APPENDIX G

Applicant-Proposed Impact Avoidance and Minimization Measures

Appendix G
Applicant-Proposed Impact Avoidance and Minimization Measures

The Applicant-proposed impact avoidance and minimization measures applicable to the proposed CHPE Project that were incorporated into the EIS analysis are presented in this appendix. These include selected best management practices (BMPs) that were proposed by the Applicant for use during construction and operation to protect environmental, agricultural, cultural, and other potentially sensitive resources along the proposed CHPE Project route. These BMPs have been incorporated into the Certificate of Environmental Compatibility and Public Need issued by the New York State Public Service Commission (NYSPSC) to the Applicant and are therefore requirements that must be followed. The complete listing of BMPs proposed by the Applicant, dated February 10, 2012, is an attachment to the Certificate (CHPEI 2012q), and is available on page 356 in the full version of the Certificate that can be found at the CHPE EIS Web site Document Library at the following link: http://www.chpexpresseis.org/docs/NYSPSC_Order.pdf. The organization of the following subsections is intended to parallel the organization of the resource area impacts analyses provided in **Chapter 5** of the EIS.

G.1 Land Use

The Applicant-proposed impact avoidance and minimization measures, including BMPs, which are applicable to land use, are as follows:

- A qualified Agricultural Inspector would be engaged during each phase of the proposed CHPE Project, including development, construction, initial restoration, post-construction monitoring, and follow-up restoration. The fundamental duty of the Agricultural Inspector is to ensure that all aspects of the proposed CHPE Project that affect farmland either fully meet (comply with) or exceed the standards of New York State Department of Agriculture and Markets including the recommendations in the Pipeline Right-of-Way Construction Project guidance document, and proposed CHPE Project transmission system-specific permit conditions or orders of certification, relevant to agricultural resources.
- The Applicant would reconfirm land use categories within 600 feet of the proposed CHPE Project, as appropriate, with special interest given to areas with sensitive land uses, including schools, health care facilities, churches, scenic areas and parks, and residences. Residential landowners with property adjacent to the proposed CHPE Project would be identified, including contact information, and contacted to discuss the proposed CHPE Project, construction schedule, and any potential concerns. Additional inquiry for other sensitive land uses would include notification of construction activities, consultation regarding special events, and consultation regarding special concerns and schedules.
- Restoration of all areas disturbed by construction activity would occur promptly. The final stage of construction would consist of restoring the construction corridor and work areas to their original condition and character as much as possible, compatible with the operation and maintenance of the proposed CHPE Project.

G.2 Transportation and Traffic

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to transportation resources, are as follows:

- Work activities in Lake Champlain would be coordinated with the U.S. Coast Guard (USCG) so that work areas are marked properly to ensure safety, and so that current information about the location of work zones can be broadcast to recreational users. A "Local Notice to Mariners" would be distributed electronically by the USCG to alert local commercial and recreational boating communities of any construction-related limitations in Lake Champlain. The notice would allow all potentially affected vessels time to relocate temporarily to prevent being blocked during the construction period. When possible, construction activities would be timed to avoid disruption of seasonal recreational events occurring in Lake Champlain.
- In Lake Champlain, cable installation would be coordinated with ferry operators to avoid effects on ferry schedules and operations. It is anticipated that additional coordination with the cable-guided Ticonderoga ferry would be necessary during cable installation activities to facilitate laying the high-voltage direct current (HVDC) cables beneath the existing ferry cables on the lake bottom.
- Construction vessel movements and material transport would be coordinated with the New York State Canal Corporation to avoid or minimize impacts on commercial and recreational users of the canal system and seasonal events occurring in the canal.
- In instances where environmental or engineering circumstances suggest that the cables should be laid within or across the navigational channel, coordination would be conducted with the U.S. Army Corps of Engineers (USACE), USCG, and other agencies as necessary to minimize the impact on normal navigation activities and ensure cables are installed at the proper depth.
- When possible, construction activities would be timed to avoid disruption of seasonal events occurring on Lake Champlain.
- If necessary, the transmission line would be buried below the authorized depth of federally maintained navigation channels as required by the USACE. Depth of burial would be verified on a periodic basis so as not to become a hazard to navigation or marine resources. The Applicant would conduct pre- and post-transmission line installation bathymetric monitoring of the route. Monitoring plans would be developed in consultation with New York State Department of Public Service (NYSDPS), New York State Department of Environmental Conservation (NYSDEC), and New York State Department of State.
- All transitions from upland to aquatic configurations would be accomplished by horizontal directional drilling (HDD) and would be at a depth sufficient so as not to interfere with any current or future water-dependent uses.
- The Applicant would provide timely information to adjacent property owners or tenants regarding the planned construction activities and schedule, and would coordinate with New York State Department of Transportation (NYSDOT), officials in counties traversed by the route, and local municipalities and police departments, as applicable, to develop and implement traffic-control measures that ensure safe and adequate traffic operations along roadways used by construction vehicles. Restoration of roadways would be designed in consultation with the appropriate jurisdictional agency. Any restoration on NYSDOT highway rights-of-way (ROWs) would be in strict compliance with the specifications of a NYSDOT highway work permit.
- Permits for oversized or overweight construction or other vehicles that exceed the legal dimensions and weights for vehicles on state highways would be obtained from NYSDOT.
- All work would be performed in accordance with applicable NYSDOT highway regulations and design standards, including the following:

  - 17 New York State Codes, Rules, and Regulations (NYCRR) §131 of the Highway Law describing *Accommodation of Utilities within State Highway ROW* and the applicable design standards of the American Association of State Highway Transportation Officials (AASHTO)
  - Guidance in the NYSDOT 2007 *Requirements for the Design and Construction of Underground Utility Installations within the State Highway Right-of-Way*
  - NYSDOT 17 NYCRR §131, the *Manual of Uniform Traffic Control Devices* (MUTCD) issued by NYSDOT in 2008, and the Federal version by the U.S. Department of Transportation (USDOT) in 2009
  - NYSDOT *Highway Design Manual*
  - NYSDOT *Policy and Standards for Entrances to State Highways*
  - NYSDOT 2007 *Requirements for the Design and Construction of Underground Utility Installations with the State Highway ROW*
  - NYSDOT 1995 *Accommodation Plan*
  - NYSDOT 2008 *Standard Specifications*.
- A Maintenance and Protection of Traffic (MPT) Plan would be completed in consultation with all affected agencies prior to the start of construction.
- Detailed traffic control plans would be provided for HDD installation areas in urban and residential areas and at road crossings.
- Signage and public notice would be posted no later than 24 hours prior to the initiation of construction.
- Traffic flow would be provided in at least one lane of the road at all times or a detour would be provided.
- Transmission line construction material delivery activities, equipment storage, and the timing of construction activities would be coordinated with the railroads so as not to affect current operations.
- Cables would be installed in accordance with railroad-specific engineering standards using the prescribed minimum separation distances from track to trench to minimize impacts on the integrity of the track system.
- In areas where HVDC cables cross existing infrastructure such as roads and utility lines, cables would be installed via HDD methodology to avoid disturbance of the existing systems.
- In the Hudson River, the project would be outside of the existing designated navigation channels. The installation of cables via water jetting technology would be closely coordinated with the USCG and adjacent terminals.
- In the Hudson, Harlem, and East rivers, a "Local Notice to Mariners" would be distributed electronically by the USCG to alert local commercial and recreational boating communities of any construction-related limitations.
- When the proposed CHPE Project must extend into designated safety and security areas along the project route, the appropriate state and Federal agencies would be contacted as required by existing regulations.
- An anchor snag manual would be developed to address a potential situation where a ship's anchor snags the proposed CHPE cables. The anchor snag manual would include a navigation risk

assessment that incorporates a river bottom assessment of the entire cable route within the Hudson, Harlem, and East rivers.

G.3 Water Resources and Quality

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to water resources with respect to avoidance of water quality impacts, are as follows:

- At least one Environmental Inspector would be employed full-time during construction and restoration. Additional Environmental Inspectors may be utilized as required to meet environmental inspection requirements set out in the Environmental Management and Construction Plan (EM&CP) and any relevant permit conditions. The lead Environmental Inspector would be responsible for determining when additional inspectors are needed to meet inspection requirements.
- At least one Aquatic Inspector would be employed full time per spread for all underwater installation procedures for the transmission system. They would be on site at the start-up of each field operation and during environmentally sensitive phases of installation. If in-water installation operations are to occur continuously (24 hours a day) a minimum of two Aquatic inspectors would be employed. At least one inspector must be on duty during underwater installation operations.
- The proposed CHPE Project would be required to obtain coverage under the State Pollutant Discharge Elimination System (SPDES) Storm Water General permit. This coverage would require a site-specific Storm Water Pollution Prevention Plan (SWPPP) for storm water discharges. Detailed maps depicting contours, slopes, drainage patterns, and locations of erosion-control structures would be included in the EM&CP, which would serve as the SWPPP. New York State Standards and Specifications for Erosion and Sediment Control specify BMPs for addressing erosion and sediment control. Storm water management features and strategies (e.g., French drains, inlet protection, dewatering, and site stabilization) would be implemented where and when necessary.
- From the U.S./Canada border to Crown Point, New York (mileposts [MPs] 0 to 73), a jet plow would be used to install the cables in the Lake Champlain lakebed. From Crown Point to Dresden (MPs 73 to 101), a shear plow would be used to install the cables to reduce sediment disturbance and resulting water quality impacts.
- The Environmental Inspector(s) would perform inspections of all erosion and sediment controls in accordance with the SPDES Storm Water General Permit. The Environmental Inspector would also establish a protocol with the construction contractor for the identification and repair of all erosion- and sediment-control measures deemed to be in need of repair or reinstallation. The Environmental Inspector is also responsible for record-keeping required by the EM&CP and the SPDES Storm Water General Permit.
- Effective erosion-control measures would be installed on the downslope of all disturbed areas and maintain them in fully functional condition. These erosion-control measures are to be installed before commencing any other activities involving soil disturbance.
- Upon completion of construction activities, initial restoration activities, including soil stabilization and temporary seeding of disturbed areas, would be conducted and would result in vegetation cover similar to the preconstruction habitat, although vegetation in the transmission line ROW would be managed within and adjacent to the cables to preclude reforestation.

- Vegetation buffers adjacent to sensitive areas such as wetlands and streams would be maintained to the greatest extent practicable. To prevent soil erosion along streams, vegetation (e.g., ground cover, shrubs, and tree stumps) would be left in place along a minimum 25-foot- (8-meter-) wide zone on each bank until the crossing point. Existing vegetation buffers would be maintained at stream crossings. Inspection and maintenance frequencies and requirements for permanent storm water management features would be identified in the EM&CP.
- A (clamshell) bucket dredge would be used at mechanical dredging sites to minimize suspension of fine-grained unconsolidated (silty) sediments.

G.4 Aquatic Habitats and Species

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to aquatic resources and habitats, are as follows:

- In Lake Champlain, all in-water work would be conducted within applicable time windows recommended by NYSDEC, New York Natural Heritage Program (NYNHP), and U.S. Fish and Wildlife Service (USFWS), (if applicable) for the protection of aquatic resources along the transmission line route. From U.S./Canada border to Crown Point, New York (MPs 0 to 73), in-water construction would only occur from May 1 to August 31. From Crown Point to Dresden (MPs 73 to 101), in-water construction would only occur from September 1 to December 31.
- HDD would be used where the lines enter and exit waterbodies to avoid or minimize effects on shoreline and shallow water habitats.
- A sheet pile cofferdam would be placed at the HDD exit point in the waterbody prior to excavation of the exit point pit. The cofferdam would remain in place and functional during all phases of the dredging operations and would be removed upon completion of dredging activities.
- Weighted silt curtains suspended on floats would be positioned to enclose the work site before commencing any mechanical dredging. The curtain would remain in place and functional during all phases of the dredging operations and remain in place for 2 hours after dredging termination.
- An Environmental Inspector or Aquatic Inspector would have the authority to modify or suspend construction if any aquatic resources are impacted in any way by construction activities.
- Construction equipment and materials, fuels, and other related items would not be stored within wetlands or within 100 feet (30 meters) of any stream or wetland system.
- Construction equipment would not be refueled within wetlands or within 100 feet (30 meters) of any stream or wetland system.
- Along the railroad ROWs, construction equipment crossings would be installed across all waterbodies to gain continuous access for construction operations where reasonable alternative access is not available.
- HDD would be used to install the transmission lines under streams in as many locations as possible to minimize impacts on aquatic resources. In those instances where the HDD method is used to install the cables to cross a waterbody there would be no time of year restrictions because the method does not require a disturbance to the bed or bank of the stream.
- If a dry crossing (flume or pump method) is proposed for any NYSDEC-designated coldwater stream, the Applicant would adhere to the proposed timing restrictions of October 1 through May 31.

- During construction, vegetated buffers at all waterbody crossings would be maintained. Where the vegetation exists along the railroad ROWs, a minimum 15-foot (5-meter) buffer would be maintained with existing trees and shrubs except for that portion of the bank that has been cleared for the construction path.
- A Frac-out Contingency Plan would be developed and implemented that would allow for timely cleanup of any bentonite leaks that could occur and ensure minimal impacts on the environment.

G.5 Aquatic Protected and Sensitive Species

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to aquatic threatened and endangered species and their occupied habitats, are as follows:

- The Applicant would work closely with Federal and state agencies to establish measures prior to construction commencement to avoid or minimize impacts on aquatic threatened and endangered species along the proposed CHPE Project route.
- HDD would be used where the cables enter and exit waterbodies to avoid or minimize effects on shoreline and shallow water habitats.
- A closed environmental (clamshell) bucket dredge would be used to minimize sediment suspension at mechanical dredging sites (i.e., exit pits for water-to-land HDD transitions) for fine-grained (silty) sediments.
- A sheet pile cofferdam would be positioned to enclose the work site for exit pits for water-to-land HDD transitions before commencing mechanical dredging. The cofferdam would remain in place and functional during all phases of the dredging operations and would be removed upon completion of dredging activities.
- The Environmental Inspector would have the authority to modify or suspend construction if any aquatic threatened and endangered species would be impacted in any way by construction activities.
- Most designated trout streams are anticipated to be crossed using the HDD method thereby avoiding disturbance of these streams.
- In the event that the Applicant unexpectedly encounters any rare, threatened, or endangered species during the preconstruction, construction, or operation and maintenance phases of the proposed CHPE Project, the following measures would be implemented:
    - The Applicant would temporarily halt construction activities, excepting any activity required for immediate stabilization of the area, to avoid or minimize the impacts on the species or habitat.
    - The Environmental Inspector would identify the area of the sighting or encounter and record GPS locations of the likely habitat boundary or the sighting location of any aquatic threatened and endangered species.
    - Any unanticipated sightings of threatened and endangered species or observation of rare, threatened, or endangered plants would be reported as soon as possible to NYSDPS Staff, NYSDEC, or USFWS. The Applicant would consult with applicable resource agencies for measures to avoid or minimize impacts on aquatic threatened and endangered species and their occupied habitat. Construction activities in the area would resume once protective measures, developed in consultation with NYSDPS Staff, NYSDEC, or USFWS, are implemented.

- If new aquatic threatened and endangered species occupied habitats are identified, the EM&CP would be updated to show the new occupied habitats.
- Construction personnel would be updated on the locations of any new aquatic threatened and endangered species or occupied habitats that are identified. These areas would be reported to the applicable resource agencies.
- All in-water work would be conducted within applicable time windows as agreed to by applicable Federal and state agencies, including location-specific dredging windows in the Hudson River estuary for the protection of aquatic threatened and endangered species.
- Construction modifications to water jetting would occur when crossing sensitive habitats including Significant Coastal Fish and Wildlife Habitats (SCFWHs) in the Hudson River, which contain important breeding habitat for protected and sensitive species. The primary operational modifications during water jetting are a reduction in water jetting pressure and a reduction in water jetting speed. Proposed areas where construction modifications could occur would be identified in plan and cross-sectional profile drawings included in the EM&CP.
- Commencement of in-river work south of the Haverstraw Bay SCFWH would occur during the high, or flood, tide condition to avoid or minimize impacts of re-suspended sediments on Haverstraw Bay which contains important habitat for protected and sensitive species.
- Any sightings of sturgeon would be reported to the NYNHP, USFWS, and National Marine Fisheries Service (NMFS) as soon as possible. A Standard Operating Procedures Manual would be prepared to outline the monitoring and reporting methods to be implemented during proposed CHPE Project construction.
- All personnel associated with the proposed CHPE Project would be advised of the potential presence of aquatic threatened and endangered species and the need to avoid collisions.
- All vessel crewmembers and contractors would participate in a fisheries training for aquatic protected species presence and emergency procedures in the unlikely event an animal is struck by a vessel.
- All construction personnel would be responsible for observing water-related activities for the presence of these species.
- All construction personnel would be advised that there are civil and criminal penalties for harming, harassing, or killing aquatic species that are protected under the Endangered Species Act.
- All vessels associated with the construction of the proposed CHPE Project would operate at “no wake/idle” speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a 4-foot (1.2-meter) clearance from the bottom. All vessels would preferentially follow deepwater routes (e.g., marked channels) whenever possible.
- Any collision with or injury to a protected species would be required to be reported immediately to the NMFS Protected Resources Division.
- The Applicant would train and educate transmission system contractors and subcontractors to identify aquatic invasive species and site-specific prescriptions for preventing or controlling their transport throughout or off of the proposed CHPE Project site.
- Require that vessels, equipment, and materials be inspected for, and cleaned of, any visible vegetation, algae, organisms, and debris before bringing them to the proposed CHPE Project area.

- Train transmission system contractors and subcontractors on the various cleaning or decontamination methods to be used on a site-by-site basis for the proposed CHPE Project.
- Require that vessels, equipment, and materials be inspected for, and cleaned of, any visible vegetation, algae, organisms and debris before leaving the waterbody for another.

G.6 Terrestrial Habitats and Species

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to terrestrial species and habitats, are as follows:

- The transmission cable centerline, construction corridor edges, access roads, extra workspace boundaries, and marshaling yards would be surveyed and marked with stakes and colored flagging to avoid out-of-corridor impacts.
- Areas designated as "no vehicular access" would be clearly marked in the field with a silt fence or construction fence to avoid inadvertent intrusion by construction equipment.
- Clearing needed in wooded areas to facilitate surveying would be minimized to the extent possible.
- The EM&CP plan and profile drawings would be provided to the NYSDEC, NYNHP, and NYSDPS Staff for review of significant natural community mapping prior to the start of construction.
- Significant natural communities are identified during preconstruction surveys within or adjacent to the construction corridor would be clearly flagged in the field prior to the start of construction activities. Access through or impact on any significant natural communities would be avoided or minimized, to the extent practicable. If access through a significant natural community is unavoidable, the Applicant would develop additional measures, in consultation with appropriate agencies as applicable, to avoid and minimize any potential impacts.
- All flags and staking would be checked by the Environmental Inspector or Facility Construction Inspector before construction to ensure proper alignment.
- During construction activities, measures would be implemented to prevent or control the transport of invasive plant species; including development and implementation of an Invasive Species Management Plan approved by applicable state agencies.
- A vegetation management plan for the operational period of the proposed CHPE Project transmission system would be developed and supplied in the EM&CP. The goal of the vegetation management plan would be to establish stable low-growing vegetation with shallow root systems that would not interfere with the cables. Vegetation along the transmission line ROW would primarily be managed by mechanical means. This would include such mechanisms as brush hogging/mowing or hand cutting.
- During construction, the objective of vegetation clearing is to remove the vegetation from the work area that is necessary for safe and proper installation of the cables. Vegetation-clearing methods would be selected to avoid and minimize impacts on rare, threatened, and endangered plants and sensitive areas (e.g., forested areas). This would be accomplished through site-specific prescriptions for clearing and disposal of woody vegetation and selective retention of vegetative buffer zones.

- The temporary construction workspace would be kept to the minimum that would allow for spoil storage, staging, assembly of materials, construction vehicle passage, and all other activities required to install the cables safely.
- During clearing operations, crews, in coordination with the Environmental Inspector, would scout the terrain ahead for unexpected conditions, check construction corridor and transmission line ROW boundaries, and review property-specific conditions or restrictions. One of the following methods would be used for vegetation clearing, to minimize impacts:
    - *Hand Cutting* – This method employs a hand-held chain saw. It is selective, but is slower and more expensive than motorized mechanical devices. Residential areas, buffer zones, wetlands, and highway screens are areas where hand cutting is typically prescribed.
    - *Mechanical Clearing Machine* – This term usually refers to a machine known as the Hydro-axe or Kershaw mower. This machine can cut trees up to 10 inches (25.4 centimeters) in diameter at the rate of several acres a day, depending on stem density and terrain. It is essentially nonselective and designed for clearing construction corridors and ROWs composed of young, undesirable species in a relatively uniform stand.
    - *Mowing* – This technique is primarily used in areas of herbaceous vegetation. Terrain must be relatively flat with no gullies or rocks.
    - *Mechanical Whole-tree Felling Equipment* – This method allows controlled felling and loading of whole trees while minimizing damage to adjacent trees. Trees would be felled into the construction corridor to avoid damage outside the corridor.
- Any vegetation removal within a road ROW would be conducted pursuant to a highway work permit issued by NYSDOT. Within the Adirondack Park, any vegetation removal in a road ROW would be conducted in accordance with the Adirondack Park State Land Master Plan and NYSDOT Guidelines for the Adirondack Park to maintain a park-like atmosphere that complements the total Adirondack environment.
- The Asian longhorned beetle (*Anoplophora glabripennis*) and the emerald ash borer (*Agrilus planipennis*) are two insects that the NYSDEC has identified as a potential problem to native trees and vegetation. If these insects are identified during construction, they would be reported to the NYSDEC regional forester. In addition, prior to construction, the contractors would be trained to identify invasive insect species and the projectwide protocol for reporting to the NYSDEC regional forester. Unmerchantable timber would be provided as firewood to interested parties pursuant to the substantive requirements of NYSDEC's firewood restrictions to protect forests from invasive species, found in six NYCRR §192.5.

G.7 Terrestrial Protected and Sensitive Species

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to terrestrial threatened and endangered species and their habitats, are as follows:

- All known threatened and endangered species, occupied habitats, and locations where rare, threatened, and endangered plants have been observed would be identified on the EM&CP maps and in the field where protected plants have been observed based on available data. The construction drawings would be provided to the NYSDEC, NYNHP, and NYSDPS for review of mapped occupied habitat areas and locations where rare, threatened, and endangered plants have been observed.

- Locations of threatened and endangered species or their habitat and rare, threatened, and endangered plants would be treated as confidential. All documents or plans containing specific location information would be marked as such. Appropriate training would be provided to employees and contractors regarding the confidential nature of this information.
- Construction personnel would be trained to identify known and potential threatened and endangered species; rare, threatened, and endangered plants; and significant natural communities that could be encountered, and the identification and protection measures that are included in the construction plan.
- The Environmental Inspector would be responsible for ensuring that prescribed protection measures are appropriately used during construction.
- The Applicant would avoid construction within or immediately adjacent to occupied Karner blue butterfly and frosted elfin habitats during the adult flight periods (approximately May to August) to avoid or minimize potential mortality of adults that might be nectaring or traveling between habitat areas. Because adult flight periods vary from year to year, the Applicant would contact NYSDEC prior to starting construction within any identified habitat areas to confirm that adults have not emerged.
- Prior to construction, a qualified biologist would conduct surveys for the presence of Karner blue and frosted elfin butterflies, in accordance with the USFWS and NYSDEC guidance document *Karner blue butterfly* (Lycaeides melissa samuelis) *Survey Protocols Within the State of New York*. These protocols include guidance on the following:
    - Prior to construction, the boundaries of any identified occupied habitat for Karner blue butterfly and frosted elfin butterfly within or immediately adjacent to construction workspaces or access routes would be clearly flagged in the field, and the Applicant would conduct a walk-through to discuss and review measures to avoid and minimize impacts.
    - Disturbance or access through any flagged occupied habitat for Karner blue butterfly and frosted elfin butterfly would be avoided.
    - Contractors and construction crews would be trained on the locations and identification of the host plant, wild blue lupine, and for the Karner blue butterfly and frosted elfin butterfly. Construction personnel would be trained and instructed to avoid trampling or destruction of wild blue lupine plants.
    - If any previously unknown or unflagged areas containing wild blue lupine are encountered during preconstruction environmental inspection, construction, or restoration, the Environmental Inspector would delineate the boundary of the habitat with flagging in the field, and would collect global positioning system (GPS) data mapping its location.
    - The Applicant would notify NYSDPS, NYSDEC, and USFWS as soon as possible (within 48 hours) if any previously unidentified habitats containing wild blue lupine are discovered during preconstruction environmental inspection, construction, or restoration. If additional protective measures are necessary to protect the Karner blue butterfly, frosted elfin butterfly, or occupied habitat for these species, the Applicant would temporarily cease any vegetation clearing, construction, ground-disturbing, or vegetation management activities in the area, excepting any activities that could be necessary for immediate stabilization of the work site, until protective measures can be implemented. Work would only resume once NYSDEC and USFWS have been notified

and recommended protective measures to avoid or minimize impacts on threatened and endangered species and occupied habitat have been implemented.

