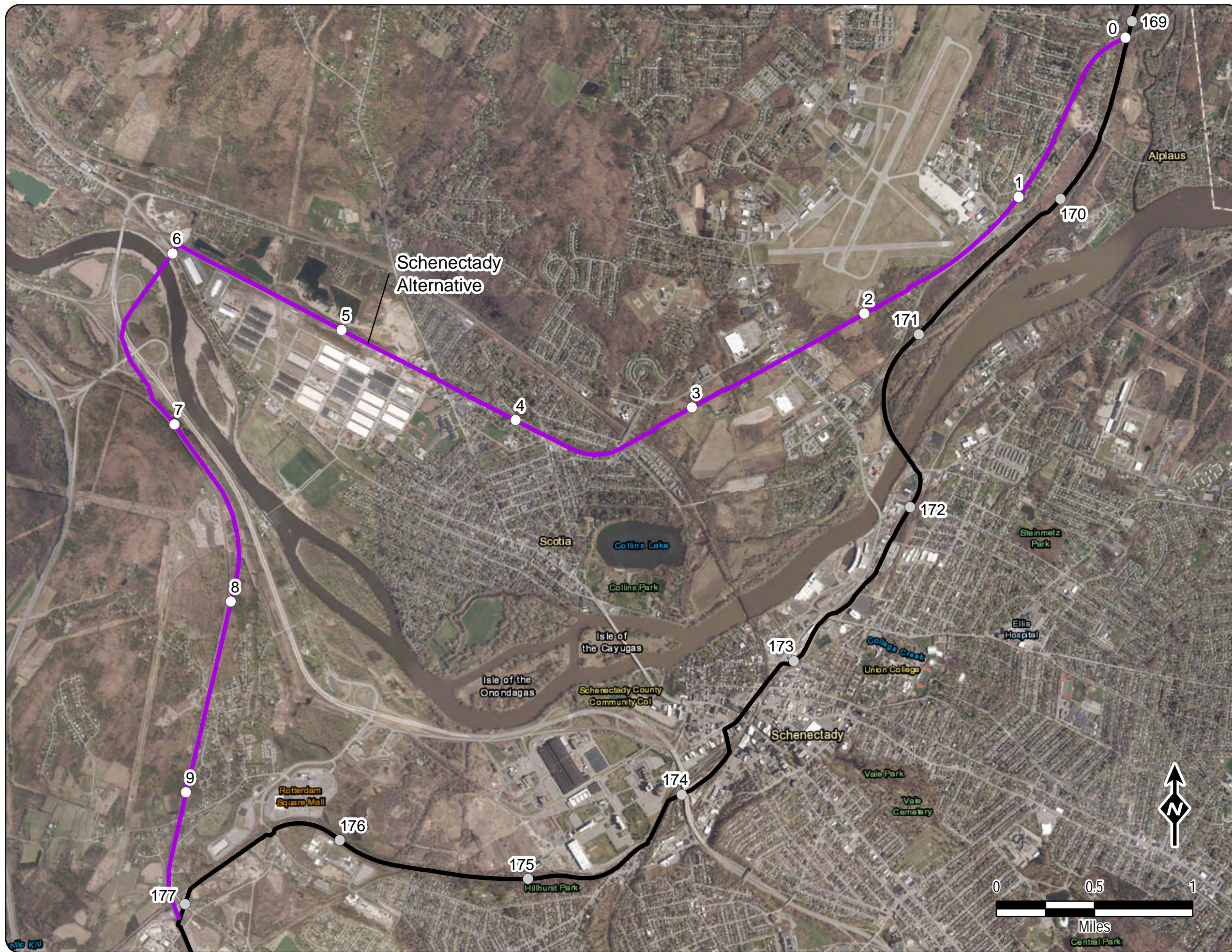


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 4b

Overview of Facility Location
Aerial
Rockland County Alternative

Prepared by:  11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC

Basemap: ESRI Aerial

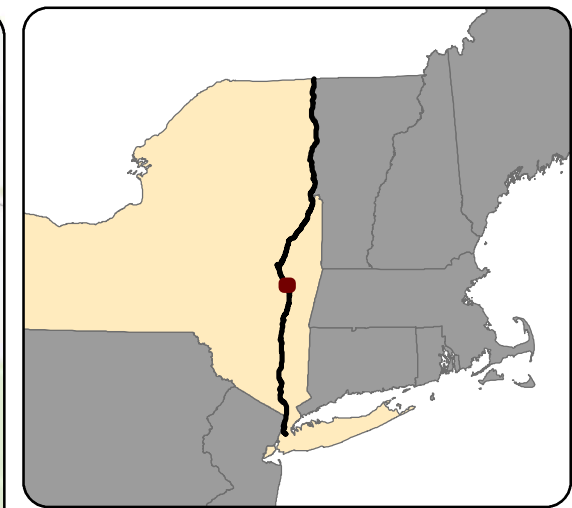
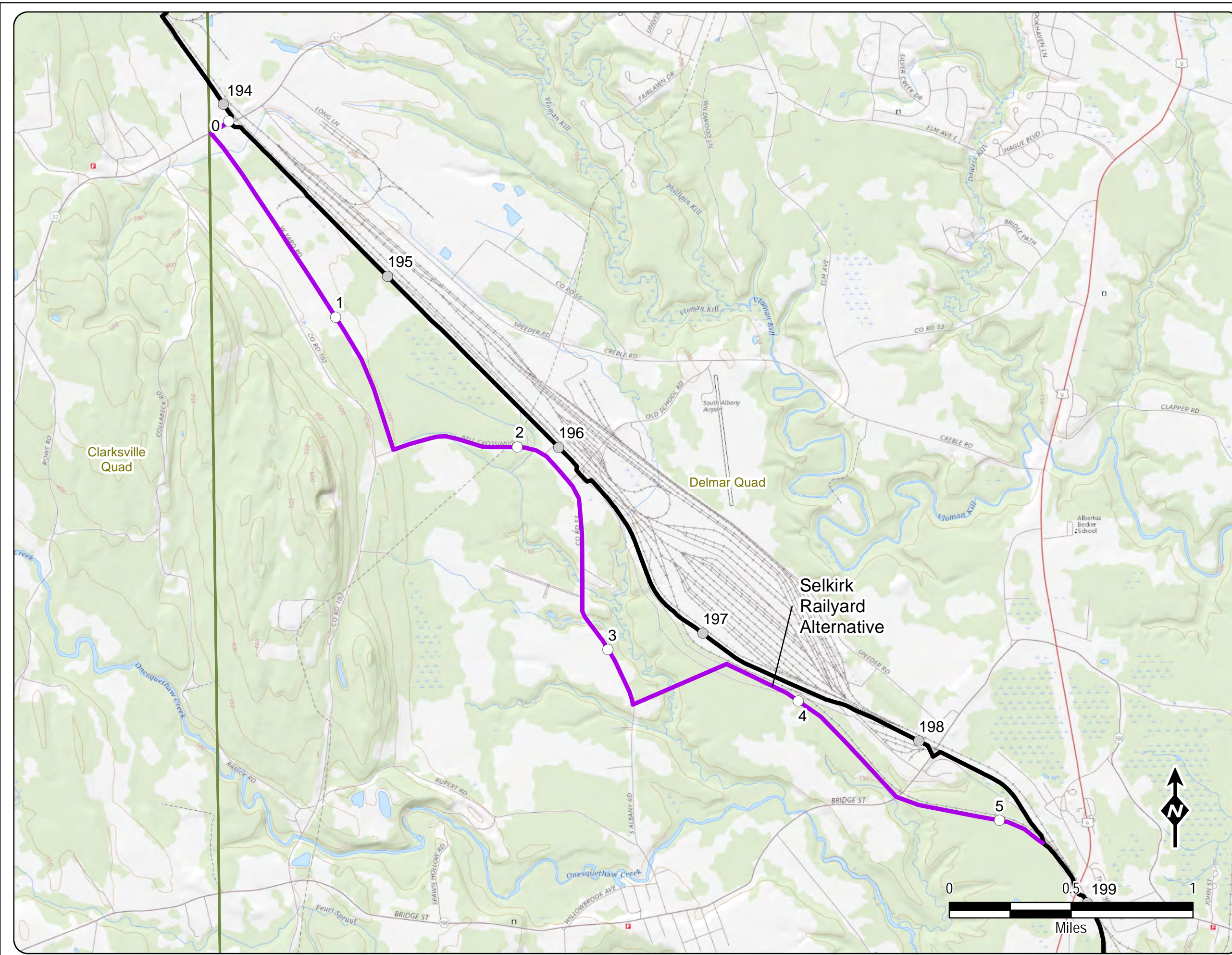