  - During operation of the transmission line, any vegetation management, emergency repairs, or other operational maintenance activities required within Karner blue butterfly and frosted elfin butterfly habitats would be implemented in accordance with a mitigation plan for these species being developed by the Applicant in consultation with USFWS and NYSDEC.

- No herbicides or pesticides would be used within occupied Karner blue butterfly and frosted elfin butterfly habitat, except as approved by the USFWS and NYSDEC.
- During the preconstruction survey, the contractors would identify and avoid impacts on large specimens of shagbark hickory, which could serve as maternity or roost trees for Indiana bats.
- In the event that the Applicant unexpectedly encounters any rare, threatened, or endangered species during the preconstruction, construction, or operation and maintenance phases of the proposed CHPE Project, the following measures would be implemented:
  - Areas of threatened and endangered species occupied habitat and locations of rare, threatened, and endangered plants along the terrestrial portions of the proposed CHPE Project route would be flagged in the field.
  - The Environmental Inspector would identify the area of the sighting or encounter; flag the boundaries of the newly identified occupied habitat or locations where the threatened or endangered species or rare, threatened, or endangered plant were observed; and record GPS locations of the likely habitat boundary or the sighting.
  - Any unanticipated sightings of threatened or endangered species or observations of rare, threatened, or endangered plants would be reported as soon as possible to NYSDPS, NYSDEC, or USFWS. The Applicant would consult with applicable resource agencies for measures to avoid or minimize impacts on plants or animals.
  - If threatened or endangered species or threatened or endangered plants are discovered during construction activities, the Applicant would temporarily halt construction activities in the vicinity of the discovery, excepting any activity required for immediate stabilization of the area, to avoid or minimize the impacts on the species or habitat. Construction activities in the area would resume once protective measures, developed in consultation with NYSDPS, NYSDEC, and USFWS, are implemented.
  - If new threatened or endangered species and occupied habitat are identified or threatened or endangered plants are observed and verified, construction plans would be updated to show the new threatened or endangered species, occupied habitat, or threatened or endangered plant species. These newly occupied areas would also be flagged in the field.
  - Construction personnel would be updated on the locations of any new threatened and endangered species or occupied habitats or locations of threatened or endangered plants that are identified. These areas would be reported to the applicable resource agencies.
- The Applicant has developed the following measures to avoid impacts on the state-listed bald eagle, which is also protected under the Bald and Golden Eagle Protection Act (BGPA) and their habitat:
  - Prior to construction, the Applicant would identify all bald eagle nest locations within 0.5 miles (0.8 kilometers [km]) of construction, based on data provided by the NYNHP.

- If any blasting activities are necessary within 0.5 miles (0.8 km) of active bald eagle nests, the Applicant would contact USFWS and NYSDEC for guidance to avoid or minimize the potential for noise-related disturbance.
- If construction would occur within 660 feet (201 meters) of an active nest during the nest-building or breeding season (December to August) per USFWS guidelines, the Applicant would contact USFWS and NYSDEC for guidance to avoid and minimize the potential for noise-related disturbance.
- Environmental training for contractors and construction crews would include training on the identification of bald eagles and location of nests. Construction personnel would be instructed to report any sightings of potential eagle nests that were not previously identified by the NYNHP.
- If any previously unidentified eagle nests are discovered, the Applicant would report findings to the NYNHP as soon as possible, and consult with the NYSDEC and USFWS for guidance to avoid or minimize the potential for disturbance, if required.

- On a project-wide basis, the Applicant would perform the following measures to prevent or control the transport of invasive plant species:
  - Prior to construction, training would be conducted to educate transmission system contractors and subcontractors on identifying invasive plant species and the site-specific protocol for preventing or controlling their transport throughout or off of the proposed CHPE Project site. These protocols include the various cleaning or decontamination methods to be used for the proposed CHPE Project. In addition, the contractors would be instructed to stay within access paths and work areas that are designated on the EM&CP plan and profile drawings to minimize ground disturbance.
  - Sediment- and erosion-control devices would be installed across the construction corridor on slopes leading into wetlands and along the edge of the corridor to prevent spoil from migrating into these areas. This would also help to prevent the dispersion of seeds from invasive plant species into uninfested wetlands during construction.
  - Vehicles, equipment, and materials (including swamp mats) would be inspected for, and cleaned of, any visible soils, vegetation, and debris before bringing them to the proposed CHPE Project area or moving them to the next wetland along the construction corridor as specified under NYSDEC's General Permit for Routine ROW Maintenance Activities, DEC No. 0-0000-01147/00001.
  - The restored corridor would be seeded with an invasive species-free seed mix immediately after final regrading to quickly create vegetative cover over the disturbed corridor and help to prevent establishment of invasive species which typically colonize disturbed sites.
  - Revegetation of disturbed areas would use seed and other plant materials that have been checked and certified as noxious-weed-free.

G.8 Wetlands

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to wetlands, are as follows:

- Prior to construction, the Applicant would obtain permits from the USACE under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Mitigation measures and

BMPs for impacts on wetlands, if required, would be determined during the permit application process in consultation with the USACE. The proposed CHPE Project would be constructed, operated, and maintained in accordance with Federal and state permits. The Applicant would also adhere to stipulations in the Certificate of Environmental Compatibility and Public Need, which is administered by the NYSPSC.

- All wetlands occurring within the project area would be delineated and flagged prior to initiation of construction activities to ensure resource protection. Wetland and stream adjacent areas would be clearly marked in the field to avoid inadvertent disturbance of wetlands and streams by construction equipment. During construction activities, spoil would be stored within the construction corridor immediately adjacent to the trench or within designated extra work areas. To the extent possible, the Applicant would avoid storing spoil within wetlands; however, due to the space constraints along the roadway and railroad ROWs, it is anticipated that some spoil storage in wetland areas could occur. In these areas, soil excavated from the wetland would be temporarily stockpiled on construction matting or geo-textile fabric to be used to backfill the trench. Any excess spoil would be removed from the ROWs and disposed of off site in accordance with Federal and state laws and regulations.
- Sediment- and erosion-control devices would be installed across the construction corridor on any slopes leading into wetlands and along the edge of the corridor, as necessary, to prevent spoil from flowing off the corridor into a wetland. Locations of sediment- and erosion-control devices would be identified on the EM&CP plan and profile drawings.
- Erosion- and sediment-laden storm water runoff from disturbed areas or spoil piles in immediately adjacent uplands have the potential to affect water quality in wetlands. Therefore, temporary and permanent erosion and sediment controls would be installed prior to construction activities to avoid increases in erosion and sedimentation into waterbodies from land disturbance. Construction storm water would be managed in accordance with the SWPPP for the proposed CHPE Project to prevent increased storm water runoff volume and velocity and prevent introduction of sediments and pollutants. An SWPPP would be prepared prior to construction as part of permitting and compliance under the SPDES.
- The Applicant would segregate topsoil in wetlands, except when standing water or saturated soils are present, to prevent the mixing of topsoil with subsoil. To expedite revegetation of wetlands, the top 1 foot (0.3 meters) of surface soil would be stripped from over the trench, retained, and later replaced. This would facilitate wetland revegetation by maintaining physical and chemical characteristics of the surface soil and preserving the native seed bank. The exception to this requirement includes areas with standing water or saturated soils, areas where no topsoil layer is evident, or areas where the topsoil layer exceeds the depth of the trench.
- The HDD method would be employed to construct landfalls from the proposed transmission cables. This would be expected to avoid impacts on freshwater tidal wetlands. In addition, the HDD method would exit the water at a depth sufficient to avoid impacts on the intertidal and foreshore areas.
- In wetland areas where trenching would occur, trench plugs or other methods to prevent draining of wetlands down into the trench would be employed. In areas where wetland topsoil would be disturbed, the organic surface layer would be backfilled over the subsoil backfill to reestablish an adequate soil profile for wetland restoration objectives.
- If any construction equipment would operate within saturated wetlands that would be likely to be affected by soil compaction or rutting based on conditions at the time of construction, the Applicant would use equipment mats or low-ground-pressure tracked vehicles to minimize impacts on wetland soils. If dewatering is required within the excavated trench, water would be

discharged to a well-vegetated upland area, a properly constructed dewatering structure, or a filter bag. Original surface hydrology in disturbed wetland areas would be reestablished by backfilling the trench and grading the surface to original contours, as needed.

- To minimize impacts from accidental leaks and spills, a Spill Prevention, Control, and Countermeasure (SPCC) Plan would be developed that would contain BMPs to limit potential water quality impacts. Construction crews would have sufficient supplies of absorbent and barrier materials on site to contain and clean up hazardous materials in the event of a spill. To reduce the likelihood of a spill entering wetland habitat, the Applicant would avoid storing hazardous materials, chemicals or lubricating oils, refueling vehicles and equipment, or parking vehicles overnight within 100 feet (30 meters) of the edge of a wetland, unless no reasonable alternative was available. If no alternative is available, the Applicant's Environmental Inspector would ensure that appropriate protection measures for spill prevention and controls would be implemented.
- Following construction, the Applicant would conduct final grading to restore original contours, as needed, and would seed disturbed areas with a temporary seed mixture to stabilize soils and establish vegetation cover. Emergent wetland vegetation would be expected to reestablish quickly following construction, and woody species would return more slowly. Forested wetlands, where not maintained, would be expected to go through several stages of successional vegetation before returning to the pre-construction vegetation cover type. To assist in the recovery of woody species, the Applicant would avoid removing roots and stumps in cleared areas outside of the cable trench, unless required for safety, to allow resprouting of woody species.
- During the initial restoration phase, all construction debris would be removed from the construction corridor. Segregated topsoil would be replaced, and wetland contours and drainage patterns would be restored to approximate original conditions by matching adjacent undisturbed areas. Restoring the grade, drainage patterns, and topsoil would promote the reestablishment of native hydrophytic vegetation (i.e., plant life that thrives in wet conditions). Restoration of wetlands would be completed within 24 hours after backfilling is completed. Restoration of the wetland would include final grading, seeding with an appropriate seed mix, fertilizing, and mulching. High organic soils (as determined by NYSDEC, NYSDPS, or the Environmental Inspector) would be graded back to original contours and left unmulched and unseeded to facilitate the germination of native seeds and sprouting of rhizomes from the seed bank.
- The Applicant would establish and implement a program to monitor the success of restoration upon completion of construction and restoration activities. The success of wetland revegetation would be monitored and recorded annually for the first 2 years (or as required by permit) after construction, or longer, until wetland revegetation is successful. Wetland revegetation would be considered successful when the vegetative cover is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. If revegetation is not successful at the end of 2 years, the Applicant would develop and implement (in consultation with a professional wetland ecologist) a plan to actively revegetate the wetland with native wetland herbaceous plant species.

In addition, during construction activities within and adjacent to wetlands, protection measures would include the following:

- Minimize amount of work within and across wetlands.
- Schedule work to be conducted in wetlands to start and finish in the dry season or when the ground is frozen, to the extent practicable.

- Limit construction vehicles and equipment to established access roads and construction workspaces depicted on EM&CP plan and profile drawings.
- Limit construction equipment within wetlands primarily to what is needed to dig the trench, install the cables, backfill, and restore the construction corridor. All other construction equipment would use access roads in upland areas to the extent practicable.
- Minimize disturbance and compaction in wetlands with saturated soils or standing water, either by using wide-tracked or balloon-tired equipment operating from timber corduroy or timber mats. Imported rock, stumps, brush, or offsite soil as temporary or permanent fill would be prohibited. Following construction, all materials used to stabilize the corridor would be removed.
- Construction equipment would not be washed in wetlands or within 100 feet (30 meters) of any wetland unless specified to minimize the spread of invasive species. Runoff resulting from washing operation would not be permitted to enter any wetlands directly.
- Spoil and excavated materials would be stored outside of wetlands and wetland adjacent areas. All stockpiled material would be stored at a sufficient distance to prevent sedimentation into any stream, wetland, wetland adjacent area, or other waterbody. If no storage area is available, spoil would be adequately protected and erosion- and sediment-control measures would be installed to prevent materials from entering adjacent areas. All excess material would be disposed of in approved upland locations.
- Any temporary access routes or parking areas adjacent to wetlands and waterbodies would be graded to direct runoff away from water resources. If needed, erosion-control measures would be installed adjacent to wetlands and other water resource areas.
- Unless work activities would resume within 14 days, disturbed soils would be stabilized as soon as possible and no more than 7 days upon temporary or permanent completion of ground-disturbing activities. If soil stabilization measures are not possible within 7 days due to snow cover, frozen ground, or other weather conditions, soils would be stabilized as soon as practicable.
- The construction corridor would be inspected periodically during and after construction until final restoration has been completed. Erosion-control or restoration features would be repaired as needed in a timely manner until permanent revegetation has become successful.
- Should it become necessary to remove water from the trench, it would be pumped to a stable, vegetated upland area (where practical) and filtered through a filter bag or siltation barrier.
- Clearing of existing vegetation in or near wetlands would be limited to material necessary to allow completion of construction activities and reasonable access for long-term maintenance.
- Brush and trees would be cut at ground level leaving the root systems intact.
- Tree stumps would only be removed directly over the trench and where necessary for safe access along the corridor.
- If high soil moisture content or standing water exist in a wetland prior to construction, the use of heavy equipment would be limited to prevent rutting and soil profile mixing.
- Trees would be felled by hand and cut to lay flat on the ground and left in place unless doing so would prevent safe access to the site.

G.9 Geology and Soils

Erosion- and sediment-control measures would be developed and implemented both during and following site development to contain soil and runoff on site, and would reduce potential for adverse impacts associated with erosion, sedimentation, and transport of sediments in runoff. The following BMPs have been identified in the Applicant's EM&CP:

- *Straw Bales and Silt Fencing.* Straw bales and silt fences are used separately or together to reduce the velocity of sediment-laden runoff and affect deposition of the transported sediment load.
- *Stabilized Construction Entrances.* Stabilized construction entrances would be installed and maintained at all points where construction access roads intersect with paved surfaces, such as roads, sidewalks, or parking areas, to reduce the tracking of sediment onto roadways.
- *Water Management Devices.* The following devices would be used along terrestrial portions of the proposed CHPE Project route as necessary to reduce the velocity of storm flows and to divert storm flows away from offsite properties and environmentally sensitive areas:
    - Water Diversion Devices.
    - Waterbars
    - Drivable Berms
    - Swales and Earthen Berms
    - Side Ditches
    - Stone Check Dams
    - French Drains
    - Temporary Culverts.
- *Sediment Retention Ponds and Filtration Devices.* Catchment basins would be used where needed to intercept sediment-laden runoff and reduce the amount of sediment leaving disturbed areas. Catchment basins would be constructed in accordance with the standards in the *New York State Standards and Specifications for Erosion and Sediment Control*.
- *Concrete Washout.* After placement of concrete, wash water used to clean the concrete truck would be directed to a concrete washout structure at designated areas only. These concrete washout area(s) would be a minimum of 100 feet (30 meters) from all wetlands, waterbodies, and drainage structures.
- *Fugitive Dust Emissions.* Dust control would be used on construction roads, construction entrances, and other disturbed areas subject to surface dust movement and dust blowing. These areas would be sprinkled with water during extended dry periods to minimize dust generation. Typically only plain water would be used for dust suppression; chemical dust suppressants would only be used in situations where plain water dust suppression is not effective and where no sensitive resources (e.g., wetlands, streams, potable water supplies, organic farms) are present.
- *Clearing, Excavation, and Grading.* In general, the construction corridor would be cleared to provide safe operation of construction equipment.
- *Site Stabilization.* Non-structural controls would also be used during project construction. Mulch would be used to provide initial erosion control while seeding is established or to prevent erosion on soils with low infiltration rates.
- *Inspection and Record Keeping*. Inspections would include all disturbed areas that have not undergone final stabilization, storm water discharges from the site, material storage areas, and site entrances and exits.

In addition to erosion- and sediment-control measures, construction BMPs would be implemented to minimize soil erosion including the following:

- Non-agricultural and non-urban/residential areas
    - Grading
    - Lime Application
    - Fertilizing
    - Aerating
    - Seeding and Planting.
- *Restoration – Urban/Residential*. Construction in urban or residential areas could require a variety of restoration activities. Aboveground and underground structures (e.g., those related to water and gas services), street pavements, curbs, sidewalks, and other features could require repair or replacement as a result of construction. Curbs, sidewalks, and streets damaged by construction would be restored to pre-existing conditions. Except where replacement would inhibit or impair the safe operation of the transmission lie, shade trees and ornamental shrubs disturbed or damaged by construction would be repaired or replaced, following construction.
- *Restoration – Railway Ballast*. Upon completion of the installation of the underground transmission line in the railroad ROW, the surface of the ROW disturbed by construction activities would be graded to match the original topographic contours and to be compatible with surrounding drainage patterns. Stone ballast or mulch would be used to stabilize the disturbed soil areas in the ROW.

All blasting activity would be performed by licensed professionals according to strict guidelines designed to control energy release. Charges would be kept to the minimum required to break up the rock. Where appropriate, mats composed of heavy steel mesh or other comparable material or trench spoil would be used to prevent the scattering of rock and debris. These activities would adhere strictly to all industry standards applying to control of blasting and blast vibration limits.

G.10 Cultural Resources

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to the prevention of impacts on historic and cultural resources, are as discussed in the following paragraphs.

Measures would be implemented to mitigate the proposed CHPE Project's potential adverse effects on known terrestrial and underwater archaeological sites found to extend into the Area of Potential Effects (APE). These measures include minor rerouting to avoid the sites and Phase III data recoveries of terrestrial and underwater archaeological sites that are listed or eligible for listing in the National Register of Historic Places and cannot be avoided by ground-disturbing activities.

The development of a programmatic agreement (PA) is underway and additional formal surveys and evaluations must be taken before it can fully be determined in detail what cultural resources require mitigation under Section 106 of the National Historic Preservation Act. Measures identified at this time are presented in the following paragraphs.

Proposed CHPE Project Cultural Resources Management Plan. To manage potential impacts on cultural resources from the proposed CHPE Project, a Cultural Resources Management Plan in consultation with certain stakeholders would be developed. This plan would identify historic properties within the APE and outline the processes for resolving adverse effects on historic properties within the

APE and determining the appropriate treatment, avoidance, or mitigation of any effects of the proposed CHPE Project on these resources. Treatment and avoidance measures would include the results of consultation between the Applicant and the New York State Historic Preservation Office (SHPO) regarding reasonable buffers between underwater sites and the cable-laying barge that would be used in Lake Champlain. In addition, cultural and heritage resource impact measures would be included in the EM&CP and facility management plans.

Unanticipated Discoveries. The potential exists for the unanticipated discovery of additional cultural resources and human remains during construction and operational activities. As a result, the Applicant would develop an Inadvertent Discovery Plan that details crewmember responsibilities for reporting in the event of a discovery during underwater and underground cable installation. The plan would also include procedures to be implemented in the event of an unanticipated find. If human remains are discovered, the Applicant would stop work within 50 feet (15 meters) of the discovery. The Applicant would then contact the county coroner and a professional archaeologist (i.e., an archaeologist that meets the Secretary of the Interior's Professional Qualifications Standards in archaeology and history) to determine the significance of the discovery. If appropriate, the Applicant would also adhere to Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations (43 Code of Federal Regulations [CFR] §19). Depending on the recommendations of the coroner and archaeologist, the Applicant would consult with the appropriate county in New York State to establish additional measures. Potential measures for unanticipated discoveries would include avoidance, documentation, excavation, and curation.

Treatment and disposition of an inadvertent discovery of human remains would be managed in a manner consistent with NAGPRA; the Advisory Council on Historic Preservation (ACHP) Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects; and the New York SHPO's Human Remains Discovery Protocol. If human remains are encountered in the course of ground-disturbing activities, the Applicant would implement the following actions in coordination with the New York SHPO, Native American tribes, and other Consulting Parties, as applicable:

- Any human remains discovered would be treated with dignity and respect.
- Work in the general area would stop immediately; the area would be physically secured; and a barrier prohibiting vehicles, equipment, and unauthorized persons from accessing the discovery site would be installed. The site would be protected from damage and disturbance to the maximum extent practicable.
- Human remains and associated artifacts would be left *in situ* and not disturbed. No human remains or materials associated with the remains would be collected or removed until appropriate consultation has taken place.
- The Applicant would contact local law enforcement, the county coroner's office, the New York SHPO, and Native American tribes, as appropriate. Local law enforcement officials and the county coroner's office would examine the remains to determine if they are forensic.
- If the remains are determined to be Native American, they would be left *in situ* and protected from disturbance until a plan for their protection or removal is developed. The Applicant would notify the New York SHPO and appropriate Native American tribes within 24 hours (during normal business hours) or as soon as possible after the discovery has been determined to be forensic. The Applicant would consult with the New York SHPO and Native American tribes to develop a plan of action, consistent with the guidance provided in the NAGPRA, the ACHP's 2007 Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects, and the New York SHPO's Human Remains Discovery Protocol. Avoiding further disturbance of the remains would be the preferred option.

- If the human remains are determined to be non-Native American, the remains would be left *in situ* and protected from disturbance until a plan for their avoidance or removal were developed. The Applicant would consult with the New York SHPO and other appropriate parties to determine a plan of action.
- Work in the affected area would resume only after the completion of the necessary consultation and treatment was completed.

G.11 Visual Resources

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to visual resources, are as follows:

- Existing vegetation buffers would be maintained to the extent possible at selected road and stream crossings and other potentially visually sensitive locations, especially at HDD sites, residential areas, or near historic sites.
- When existing vegetative buffers in visually sensitive areas cannot be avoided, the areas would be restored following construction, except where replacement would inhibit or impair the safe operation of the cables.
- Good housekeeping practices and removal of temporary storm water and erosion controls such as silt fence, straw bales, and mulch; construction debris; or blast rock during the various stages of construction would limit the visual impact.

G.12 Infrastructure

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to infrastructure, are as follows:

- The Applicant would engineer, construct, and install the proposed CHPE Project so as to make it fully compatible with the continued operation and maintenance of collocated infrastructure (e.g., aboveground, below ground, and submerged electric, gas, telecommunications, water, wastewater, sewer, and steam infrastructure and appurtenant facilities and associated equipment), and affected railroads and railways; and highways, roads, streets, or avenues.
- Existing utility infrastructure owners would be contacted prior to the beginning of any preconstruction activities and throughout the proposed CHPE Project design process, and protection measures and specifications for existing utility facilities would be negotiated with the utility owners.
- In most cases, the proposed cables would be installed over the existing infrastructure using protective coverings (e.g., grout-filled mattresses, articulated concrete mattresses, Uraduct®, and rock rip-rap).
- The design of utility crossings would follow industry standards and infrastructure agreements based on owner consultations. Many of the crossing types would include the use of a protective sleeve around the transmission cables to ensure minimum separation at the crossing point. The sleeve would extend a minimum of approximately 15 feet (5 meters) from each side of the utility intersection. The installed length of protective coverings would be between 60 and 75 feet (20 and 21 meters) in length to ensure this requirement is met.

Water Supply Systems

- Consultations with the water supply infrastructure owners and operators would be conducted to get specific information on each intake (e.g., specific location, water depth, intake size, dimensions and slot size of intake screening, flow rates, and average withdrawal rates).
- Based on this information, determine the potential impact on water supply intakes due to the mobilization of sediment, including contaminated sediment.
- If adverse impacts would be possible, develop strategies to avoid or minimize the magnitude of the estimated potential impacts. Such strategies include incorporating minor route adjustments, providing intake screens, sediment filters or barriers in the vicinity of the intake, or using alternate construction methods (e.g., non-burial installation).
- If it is determined that contaminated sediments might not be able to be avoided using alternative transmission cable installation methods or minor route adjustments, the Applicant would perform water quality modeling to assess the potential adverse impacts on water supply systems from installing the transmission cables within contaminated sediments.
- In the event that aquatic transmission cable installation would result in the exceedance of Maximum Contaminant Levels (MCLs) and the NYSDPS Staff determined that the continued use of techniques to reduce impacts would be unable to avoid exceedance of MCLs; aquatic transmission cable installation would be suspended; and the Applicant would consult with NYSDPS Staff, New York State Department of Health (NYSDOH), and NYSDEC regarding alternative cable installation techniques such non-burial methods, shear plow, or additional route modification and propose such changes to the approved EM&CP.

Communications

- A minimum separation between the proposed CHPE Project's aquatic cables and the existing telecommunications cable would be provided by installing a protective sleeve on the proposed CHPE cable at each utility crossing. The protective sleeve would extend for approximately 50 to 80 feet (15 to 24 meters) on each side of the crossing point.
- In some areas of the Hudson River Segment, existing telecommunication cables are buried less than 3 feet deep. At these locations, the Applicant would propose to use protective sleeves on the aquatic transmission cables along with burial until touching the existing cables, increase the burial depth of the existing cables by water jetting at the crossing point prior to installing the submarine cables, or cut and re-splice the telecommunications cables after installing the submarine cables. The details of these crossings would be coordinated with the owners of the existing facilities.

Solid Waste Management

- Some conventional dredging could be used for HDD water-to-land transitions. The construction contractor would be required to develop a detailed Dredge Plan and obtain the necessary dredge and disposal approvals in accordance with Federal and state regulations. The Dredge Plan would follow the guidance of the U.S. Environmental Protection Agency (USEPA)/USACE *Ecological Evaluation for Dredged Material Proposed for Ocean Disposal in the Marine Environment* and the Regional Implementation Manual New York/New Jersey Harbor *Guidance for Performing Tests on Dredged Material Proposed for Ocean Disposal.* Sediment testing results would determine the resulting waste's suitability for ocean or upland disposal. Dredged waste sediment

from the Hudson River would not be returned to the river. Instead, it would be disposed of either in an upland or ocean waste disposal site in accordance with Federal and state regulations.

G.13 Recreation

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to recreation, are as follows:

- Access to boat launch areas and piers would be maintained, as feasible, but could be restricted during construction for safety reasons.
- Existing vegetation buffers between parks and the railroad ROWs would be maintained near recreational areas, as appropriate, especially at HDD drilling sites.
- Following construction, impacted areas within the CHPE Project route construction area would be seeded and allowed to revegetate naturally. When vegetative buffers in recreational areas cannot be maintained, the areas would be restored following construction, except where replacement would inhibit or impair the safe operation of the cables.

G.14 Public Health and Safety

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to public health and safety, are as follows:

- One Safety Inspector would work full time on the proposed CHPE Project and would be present for any higher risk procedures. The Safety Inspector would assist in the establishment and implementation of regulatory compliance and incident-prevention activities regarding the safety and health of employees, contractor and subcontractor personnel, and the public.
- Follow all guidelines established in project Health and Safety Plans and the Emergency Contingency Plan to ensure construction activities are conducted in a safe manner.
- Follow all guidelines established in the Aquatic Safety and Communication Plan when conducting project activities in waterways to ensure activities are conducted in a safe manner.
- Follow all guidelines detailed in the project Emergency Repair and Response Plan (ERRP) to be developed for the project when conducting emergency repair and maintenance activities.

G.15 Hazardous Materials and Wastes

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to the management of hazardous materials and waste, are as follows:

- Visual, olfactory, and photoionization detector soil screenings and assessments are to be performed by a qualified environmental professional.
- Conduct waste characterization sampling of contaminated soil stockpiles prior to disposal.
- Use liners, covers, and other soil erosion and sediment controls to minimize the potential spread of contaminated soils.
- Transport and dispose of contaminated soils in accordance with applicable regulations and standards, fugitive dust monitoring, and dust-control measures.

- Provide health and safety training for all personnel who might be exposed to hazardous substances or health hazards on site.

G.16 Air Quality

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to avoidance of impacts on air quality, are as follows:

- Keep all construction equipment in good running condition to minimize emissions from internal combustion engines and ensure that emissions and odors are kept to a minimum.
- To the degree practical, minimize equipment idling for long periods of time.
- Apply water or non-toxic soil stabilizers to all unpaved access roads, parking areas, and staging areas with sufficient frequency to control dust and maintain an effective level of soil moisture or cohesion while avoiding excessive water application.
- Clean accumulated dirt, as necessary, from roads along the construction corridor or from construction vehicles.
- Implement dust-control measures, as necessary, to limit dust releases from trucks (such as covering loads, wetting dry soil and maintaining a certain depth of freeboard).
- Seed or plant exposed areas as soon as practicable after construction, or as called for by permit, at the converter station and substation to reduce the potential for wind blown erosion.
- Keep all construction equipment in good running condition to minimize emissions from internal combustion engines and ensure that odor impacts are kept to a minimum.
- Exposed stockpiles of soil and other excavated materials would be contained within perimeter silt fencing, watered, treated with soil binders, or covered as necessary.
- To the degree practical, minimize equipment idling for longer than necessary periods of time.
- Develop a monitoring plan that includes an inventory of equipment containing SF6, include design elements to reduce energy consumption and thermal cycling of switchgear which helps reduce leakage, identify and repair leaking equipment in a timely fashion, train employees on the climate change effects of SF6, and account for the respective make-up quantities.
- Use low-emission construction equipment, minimize vehicle idling, and carpool to further reduce greenhouse gas (GHG) emissions.

G.17 Noise

The Applicant-proposed impact avoidance and minimization measures, including BMPs, that are applicable to noise, are as follows:

- Measures to apply at residential areas and other noise-sensitive locations include public outreach, appropriate work hour and operation restrictions, temporary sound barriers, employment of equipment fitted with sound deadening materials, selection of low noise equipment and procedures, and other noise-reduction work methods or devices as determined appropriate for the locale and task. Construction and maintenance equipment would be equipped with appropriate sound-muffling devices (i.e. Original Equipment Manufacturer [OEM] or better), and should be maintained in good operating condition at all times.

- Should blasting be required at any location where non-blasting methods of excavation are impossible or blasting causes less impact, then noise and vibration effects on nearby land uses and structures would be managed with a blasting plan for each site prior to any blasting activities. The plan should include the blasting methods, surveys of existing structures and other built facilities, and distance calculations to estimate the area of effect of the blasting.
- Locating equipment yards and marshalling areas away from noise-sensitive receptors as practical.
- Installing improved mufflers on heavy construction equipment when used in close proximity to noise-sensitive areas.
- Utilizing low-noise technologies (e.g., vibratory pile drivers) as appropriate.
- Limiting construction of high noise level activities (e.g., wood chipping, pile driving, rock drilling, blasting, excavation, and loading) to non-overnight hours as much as possible when construction is conducted in close proximity to noise-sensitive receptors.
- In cases where a noise source would be in a fixed position for an extended period of time (such as for an HDD operation), install temporary sound barriers such as wooden sound barriers to reduce noise levels or, in extreme cases, offer temporary lodging for residents adversely affected.

G.18 Socioeconomics

No measures would be necessary for socioeconomic resources.

G.19 Environmental Justice

No measures would be required for environmental justice because any human health or environmental effects related to minority or low-income populations would be negligible and not considered disproportionately high or adverse.

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APPENDIX H

ESA Section 7 Documentation

APPENDIX H.1 – SECTION 7 CONSULTATION DOCUMENTATION FOR THE PROPOSED CHPE PROJECT

Department of Energy
Washington, DC 20585

June 21, 2012

Robyn Niver
Endangered Species Biologist
U.S. Fish and Wildlife Service
New York Field Office
3817 Luker Road
Cortland, New York 13045

SUBJECT: Proposed Champlain Hudson Power Express Transmission Line Project

Dear Ms. Niver:

As you are aware, Champlain Hudson Power Express, Inc. ("CHPEI" or "Applicants") has applied to the U.S. Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability for a Presidential Permit to construct, operate, maintain, and connect the proposed Champlain Hudson Power Express Transmission Line Project (Project). This letter is to initiate informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) for the Project.

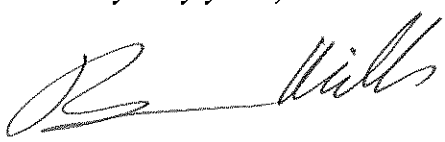
CHPEI's application for a Presidential Permit was submitted to the DOE on January 27, 2010. CHPEI subsequently modified its application on August 6, 2010; July 7, 2011; and February 28, 2012. The Project currently under review by the DOE would consist of a 1,000-megawatt (MW) high-voltage direct current (HVDC) Voltage Source Converter controllable transmission system extending from the Canadian Province of Quebec to New York City, as shown in the attached Figures 1 through 4. From the international border between the United States and Canada, two cables (comprising a single bipole) would extend south to an HVDC Converter Station to be located near Luyster Creek, north of 20th Avenue in Astoria, Queens. From the Converter Station, a 345-kilovolt (kV) underground alternating current (AC) circuit would connect to the existing 345-kV gas-insulated substation owned by the New York Power Authority (NYPA) and situated near NYPA's Charles Poletti Power Project in Astoria. The Applicants also propose to construct a 3-mile buried 345-kV HVAC cable circuit from the Astoria Substation to Consolidated Edison's Rainey Substation in Queens. The Applicants have proposed to install the cables within waterways, and within the rights-of-way of existing transportation infrastructure, including railroads and roadways. Sections of the transmission line installed within waterways will generally be buried beneath the lake or riverbed. Overland sections of the Project will be buried within existing ROW corridors.

The DOE has determined that an Environmental Impact Statement (EIS) is the appropriate level of review under the National Environmental Policy Act (NEPA) for the proposed project, as was documented in our Federal Register Notice of Intent to prepare an EIS on June 18, 2010 (75 FR 117). The Notice of Intent, along with background information, an opportunity to subscribe to our mailing list, and more, are available on our EIS-specific website at http://www.chpexpresseis.org.

We ask that you provide a list of species that might occur in the action area. We also request a meeting to kick off informal consultation and discuss any concerns relative to impacts of the Proposed Action on federally listed species. We will also consult with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service regarding threatened and endangered species and critical habitat under their purview and essential fish habitat that could be affected by the Proposed Action.

Please feel free to contact me directly at any time at Brian.Mills@hq.DOE.gov, or by phone at (202) 586-8267.

Very truly yours,



Mr. Brian Mills
Permitting, Siting, and Analysis, OE-20
Office of Electricity Delivery and
Energy Reliability
U.S. Department of Energy

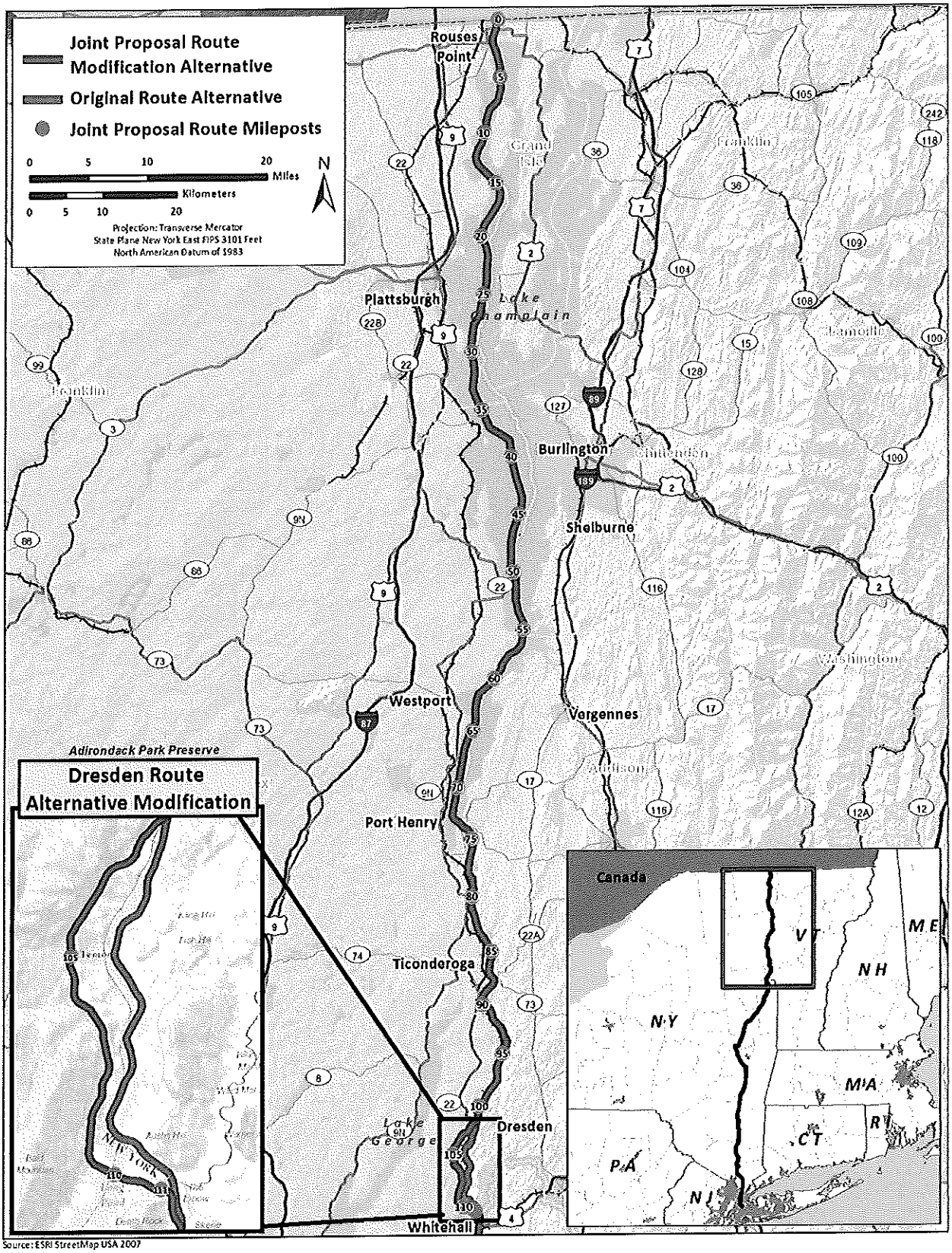


Figure 1. CHPE Lake Champlain Segment

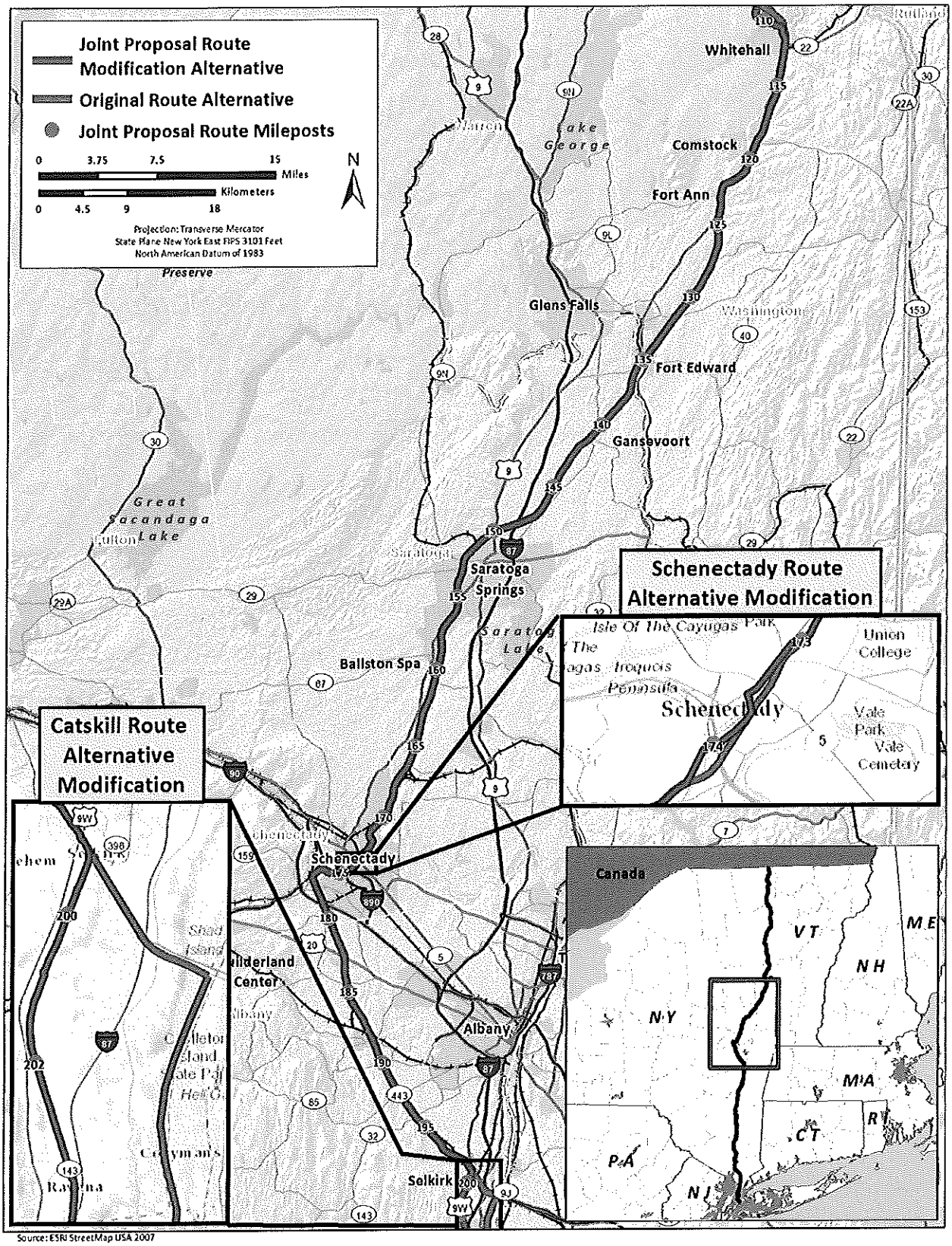


Figure 2. CHPE Railroad ROW Segment

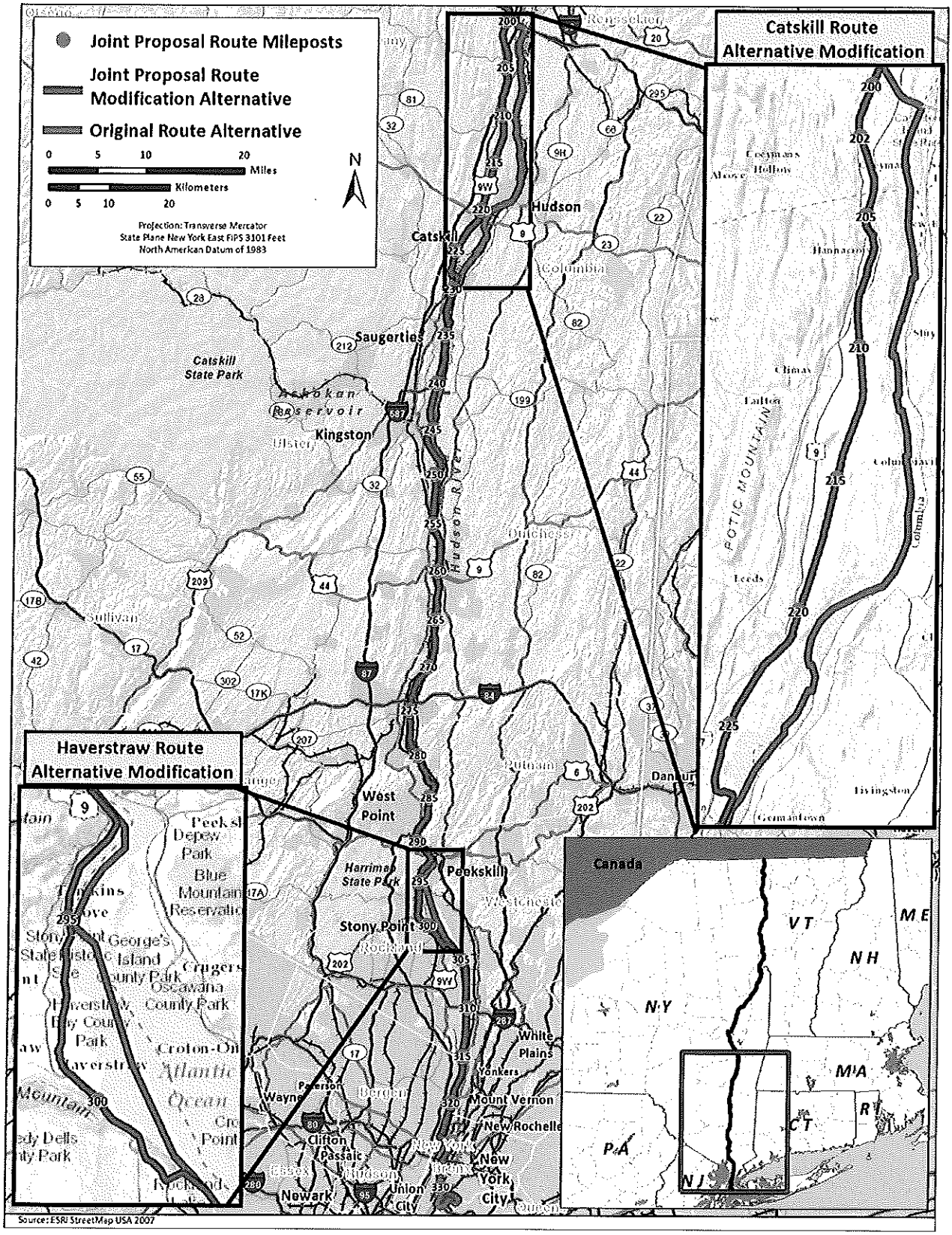


Figure 3. Hudson River Segment

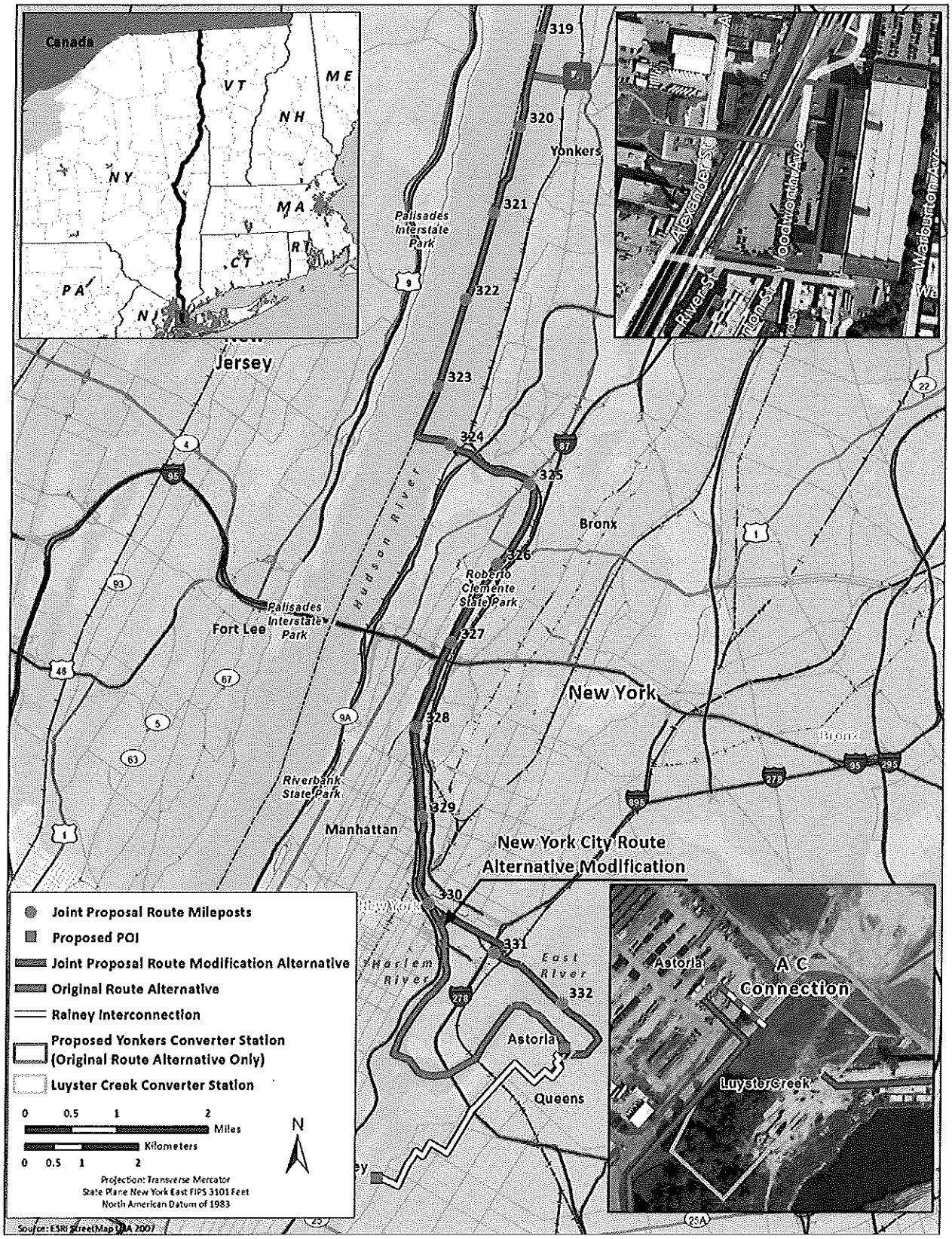


Figure 4. New York City Metropolitan Area Segment

Department of Energy
Washington, DC 20585

June 21, 2012

Ms. Mary Colligan, Assistant Regional Administrator
NOAA National Marine Fisheries Service Northeast Regional Office
55 Great Republic Drive
Gloucester, MA 01930

SUBJECT: Proposed Champlain Hudson Power Express Transmission Line Project

Dear Ms. Colligan:

As you are aware, Champlain Hudson Power Express, Inc. ("CHPEI" or "Applicants") has applied to the U.S. Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability for a Presidential Permit to construct, operate, maintain, and connect the proposed Champlain Hudson Power Express Transmission Line Project (Project). This letter is to initiate informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA) for the Project.