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 4b

Overview of Facility Location
Aerial
Schenectady Alternative

Prepared by: TRC 11/1/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- USGS Quad Boundary

Basemap: USGS Topo

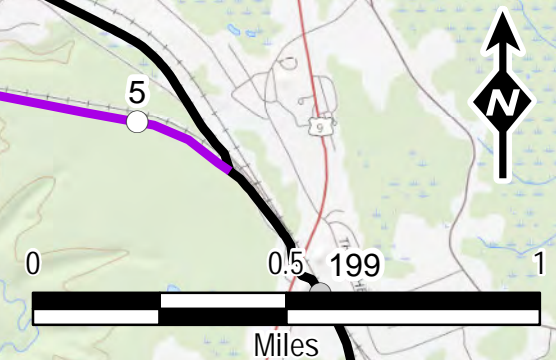


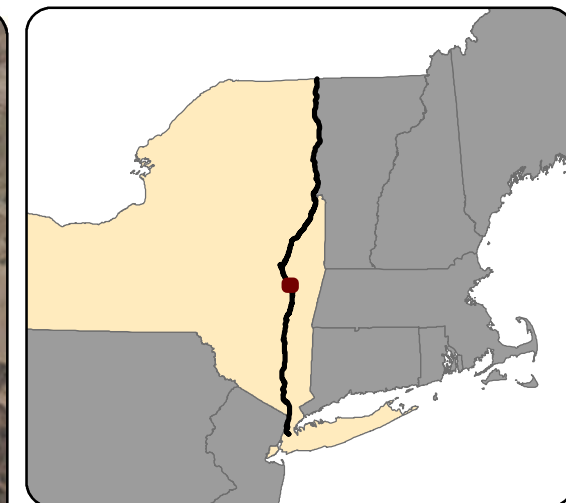
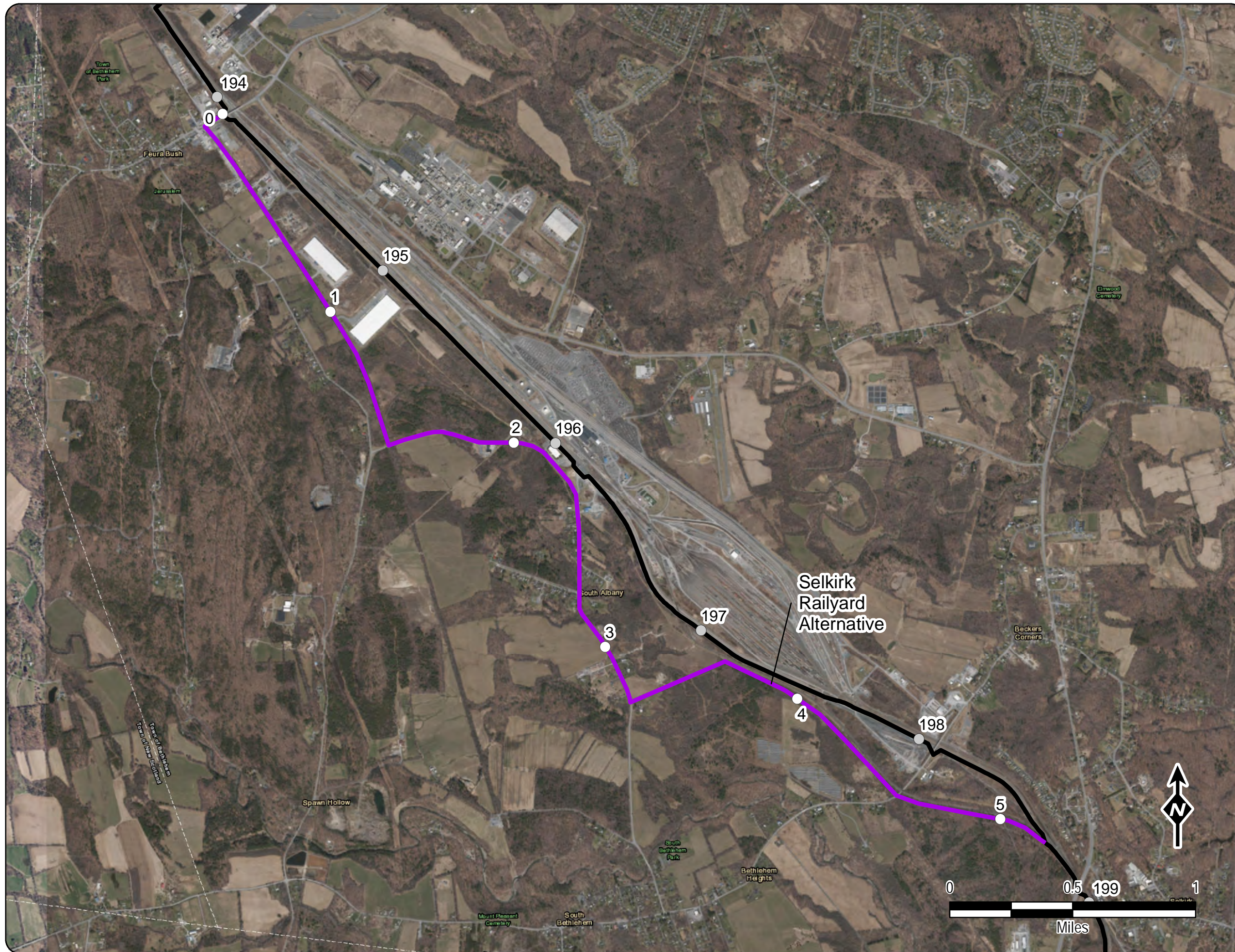
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Champlain-Hudson Power Express Inc.