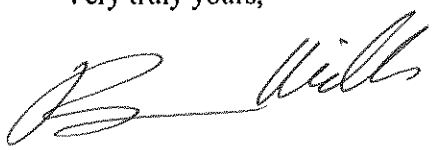
CHPEI's application for a Presidential Permit was submitted to the DOE on January 27, 2010. CHPEI subsequently modified its application on August 6, 2010; July 7, 2011; and February 28, 2012. The Project currently under review by the DOE would consist of a 1,000-megawatt (MW) high-voltage direct current (HVDC) Voltage Source Converter controllable transmission system extending from the Canadian Province of Quebec to New York City, as shown in the attached Figures 1 through 4. From the international border between the United States and Canada, two cables (comprising a single bipole) would extend south to an HVDC Converter Station to be located near Luyster Creek, north of 20th Avenue in Astoria, Queens. From the Converter Station, a 345-kilovolt (kV) underground alternating current (AC) circuit would connect to the existing 345-kV gas-insulated substation owned by the New York Power Authority (NYPA) and situated near NYPA's Charles Poletti Power Project in Astoria. The Applicants also propose to construct a 3-mile buried 345-kV HVAC cable circuit from the Astoria Substation to Consolidated Edison's Rainey Substation in Queens. The Applicants have proposed to install the cables within waterways, and within the rights-of-way of existing transportation infrastructure, including railroads and roadways. Sections of the transmission line installed within waterways will generally be buried beneath the lake or riverbed. Overland sections of the Project will be buried within existing ROW corridors.

The DOE has determined that an Environmental Impact Statement (EIS) is the appropriate level of review under the National Environmental Policy Act (NEPA) for the proposed project, as was documented in our *Federal Register* Notice of Intent to prepare an EIS on June 18, 2010 (75 FR 117). The Notice of Intent, along with background information, an opportunity to subscribe to our mailing list, and more, are available on our EIS-specific website at http://www.chpexpresseis.org.

Detailed figures of the project area are attached for your consideration. It is our understanding that your area of interest overlaps the Hudson River and New York City Area Metropolitan segments of the project area in Figures 3 and 4, respectively. Our current information indicates that the action area is both within the immediate vicinity of the project area and along the potential routes for a cable laying ship and associated support vessels navigating to and from port for a limited number of trips. We ask that you provide a list of species that might occur in the action area. We also request a meeting at your earliest convenience, to kick off informal consultation and discuss any concerns relative to impacts of the Proposed Action on federally listed species. We will also consult with the NOAA Habitat Conservation Division regarding essential fish habitat that could be affected by the Proposed Action, as well as the U.S. Fish and Wildlife Service regarding species and critical habitat under their purview.

Please feel free to contact me directly at any time at Brian.Mills@hq.DOE.gov, or by phone at (202) 586-8267.

Very truly yours,



Mr. Brian Mills
Permitting, Siting, and Analysis, OE-20
Office of Electricity Delivery and
Energy Reliability
U.S. Department of Energy

Attch: Figures 1 through 4

Department of Energy
Washington, DC 20585

June 21, 2012

Ms. Diane Rusanowsky
NOAA Fisheries Science Center
Milford Laboratory
212 Rogers Avenue
Milford, CT 06460-6499

SUBJECT: Proposed Champlain Hudson Power Express Transmission Line Project

Dear Ms. Rusanowsky:

As you are aware, Champlain Hudson Power Express, Inc. ("CHPEI" or "Applicants") has applied to the U.S. Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability for a Presidential Permit to construct, operate, maintain, and connect the proposed Champlain Hudson Power Express Transmission Line Project (Project). This letter is to initiate informal consultation under Section 7(a)(2) of the Endangered Species Act (ESA), as well as to request the identification of essential fish habitat (EFH) for the Project.

CHPEI's application for a Presidential Permit was submitted to the DOE on January 27, 2010. CHPEI subsequently modified its application on August 6, 2010; July 7, 2011; and February 28, 2012. The Project currently under review by the DOE would consist of a 1,000-megawatt (MW) high-voltage direct current (HVDC) Voltage Source Converter controllable transmission system extending from the Canadian Province of Quebec to New York City, as shown in the attached Figures 1 through 4. From the international border between the United States and Canada, two cables (comprising a single bipole) would extend south to an HVDC Converter Station to be located near Luyster Creek, north of 20th Avenue in Astoria, Queens. From the Converter Station, a 345-kilovolt (kV) underground alternating current (AC) circuit would connect to the existing 345-kV gas-insulated substation owned by the New York Power Authority (NYPA) and situated near NYPA's Charles Poletti Power Project in Astoria. The Applicants also propose to construct a 3-mile buried 345-kV HVAC cable circuit from the Astoria Substation to Consolidated Edison's Rainey Substation in Queens. The Applicants have proposed to install the cables within waterways, and within the rights-of-way of existing transportation infrastructure, including railroads and roadways. Sections of the transmission line installed within waterways will generally be buried beneath the lake or riverbed. Overland sections of the Project will be buried within existing ROW corridors.

The DOE has determined that an Environmental Impact Statement (EIS) is the appropriate level of review under the National Environmental Policy Act (NEPA) for the proposed project, as was documented in our Federal Register Notice of Intent to prepare an EIS on June 18, 2010 (75 FR 117). The Notice of Intent, along with background information, an opportunity to subscribe to our mailing list, and more, are available on our EIS-specific website at http://www.chpexpresseis.org.

Detailed figures of the CHPEI project area are attached for your consideration. Our research indicates that EFH is only designated in the Hudson River and New York City Metropolitan Area segments of the project area in Figures 3 and 4, respectively.

We ask that you provide a list of potentially affected species with EFH in the project area. We also request a meeting to initiate consultation and discuss any concerns you might have relative to impacts of the Proposed Action on EFH. We will also consult with the NOAA Protected Resources Division and the U.S. Fish and Wildlife Service and the regarding threatened and endangered species and critical habitat under their purview that could be affected by the proposed action.

Please feel free to contact me directly at any time at Brian.Mills@hq.DOE.gov, or by phone at (202) 586-8267.

Very truly yours,

Mr. Brian Mills
Permitting, Siting, and Analysis, OE-20
Office of Electricity Delivery and
Energy Reliability
U.S. Department of Energy

Attch: Figures 1 through 4

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo

Project Number: 90534

To: Brian Mills Date: Jul 17, 2012

Regarding: Champlain Hudson Power Express

Town/County: from the Canadian Province of Quebec to New York City

The U.S. Fish and Wildlife Service (Service) New York Field Office has received your request for information regarding occurrences of Federally-listed or proposed threatened and endangered species within the vicinity of the above-referenced project/property. In an effort to streamline project reviews, we have shifted our species list request responses to our website at http://www.fws.gov/northeast/nyfo/es/section7.htm. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response for your files. Step-by-step instructions are also found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, Section 7(a)(2) of the ESA requires Federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take"* any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or when appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above project number in any future correspondence.

Endangered Species Biologist: Robyn A. Niver Robyn A Niver

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to ***take*** (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
55 Great Republic Drive
Gloucester, MA 01930-2276

JUN 28 2012

Brian Mills
Permitting, Siting and Analysis, OE-20
Office of Electricity Delivery and Energy Reliability
U.S. Department of Energy
Washington, DC 20585

Re: Proposed Champlain Hudson Power Express

Dear Mr. Mills,

Your letter dated June 21, 2012, requests information on listed species present along the route of the proposed Champlain Hudson Power Express. Champlain Hudson Power Express, Inc. (CHPEI) has applied to the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability for a Presidential Permit to construct, operate, maintain, and connect the proposed transmission line. It is our understanding that approvals or permits will also be required from the U.S. Army Corps of Engineers and possibly the Federal Energy Regulatory Commission. The proposed project involves the installation of a new transmission cable from Quebec, Canada to New York City. The cable will be installed down the length of the Hudson River from Lake Champlain to the lower river in Manhattan.

Endangered Species
Atlantic sturgeon occur in estuarine and marine waters along the U.S. Atlantic coast, including the Hudson River. In the Hudson River, Atlantic sturgeon can occur from the Troy Dam to the confluence with the Atlantic Ocean. The New York Bight, Chesapeake Bay, South Atlantic and Carolina Distinct Population Segments (DPS) of Atlantic sturgeon are endangered; the Gulf of Maine DPS is threatened. Individuals originating from any of these DPSs could occur in the project area. A population of endangered shortnose sturgeon occurs in the Hudson River; ranging from New York Harbor to the Troy Dam. You can find more information on sturgeon species at: http://www.nero.noaa.gov/prot_res/esp/index.html.

Candidate Species
Candidate species are those petitioned species that we are actively considering for listing as endangered or threatened under the ESA, as well as those species for which we has initiated an ESA status review that it has announced in the *Federal Register*. "Candidate" status does not carry any procedural or substantive protections under the ESA. Two candidate species, alewife and blueback herring, can occur in the project area. You can find more information on these species in the Federal Register notice that announced this decision: http://www.nmfs.noaa.gov/pr/pdfs/fr/fr76-67652.pdf.

ESA Section 7 Consultation

Section 7(a)(2) of the ESA, states that each Federal agency shall, in consultation with the Secretary, insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Any discretionary federal action that may affect a listed species must undergo Section 7 consultation. We encourage you to work with the ACOE and/or FERC to ensure that the section 7 consultation is initiated with us as appropriate. We recommend that any necessary consultation or conference with us be completed prior to issuing any final permits or authorizations. We also request that you identify a lead Federal agency for purposes of section 7 consultation and that determination be provided to us in writing in a letter that identifies all of the federal authorizations or permits necessary for the project.

As project plans are developed, we recommend that you consider the following effects of the project on NMFS listed and candidate species:

- Effects of increased suspended sediment;
- Suspension of contaminated sediments, particularly PCBs;
- Discharge of any other pollutant;
- Loss of prey; and,
- Any impacts to habitat or conditions that make affected waterbodies suitable for these species.

We encourage you to develop construction plans that avoid habitat disruption in places and at times where spawning and/or rearing of early life stages takes place. With careful planning some impacts to listed species may be able to be avoided. We look forward to working with you as project plans are developed. Should you have any questions regarding endangered species and to arrange the requested meeting, please contact Julie Crocker at (978)282-8480 or by e-mail (Julie.Crocker@noaa.gov). If you have not done so already, please contact Chris Boelke in our Habitat Conservation Division at (978) 281-9394 or by e-mail (Christopher.Boelke@noaa.gov) regarding potential impacts of the proposed action on Essential Fish Habitat and resources considered under the Fish and Wildlife Coordination Act. Questions regarding candidate species should be directed to Kim Damon-Randall at (978)282-8485 or by e-mail (Kimberly.Damon-Randall@noaa.gov).

Sincerely,

Mary A. Colligan
Assistant Regional Administrator
for Protected Resources

CC: Boelke, F/NER4
Murray-Brown, Damon-Randall - F/NER3

File Code: Sec 7 tech assist 2012

APPENDIX H.2 – BIOLOGICAL RESOURCES TABLES

Appendix H.2
Biological Resources Tables

Appendix H.2 contains tables that document various species that are found along the proposed CHPE Project route. Tables are broken down by segments, with the exception of Table H.2, which includes breeding birds for the entire proposed CHPE Project route, and identifies life history characteristics that are important to species that occur within the area of the proposed CHPE Project. State-listed species are identified as such in the tables.

Appendix H.2 contains the following tables:

- **Table H.2-1.** Life History Characteristics of Representative Fish of Lake Champlain
- **Table H.2-2.** State-Listed Species Occurring Within 0.25 Miles of the Overland Segment
- **Table H.2-3.** Life History Characteristics of Representative Fish of the Hudson River
- **Table H.2-4.** State-Listed Species Occurring within 0.25 miles of the Hudson River Segment
- **Table H.2-5.** Breeding Birds in the Vicinity of the Proposed CHPE Project

Table H.2-1. Life History Characteristics of Representative Fish of Lake Champlain

Common Name	Scientific Name	Temperature Preference	Trophic Level	Habitat	Migratory or Resident	Spawning Season/Habitat
Sea lamprey	*Petromyzon marinus*	Cold water	Predator	Pelagic	Migratory	Spring-summer/rocky streams
Lake herring/cisco	*Coregonus artedi*	Cold water	Forage	Pelagic	Resident	Late fall/shallow water
Atlantic salmon*	*Salmo salar*	Cold water	Predator	Pelagic	Migratory	Fall/streams
Steelhead	*Oncorhynchus mykiss*	Cold water	Predator	Pelagic	Migratory	Spring/streams
Alewives	*Alosa pseudoharengus*	Warm water	Forage	Pelagic	Migratory	Spring-summer/shallow areas of lakes
Rainbow smelt	*Osmerus mordax*	Cold water	Forage	Pelagic	Migratory	Late winter/streams
Lake whitefish	*Coregonus clupeaformis*	Cool water	Forage	Pelagic	Resident	Fall/nearshore over rock, gravel, or sand
Lake trout*	*Salvelinus namaycush*	Cold water	Predator	Demersal	Migratory	Fall-early winter/rocky shoals
Walleye	*Sander vitreum*	Cool water	Predator	Littoral	Migratory	Spring/streams and shoals with current
Northern pike	*Esox lucius*	Cool water	Predator	Littoral	Migratory	Spring/shallow marshes
Yellow perch	*Perca flavescens*	Cool water	Forage	Littoral	Resident	Spring/shallows over sand, gravel, rubble, or vegetation
American eel	*Anguilla rostrata*	Warm water	Predator	Littoral	Migratory	Late summer-fall/ Sargasso Sea
Largemouth bass	*Micropterus salmoides*	Warm water	Predator	Littoral	Resident	Spring-summer/nearshore near vegetation
Smallmouth bass	*M. dolomieu*	Warm water	Predator	Littoral	Resident	Spring/along shore over gravel
Brown trout*	*Salmo trutta*	Cold water	Predator	Littoral	Migratory	Fall-early winter/streams
Pumpkinseed	*Lepomis gibbosus*	Warm water	Predator	Littoral	Resident	Spring-mid-summer/ nearshore near vegetation

Common Name	Scientific Name	Temperature Preference	Trophic Level	Habitat	Migratory or Resident	Spawning Season/Habitat
White crappie	*Pomoxis annularis*	Warm water	Predator	Littoral	Resident	Spring/turbid waters w/underwater objects over gravel, rock.
Black crappie	*Pomoxis nigromaculatus*	Warm water	Predator	Littoral	Resident	Spring-early summer/shallow, weedy water with sand
Lake sturgeon	*Acipenser fulvescens*	Cold water	Forage	Demersal	Migratory	Spring - early summer/ relatively shallow water near gravel beds

Sources: Trzaskos and Malchoff 2006, NYSDEC 1986, Fishbase 2013

Note: * Species stocked by state or Federal agencies.

Table H.2-2. State-Listed Species Occurring Within 0.25 Miles of the Overland Segment

Common Name	Scientific Name	New York Status	Species Information
Plants			
Rock cress	*Draba arabisans*	T	Flowering plant with a range spanning much of the northeastern United States. Grows on dry cliffs, rocky ledges, talus slopes, and open woodlands, often at calcareous sites. In New York State, rock cress has been found on bedrock of limestone, shale and siltstone, and anorthosite. Occurs in calcareous cliff communities.
Smooth rock cress	*Draba glabella*	E	Flowering plant with a range spanning northeastern United States. Grows on dry cliffs, rocky ledges, talus slopes, and open woodlands, often at calcareous sites. In New York State, smooth rock cress is only known to occur along Lake Champlain. Occurs in calcareous cliff communities.
Long's bittercress	*Cardamine longii*	T	Mustard plant limited to the Hudson River and Long Island. Habit is intertidal areas within tidal estuaries and backwater areas.
Davis sedge	*Carex davisii*	T	Sedge plant found in New York. It is mainly found in areas adjacent to the Hudson River from north of Albany south to Queens in mesic limestone, rich bottomland, and floodplain forest communities.
Handsome sedge	*Carex Formosa*	T	In New York, the sedge plant can be found scattered throughout the state. It can be found in habitats such as forests, forest edges, road sides, or less frequently in open meadows. It occurs in areas where the bedrock is limestone or the soils are calcareous. Occurs in calcareous cliff communities.
Lake cress	*Neobeckia aquatic*	T	Plant of the mustard family found in New York State. Prefers shallow, still water.
Smooth cliff brake	Pallaea glabellas sp glabella	T	Fern with a range spanning much of eastern United States. Thrives on bare limestone. Occurs in calcareous cliff communities.
Heartleaf plantain	*Plantago chordate*	T	A high proportion of the populations are along the Hudson River, where it prefers the edges of freshwater intertidal mudflats, sandy or rocky shorelines of tidal creeks and other waterways, edges of freshwater tidal marshes, and gravel shores along freshwater tidal portions.
Douglas knotweed	*Polygonum douglassi*	T	Flowering plant with a range spanning much of New England. Prefers rocky slopes and dry soils.

Common Name	Scientific Name	New York Status	Species Information
Plants (continued)			
Hill's pondweed	*Potamogeton hilli*	T	Pondweed that can be found in New York State, where it prefers the calcareous wetlands and ponds of the eastern Hudson River Valley.
Slender bulrush	*Schoenoplectus heterochaetus*	E	Rare sedge that can be found scattered but mostly east and west of Adirondacks. Prefers shallow emergent marshes along slow-moving creeks or rivers, often at their mouths.
Downey lettuce	*Lactuca hirsute*	E	Herb found in the majority of the eastern United States and prefers dry, open woods, clearings.
Estuary beggar-ticks	*Bidens hyperborean var. hyperborean*	E	Aster reaching its southern limit in New York State. Because its tidal habitat is only available for a few hours a day during low tide, there is very little information on the distribution of the species in New York. Prefers freshwater tidal mud flats and marshes.
Spongy arrowhead	*Sagittaria montevidensis var. spongiosa*	T	Scattered individuals in good habitat. Intertidal brackish marsh with muddy creek. Plants submerged at high tide.
Hudson River water-nymph	*Najas guadalupensis ssp. Muenscheri*	E	Water-nymph endemic to New York State. Prefers shallow water or pools of tidal mud flats of the Hudson River on mucky or gravel and rock soils.
Lake-cress	*Rorippa aquatic*	T	Lake-cress is scattered throughout New York State. Prefers habitat in shallow, still water, which include many ponds and lakes.
American waterwort	*Elatine americana*	E	Water starwort known to occur from Long Island through tidally influenced Hudson River. Prefers intertidal mudflats and marshes along the Hudson River.
Stiff-leaf golden-rod	*Oligoneuron rigidum* var. *rigidum*	T	Goldenrod found in calcareous or circumneutral areas within the Hudson Valley. Habitats range from open dry, shaley slopes or limestone bedrock to woodland edges between calcareous woodlands and successional old fields, among others.
Insects			
Frosted elfin	*Callophrys irus*	T	Rare butterfly extirpated from Canada and some U.S. states. Can be found scattered on sandplains, mainly in the upper Hudson River Valley. The key habitat feature is an abundance of foodplants (wild blue lupine and wild indigo [Baptisia spp.]), and is associated with remnant pine barrens, oak savannas, or dry oak forest.
Persius duskywing	*Erynnis persius persius*	E	Rare butterfly with only a few colonies remaining in New York State. Their range spans much of the United States and they prefer dry brushy or scrubby areas or relatively open woodlands with abundant New Jersey Tea (*Ceanothus americanus*).

Common Name	Scientific Name	New York Status	Species Information
Birds			
Peregrine falcon	*Falco peregrines*	E	Highly migratory falcon with an expansive foraging range. Arrives in northern breeding areas late April–early May; southern departure begins late August–early September. Prefers open habitat and often nests on ledges or holes on the face of rocky cliffs or crags.
Short-eared owl	*Asio flammeus*	E	Highly migratory bird that breeds in Essex County. Its preferred habitat consists of marshes and open lowland areas, and recent nests have been observed in pastures and agricultural areas in New York State.
Bald eagle*	*Haliaeetus leucocephalus*	T	Raptor that can be found in scattered areas throughout the United States. The bald eagle generally prefers areas adjacent to large bodies of water that support fish populations. Wintering areas are concentrated in four main areas: the Upper Delaware River, the Saint Lawrence River, the Lower Hudson River, and the Sacandaga River.
Least bittern	*Ixobrychus exilis*	T	Long distance migratory bird arriving at nesting areas in the northeastern United States in early to mid-April or early May and leaves northern breeding areas by September/October. Considered locally common in marshes of the Hudson River Valley, and possibly breeding in the Champlain Valley. Typically breeds in tall, emergent vegetation in marshes, primarily fresh water. When least bitterns are alarmed, instead of flying away, they often freeze.
Northern harrier	*Circus cyaneus*	T	Raptor with a very large home range, and whose breeding range includes most of New York State. The northern harrier prefers open marshy and lowland areas, similar to the short-eared owl.
Loggerhead shrike	*Lanius ludovicianus*	E	Prefers open habitats such as pastures, hayfields, and other agricultural areas. It uses the thorns of certain shrubs and trees, such as hawthorn, to impale its prey. It is not known whether hawthorn trees occur along the Overland Segment, but the Washington hawthorn is used extensively throughout New York State as an ornamental and landscape tree.