Figure 6a

Overview of Facility Location
USGS Topo
Selkirk Railyard Alternative

Prepared by:  11/1/2019





Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC

Basemap: ESRI Aerial

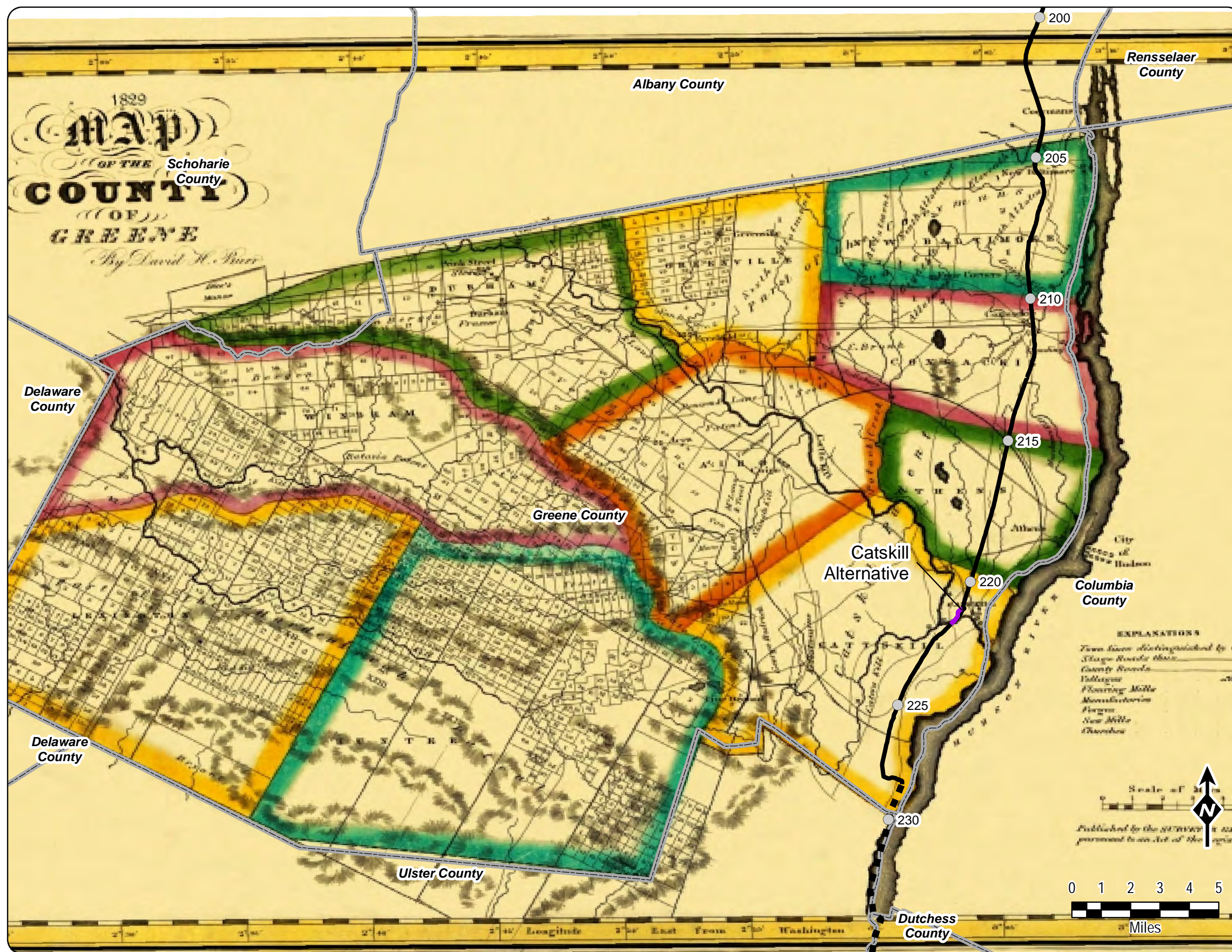


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Champlain-Hudson Power Express Inc.

Figure 6b

Overview of Facility Location
Aerial
Selkirk Railyard Alternative

Prepared by: 11/1/2019

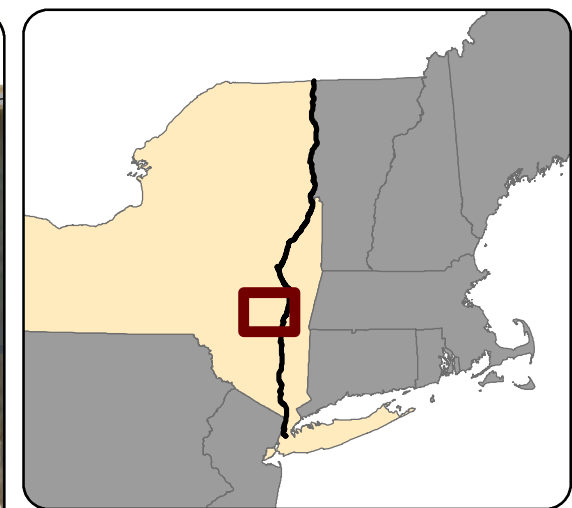


Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- ■ ■ Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary


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 Champlain-Hudson Power Express Inc.

Figure 7. Historic Map
 Greene County 1829
 Catskill Alternative



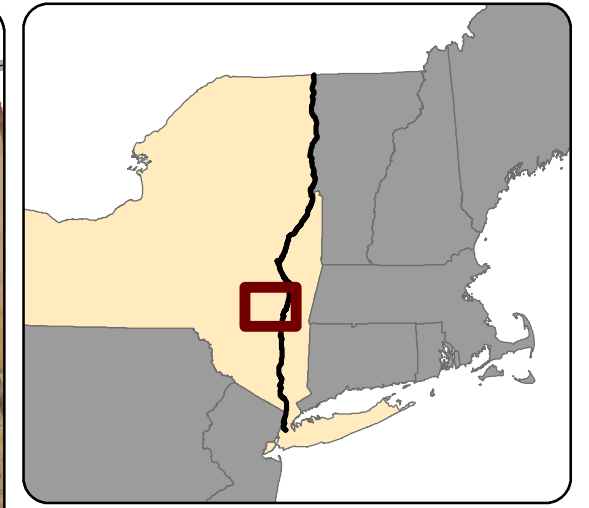
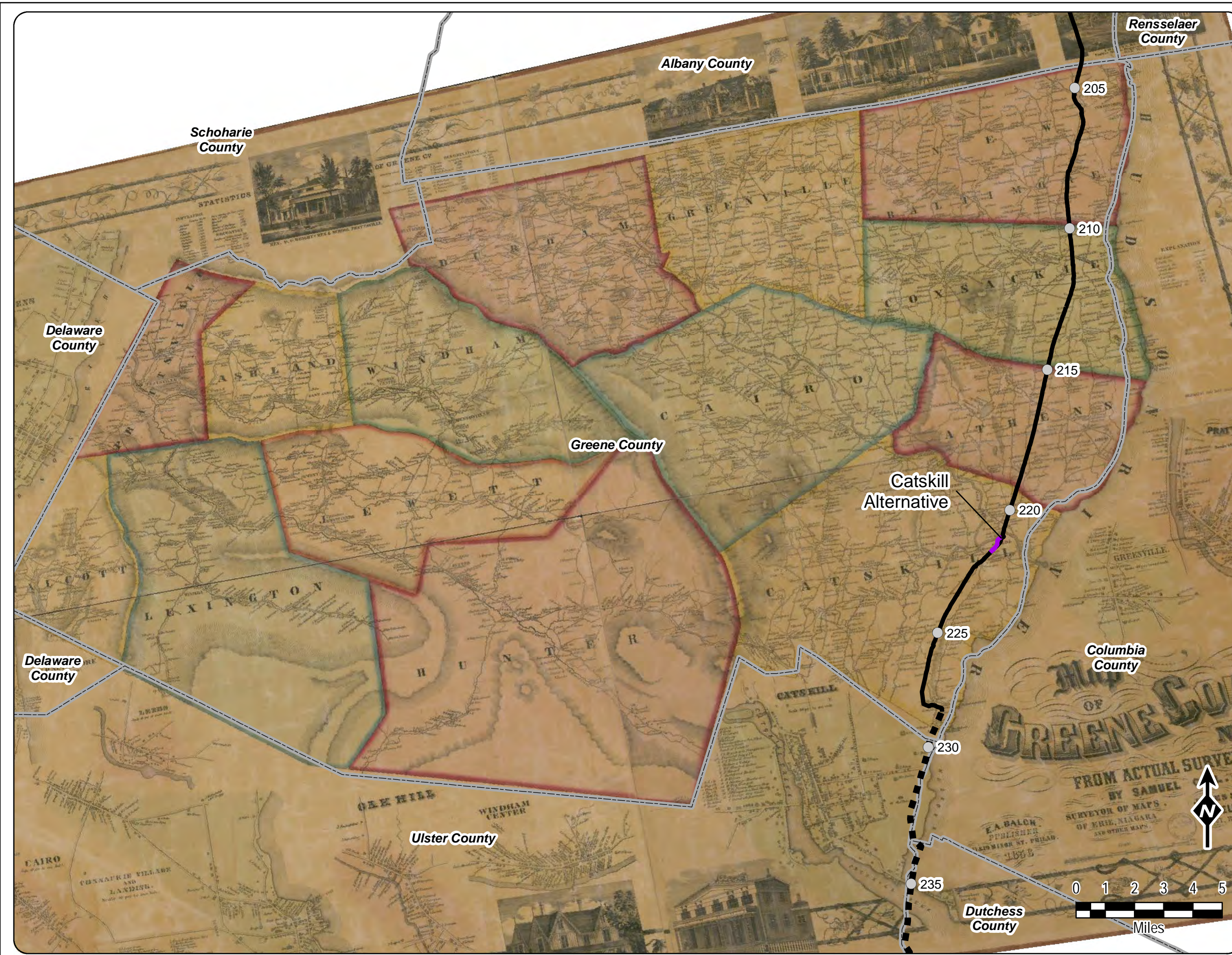
Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- ■ ■ Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary



Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 8. Historic Map
Greene County 1838
Catskill Alternative



Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- ■ ■ Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary



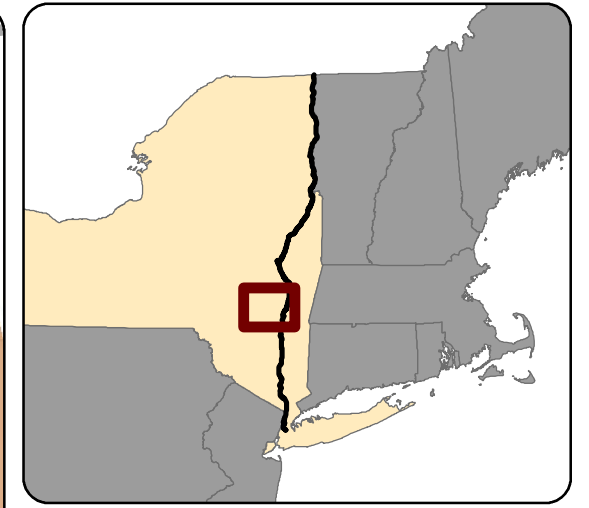
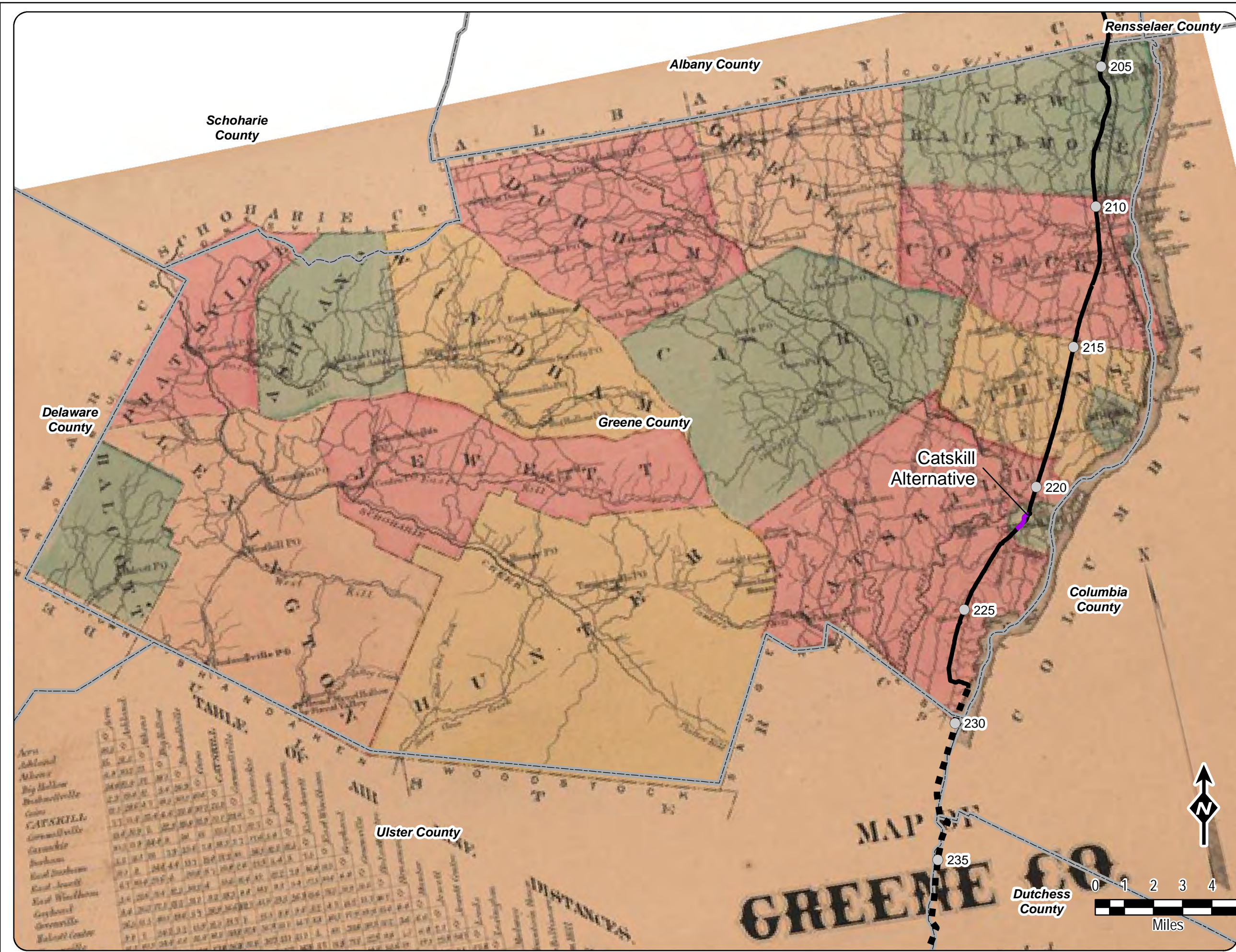

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Champlain-Hudson Power Express Inc.