Sources: NatureServe 2012, PFAF Database 2012, NYNHP 2005c, UW 2012b, Cornell 2012, CHPEI 2012x, NYSDEC 2012k

Key:

T = threatened, E = endangered

* = The Bald eagle is also protected under the BGEPA.

Table H.2-3. Life History Characteristics of Representative Fish of the Hudson River

Common Name	Scientific Name	Diet	Habitat	Migratory or Resident	Salinity Preference	Spawning Season/Habitat
Alewife	*Alosa pseudoharengus*	Zooplankton, smaller fish, insects and eggs of fish, insects, and crustaceans	Pelagic	Migratory	Anadromous	March–May/shallow streams and large rivers
American eel	*Anguilla rostrata*	Insects, mollusks, fish, crustaceans	Demersal	Migratory	Catadromous (spawn in salt water, live in fresh water)	Winter and early spring/Saragosso Sea
American shad	*Alosa sapidissima*	Insects, crustaceans, mysids, copepods, small fish	Pelagic	Migratory	Anadromous	April–June/sand, silt, muck, gravel, and boulder substrates, usually in waters < 10 feet (3 meters)
Atlantic menhaden	*Brevoortia tyrannus*	Copepods, zooplankton, phytoplankton, and diatoms	Pelagic	Migratory	Marine	May–June and September–October/ coastal waters < 32 feet (10 meters)
Atlantic silverside	*Menidia menidia*	Copepods, mysids, amphipods, fish eggs, worms, and insects	Pelagic	Migratory	Estuarine	March–June/ intertidal zone of estuaries and tributaries
Atlantic sturgeon	*Acipenser oxyrhynchus*	Mollusks, worms, gastropods, shrimps, small fish	Demersal	Migratory	Anadromous	March–May/rock, rubble, or hard clay
Atlantic tomcod	*Microgadus tomcod*	Small crustaceans, mollusks, and fish	Demersal	Resident	Estuarine	November–February/shallow waters of estuaries or stream mouths
Banded killifish	*Fundulus diaphanous*	Flying insects, midge larvae	Pelagic	Resident	Fresh water	April–August/pools with vegetation

Common Name	Scientific Name	Diet	Habitat	Migratory or Resident	Salinity Preference	Spawning Season/Habitat
Bay anchovy	*Anchoa mitchilli*	Mysids and copepods	Pelagic	Migratory	Estuarine	May–September/estuarine waters < 12 ºC
Black sea bass	*Centropristis striata*	Crustaceans, mollusks, echinoderms, crabs and fish	Pelagic	Migratory	Marine	May–October/continental shelf in vicinity of large estuaries
Blueback herring	*Alosa aestivalis*	Zooplankton, smaller fish, insects and eggs of fish, insects, and crustaceans	Pelagic	Migratory	Anadromous	May–April/ fast currents over hard substrate
Bluefish	*Pomatomus saltatrix*	Zooplankton, fish larvae, shrimp, fish, squid, crustaceans	Pelagic	Migratory	Marine	June–August/ coastal waters between 8 and 26 ºC
Fourspine stickleback	*Apeltes quadracus*	Plankton, diatoms, nematodes, cyclopods	Midwater/ demersal	Resident	Marine/ Fresh water	April–August/ bottom debris and vegetation
Gizzard shad	*Dorosoma cepedianum*	Plankton and detritus	Pelagic	Resident	Fresh water	May–June/ over submerged objects like rocks or logs near shore
Hickory shad	*Alosa mediocris*	Squid, small fish, fish eggs, and small crustaceans	Pelagic	Migratory	Anadromous	April–June/ water temperate approximately 13 ºC
Hogchoker	*Trinectes maculates*	Small crustaceans and worms	Demersal	Migratory	Fresh water/ estuarine	May–August/ lower estuarine areas
Largemouth bass	*Micropterus salmoides*	Plankton, insects, and fish	Midwater/ demersal	Resident	Fresh water	May–June/1 to 5 feet of water near weedy vegetation
Mummichog	*Fundulus heteroclitus*	Small invertebrates on surface and in water column	Pelagic	Resident	Estuarine/ Marine	April–July/ empty shells of mussels and within dead leaves and algal mats

Common Name	Scientific Name	Diet	Habitat	Migratory or Resident	Salinity Preference	Spawning Season/Habitat
Sea lamprey	*Petromyzon marinus*	Parasitic; cetaceans and large fish	Demersal	Migratory	Anadromous	April–July/ rocky streams
Sheepshead minnow	*Cyprinodon variegatus*	Organic detritus and algae, microcrustaceans	Midwater/ demersal	Resident	Marine/Fresh water	April–August/ warm waters
Shortnose sturgeon	*Acipenser brevirostrum*	Crustaceans, insect larvae, mollusks, small benthic fish	Demersal	Migratory	Fresh water amphidromous (live in fresh water and spawn in marine waters of natal river)	March–May/ rock, rubble or hard clay
Spotfin killifish	*Fundulus luciae*	Detritus, diatoms, ostracods, dipterans, copepods, and other small organisms	Midwater/ demersal	Resident	Fresh water/ Estuarine	April–September/not specified
Striped bass	*Morone saxatilis*	Crustaceans, fish (e.g., alewives, eels, silversides), and invertebrates	Demersal	Migratory	Anadromous	May–June/ rivers and tributaries
Striped killifish	*Fundulus majalis*	Midge larvae, flying insects, mollusks, and flatworms	Pelagic	Resident	Estuarine/ marine	June–August/still, shallow water close to shore; and small ponds within substrate
Tautog	*Tautoga onitis*	Mollusks, gastropods, and crustaceans	Pelagic	Resident	Marine	April–June/coastal waters
Threespine stickleback	*Gasterosteus aculeatus*	Worms, crustaceans, aquatic insects	Midwater/ demersal	Migratory	Fresh water/ estuarine	April–August/shallow water
Weakfish	*Cynoscion regalis*	Shrimp, anchovies, and clupeid fishes	Demersal	Migratory	Marine	June–August/ nearshore and estuarine areas of coast

Common Name	Scientific Name	Diet	Habitat	Migratory or Resident	Salinity Preference	Spawning Season/Habitat
White catfish	*Ameiurus catus*	Aquatic insects, fish, and fish eggs	Demersal	Migratory (local migrations)	Fresh water/estuarine	June and July in California/sand or gravel bars
White perch	*Morone americana*	Aquatic insects, crustaceans, fish, and zooplankton	Demersal	Resident	Anadromous	April–May/ estuaries, rivers, lakes, and marshes
Windowpane flounder	*Scophthalmus aquosus*	Small crustaceans and fish larvae	Demersal	Migratory	Marine	April–July and September to October/ sand, silt, or mud substrate
Winter flounder	*Pseudopleuronectes americanus*	Shrimp, amphipods, crabs, urchins, and snails	Demersal	Resident	Marine	December–March/coastal waters, sandy substrate at depths of 6 feet (2 meters) to 262 feet (80 meters) deep

Sources: USFWS 1989, NYSDEC 1986, NOAA 1999a, NOAA 1999b, NOAA 2006b, NOAA 2007, ADCNR 2012, Fishbase 2013, NatureServe 2012, ODNR 2012, TPW 2012, USGS 2012b, VDGIF 2012,

Table H.2-4. State-Listed Species Occurring within 0.25 miles of the Hudson River Segment

Common Name	Scientific Name	New York Status	Species Information
Plants			
Heartleaf plantain	*Plantago chordata*	T	A high proportion of the populations are along the Hudson River Valley, where it prefers the edges of freshwater intertidal mudflats, sandy or rocky shorelines of tidal creeks and other waterways, edges of freshwater tidal marshes, and gravel shores along freshwater tidal portions.
Smooth bur-marigold	*Bidens laevis*	T	A flowering aster found mostly in states east of the Mississippi River. In New York State, it is mostly found on Long Island and along the Hudson River. This species prefers freshwater and brackish tidal mud flats and tidal marshes.
Davis sedge	*Carex davisii*	T	*Carex davisii* is mainly found in areas adjacent to the Hudson River from north of Albany to Queens and prefers mesic limestone, rich bottomland, and floodplain forests.
Straw sedge	*Carex straminea*	E	A sedge predominantly found on Long Island and southeastern New York. This species prefers swamp margins and marshes.
Basil mountain-mint	*Pycnanthemum clinopodioides*	E	This mint occurs in shallow soil associated with the Palisades and Harlem Valley and prefers dry, south- or west-facing slopes on rocky soil. These sites are open oak-hickory forests, woodlands, or savannas, with lots of exposed bedrock.
Torrey's mountain-mint	*Pycnanthemum torrei*	E	This mint is found in southern New York State from New York, Rockland, and Dutchess counties. Found in dry, open habitats, including red cedar barrens, rocky summits, trails, and roadsides
Saltmarsh aster	*Symphyotrichum subulatum* var. *subulatum*	T	Aster that occurs along the edges of the Hudson River to Putnam and Rockland counties. Prefers coastal areas in salt to brackish marshes, along the banks of salt-influenced tidal channels, brackish marshes, among other salt-influenced habitat.
Spongy arrowhead	*Sagittaria montevidensis* var. *spongiosa*	T	Arrowhead that is restricted to estuaries along the Hudson River. Prefers fresh water to brackish open intertidal mud flats. Occasionally found adjacent and upslope of these habitats.
Birds			
Peregrine falcon	*Falco peregrinus*	E	Highly migratory falcon with an expansive foraging range. Arrives in northern breeding areas in late April–early May; southern departure begins late August–early September. Prefers open habitat and often nests on ledges or holes on the face of rocky cliffs or crags.

Common Name	Scientific Name	New York Status	Species Information
Birds (continued)			
Short-eared owl	*Asio flammeus*	E	Highly migratory bird that breeds in Essex County. Its preferred habitat consists of marshes and open lowland areas, and recent nests have been observed in pastures and agricultural areas in New York State.
Bald eagle	*Haliaeetus leucocephalus*	T	Raptor that can be found in scattered areas throughout the United States. The bald eagle generally prefers areas adjacent to large bodies of water that support fish populations. Wintering areas are concentrated in four main areas: the Upper Delaware River, the Saint Lawrence River, the Lower Hudson River, and the Sacandaga River.
Northern harrier	*Circus cyaneus*	T	Raptor with a very large home range and whose breeding range includes most of New York State. The northern harrier prefers open marshy and lowland areas, similar to the short-eared owl.
Least bittern	*Ixobrychus exilis*	T	Long-distance migratory bird arriving at nesting areas in the northeastern United States in early to mid-April or early May and leaves northern breeding areas by September–October. Considered locally common in marshes of the Hudson River Valley, and possibly breeding in the Champlain Valley. Habitats vary throughout North America. Typically breeds in tall emergent vegetation in marshes, primarily fresh water. When least bitterns are alarmed, instead of flying away, they often freeze.

Sources: NYNHP 2005c, NYNHP 2005d, NatureServe 2012, NYNHP 2013c

Key: T = threatened, E = endangered

Table H.2-5. Breeding Birds in the Vicinity of the Proposed CHPE Project

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Acadian flycatcher	*Empidonax virescens*	No	No	Yes
Alder flycatcher	*Empidonax alnorum*	Yes	Yes	Yes
American bittern	*Botaurus lentiginosus*	Yes	Yes	Yes
American black duck	*Anas rubripes*	Yes	Yes	Yes
American coot	*Fulica americana*	Yes	No	No
American crow	*Corvus brachyrhynchos*	Yes	Yes	Yes
American goldfinch	*Carduelis tristis*	Yes	Yes	Yes
American kestrel	*Falco sparverius*	Yes	Yes	Yes
American redstart	*Setophaga ruticilla*	Yes	Yes	Yes
American robin	*Turdus migratorius*	Yes	Yes	Yes
American three-toed woodpecker	*Picoides dorsalis*	Yes	No	No
American wigeon	*Anas americana*	Yes	No	Yes
American woodcock	*Scolopax minor*	Yes	Yes	Yes
Bald eagle	*Haliaeetus leucocephalus*	Yes	No	Yes
Baltimore oriole	*Icterus galbula*	Yes	Yes	Yes
Bank swallow	*Riparia riparia*	Yes	Yes	Yes
Barn owl	*Tyto alba*	Yes	Yes	Yes
Barn swallow	*Hirundo rustica*	Yes	Yes	Yes
Barred owl	*Strix varia*	Yes	Yes	Yes
Bay-breasted warbler	*Setophaga castanea*	Yes	No	No
Belted kingfisher	*Ceryle alcyon*	Yes	Yes	Yes
Bicknell's thrush	*Catharus bicknelli*	Yes	Yes	Yes
Black tern	*Childonias niger*	Yes	Yes	No
Black-and-white warbler	*Mniotilta varia*	Yes	Yes	Yes
Black-backed woodpecker	*Picoides arcticus*	Yes	Yes	No
Black-billed cuckoo	*Coccyzus erythropthalmus*	Yes	Yes	Yes
Black-capped chickadee	*Poecile atricapillus*	Yes	Yes	Yes
Black-crowned night-heron	*Nycticorax nycticorax*	Yes	Yes	Yes
Black-throated blue warbler	*Setophaga caerulescens*	Yes	Yes	Yes
Black-throated green warbler	*Dendroica virens*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Blackburnian warbler	*Setophaga fusca*	Yes	Yes	Yes
Blackpoll warbler	*Setophaga striata*	Yes	Yes	Yes
Blue grosbeak	*Passerine caerulea*	No	No	Yes
Blue jay	*Cyanocitta cristata*	Yes	Yes	Yes
Blue-gray gnatcatcher	*Polioptila caerulea*	Yes	Yes	Yes
Blue-headed vireo	*Vireo solitaries*	Yes	Yes	Yes
Blue-winged teal	*Anas discors*	Yes	Yes	Yes
Blue-winged warbler	*Vermivora pinus*	No	No	Yes
Bobolink	*Dolichonyx oryzivorus*	Yes	Yes	Yes
Brewster's warbler (golden-winged x blue-winged)*	*Vermivora Vermivora chrysoptera x cyanoptera*	No	Yes	Yes
Boreal chickadee	*Poecile hudsonicus*	Yes	No	Yes
Broad-winged hawk	*Buteo platypterus*	Yes	Yes	Yes
Brown creeper	*Certhia americana*	Yes	Yes	Yes
Brown thrasher	*Toxostoma rufum*	Yes	Yes	Yes
Brown-headed cowbird	*Molothrus ater*	Yes	Yes	Yes
Bufflehead	*Bucephala albeola*	Yes	No	No
Canada goose	*Branta canadensis*	Yes	Yes	Yes
Canada warbler	*Wilsonia canadensis*	Yes	Yes	Yes
Cape May warbler	*Setophaga tigrina*	Yes	No	No
Carolina wren	*Thryothorus ludovicianus*	Yes	Yes	Yes
Cattle egret	*Bubulcus ibis*	Yes	No	No
Cedar waxwing	*Bombycilla cedrorum*	Yes	Yes	Yes
Cerulean warbler	*Setophaga cerulea*	Yes	Yes	Yes
Chestnut-sided warbler	*Vermivora pinus*	Yes	Yes	Yes
Chimney swift	*Chaetura pelagica*	Yes	Yes	Yes
Chipping sparrow	*Spizella passerina*	Yes	Yes	Yes
Clay-colored sparrow	*Spizella pallida*	Yes	Yes	No
Cliff swallow	*Petrochelidon pyrrhonota*	Yes	Yes	Yes
Common goldeneye	*Bucephala clangula*	Yes	No	No
Common grackle	*Quiscalus quiscula*	Yes	Yes	Yes
Common loon	*Gavia immer*	Yes	Yes	No
Common merganser	*Mergus merganser*	Yes	Yes	Yes
Common moorhen	*Gallinula chloropus*	Yes	Yes	Yes
Common nighthawk	*Chordeiles minor*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Common raven	*Corvus corax*	Yes	Yes	Yes
Common tern	*Sterna hirundo*	Yes	No	No
Common yellowthroat	*Geothlypis trichas*	Yes	Yes	Yes
Cooper's hawk	*Accipiter cooperi*	Yes	Yes	Yes
Dark-eyed junco (slate-colored junco)	*Hunco hyemalis*	Yes	Yes	Yes
Double-crested cormorant	*Phalacrocorax auritus*	Yes	Yes	Yes
Downy woodpecker	*Picoides pubescens*	Yes	Yes	Yes
Eastern bluebird	*Sialia sialis*	Yes	Yes	Yes
Eastern kingbird	*Tyrannus tyrannus*	Yes	Yes	Yes
Eastern meadowlark	*Sturnella magna*	Yes	Yes	Yes
Eastern phoebe	*Sayornis phoebe*	Yes	Yes	Yes
Eastern screech-owl	*Megascops aslo*	Yes	Yes	Yes
Eastern towhee	*Pipilo erythrophthalmus*	Yes	Yes	Yes
Eastern wood-pewee	*Contopus virens*	Yes	Yes	Yes
European starling	*Sturnus vulgaris*	Yes	Yes	Yes
Evening grosbeak	*Coccothraustes vespertinus*	Yes	Yes	Yes
Field sparrow	*Spizella pusilla*	Yes	Yes	Yes
Fish crow	*Corvus ossifragus*	No	Yes	Yes
Gadwall	*Anas strepera*	Yes	No	Yes
Golden eagle	*Aquila chrysaetos*	Yes	No	No
Golden-crowned kinglet	*Regulus satrapa*	Yes	Yes	Yes
Golden-winged warbler	*Vermivora chrysoptera*	Yes	Yes	Yes
Grasshopper sparrow	*Ammodramus savannarum*	Yes	Yes	Yes
Gray catbird	*Dumetella carolinensis*	Yes	Yes	Yes
Gray jay	*Perisoreus canadensis*	Yes	No	No
Gray partridge	*Perdix perdix*	Yes	No	No
Great black-backed gull	*Larus marinus*	Yes	No	Yes
Great blue heron	*Ardea herodias*	Yes	Yes	Yes
Great crested flycatcher	*Myiarchus crinitus*	Yes	Yes	Yes
Great egret	*Ardea alba*	Yes	No	No
Great horned owl	*Bubo virginianus*	Yes	Yes	Yes
Greater scaup	*Aythya marila*	Yes	No	No
Green heron	*Butorides virescens*	Yes	Yes	Yes
Green-winged teal	*Anas crecca*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Hairy woodpecker	*Picoides villosus*	Yes	Yes	Yes
Henslow's sparrow	*Ammodramus henslowii*	No	Yes	Yes
Hermit thrush	*Catharus guttatus*	Yes	Yes	Yes
Herring gull	*Larus argentatus*	Yes	Yes	No
Hooded merganser	*Lophodytes cucullatus*	Yes	Yes	Yes
Hooded warbler	*Wilsonia citrina*	No	No	Yes
Horned lark	*Eremophila alpestris*	Yes	Yes	Yes
House finch	*Carpodacus mexicanus*	Yes	Yes	Yes
House sparrow	*Passer domesticus*	Yes	Yes	Yes
House wren	*Troglodytes aedon*	Yes	Yes	Yes
Hybrid mallard x black or mottled	*Anas platyrhynchos x rubripes/ x fulvigula*	Yes	Yes	Yes
Indigo bunting	*Passerina cyanea*	Yes	Yes	Yes
Kentucky warbler	*Geothlypis formosa*	No	No	Yes
Killdeer	*Charadrius vociferus*	Yes	Yes	Yes
King rail	*Rallus elegans*	No	Yes	Yes
Lawrence's warbler (blue-winged x golden-winged)*	*Vermivora cyanoptera x chrysoptera*	Yes	Yes	Yes
Least bittern	*Ixobrychus exillis*	Yes	Yes	Yes
Least flycatcher	*Empidonax minimus*	Yes	Yes	Yes
Lesser scaup	*Aythya affinis*	Yes	No	No
Lincoln's sparrow	*Melospiza lincolnii*	Yes	Yes	No
Loggerhead shrike	*Lanius ludovicianus*	Yes	Yes	No
Long-eared owl	*Asio otus*	Yes	Yes	No
Louisiana waterthrush	*Seiurus motacilla*	Yes	Yes	Yes
Magnolia warbler	*Setophaga magnolia*	Yes	Yes	Yes
Mallard	*Anas platyrhynchos*	Yes	Yes	Yes
Marsh wren	*Cistothorus palustris*	Yes	Yes	Yes
Mourning dove	*Zenaida macroura*	Yes	Yes	Yes
Mourning warbler	*Geothlypis philadelphia*	Yes	Yes	Yes
Mute swan	*Cygnus olor*	No	No	Yes
Nashville warbler	*Oreothlypis ruficapilla*	Yes	Yes	Yes
Northern bobwhite	*Colinus virginianus*	Yes	Yes	Yes
Northern cardinal	*Cardinalis cardinalis*	Yes	Yes	Yes
Northern flicker (yellow-shafted flicker)	*Colaptes auratus*	Yes	Yes	Yes
Northern goshawk	*Accipiter gentilis*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Northern harrier	*Circus cyaneus*	Yes	Yes	Yes
Northern mockingbird	*Mimus polyglottos*	Yes	Yes	Yes
Northern parula	*Setophaga americana*	Yes	Yes	Yes
Northern pintail	*Anas acuta*	Yes	Yes	No
Northern rough-winged swallow	*Stelgidopteryx serripennis*	Yes	Yes	Yes
Northern saw-whet owl	*Aegolius acadicus*	Yes	Yes	Yes
Northern shoveler	*Anas clypeata*	Yes	No	No
Northern waterthrush	*Seiurus noveboracensis*	Yes	Yes	Yes
Olive-sided flycatcher	*Contopus cooperi*	Yes	Yes	Yes
Orchard oriole	*Icterus spurius*	Yes	Yes	Yes
Osprey	*Pandion haliaetus*	Yes	Yes	Yes
Ovenbird	*Seiurus aurocapilla*	Yes	Yes	Yes
Palm warbler	*Setophaga palmarum*	Yes	No	No
Peregrine falcon	*Falco peregrinus*	Yes	No	No
Philadelphia vireo	*Vireo philadelphicus*	Yes	Yes	No
Pied-billed grebe	*Podilymbus podiceps*	Yes	Yes	Yes
Pileated woodpecker	*Dryocopus pileatus*	Yes	Yes	Yes
Pine siskin	*Spinus pinus*	Yes	Yes	Yes
Pine warbler	*Setophaga pinus*	Yes	Yes	Yes
Prairie warbler	*Dendroica discolor*	Yes	Yes	Yes
Prothonotary warbler	*Protonotaria citrea*	No	Yes	No
Purple finch	*Haemorhous purpureus*	Yes	Yes	Yes
Purple martin	*Progne subis*	Yes	Yes	Yes
Red crossbill	*Loxia curvirostra*	Yes	Yes	Yes
Red-bellied woodpecker	*Melanerpes carolinus*	Yes	Yes	Yes
Red-breasted merganser	*Mergus serrator*	Yes	Yes	No
Red-breasted nuthatch	*Sitta canadensis*	Yes	Yes	Yes
Red-eyed vireo	*Vireo olivaceus*	Yes	Yes	Yes
Red-headed woodpecker	*Melanerpes erythrocephalus*	Yes	Yes	Yes
Red-shouldered hawk	*Buteo lineatus*	Yes	Yes	Yes
Red-tailed hawk	*Buteo jamaicensis*	Yes	Yes	Yes
Red-winged blackbird	*Agelaius phoeniceus*	Yes	Yes	Yes
Redhead	*Aythya americana*	Yes	No	No
Ring-billed gull	*Larus delawarensis*	Yes	No	No
Ring-necked duck	*Aythya collaris*	Yes	Yes	Yes
Ring-necked pheasant	*Phasianus colchicus*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Rock pigeon	*Columba livia*	Yes	Yes	Yes
Rose-breasted grosbeak	*Pheucticus ludovicianus*	Yes	Yes	Yes
Ruby-crowned kinglet	*Regulus calendula*	Yes	No	No
Ruby-throated hummingbird	*Archilochus colubris*	Yes	Yes	Yes
Ruddy duck	*Oxyura jamaicensis*	No	No	Yes
Ruffed grouse	*Bonasa umbellus*	Yes	Yes	Yes
Rusty blackbird	*Euphagus carolinus*	Yes	Yes	No
Savannah sparrow	*Passerculus sandwichensis*	Yes	Yes	Yes
Scarlet tanager	*Piranga olivacea*	Yes	Yes	Yes
Sedge wren	*Cistothorus platensis*	Yes	Yes	No
Sharp-shinned hawk	*Accipiter striatus*	Yes	Yes	Yes
Short-eared owl	*Asio flammeus*	Yes	No	Yes
Song sparrow	*Melospiza melodia*	Yes	Yes	Yes
Sora	*Porzana carolina*	Yes	Yes	Yes
Spotted sandpiper	*Actitis macularia*	Yes	Yes	Yes
Spruce grouse	*Falcipennis canadensis*	Yes	No	No
Swainson's thrush	*Catharus ustulatus*	Yes	Yes	Yes
Swamp sparrow	*Melospiza georgiana*	Yes	Yes	Yes
Tennessee warbler	*Oreothlypis peregrina*	Yes	No	No
Tree swallow	*Tachycineta bicolor*	Yes	Yes	Yes
Tufted titmouse	*Baeolophus bicolor*	Yes	Yes	Yes
Turkey vulture	*Cathartes aura*	Yes	Yes	Yes
Upland sandpiper	*Bartramia longicauda*	Yes	Yes	Yes
Veery	*Catharus fuscescens*	Yes	Yes	Yes
Vesper sparrow	*Pooecetes gramineus*	Yes	Yes	Yes
Virginia rail	*Rallus limicola*	Yes	Yes	Yes
Warbling vireo	*Vireo gilvus*	Yes	Yes	Yes
Western meadowlark	*Sturnella neglecta*	No	No	Yes
Whip-poor-will	*Antrostomus vociferus*	Yes	Yes	Yes
White-breasted nuthatch	*Sitta carolinensis*	Yes	Yes	Yes
White-eyed vireo	*Vireo griseus*	Yes	Yes	Yes
White-throated sparrow	*Zonotrichia albicollis*	Yes	Yes	Yes
White-winged crossbill	*Loxia leucoptera*	Yes	Yes	No
Wild turkey	*Meleagris gallopavo*	Yes	Yes	Yes
Willow flycatcher	*Empidonax traillii*	Yes	Yes	Yes
Wilson's snipe	*Gallinago delicata*	Yes	Yes	Yes