Figure 9. Historic Map
Greene County 1856
Catskill Alternative

Prepared by:  TRC 11/1/2019



Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- ■ ■ Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary



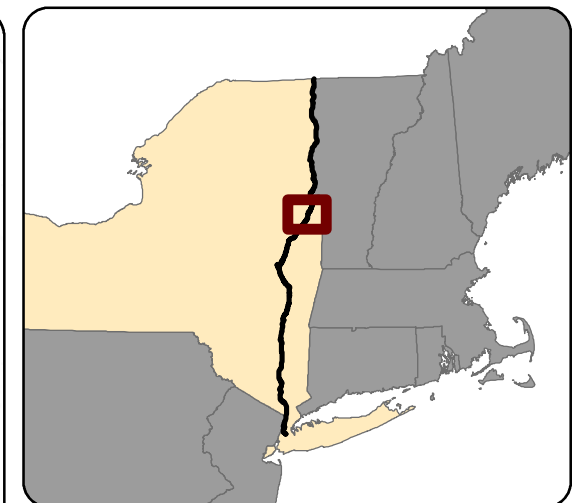
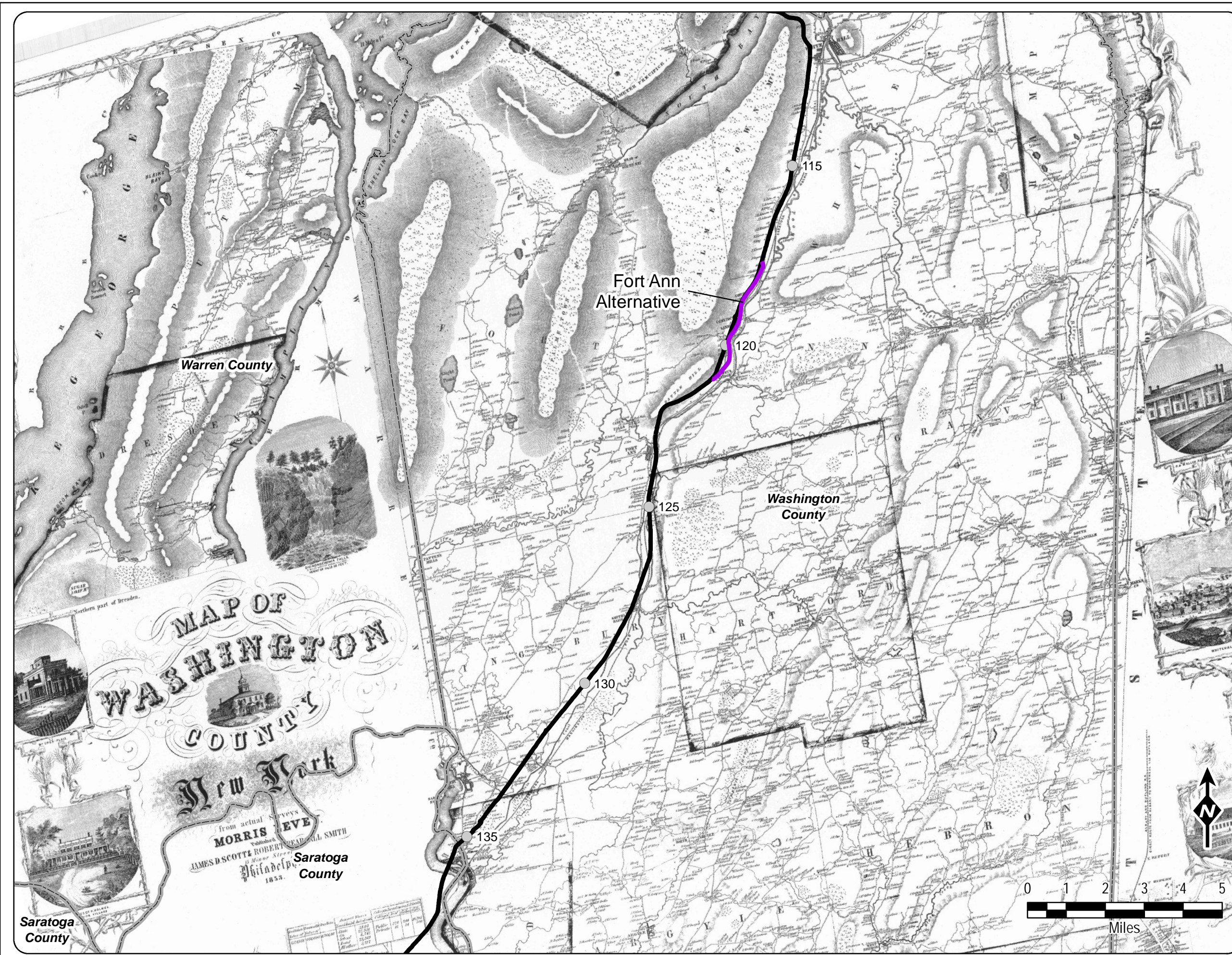

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Figure 10. Historic Map
Greene County 1867
Catskill Alternative