Common Name	Scientific Name	Species Found in the Vicinity of the Segment		
		Lake Champlain Segment	Overland Segment	Hudson River and New York City Metropolitan Area Segments
Wilson's warbler	*Cardellina pusilla*	Yes	No	No
Winter wren	*Troglodytes hiemalis*	Yes	Yes	Yes
Wood duck	*Aix sponsa*	Yes	Yes	Yes
Wood thrush	*Hylocichla mustelina*	Yes	Yes	Yes
Worm-eating warbler	*Helmitheros vermivorus*	No	Yes	Yes
Yellow warbler	*Dendroica petechia*	Yes	Yes	Yes
Yellow-bellied flycatcher	*Empidonax flaviventris*	Yes	Yes	Yes
Yellow-bellied sapsucker	*Sphyrapicus varius*	Yes	Yes	Yes
Yellow-billed cuckoo	*Coccyzus americanus*	Yes	Yes	Yes
Yellow-breasted chat	*Icteria virens*	No	Yes	Yes
Yellow-rumped warbler (unid. Myrtle/Audubon's)	*Setophaga coronate*	Yes	Yes	Yes
Yellow-throated vireo	*Vireo flavifrons*	Yes	Yes	Yes
Yellow-throated warbler	*Setophaga dominica*	Yes	Yes	No

Source: NYSDEC 2008
Note:
* = Brewster's and Lawrence's warblers are two separate hybrid species from blue-winged and golden-winged warbler pairings.

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APPENDIX I

Summary of Wetlands and Soils along Proposed CHPE Project Route

APPENDIX I.1 – POTENTIALLY IMPACTED WETLANDS ASSOCIATED WITH THE PROPOSED CHPE PROJECT

Appendix I.1
Potentially Impacted Wetlands Associated with the Proposed CHPE Project

This appendix contains a brief summary of palustrine wetlands located within the proposed CHPE Project ROI for the Wetlands resource area, and a listing of all wetlands that were delineated within the construction corridor and wetlands ROI.

Appendix I.1 contains the following tables:

- **Table I.1-1.** Delineated Wetlands within the Proposed CHPE Project Construction Corridor
- **Table I.1-2.** Delineated Wetlands within the Proposed CHPE Project ROI
- **Table I.1-3.** NYSDEC Freshwater Wetlands within the Proposed CHPE Project ROI
- **Table I.1-4.** NYSDEC Freshwater Wetland Adjacent Areas within the Proposed CHPE Project ROI
- **Table I.1-5.** NYSDEC Tidal Wetlands within the Proposed CHPE Project ROI

Description of Palustrine Wetlands within the Proposed CHPE Project ROI

Palustrine Emergent Wetlands. Palustrine emergent (PEM) wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (USACE 2012a). The freshwater emergent wetlands along the proposed CHPE Project survey area primarily include shallow emergent marshes, deep emergent marshes, and reedgrass/purple loosestrife marshes (NYSDEC 2010e). PEM wetlands occur as a single dominant wetland cover type, and also as a codominant wetland type when other plant community types exist within the wetland.

Palustrine Scrub-Shrub Wetland. The palustrine scrub-shrub (PSS) wetland cover type includes areas that are dominated by saplings and shrubs that are less than 20 feet (6 meters) tall (USACE 2012a). Scrub-shrub wetlands along the proposed CHPE Project wetland survey area were dominated by silky dogwood (*Cornus amomum*), gray dogwood (*Cornus foemina* ssp. *racemosa*), honeysuckle (*Lonicera* spp.), and speckled alder (*Alnus incana* ssp. *rugosa*). Other vegetation observed includes meadowsweet (*Spirea latifolia*), highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*), elderberry (*Sambucus canadensis*), gray birch (*Betula populifolia*), and northern arrowwood (*Viburnum recognitum*). Invasive species observed within PSS wetlands include honeysuckle and buckthorn (*Frangula alnus*). PSS wetlands occur as a single dominant wetland cover type, and also as a codominant wetland type when other plant community types exist within the wetland.

Palustrine Forested Wetland. Palustrine forested (PFO) wetland cover types are dominated by trees and shrubs that have developed a tolerance to a seasonal high water table. To be characterized as forested, a wetland must be dominated by trees and shrubs that are at least 20 feet (6 meters) tall (USACE 2012a). PFO wetlands occur as a single dominant wetland cover type, and also as a codominant wetland type when other plant community types exist within the wetland.

Forested wetlands typically have a mature tree canopy, and depending upon the species and density, can have a broad range of understory and groundcover community components. Forested wetland communities along the proposed CHPE Project survey area include red maple (*Acer rubrum*) hardwood swamps, floodplain forest, and silver maple-ash swamps (NYSDEC 2010e).

Palustrine Open Water. Besides vegetated wetlands, a few scattered small ponds are within the ROI. These wetland areas are characterized by a vegetative cover of less than 30 percent, although there could often be emergent or shrubby vegetation bordering the open water areas (CHPEI 2012ee).

Wetland Impact Table															
									Temporary Impacts a/		Permanent Impacts b/		Total Impacts c/	
Approx. MP	Index Map Sheet	Town	Field ID	NYSDEC Wetland ID	NYSDEC Wetland Class	Cowardin Classification	HDD Crossing Length (feet)	Direct Bury Crossing Length (feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)
Route 22 Right-of-Way														
101.6	1	Dresden	A3611	N/A	N/A	PEM	16.6	-	-	-	-	-	-	-
102.2	3	Dresden	A3511	N/A	N/A	PEM	-	-	-	906.5	-	-	-	906.5
102.3	4	Dresden	A3411	N/A	N/A	PSS/RUB	-	-	-	163.4	-	-	-	163.4
103.0	5	Dresden	A3311	N/A	N/A	PEM	-	-	-	104.3	-	-	-	104.3
103.1	6	Dresden	A3211	N/A	N/A	PEM	-	-	-	935.6	-	-	-	935.6
103.2	6	Dresden	A3111	N/A	N/A	PEM/PSS	-	-	-	266.4	-	-	-	266.4
103.7	7	Dresden	A2911	N/A	N/A	PEM/PFO	-	-	1,233.5	-	-	-	1,233.5	-
103.8	7	Dresden	A2711	N/A	N/A	PEM	-	-	-	877.7	-	-	-	877.7
103.8	8	Dresden	A2811	N/A	N/A	PFO/RUB	-	-	1,435.5	-	-	-	1,435.5	-
103.9	8	Dresden	A2611	N/A	N/A	PEM/POW	-	-	-	1,048.7	-	-	-	1,048.7
104.4	9	Dresden	A2511	N/A	N/A	PFO	-	-	14.5	-	-	-	14.5	-
104.8	10	Dresden	A2411	N/A	N/A	PFO/RUB	-	-	28.7	527.2	-	-	28.7	527.2
104.9	10	Dresden	A2311	N/A	N/A	PEM	-	-	-	109.9	-	-	-	109.9
105.2	11	Dresden	A2211	N/A	N/A	PEM	-	-	-	2.5	-	-	-	2.5
105.7	13	Dresden	A2111	N/A	N/A	PEM	-	-	-	299.2	-	-	-	299.2
107.2	16	Dresden	A1811	N/A	N/A	PEM/PSS	-	-	-	293.2	-	-	-	293.2
107.3	17	Dresden	A1611	N/A	N/A	PEM	-	-	-	322	-	-	-	322
107.4	17	Dresden	A1511	N/A	N/A	PEM	-	-	-	338.2	-	-	-	338.2
108.1	19	Dresden	A1311	N/A	N/A	PEM	-	-	-	1,196.3	-	-	-	1,196.3
108.4	19	Dresden	A1111	N/A	N/A	PFO	-	-	365	-	-	-	365	-

Wetland Impact Table														
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108.4	20	Dresden	A1211	N/A	N/A	PSS	-	-	-	461	-	-	-	461
108.5	20	Dresden	A1011	N/A	N/A	PSS	-	-	-	1,017.1	-	-	-	1,017.1
109.2	22	Dresden	A0511	N/A	N/A	PEM/PFO	-	-	23.4	-	-	-	23.4	-
109.6	23	Dresden	A0811	N/A	N/A	PEM	-	283.5	-	6,250.1	-	4,006	-	10,256.1
110.4	25	Whitehall	A0411	N/A	N/A	PEM	-	-	-	1,306	-	-	-	1,306
110.8	26	Whitehall	A0311	N/A	N/A	PEM/PSS	-	-	-	313.4	-	-	-	313.4
111.4	27	Whitehall	A0211	WH-2	1	PEM	-	-	-	361.4	-	-	-	361.4
111.7	28	Whitehall	A0111	WH-2	1	PEM/PSS	-	-	-	1,218.3	-	16.5	-	1,234.8
Route 22 Right-of-Way Subtotal:							**16.6**	**283.5**	**3,100.6**	**18,318.4**	**-**	**4,022.5**	**3,100.6**	**22,340.9**
Canadian Pacific (CP) Railroad Right-of-Way														
113.5; 113.9; 116.4	33, 34, 40	Whitehall	B54	N/A	N/A	PEM/PSS/PFO	-	-	33,011.5	175,874	-	1,157.4	33,011.5	177,031.4
115.6	38	Whitehall	B55	N/A	N/A	PEM/PSS	-	-	-	4,396.2	-	960.6	-	5,356.8
117.5	43	Whitehall	B53	N/A	N/A	PEM	-	-	-	40,598.9	-	4	-	40,602.9
117.8	44	Whitehall	B52	N/A	N/A	PEM	-	-	-	5,002.6	-	-	-	5,002.6
118.1	45	Fort Ann	B51	N/A	N/A	PEM	-	-	-	64,340.7	-	0.5	-	64,341.2
118.6	46	Fort Ann	B50	N/A	N/A	PEM	-	-	-	433	-	-	-	433
118.9; 119.1	47/48	Fort Ann	B48	N/A	N/A	PEM/PFO	-	-	2,282.9	16,322.2	-	-	2,282.9	16,322.2
119.0	47	Fort Ann	B49	N/A	N/A	PEM	-	-	-	1,140.3	-	-	-	1,140.3
119.3	48	Fort Ann	F19	N/A	N/A	PFO	-	-	155	-	-	-	155	-
119.8; 120.4	49, 51	Fort Ann	F17	FA-13	1	PFO/POW	-	-	753.4	37,698	-	-	753.4	37,698
121.7	54	Fort Ann	F14	N/A	N/A	PFO	-	-	2,762.5	-	-	-	2,762.5	-

Wetland Impact Table														
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121.9	55	Fort Ann	F13	N/A	N/A	PFO	-	-	4,763.4	-	-	-	4,763.4	-
122.0; 122.4	55	Fort Ann	F12	N/A	N/A	PSS/PFO	-	-	18,939.9	-	-	-	18,939.9	-
122.8	57	Fort Ann	F11	N/A	N/A	PSS/PFO	-	-	23,480.4	-	-	-	23,480.4	-
123.2	58	Fort Ann	F10	N/A	N/A	PSS/PFO	-	-	3,336.4	-	-	-	3,336.4	-
124.2; 124.3; 124.4; 125.2; 125.3; 125.6	59, 60, 61, 62, 64, 65	Fort Ann	F8	N/A	N/A	PEM/PSS/PFO	-	0.7	64,793	58,489.2	25.8	731.5	64,818.8	59,220.7
127.2; 127.5	69	Kingsbury	F4	N/A	N/A	PEM/PSS	-	-	-	52,923.3	-	-	-	52,923.3
128.4	71	Kingsbury	F2	N/A	N/A	PEM/PSS	-	-	-	46,518.2	-	39.7	-	46,557.9
129.6; 130.2	74, 76	Kingsbury	A54	N/A	N/A	PEM/PSS	-	-	-	177,328.5	-	-	-	177,328.5
131.9; 132.3	81, 82	Kingsbury	A2	N/A	N/A	PEM/PSS	-	-	-	76,512.5	-	-	-	76,512.5
133.3	85	Fort Edward	A5	N/A	N/A	PSS	-	267	-	3,212.8	-	2,895.9	-	6,108.7
133.6	86	Fort Edward	A6	N/A	N/A	PFO	-	-	372.6	-	-	-	372.6	-
135.8	91	Moreau	A14	N/A	N/A	PEM/PSS	-	-	-	1,288.3	-	-	-	1,288.3
135.9	92	Moreau	A15	N/A	N/A	PSS	-	-	-	377.6	-	-	-	377.6
136.0	92	Moreau	A16	N/A	N/A	PFO	-	-	766.2	-	-	-	766.2	-
136.1	92	Moreau	A17	N/A	N/A	PFO	-	-	2,096.8	-	-	-	2,096.8	-
136.7	94	Moreau	A23	N/A	N/A	PEM	-	8.1	-	44.3	-	104.6	-	148.9
136.9	94	Moreau	A24	N/A	N/A	PEM/PSS	-	-	-	1,913.9	-	528.8	-	2,442.7
137.1; 137.2	95	Moreau	A26	F-20	2	PEM/PSS/PFO	-	-	1,056.2	13,007.8	-	-	1,056.2	13,007.8
137.8	96	Moreau	A28	N/A	N/A	PFO	-	-	158	-	-	-	158	-

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137.9	97	Moreau	A30	F-7	2	PSS	-	-	-	1,034.4	-	-	-	1,034.4
138.5	98	Moreau	A36	F-7	2	PSS	-	-	-	406.7	-	-	-	406.7
138.8; 139.0	99, 100	Moreau	A38	F-7	2	PSS/PFO	-	15.4	18,915.7	28,318	272.3	1.2	19,188	28,319.2
139.8	102	Northumberland	A41	N/A	N/A	PSS	-	-	-	5,081.7	-	-	-	5,081.7
141.3	106	Northumberland	A47	N/A	N/A	PFO	-	-	4,567.5	-	-	-	4,567.5	-
141.4	106	Northumberland	A48	N/A	N/A	PFO	-	-	404	-	-	-	404	-
141.7; 141.8; 142.1	106, 107	Northumberland	A49	Q-32	1	PSS/PFO	-	-	21,734.4	1,755.7	32.6	-	21,767.1	1,755.7
142.2	108	Northumberland	A52	N/A	N/A	PFO	-	-	2,018.5	-	-	-	2,018.5	-
142.9	110	Northumberland	D7	GA-20	2	PEM	-	-	-	8,663.4	-	-	-	8,663.4
143.0	110	Northumberland	D6	N/A	N/A	PEM/PFO	-	-	1,254.2	-	-	-	1,254.2	-
143.1	111	Northumberland	D4	N/A	N/A	PFO	-	-	342.7	-	-	-	342.7	-
143.2	111	Northumberland	D3	N/A	N/A	PFO	-	-	17,230.3	-	-	-	17,230.3	-
143.4	111	Wilton	D2	N/A	N/A	PFO	-	-	732	-	-	-	732	-
145.9; 146.0	118	Wilton	B39	N/A	N/A	PEM/PFO	-	-	10,361.2	-	-	-	10,361.2	-
146.4	119	Wilton	B36	Q-11	1	PFO/PSS	10.6	-	-	-	-	-	-	-
149.5	127	Wilton	B1	S-7	2	PEM	-	-	-	124.3	-	-	-	124.3
150.5; 150.6; 150.7	130, 131	Greenfield	B3	S-19	1	PEM/PSS /PFO	-	73.3	565.7	28,510.2	-	3,001.9	565.7	31,512.1
151.4	132	Greenfield	B4	S-19	1	PEM/PSS	-	3.3	-	15,338.7	-	264.6	-	15,603.3
152.3	135	Saratoga Springs	B5	S-19	1	PEM/PSS	-	-	-	190.9	-	-	-	190.9
152.8	136	Saratoga Springs	B6	N/A	N/A	PEM/PSS	-	-	-	9,918.5	-	9.3	-	9,927.8

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154.9	141	Saratoga Springs	D9	S-21	3	PEM	-	1,402.3	-	86,021.6	-	19,867.9	-	105,889.5
155.5	143	Saratoga Springs	B47	S-21	3	PEM/PSS/PFO	-	45.6	642.1	-	594.1	-	1,236.2	-
155.9	144	Saratoga Springs	B45	N/A	N/A	PEM	-	1,899.2	-	4,410.6	-	22,780.9	-	27,191.5
157.0	146	Saratoga Springs	B44	N/A	N/A	PEM/PFO	-	313.1	10,031	-	3,594.3	-	13,625.3	-
157.1	147	Saratoga Springs	B41	N/A	N/A	PFO	-	-	11,762.1	-	204.3	-	11,966.4	-
157.5; 158.0	148, 149	Saratoga Springs	B10	N/A	N/A	PFO	252.2	248.8	18,784	-	2,898.6	-	21,682.6	-
158.3	150	Milton	B17	N/A	N/A	PFO	-	53.8	3,739.8	-	699.6	-	4,439.4	-
158.7	151	Milton	B16	N/A	N/A	PFO	-	-	14,919	-	-	-	14,919	-
159.0	152	Ballston	B18	N/A	N/A	PEM/PSS	-	133.9	-	15,675.5	-	3,920.4	-	19,595.8
159.1	152	Ballston	B20	N/A	N/A	PEM/PSS	-	-	-	281.6	-	-	-	281.6
159.3	153	Ballston	B21	R-50	3	PEM	-	-	-	801.6	-	-	-	801.6
159.5	154	Ballston	B23	N/A	N/A	PEM	174.7	-	-	560.3	-	347.8	-	908.2
160.1; 160.4	154, 156	Ballston	B25	R-3	3	PEM/PSS/PFO	-	107.7	12,688	36,707	251.4	6,805.7	12,939.3	43,512.7
160.7	156	Ballston	B28	N/A	N/A	PEM	-	-	-	188.8	-	-	-	188.8
160.9	157	Ballston	B29	N/A	N/A	PEM/PSS	-	-	-	1,877.7	-	56.3	-	1,934
161.2	157	Ballston	B30	N/A	N/A	PEM/PSS	-	605.8	-	10,445.5	-	6,881.1	-	17,326.6
161.6	159	Ballston	B31	R-11	2	PEM	-	-	-	17,974.4	-	1,151.2	-	19,125.6
161.8	159	Ballston	B32	N/A	N/A	PEM	-	-	-	10,108.9	-	1,371.8	-	11,480.6
162.9	162	Ballston	B-C1	N/A	N/A	PEM	-	675.4	-	5,965.6	-	8,427.8	-	14,393.4
162.9; 163.0; 163.1	162, 163	Ballston	C1	N/A	N/A	PEM/PSS	-	528	-	16,485.3	-	6,229.3	-	22,714.7
163.4	163	Ballston	C2	N/A	N/A	PEM	27.4	-	-	-	-	-	-	-

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163.4	164	Ballston	C4	N/A	N/A	PEM	-	350.6	-	4,397.3	-	3,197.6	-	7,594.8
163.7	164	Ballston	C5	N/A	N/A	PEM	-	-	-	991.4	-	123.2	-	1,114.6
164.4	166	Ballston	C8	R-18	2	PEM	8	68.4	-	24,785.7	-	4,230.2	-	29,015.9
164.9	167	Ballston	C15	R-18	2	PFO	-	108.6	18,343.5	-	1,441	-	19,784.5	-
167.1	173	Clifton Park	C29	B-31	2	PEM	-	-	-	2,352.2	-	642	-	2,994.2
167.5	174	Clifton Park	C31	N/A	N/A	PEM	-	-	-	10,504.3	-	-	-	10,504.3
168.2	176	Clifton Park	C35	N/A	N/A	PEM/PSS	-	-	-	8,397.6	-	-	-	8,397.6
170.0; 170.2	181	Glenville	C42	S-107	2	PEM/PSS/PFO	67.5	867.9	10,693.4	53,073.3	1,165.3	11,082.6	11,858.7	64,155.9
170.5	182	Glenville	X01	N/A	N/A	PSS/PFO	-	1,002.2	16,039.5	16,853.2	4,022.6	8,075.2	20,062	24,928.4
171.4	185	Glenville	C44	S-112	2	PEM	-	-	-	282.7	-	-	-	282.7
174.8	193	Schenectady	C46	N/A	N/A	PEM	-	-	-	3,316.9	-	-	-	3,316.9
175.0	193	Schenectady	C48	N/A	N/A	PEM	-	100.4	-	814.4	-	1,302.5	-	2,116.8
175.3	194	Schenectady	C56	N/A	N/A	PEM	-	278.4	-	6,131.2	-	3,360.1	-	9,491.3
CP Railroad Right-of-Way Subtotal:							**540.4**	**9,157.9**	**354,496.8**	**1,216,169.4**	**15,201.9**	**119,553.6**	**369,698.6**	**1,335,722.8**
CSX Railroad Right-of-Way – Rotterdam to Catskill, NY														
178.4	202	Rotterdam	E2	N/A	N/A	PSS	-	-	-	5,568.7	-	-	-	5,568.7
178.8; 178.9	203	Rotterdam	E3	N/A	N/A	PEM/PFO	-	331.6	14,381.2	14,470.3	3,914.4	3,050.3	18,295.6	17,520.6
179.1	204	Rotterdam	E4	N/A	N/A	PEM	-	-	-	25,741.6	-	780.6	-	26,522.3
179.5	205	Rotterdam	E5	N/A	N/A	PEM/PFO	-	66.5	13,960	120.4	132.2	2,995.9	14,092.1	3,116.3
179.7; 179.8	205, 206	Rotterdam	E7	N/A	N/A	PEM/PSS	-	51.2	-	10,797.8	-	1,497.7	-	12,295.5
180.0; 180.1; 180.3	206, 207	Rotterdam	E9	S-117	2	PEM/PSS	-	-	-	61,877.8	-	4,111.6	-	65,989.3