Prepared by:  TRC 11/1/2019

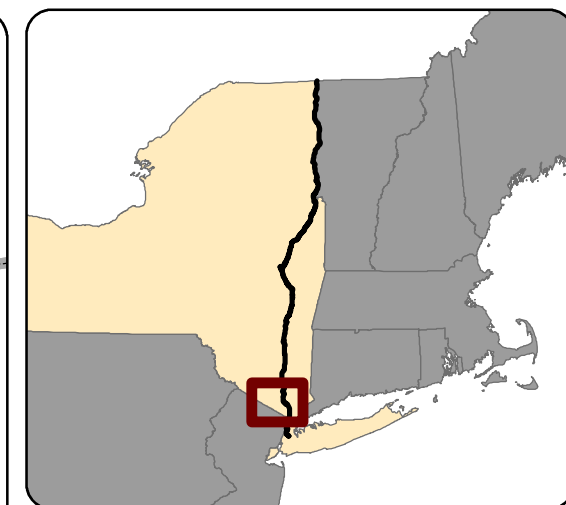
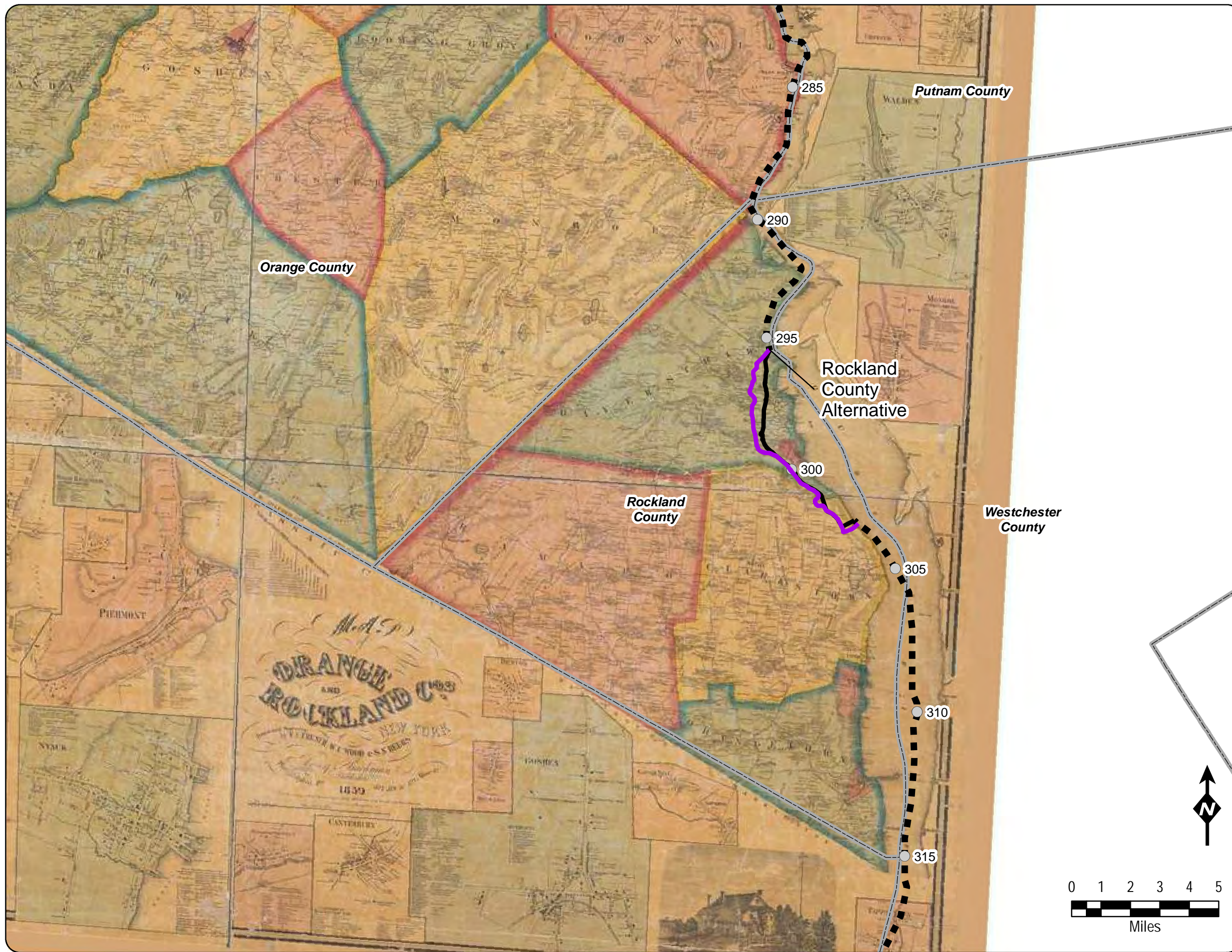


Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- County Boundary


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Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 12. Historic Map
Washington County 1853
Fort Ann Alternative



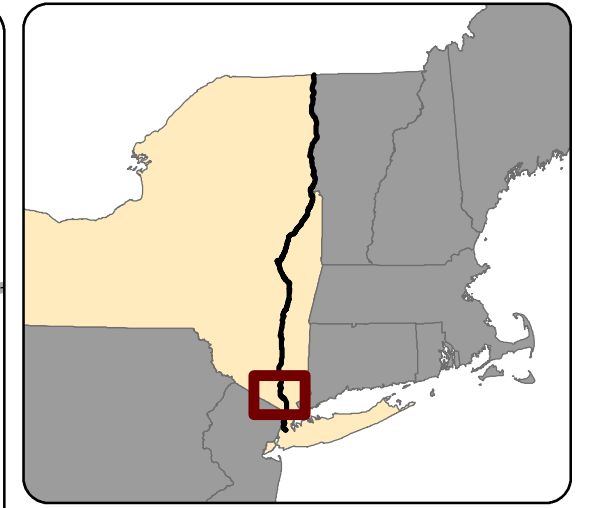
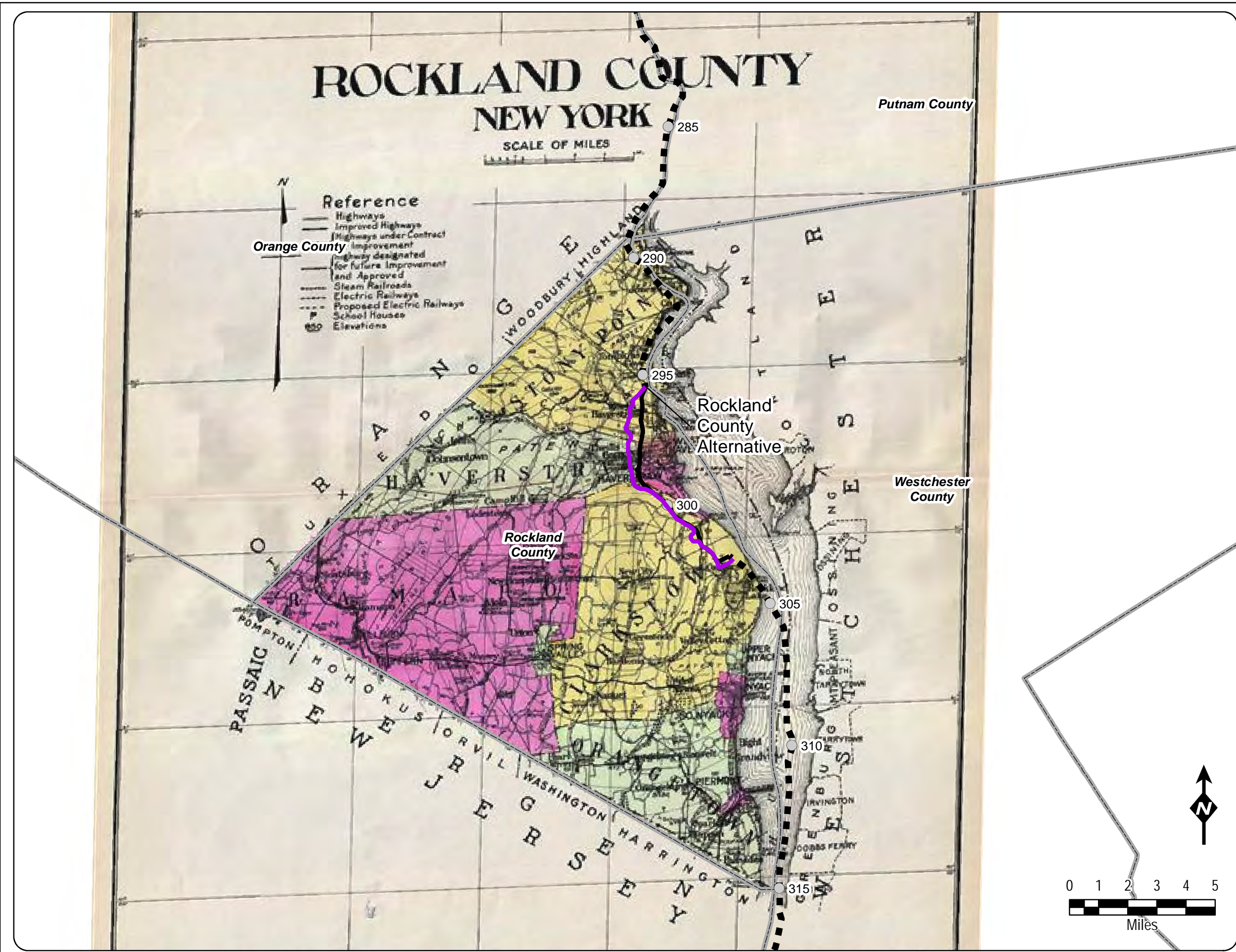
Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary


 Transmission Developers Inc.
 Champlain-Hudson Power Express Project
 Champlain-Hudson Power Express Inc.