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180.6; 180.7	208	Guilderland	E10	N/A	N/A	PEM/PSS	13.1	196.4	-	7,226.5	-	2,253.2	-	9,479.8
180.8	208	Guilderland	E12	N/A	N/A	PEM/PFO	224.2	415.6	15,303.1	-	4,161.1	199.9	19,464.2	199.9
181.2; 181.6; 181.7; 181.8	209, 210	Guilderland	E15	N/A	N/A	PEM/PSS/PFO	589	184	12,258.2	6,090.5	2,038	6,439.9	14,296.1	12,530.4
182.0	212	Guilderland	E95	N/A	N/A	PEM	-	4.9	-	411.1	-	85.6	-	496.6
182.1; 182.2	212	Guilderland	E96	N/A	N/A	PEM/PSS/PFO	-	78.9	208.5	4,141.1	-	962.4	208.5	5,103.5
182.4; 182.5	213	Guilderland	E97	N/A	N/A	PEM/PSS	-	2.3	-	964.6	-	124.9	-	1,089.5
183.3	215	Guilderland	E80	N/A	N/A	PEM/PSS	-	-	-	1,139.8	-	-	-	1,139.8
183.4	215	Guilderland	E79	N/A	N/A	PSS/PFO	-	-	6,124.8	-	-	-	6,124.8	-
183.5	215	Guilderland	E77	N/A	N/A	PSS	-	-	-	5,319.7	-	-	-	5,319.7
183.8	216	Guilderland	E75	N/A	N/A	PFO	-	-	1,079.1	-	-	-	1,079.1	-
184.2; 184.2	217	Guilderland	E17	N/A	N/A	PSS/PFO/POW	-	79.9	721.1	13,056	-	1,180.5	721.1	14,236.5
185.5; 186.2; 186.2; 186.3	221, 222	Guilderland	E21	N/A	N/A	PEM/PSS/PFO	-	20.5	8,817.3	61,995.3	-	1,076.5	8,817.3	63,071.8
186.5; 186.7; 186.9; 186.9	223, 224	Guilderland	E24	N/A	N/A	PEM/PSS/PFO	-	552.6	17,695	25,776.1	4,187.3	3,263.7	21,882.2	29,039.8
187.3	225	Guilderland	E26	N/A	N/A	PEM/PSS	-	-	-	9,838.6	-	696.9	-	10,535.5
187.5; 187.7; 187.8	226	New Scotland	E28	V-52	2	PSS/PFO	-	475.1	3,240.8	15,424.9	1,259.7	5,297	4,500.5	20,722
188.0; 188.0	227	New Scotland	E29	N/A	N/A	PSS/PFO	-	16.2	991.7	6,695.2	0.1	774.2	991.8	7,469.4
189.2	230	New Scotland	E31	N/A	N/A	PSS	-	-		2,013.4	-	-	-	2,013.4

Wetland Impact Table														
									Temporary Impacts a/		Permanent Impacts b/		Total Impacts c/	
Approx. MP	Index Map Sheet	Town	Field ID	NYSDEC Wetland ID	NYSDEC Wetland Class	Cowardin Classification	HDD Crossing Length (feet)	Direct Bury Crossing Length (feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)
189.8	232	New Scotland	E33	N/A	N/A	PEM/PSS/PFO	-	-	1,791.8	1,309.5	30.3	-	1,822.1	1,309.5
190.4	233	New Scotland	E35	N/A	N/A	PFO	-	-	3,111.6	-	-	-	3,111.6	-
190.7	234	New Scotland	E37	N/A	N/A	PFO	-	-	5,272.2	-	58.5	-	5,330.7	-
191.1	235	New Scotland	E39	N/A	N/A	PEM	-	345.4	-	11,289.7	-	4,377.6	-	15,667.3
191.5; 191.6	236	New Scotland	E43	N/A	N/A	PEM/PFO	-	-	4,450	1,003.1	-	-	4,450	1,003.1
194.0	243	Bethlehem	E51	N/A	N/A	PEM	-	-	-	9.8	-	-	-	9.8
194.1	243	Bethlehem	E52	N/A	N/A	PEM	-	-	-	877.8	-	94.7	-	972.5
194.1	243	Bethlehem	E59	N/A	N/A	PEM	-	17.8	-	1,386.6	-	231.8	-	1,618.4
194.2	243	Bethlehem	E58	N/A	N/A	PEM	18.5	1,962.2	-	15,570.3	-	26,527.1	-	42,097.4
197.2	250	Bethlehem	E104	N/A	N/A	PEM	-	-	-	38,523.1	-	-	-	38,523.1
199.2	253	Bethlehem	M71/ E101	N/A	N/A	PEM/PSS	36.5	161.8	-	57,844.8	-	8,899.7	-	66,744.4
199.3	256	Bethlehem	M70	N/A	N/A	PFO	-	-	1,235.9	-	-	-	1,235.9	-
199.6	257	Coeymans	M69	N/A	N/A	PEM/PFO	-	439.9	16,473.2	-	3,499.1	1,653.3	19,972.3	1,653.3
199.8	257	Coeymans	M67	N/A	N/A	PEM/PSS/PFO	-	1,592.2	67,714.2	-	19,234.4	-	86,948.6	-
200.3	259	Coeymans	M65	N/A	N/A	PEM/PSS/PFO	-	-	5,324.7	939	-	-	5,324.7	939
200.3	259	Coeymans	M66	N/A	N/A	PEM/PFO	-	58.7	1,453.7	-	574.7	-	2,028.4	-
200.8	260	Coeymans	M63	N/A	N/A	PEM/PSS/PFO	-	264.4	6,606.9	1,285	2,979.1	438.1	9,586	1,723.1
201.1	261	Coeymans	M62	N/A	N/A	PEM	-	154.3	-	7,739	-	1,954.4	-	9,693.5
201.1	261	Coeymans	Y36	N/A	N/A	PEM	-	-	-	170.2	-	-	-	170.2
201.2	261	Coeymans	M61	N/A	N/A	PEM/PSS/PFO/POW	-	3,421	7,458.2	94,038	10.7	31,812.2	7,468.9	125,850.2
202.0	264	Coeymans	Y34	N/A	N/A	PEM/PSS	-	132.6	-	3,486.2	-	688.5	-	4,174.7

Wetland Impact Table														
									Temporary Impacts a/		Permanent Impacts b/		Total Impacts c/	
Approx. MP	Index Map Sheet	Town	Field ID	NYSDEC Wetland ID	NYSDEC Wetland Class	Cowardin Classification	HDD Crossing Length (feet)	Direct Bury Crossing Length (feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)
202.2	264	Coeymans	M60	N/A	N/A	PEM/PFO	-	677.1	32,424.8	-	9,747.5	-	42,172.3	-
202.4	265	Coeymans	M59	N/A	N/A	PEM/PSS/PFO	-	43.9	2,926.9	-	537.3	-	3,464.2	-
202.6	265	Coeymans	Y33	N/A	N/A	PEM	-	32.6	-	19,632.9	-	640.5	-	20,273.4
203.0	266	Coeymans	M58	N/A	N/A	PEM/PSS	-	-	-	3,104.4	-	501.5	-	3,605.9
203.1	266	Coeymans	M57	N/A	N/A	PEM/PFO	-	216.2	1,186.8	-	2,717.8	-	3,904.5	-
203.9	268	Coeymans	M56	N/A	N/A	PEM/PSS/PFO	-	-	368.9	-	-	-	368.9	-
204.4	270	New Baltimore	M53	N/A	N/A	PEM	-	822.4	-	10,101.7	-	6,453.7	-	16,555.4
204.6	270	New Baltimore	M52	N/A	N/A	PEM	130.8	-	-	1,663.5	-	880.3	-	2,543.7
204.9	271	New Baltimore	Y32	N/A	N/A	PEM/PSS	-	-	-	1,219.7	-	-	-	1,219.7
205.1	272	New Baltimore	Y31	N/A	N/A	PEM/PSS	-	-	-	3,409	-	-	-	3,409
205.4	272	New Baltimore	Y30	N/A	N/A	PEM	-	-	-	3,492.1	-	-	-	3,492.1
206.1	274	New Baltimore	M48	N/A	N/A	PSS	-	-	-	710.2	-	50	-	760.2
206.5	275	New Baltimore	M47	N/A	N/A	PEM/PSS	27.9	396.9	-	1,939.2	-	5,152.8	-	7,091.9
208.0	279	New Baltimore	Y27	N/A	N/A	PEM/PSS	-	14.7	-	143.4	-	196.6	-	340
208.4	280	New Baltimore	Y26	N/A	N/A	PEM	155.5	-	-	-	-	93.8	-	93.8
208.8	281	New Baltimore	M42	N/A	N/A	PEM/PSS	-	386.3	-	2,164.2	-	5,074.1	-	7,238.3
208.9	282	New Baltimore	M41	N/A	N/A	PEM/PSS/PFO	-	292.7	7,558.5	-	3,845.6	-	11,404.1	-
209.0	282	New Baltimore	M40	N/A	N/A	PSS	-	50.4	-	2,372.4	-	639.7	-	3,012.1
209.0	282	New Baltimore	Y24	N/A	N/A	PEM/PSS	-	95.9	-	3,323.5	-	1,233.4	-	4,556.9
209.8	284	New Baltimore	Y22	N/A	N/A	PEM	-	269.7	-	359.7	-	2,979.5	-	3,339.2
210.4	286	Coxsackie	M36	N/A	N/A	PFO	-	219	851.5	-	2,950.2	-	3,801.6	-

Wetland Impact Table														
									Temporary Impacts a/		Permanent Impacts b/		Total Impacts c/	
Approx. MP	Index Map Sheet	Town	Field ID	NYSDEC Wetland ID	NYSDEC Wetland Class	Cowardin Classification	HDD Crossing Length (feet)	Direct Bury Crossing Length (feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)
210.6	286	Coxsackie	M35	N/A	N/A	PSS	-	37.6	-	19.1	-	334	-	353
210.7	287	Coxsackie	M34	HN-101	1	PEM/PFO	-	138	160.7	-	718	1,000	878.8	1,000
210.9	287	Coxsackie	Y21	N/A	N/A	PEM	-	133.4	-	1,026.3	-	1,728.8	-	2,755.1
211.2	288	Coxsackie	Y20	N/A	N/A	PEM	18.5	1,262.5	-	8,738.2	-	16,996.3	-	25,734.5
211.7	289	Coxsackie	M33	N/A	N/A	PEM/PFO	4.4	179.9	11852	34.5	2286.8	187.7	14138.8	222.2
211.8	289	Coxsackie	Y19	N/A	N/A	PEM	12.5	23.8	-	266.7	-	583.7	-	850.4
212.3	290	Coxsackie	Y18	N/A	N/A	PEM	-	2,500.2	-	55,108.8	-	28,350.7	-	83,459.4
213.5	292	Coxsackie	M32	N/A	N/A	PEM/PSS/PFO	-	11.6	56,130.8	-	6,327.6	-	62,458.3	-
214.5; 216.0	296, 299	Coxsackie/ Athens	Y16	HN-108	1	PEM	854.1	1,627.6	-	276,129.4	-	40,961	-	317,090.4
216.8	303	Athens	Y17	HN-108	1	PEM	-	-	-	719.2	-	-	-	719.2
220.2	311	Catskill	Y15	N/A	N/A	PEM	-	-	-	37,575.7	-	-	-	37,575.7
220.4	312	Catskill	Y14	N/A	N/A	PEM	-	-	-	2,055.3	-	-	-	2,055.3
220.8	313	Catskill	Y13	N/A	N/A	PEM	-	-	-	1,562	-	242.5	-	1,804.5
220.9	313	Catskill	M29	N/A	N/A	PEM	-	36.5	-	6,019.5	-	905.8	-	6,925.3
222.0	316	Catskill	M25	N/A	N/A	PEM/PFO	-	17	952.8	-	348.3	-	1,301.2	-
222.5	318	Catskill	M24	N/A	N/A	PEM/PFO	-	1.3	4,844.9	-	100.6	-	4,945.5	-
223.2	319	Catskill	Y11	N/A	N/A	PEM	-	627.8	-	6,158.5	-	4,535.6	-	10,694.2
223.6	321	Catskill	M21	N/A	N/A	PEM	-	-	-	11,045	-	41.6	-	11,086.6
223.8	321	Catskill	M20	N/A	N/A	PFO	-	-	242.8	-	-	-	242.8	-
224.1	322	Catskill	M19	N/A	N/A	PFO	-	-	2,133.3	-	-	-	2,133.3	-
224.3	323	Catskill	Y10	N/A	N/A	PEM	-	-	-	10,013.7	-	93.2	-	10,106.9

Wetland Impact Table

Approx. MP	Index Map Sheet	Town	Field ID	NYSDEC Wetland ID	NYSDEC Wetland Class	Cowardin Classification	HDD Crossing Length (feet)	Direct Bury Crossing Length (feet)	Temporary Impacts a/		Permanent Impacts b/		Total Impacts c/	
									Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)	Forested Wetland (square feet) d/	Non-Forested Wetland (square feet)
224.5	323	Catskill	Y9	N/A	N/A	PEM	-	-	-	852.2	-	-	-	852.2
225.0	324	Catskill	M16	N/A	N/A	PEM	-	-	-	928.4	-	-	-	928.4
225.2	325	Catskill	M15	N/A	N/A	PEM	-	-	-	485.7	-	795.3	-	1,281
226.0	327	Catskill	M12	N/A	N/A	PEM	-	67.6	-	3,137.2	-	1,189.5	-	4,326.7
226.2	328	Catskill	M11	N/A	N/A	PEM/PFO	10.9	-	904.5	-	-	-	904.5	-
226.3	328	Catskill	M9	N/A	N/A	PSS/PFO	-	25.1	8,058.4	-	655.8	-	8,714.2	-
226.5	328	Catskill	M8	N/A	N/A	PEM/PFO	-	14.4	1,428	-	325.4	-	1,753.4	-
227.1	330	Catskill	M3	N/A	N/A	PEM/PSS	-	234.3		5,491.3	-	3,493.7	-	8,985
CSX Railroad Right-of-Way – Haverstraw Bay Bypass, NY														
296.1	335	Stony Point	Y1	HS-2	1	PEM	266.6	-	-	-	-	-	-	-
298.5	342	Haverstraw	Y4	N/A	N/A	PEM	-	-	-	1,161.6	-	62.5	-	1,224.2
CSX Railroad Right-of-Way Subtotal:							**2,362.5**	**21,482.4**	**347,698.8**	**996,305.7**	**72,640.5**	**236,866**	**420,339.9**	**1,233,171.6**
Total Impacts									**705,296.2 (16.2 acres)**	**2,230,793.5 (51.2 acres)**	**87,842.4 (2.0 acres)**	**360,442.1 (8.3 acres)**	**793,139.1 (18.2 acres)**	**2,591,235.3 (59.5 acres)**

a/ Temporary Impacts are based on an approximate 31- to 33-foot temporary workspace encompassing activities such as trenching, access, equipment staging, and spoil storage.
b/ Permanent Impacts are based on an approximate 13- to 17- foot permanent vegetation maintenance corridor.
c/ Total Impacts include both temporary and permanent impacts combined.
d/ If multiple Cowardin classifications exist for any given wetland identified as containing PFO (i.e. PFO/PSS), impacts were assigned to forested wetland.

Table I.1-2. Delineated Wetlands within the Proposed CHPE Project ROI

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	102	A3411	PSS1B/R3UB1	0.02
Overland	102	A3511	PEM1F	0.14
Overland	102	A3611	PEM1C	0.07
Overland	103	A3011	PEM1B	0.02
Overland	103	A3111	PEM1B/PSS1B	0.10
Overland	103	A3211	PEM1B	0.04
Overland	103	A3311	PEM1B	< 0.01
Overland	104	A2511	PFO1B	0.22
Overland	104	A2611	PEM1B/OWxh	0.05
Overland	104	A2711	PEM1B	0.05
Overland	104	A2811	PFO1D/R3UB1	0.06
Overland	104	A2911	PFO1B/PEM1B	0.21
Overland	105	A2211	PEM1B	< 0.01
Overland	105	A2311	PEM1B	< 0.01
Overland	105	A2411	PFO1D/R3UB1	0.04
Overland	106	A2011	PEM1B/PSS1B	0.01
Overland	106	A2111	PEM1B	0.02
Overland	107	A1511	PEM1B	0.03
Overland	107	A1611	PEM1B	0.01
Overland	107	A1711	PFO1B/PEM1B	0.07
Overland	107	A1811	PEM1F/PSS1	0.08
Overland	108	A1111	PFO1B	0.01
Overland	108	A1211	PSS1C	0.02
Overland	108	A1311	PEM1B	0.03
Overland	108	A1411	PFO1	0.01
Overland	109	A0511	PEM1B/PFO1B	0.02
Overland	109	A0611	PEM	0.01
Overland	109	A0911	PFO/PEM	0.02
Overland	109	A1011	PSS1B-C	0.04
Overland	110	A0411	PEM1Br	0.08
Overland	110	A0711	PSS1/PEM	0.30
Overland	110	A0811	PEM1B	0.28
Overland	111	A0211	PEM1F	0.60
Overland	111	A0311	PSS1E/PEM1E	0.77
Overland	112	A0111	PSS1/PEM1C	0.17
Overland	113	B54	PFO/PSS	0.01
Overland	114	B54	PEM/PSS	0.56
Overland	114	B54	PSS	0.62

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	115	B54	PEM	14.8
Overland	116	B54	PFO/PEM	4.22
Overland	116	B55	PEM/PSS	0.12
Overland	117	B53	PEM	1.61
Overland	117	B54	PFO	8.04
Overland	118	B51	PEM	4.40
Overland	118	B52	PEM	0.78
Overland	119	B48	PEM	2.27
Overland	119	B48	PFO	0.26
Overland	119	B48	PSS	0.21
Overland	119	B48-A	PEM	0.26
Overland	119	B49	PEM	0.24
Overland	119	B50	PEM	0.25
Overland	119	F19	PFO	0.04
Overland	120	F17	PEM	3.41
Overland	120	F17	PFO	0.04
Overland	120	F17	POW	2.45
Overland	120	F17	PSS	0.10
Overland	120	F20	POW	0.06
Overland	121	F16	PFO	0.84
Overland	121	F16	PFO/PEM	0.27
Overland	122	F12	PFO	0.38
Overland	122	F12	PFO/PSS	1.92
Overland	122	F13	PFO	0.51
Overland	122	F14	PFO	0.22
Overland	123	F10	PFO/PSS	0.31
Overland	123	F10	PSS	0.28
Overland	123	F11	PFO/PSS	1.65
Overland	124	F08	PFO/PSS	9.39
Overland	125	F08	PEM/PSS	1.05
Overland	125	F08	PFO/PEM	0.58
Overland	126	F08	PEM	0.04
Overland	127	F04	PEM/PSS	2.48
Overland	128	F02	PEM/PSS	6.43
Overland	128	F03	PEM	0.04
Overland	128	F03	PEM/PSS	0.13
Overland	128	F04	PSS	1.82
Overland	129	A0054	PEM	5.12
Overland	129	F02	PEM	0.02

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	130	A0054	PSS	2.93
Overland	130	A0055	PSS	7.11
Overland	132	A0002	PEM	2.43
Overland	132	A0002	PSS	2.88
Overland	133	A0003	PEM	0.11
Overland	133	A0003	PSS	0.01
Overland	133	A0004	PEM	0.07
Overland	133	A0005	PSS	0.14
Overland	134	A0006	PFO	0.01
Overland	134	A0008	PFO	0.91
Overland	134	A0009	PFO	0.01
Overland	135	A0012	PFO	0.07
Overland	136	A0013	PEM/PSS	0.13
Overland	136	A0014	PEM/PSS	0.03
Overland	136	A0015	PSS	0.01
Overland	136	A0016	PFO	0.14
Overland	136	A0017	PEM	0.15
Overland	136	A0017	PFO	0.17
Overland	136	A0018	PFO	0.01
Overland	137	A0020	PEM/PSS	0.01
Overland	137	A0022	PSS	0.04
Overland	137	A0023	PEM	< 0.01
Overland	137	A0024	PEM	0.03
Overland	137	A0024	PEM/PSS	0.08
Overland	137	A0024	PFO	0.02
Overland	137	A0024	PFO/PSS	0.03
Overland	137	A0024	PSS	0.17
Overland	137	A0025	PSS	0.05
Overland	137	A0026	PEM/PSS	0.04
Overland	137	A0026	PFO	0.08
Overland	137	A0026	PSS	1.21
Overland	138	A0027	PFO	0.12
Overland	138	A0028	PFO	< 0.01
Overland	138	A0029	PFO	0.13
Overland	138	A0030	PSS	0.08
Overland	138	A0031	PSS	0.07
Overland	138	A0033	PSS	0.02
Overland	138	A0034	PSS	0.22
Overland	138	A0035	PEM	0.11

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	139	A0036	PSS	0.13
Overland	139	A0037	PFO	0.08
Overland	139	A0037	PSS	1.10
Overland	139	A0038	PFO	0.49
Overland	139	A0038	PSS	0.94
Overland	140	A0041	PSS	0.13
Overland	141	A0044	PFO/PEM	0.32
Overland	141	A0046	PSS	0.05
Overland	141	A0047	PFO	0.10
Overland	141	A0047	PSS	0.12
Overland	141	A0048	PFO	0.01
Overland	141	A0050	PSS	0.06
Overland	142	A0049	PFO	0.55
Overland	142	A0049	PFO/PSS	0.01
Overland	142	A0049	PSS	0.08
Overland	142	A0051	PSS	0.20
Overland	142	A0053	PFO	1.17
Overland	142	A0053	PFO/PSS	0.01
Overland	142	A0053	PSS	0.23
Overland	142	A5211	PFO	0.07
Overland	143	D02	PFO	0.11
Overland	143	D03	PFO	0.68
Overland	143	D04	PFO	0.01
Overland	143	D05	PFO	0.03
Overland	143	D06	PFO/PEM	0.03
Overland	143	D07	PEM	0.34
Overland	143	D08	PFO	< 0.01
Overland	144	D01	PFO	0.10
Overland	145	B38	PEM	0.27
Overland	146	B36	PFO/PSS	0.47
Overland	146	B37	PFO	0.04
Overland	146	B37	PFO/PSS	0.19
Overland	146	B37	PSS	0.11
Overland	146	B39	PFO	0.20
Overland	146	B39	PFO/PEM	0.05
Overland	150	B01	PEM	0.35
Overland	150	B01	PEM/PSS	0.36
Overland	151	B03	PEM	1.31
Overland	151	B03	PSS	0.68