Figure 13. Historic Map
 Rockland County 1859
 Rockland County Alternative

Prepared by:  11/1/2019



Legend

- Milepost (5 mi)
- Alternate Terrestrial Route
- ■ ■ Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- County Boundary



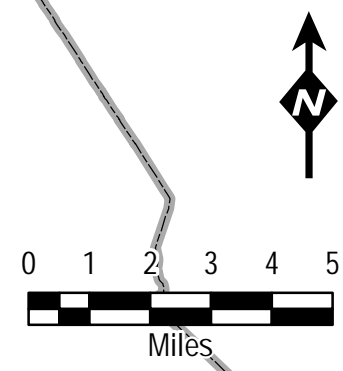
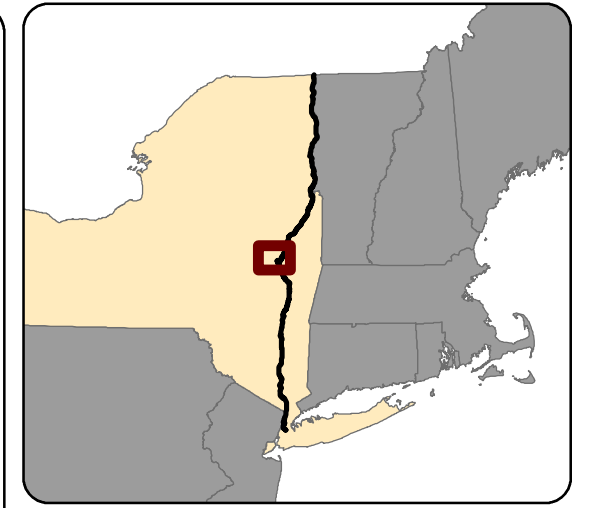
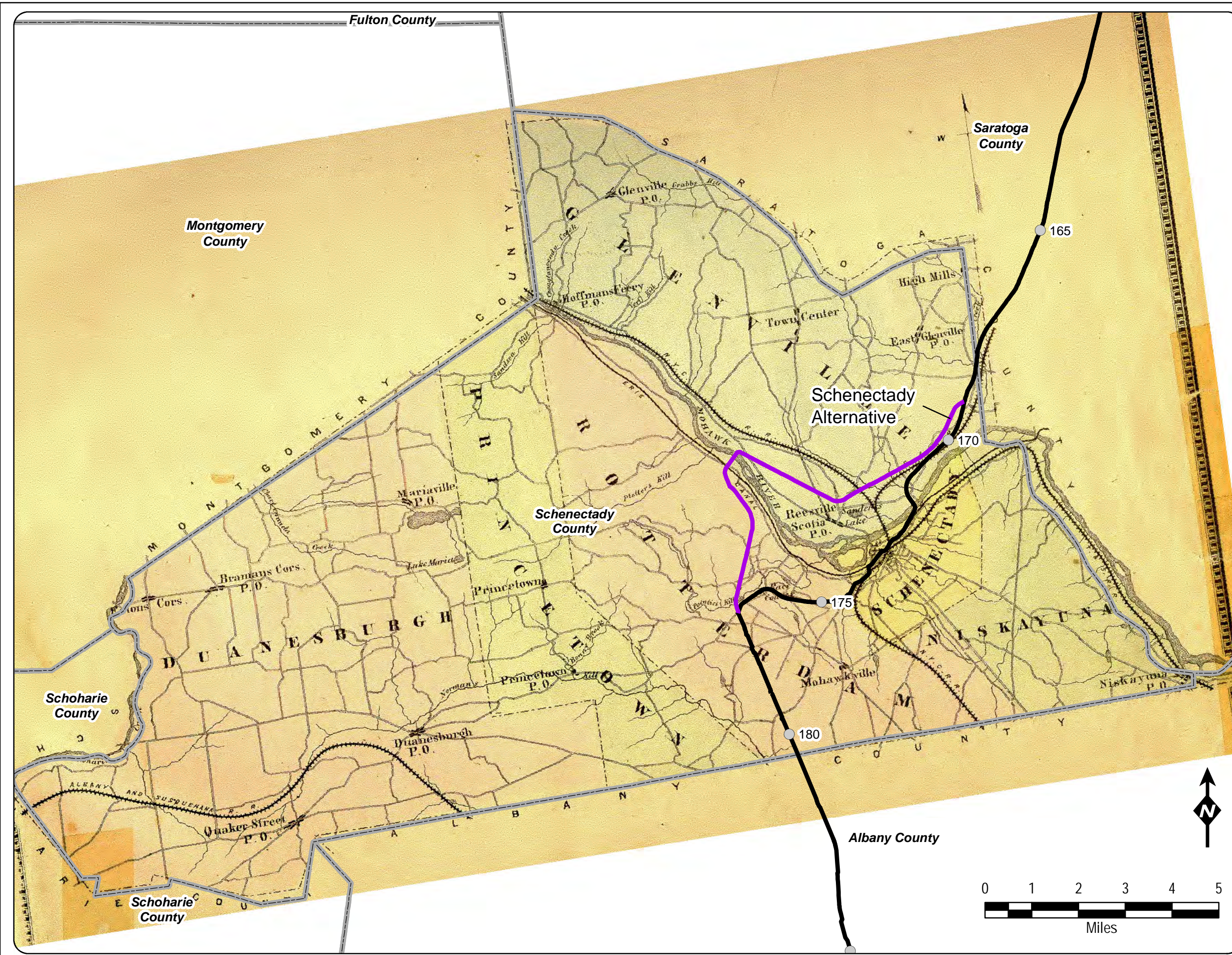

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Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 14. Historic Map
Rockland County 1912
Rockland County Alternative

Prepared by:  TRC 11/1/2019





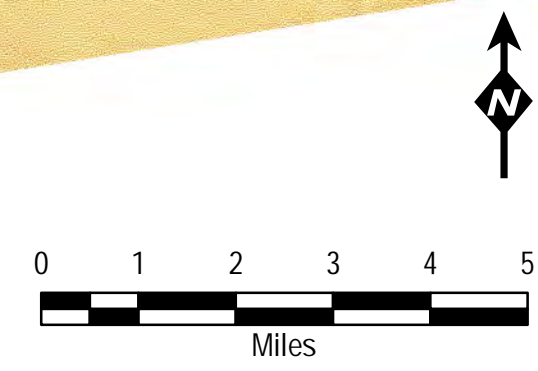
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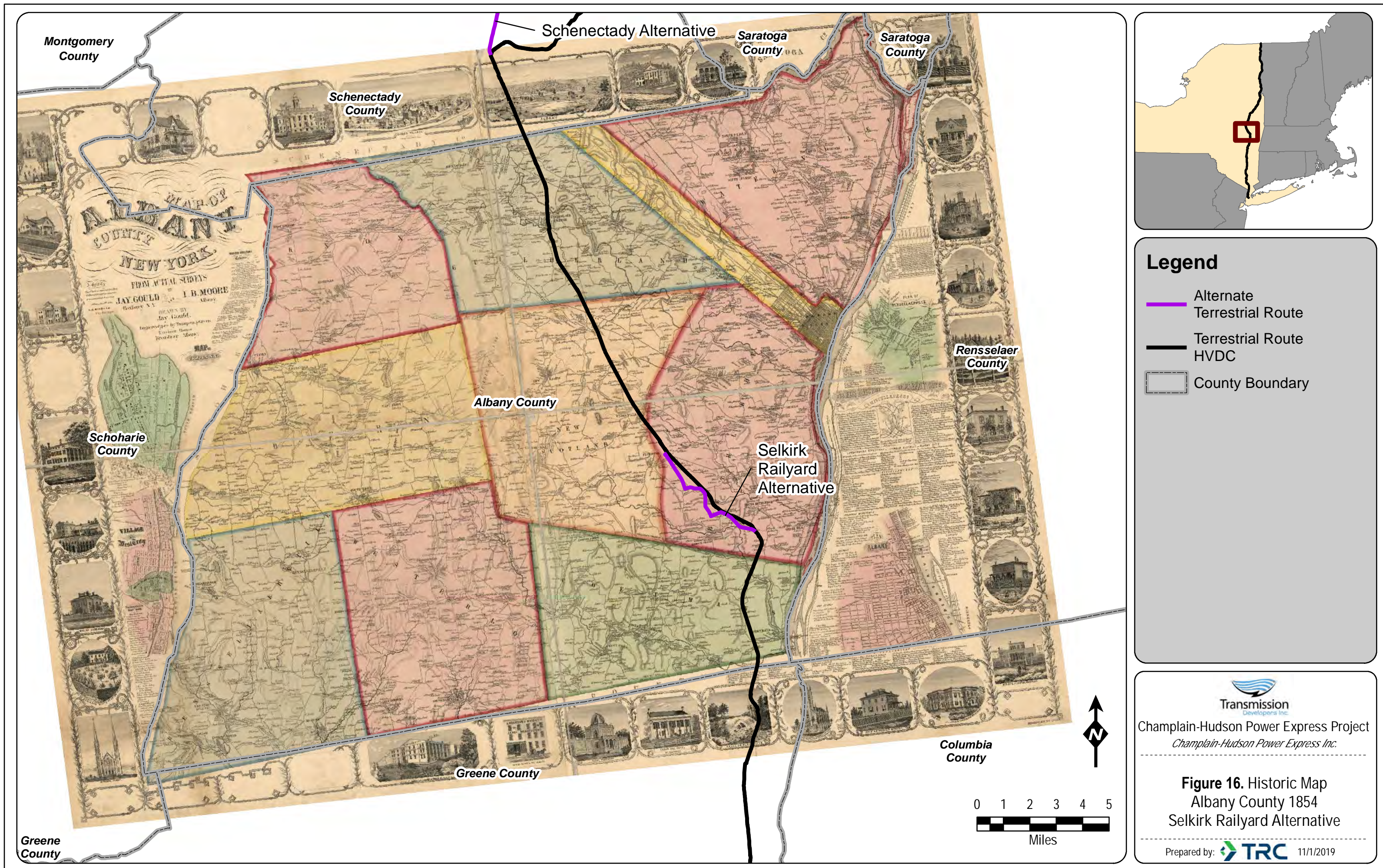
- Milepost (5 mi)
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- County Boundary

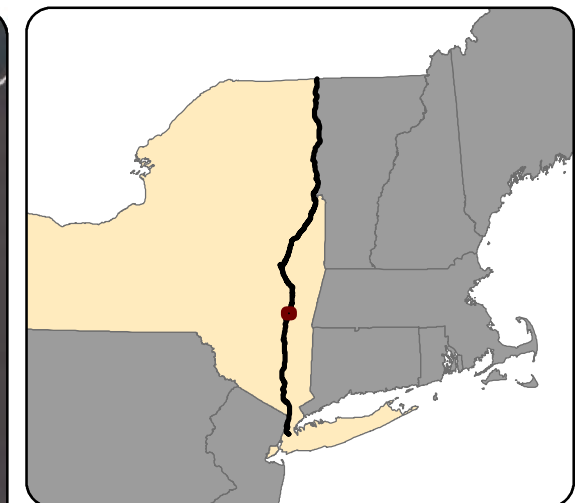


Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

**Figure 15. Historic Map
Schenectady County 1866
Schenectady Alternative**







Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- Culturally Sensitive Walkover Area

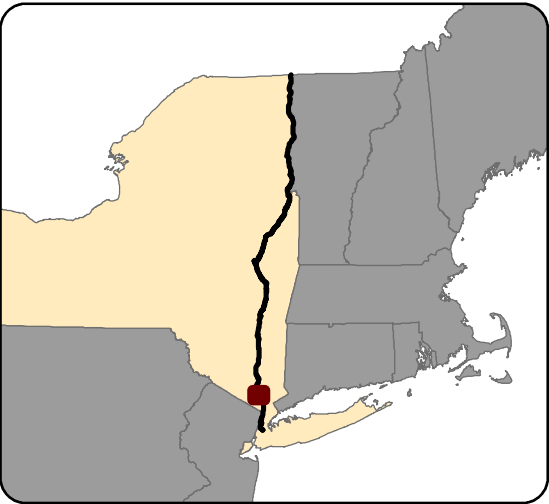
Basemap: ESRI Aerial



Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

**Figure 17. Catskill Alternative
Culturally Sensitive Walkover Area**

Prepared by: **TRC** 11/7/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- - - Settlement - Submarine Route HVDC
- Terrestrial Route HVDC
- Culturally Sensitive Walkover Area

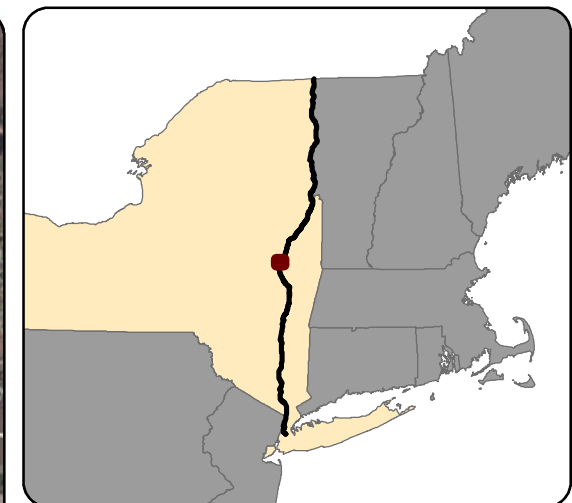
Basemap: ESRI Aerial



Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

Figure 18. Rockland County Alternative Culturally Sensitive Walkover Areas

Prepared by: **TRC** 11/7/2019



Legend

- Route Alt MP (1 mile)
- Milepost
- Alternate Terrestrial Route
- Terrestrial Route HVDC
- Culturally Sensitive Walkover Area

Basemap: ESRI Aerial



Champlain-Hudson Power Express Project
Champlain-Hudson Power Express Inc.

**Figure 19. Schenectady Alternative
Culturally Sensitive Walkover Area**

Prepared by: 11/7/2019