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	151	B04	PEM	0.19
Overland	151	B04	PEM/PSS	1.42
Overland	152	B04	PSS	0.10
Overland	152	B05	PEM/PSS	0.39
Overland	152	B05	PSS	0.26
Overland	153	B06	PEM/PSS	0.35
Overland	153	B07	PFO/PSS	0.01
Overland	154	B08	PFO	0.01
Overland	155	B47	PFO/PSS	< 0.01
Overland	155	B47	PSS	0.08
Overland	155	D09	PEM	4.76
Overland	156	B45	PEM	1.22
Overland	156	B46	PEM	1.54
Overland	156	B47	PFO/PEM	0.62
Overland	157	B41	PFO	0.36
Overland	157	B42	PEM	0.50
Overland	157	B43	PEM	0.76
Overland	157	B44	PFO/PEM	1.09
Overland	158	B10	PFO	1.00
Overland	159	B16	PFO	0.59
Overland	159	B17	PFO	0.53
Overland	159	B17	PFO/PSS	0.10
Overland	159	B18	PEM/PSS	0.46
Overland	159	B19	PEM/PSS	0.31
Overland	159	B20	PEM/PSS	0.14
Overland	159	B21	PEM	0.07
Overland	160	B23	PEM	0.09
Overland	160	B24	PFO	0.02
Overland	160	B25	PEM	0.07
Overland	160	B25	PEM/PSS	1.51
Overland	160	B25	PFO	0.30
Overland	160	B26	PSS	0.03
Overland	161	B28	PEM	0.01
Overland	161	B29	PEM/PSS	0.04
Overland	161	B30	PEM/PSS	0.52
Overland	162	B31	PEM	0.44
Overland	162	B32	PEM	0.50
Overland	163	B-C1	PEM	0.33
Overland	163	C01	PEM	0.15

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	163	C01	PEM/PSS	0.20
Overland	163	C01	PSS	0.17
Overland	163	C02	PEM	0.01
Overland	163	C04	PEM	0.17
Overland	164	C05	PEM	0.03
Overland	164	C08	PEM	0.85
Overland	164	C08	PFO/PEM	0.06
Overland	164	C09	PFO/PSS	0.02
Overland	164	C09	PSS	0.13
Overland	165	C12	PEM	0.09
Overland	165	C14	PEM	0.21
Overland	165	C15	PFO	1.91
Overland	166	C21	PEM	0.03
Overland	166	C23	PEM	0.28
Overland	167	C26	PEM	0.91
Overland	167	C29	PEM	0.54
Overland	167	C31	PEM	0.79
Overland	168	C31	PEM/PSS	0.10
Overland	168	C34	PEM/PSS	0.31
Overland	168	C35	PEM/PSS	0.19
Overland	168	C36	PSS	0.17
Overland	169	C37	PFO/PSS	0.10
Overland	170	C42	PEM/PSS	2.19
Overland	170	C42	PEM1E/PFO1E/PSS1E	3.87
Overland	171	C44	PEM	0.18
Overland	171	X01	PSS1E/PFO1E	2.28
Overland	175	C46	PEM	0.37
Overland	175	C48	PEM	0.26
Overland	175	C56	PEM	0.22
Overland	176	C57	PEM	0.07
Overland	176	C57	PFO/PEM	0.29
Overland	176	C57	PFO/PSS	< 0.01
Overland	178	E002	PSS	0.13
Overland	179	E003	PEM	0.92
Overland	179	E003	PFO	0.85
Overland	179	E004	PEM	1.38
Overland	179	E005	PEM	0.16
Overland	179	E005	PFO	1.42
Overland	180	E006	PFO/PSS	0.11

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	180	E007	PEM	0.09
Overland	180	E007	PEM/PSS	0.02
Overland	180	E007	PFO/PSS	0.08
Overland	180	E007	PSS	0.44
Overland	180	E008	PEM	0.27
Overland	180	E009	PEM	3.44
Overland	180	E009	PEM/PSS	0.46
Overland	180	E009	PSS	0.15
Overland	181	E010	PEM	0.41
Overland	181	E010	PEM/PSS	0.28
Overland	181	E010	PSS	0.07
Overland	181	E011	PFO	0.16
Overland	181	E012	PEM/PSS	0.15
Overland	181	E012	PFO/PEM	1.44
Overland	181	E013	PEM	0.01
Overland	181	E014	PFO	0.08
Overland	181	E015	PEM	0.62
Overland	181	E015	PFO	1.02
Overland	182	E015	PEM/PSS	2.07
Overland	182	E015	PSS	0.02
Overland	182	E095	PEM	0.01
Overland	182	E095	PEM/PSS	0.29
Overland	182	E096	PEM	0.12
Overland	182	E096	PEM/PSS	< 0.01
Overland	182	E096	PFO	0.40
Overland	182	E097	PEM	0.10
Overland	182	E097	PEM/PSS	0.54
Overland	183	E079	PFO/PSS	0.28
Overland	183	E080	PEM/PSS	0.04
Overland	183	E081	PFO	0.01
Overland	183	E098	POW	0.20
Overland	184	E017	PFO	0.02
Overland	184	E017	PFO/PSS	0.03
Overland	184	E017	POW	0.62
Overland	184	E075	PFO	0.12
Overland	184	E077	PSS	0.32
Overland	186	E021	PEM	3.52
Overland	186	E021	PEM/PSS	0.12
Overland	186	E021	PFO	0.10

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	186	E021	PFO/PEM	0.16
Overland	187	E024	PEM	0.11
Overland	187	E024	PEM/PSS	0.59
Overland	187	E024	PFO	0.49
Overland	187	E024	PFO/PEM	0.01
Overland	187	E026	PEM/PSS	0.28
Overland	188	E028	PEM/PSS	0.10
Overland	188	E028	PFO	0.09
Overland	188	E028	PFO/PSS	0.05
Overland	188	E028	POW/PSS	0.11
Overland	188	E028	PSS	0.49
Overland	188	E029	PEM	< 0.01
Overland	188	E029	PFO	0.02
Overland	188	E029	PSS	0.17
Overland	189	E031	PSS	0.05
Overland	190	E032	PEM	0.04
Overland	190	E033	PEM	0.24
Overland	190	E033	PFO/PEM	0.04
Overland	190	E033	PSS	0.27
Overland	190	E034	PEM	0.16
Overland	190	E034	PFO	0.05
Overland	190	E034	PSS	< 0.01
Overland	190	E035	PFO	0.60
Overland	190	E035	PFO/PSS	< 0.01
Overland	190	E036	PFO	0.12
Overland	190	E082	PEM	0.04
Overland	190	E083	PEM	0.19
Overland	191	E037	PFO	0.57
Overland	191	E037	PSS	0.66
Overland	191	E039	PEM	1.24
Overland	191	E042	PFO	0.06
Overland	191	E043	PFO/PEM	0.26
Overland	192	E042	PEM	0.16
Overland	192	E042	PEM/PSS	0.25
Overland	192	E043	PEM	0.08
Overland	192	E044	PEM	0.08
Overland	192	E046	PEM	0.13
Overland	192	E046	PEM/PSS	0.44
Overland	192	E047	PEM	0.45

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	194	E048	PEM/PSS	0.65
Overland	194	E051	PEM	0.28
Overland	194	E052	PEM	0.21
Overland	194	E059	PEM	0.07
Overland	195	E058	PEM	1.93
Overland	195	E090	PEM	0.06
Overland	195	E091	PEM	0.08
Overland	195	E092	PEM	0.02
Overland	197	E103	PEM	0.20
Overland	197	E104	PEM	1.19
Overland	198	E106	PEM	0.05
Overland	198	M71/E101	PSS	0.02
Overland	199	E069	PEM	0.14
Overland	199	M70	PFO	0.20
Overland	199	M71/E101	PEM	4.34
Overland	199	M71/E101	PEM/PSS	0.16
Overland	199	M72	PEM	< 0.01
Overland	200	M65	PFO/PSS/PEM	1.09
Overland	200	M66	PFO/PEM	0.22
Overland	200	M67	PFO/PSS/PEM	2.54
Overland	200	M68	PFO/PSS/PEM	0.79
Overland	200	M69	PFO/PEM	1.73
Overland	200	Y38	PSS/PFO	0.03
Overland	200	Y39	PEM	0.69
Overland	201	M62	PEM	0.35
Overland	201	M63	PFO/PSS/PEM	0.74
Overland	201	M64	PFO/PEM	0.29
Overland	201	M64	PSS/PEM	0.06
Overland	201	Y36	PEM	0.22
Overland	202	M61	PFO/PSS/PEM/POW	3.47
Overland	202	M61	PFO/PSS/PEM/POW	0.12
Overland	202	Y35	PEM	1.19
Overland	202	Y35	PEM	0.02
Overland	202	M59	PFO/PSS/PEM	0.32
Overland	202	M60	PFO/PEM	1.51
Overland	202	M61	PFO/PSS/PEM/POW	2.38
Overland	202	M61	PFO/PSS/PEM/POW	0.13
Overland	202	Y34	PEM/PSS	< 0.01
Overland	202	Y34	PSS/PEM	0.38

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	202	Y35	PEM	0.73
Overland	202	Y35	PEM	0.02
Overland	203	M57	PFO/PEM	0.10
Overland	203	M58	PSS/PEM	0.08
Overland	203	Y33	PEM	0.51
Overland	204	M53	PEM	0.38
Overland	204	M54	PSS	0.20
Overland	204	M55	PEM	0.21
Overland	204	M56	PFO/PSS/PEM	0.46
Overland	205	M52	PEM	0.10
Overland	205	Y30	PEM	0.16
Overland	205	Y31	PEM/PSS	0.08
Overland	205	Y32	PEM/PSS	1.17
Overland	206	M48	PSS	0.02
Overland	206	M49	PSS	0.05
Overland	206	M50	PSS	0.03
Overland	207	M47	PSS/PEM	0.39
Overland	207	Y29	PEM	0.82
Overland	208	M44	PFO/PEM	0.18
Overland	208	M46	PFO/PSS	0.56
Overland	208	Y26	PEM	0.46
Overland	208	Y27	PEM/PSS	0.03
Overland	208	Y28	PEM/PSS	0.08
Overland	209	M40	PSS	0.07
Overland	209	M41	PFO/PSS/PEM	0.33
Overland	209	M42	PSS/PEM	0.27
Overland	209	M43	PSS/PEM	0.36
Overland	209	Y24	PEM/PSS	0.18
Overland	210	M34	PFO/PEM	0.58
Overland	210	M36	PFO	0.12
Overland	210	M37	PFO/PSS	0.01
Overland	210	M38	PSS	0.03
Overland	210	M39	PFO/PEM	0.03
Overland	210	Y22	PEM	0.21
Overland	210	Y23	PEM/PSS	0.22
Overland	211	M35	PSS	0.01
Overland	211	Y20	PEM	0.88
Overland	211	Y21	PEM	0.08
Overland	212	M33	PFO/PEM	0.88

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	212	Y18	PEM	3.47
Overland	212	Y19	PEM	0.20
Overland	213	M32	PFO/PSS/PEM	3.96
Overland	214	M30	PSS/PEM	0.02
Overland	214	M31	PEM	0.02
Overland	216	Y16	PEM	20.07
Overland	217	Y17	PEM	0.10
Overland	220	Y14	PEM	0.05
Overland	220	Y15	PEM	2.14
Overland	221	M26	PSS/PEM	< 0.01
Overland	221	M27	PSS	0.04
Overland	221	M28	PFO	0.04
Overland	221	M29	PEM	0.24
Overland	221	Y13	PEM	0.04
Overland	222	M25	PFO/PEM	0.03
Overland	222	Y12	PEM	0.01
Overland	223	M22	PFO	0.19
Overland	223	M23	PFO	0.18
Overland	223	M24	PFO/PEM	0.58
Overland	223	Y11	PEM	0.25
Overland	224	M19	PFO	0.05
Overland	224	M20	PFO	0.01
Overland	224	M21	PEM	0.56
Overland	224	Y10	PEM	0.62
Overland	225	M14	PEM	0.02
Overland	225	M15	PEM	0.03
Overland	225	M16	PEM	0.02
Overland	225	M17	PSS/PEM/POW	0.06
Overland	225	M18	PEM	0.01
Overland	225	Y08	PEM	0.25
Overland	225	Y09	PEM	0.02
Overland	226	M09	PFO/PSS	0.22
Overland	226	M11	PFO/PEM	0.08
Overland	226	M12	PEM	0.10
Overland	226	M13	PEM	0.04
Overland	227	M02	PEM	0.08
Overland	227	M03	PSS/PEM	0.48
Overland	227	M05	PFO/PEM	< 0.01
Overland	227	M06	PFO	0.25

Segment	MP	Wetland ID	Cowardin Classification	Acres in ROI
Overland	227	M07	PEM	0.09
Overland	227	M08	PFO/PEM	0.44
Hudson River	228	M01	PEM	0.08
Hudson River	296	Y01	PEM	0.53
Hudson River	296	Y02	PEM	0.02
Hudson River	297	Y03	PEM	0.07
Hudson River	299	Y04	PEM	0.06
Hudson River	299	Y05	PEM	0.03
Hudson River	300	Y06	PEM	0.04
Hudson River	302	Y07	PEM	0.02
Approximate Total Acreage				**257.51**

Key:

MP = milepost

OWxh = open water, excavated, diked/impounded

PEM = palustrine emergent

PEM1B = palustrine emergent, persistent, saturated

PEM1Br = palustrine emergent, persistent, saturated, artificial substrate

PEM1C = palustrine emergent, persistent, seasonally flooded

PEM1E = palustrine emergent, persistent, seasonally flooded/saturated

PEM1F = palustrine emergent, persistent, semi-permanently flooded

PFO = palustrine forested

PFO1 – palustrine forested, broad-leaved deciduous

PFO1B = palustrine forested, broad-leaved deciduous, saturated

PFO1D = palustrine forested, broad-leaved deciduous, partially drained/ditched

POW = palustrine open water

PSS = palustrine shrub-scrub

PSS1 = palustrine shrub-scrub, broad-leaved deciduous, seasonally

flooded/saturated

PSS1B = palustrine shrub-scrub, broad-leaved deciduous, saturated

PSS1B-C = palstrine shrub-scrub, broad-leaved deciduous, saturated-seasonally

flooded

PSS1E = palustrine shrub-scrub, broad-leaved deciduous, seasonally

flooded/saturated

R3UB1 = riverine-upper perennial-unconsolidated bottom-gravel

ROI = region of influence (within 100 feet on either side of the transmission line

Table I.1-3. NYSDEC Freshwater Wetlands within the Proposed CHPE Project ROI

Segment	MP	Wetland ID	NYSDEC Wetland ID	Cowardin Classification	Acres in ROI
Overland	111.4	A0211	WH-2	PEM1F	0.60
Overland	111.7	A0111	WH-2	PSS1/PEM1C	0.17
Overland	119.7	F17	FA-13	PEM	3.41
Overland	136.2	A17	HF-1	PEM/PFO	0.32
Overland	137.1	A26	F-20	PEM/PSS/PFO	1.33
Overland	137.9	A29	F-7	PFO	0.13
Overland	137.9	A30	F-7	PSS	0.08
Overland	137.9	A31	F-7	PSS	0.07
Overland	138.5	A36	F-7	PSS	0.13
Overland	138.8	A38	F-7	PFO/PSS	1.43
Overland	141.7	A49	Q-32	PFO/PSS	0.64
Overland	141.9	A53	Q-32	PFO/PSS	1.41
Overland	142.9	D7	GA-20	PEM	0.34
Overland	143.6	D1	GA-20	PFO	0.10
Overland	145.1	B38	Q-11	PEM	0.27
Overland	146.4	B36	Q-11	PFO/PSS	0.47
Overland	146.4	B37	Q-11	PFO/PSS	0.34
Overland	149.5	B1	S-7	PEM/PSS	0.71
Overland	150.5	B3	S-19	PEM/PSS	1.99
Overland	151.4	B4	S-19	PEM/PSS	1.71
Overland	152.3	B5	S-19	PEM/PSS	0.65
Overland	153.7	B8	S-19	PFO	0.01
Overland	154.9	D9	S-21	PEM	0.24
Overland	155.5	B47	S-21	PFO/PSS	0.62
Overland	159.3	B21	R-50	PEM	0.07
Overland	159.5	B24	R-50	PFO	0.02
Overland	160.1	B25	R-3	PEM/PFO/PSS	1.88
Overland	161.6	B31	R-11	PEM	0.44
Overland	164.4	C8	R-18	PFO/PEM	0.91
Overland	164.9	C15	R-18	PFO	1.91
Overland	165.9	C23	B-31	PEM	0.28
Overland	167.1	C29	B-31	PEM	0.54
Overland	170	C42	S-107	PEM/PSS/PFO/PEM1E/ PFO1E/PSS1E	6.06
Overland	171.4	C44	S-112	PEM	0.18
Overland	175.4	C57	S-115	PEM/PFO/PSS	0.36
Overland	180	E9	S-117	PEM/PSS	4.05
Overland	186.5	E24	V-51	PEM/PSS/PFO	1.29

Segment	MP	Wetland ID	NYSDEC Wetland ID	Cowardin Classification	Acres in ROI
Overland	187.4	E28	V-52	PEM/PSS/PFO	1.61
Overland	210.7	M34	HN-101	PFO/PEM	0.58
Overland	214.5	Y16	HN-108	PEM	20.07
Overland	216.8	Y17	HN-108	PEM	0.10
Hudson River	296.1	Y1	HS-2	PEM	0.53
Total Acreage					**58.05**

Key:
MP = milepost
NYSDEC = New York State Department of Environmental Conservation
PEM = palustrine emergent
PEM1C = palustrine emergent, persistent, seasonally flooded
PEM1E = palustrine emergent, persistent, seasonally flooded/saturated
PEM1F = palustrine emergent, persistent, semi-permanently flooded
PFO = palustrine forested
PFO1E = palustrine forested, broad-leaved deciduous, seasonally flooded/saturated
PSS = palustrine shrub-scrub
PSS1E = palustrine shrub-scrub, broad-leaved deciduous, seasonally flooded/saturated
POW = palustrine open water
ROI = region of influence (within 100 feet on either side of the transmission line)

Table I.1-4. NYSDEC Freshwater Wetland Adjacent Areas within the Proposed CHPE Project ROI

Segment	MP	NYSDEC Wetland ID	Acres in ROI
Overland	110	WH-1	0.02
Overland	112	WH-2	2.13
Overland	120	FA-13	8.70
Overland	122	FA-12	0.32
Overland	130	HF-10	6.76
Overland	136	HF-1	3.47
Overland	137	F-20	1.06
Overland	138	F-7	4.98
Overland	140	Q-32	9.07
Overland	143	GA-20	3.66
Overland	143	Q-32	0.02
Overland	143	GA-20	0.02
Overland	143	GA-21	1.23
Overland	145	Q-11	3.79
Overland	150	S-7	1.94
Overland	151	S-19	14.30
Overland	152	S-50	0.60
Overland	152	S-48	0.01
Overland	155	S-20	3.05
Overland	155	S-21	4.30
Overland	159	R-50	7.87
Overland	160	R-3	1.90
Overland	162	R-11	8.35
Overland	164	R-18	20.14
Overland	166	B-31	17.38
Overland	169	BH-6	2.14
Overland	169	S-105	2.31
Overland	170	S-107	7.58
Overland	171	S-112	2.09
Overland	176	S-115	3.63
Overland	180	S-117	1.37
Overland	181	S-15	0.75
Overland	187	V-51	2.35
Overland	188	V-52	2.68
Overland	228	HS-101	0.18
Overland	228	C-23	1.89

Segment	MP	NYSDEC Wetland ID	Acres in ROI
Overland	228	C-23	0.19
Hudson River	228	C-23	0.19
Hudson River	229	C-23	0.39
Hudson River	229	C-25	0.03
Hudson River	296	HS-2	2.49
Hudson River	297	HS-11	1.02
Total Acreage			**156.35**

Key:
MP = milepost
NYSDEC = New York State Department of Environmental Conservation
ROI = region of influence (within 100 feet on either side of the transmission line)

Table I.1-5. NYSDEC Tidal Wetlands within the Proposed CHPE Project ROI

Segment	MP	Tidal Wetland ID	Description	Acres in ROI
Hudson River	317.4	2020	Littoral Zone	164.30 *
Hudson River	319.6	2020	Littoral Zone	270.40 *
New York City Metropolitan Area	328.5	5000	Adjacent Area	0.06
New York City Metropolitan Area	329.1	5000	Adjacent Area	0.23
New York City Metropolitan Area	329.4	5000	Adjacent Area	0.06
New York City Metropolitan Area	332.1	5000	Adjacent Area	17.66
New York City Metropolitan Area	332.3	2030	Formerly Connected	0.63
Total Acreage				**453.34**

Note: * Acreage for the littoral zone wetlands includes the Hudson River itself.

Key:

MP = milepost

ROI = region of influence (within 100 feet on either side of the transmission line)

APPENDIX I.2 – POTENTIALLY IMPACTED SOILS ASSOCIATED WITH THE PROPOSED CHPE PROJECT

Appendix I.2
Potentially Impacted Soils Associated with the Proposed CHPE Project

Table I.2-1 provides a description of soil types found within the proposed CHPE Project ROI for the Geology and Soils resource area. The table is sorted by segment and contains the map unit name, map unit type, acres of soil within the ROI, and the mile post at which the soil occurs.

Table I.2-1. Soils within the Proposed CHPE Project ROI

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Lake Champlain	Fluvaquents	Consociation	0.03	98.6
Lake Champlain	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.47	99.9
Lake Champlain	Fluvaquents	Consociation	0.23	100.3
Lake Champlain	Fluvaquents	Consociation	0.34	100.4
Overland	Saco silt loam	Consociation	1.78	101.4
Overland	Vergennes silty clay loam, 6 to 12 percent slopes	Consociation	1.81	101.5
Overland	Oakville loamy fine sand, 5 to 15 percent slopes	Consociation	1.65	101.6
Overland	Pits, gravel, and sand	Consociation	2.91	101.6
Overland	Farmington-Rock outcrop association, nearly level through moderately steep	Association	4.44	101.8
Overland	Oakville loamy fine sand, 5 to 15 percent slopes	Consociation	8.87	102.0
Overland	Hollis-Charlton association, moderately steep and steep	Association	0.92	102.2
Overland	Limerick silt loam	Consociation	0.63	102.2
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.40	102.4
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.00	102.4
Overland	Pits, gravel, and sand	Consociation	0.79	102.4
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	7.49	102.4
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	6.68	102.7

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	0.00	102.8
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.17	102.9
Overland	Hollis-Charlton association, moderately steep and steep	Association	1.35	103.0
Overland	Charlton soils, very stony, gently sloping and sloping	Consociation	4.24	103.1
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	0.07	103.1
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	7.66	103.3
Overland	Hollis-Charlton association, moderately steep and steep	Association	4.18	103.6
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	0.44	103.6
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.03	103.7
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	4.13	103.8
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	16.60	103.9
Overland	Hollis-Charlton association, moderately steep and steep	Association	5.76	104.6
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.29	104.7
Overland	Hoosic gravelly sandy loam, rolling and hilly	Consociation	0.96	104.9
Overland	Hollis-Charlton association, moderately steep and steep	Association	1.28	104.9
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	2.33	105.0
Overland	Hollis-Charlton association, moderately steep and steep	Association	10.54	105.1
Overland	Charlton soils, very stony, gently sloping and sloping	Consociation	6.94	105.5
Overland	Vergennes silty clay loam, 6 to 12 percent slopes	Consociation	4.44	105.8
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.28	105.9
Overland	Charlton soils, very stony, moderately steep and steep	Consociation	3.94	106.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.42	106.1
Overland	Hollis-Charlton association, moderately steep and steep	Association	21.04	106.2
Overland	Rock outcrop-Hollis association, moderately steep through very steep	Association	4.37	107.0
Overland	Hollis-Charlton association, moderately steep and steep	Association	8.08	107.2
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.26	107.4
Overland	Rock outcrop-Hollis association, moderately steep through very steep	Association	3.59	107.5
Overland	Hollis-Charlton association, moderately steep and steep	Association	0.10	107.7
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	3.41	107.7
Overland	Hollis-Charlton association, moderately steep and steep	Association	32.78	107.8
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	1.96	108.3
Overland	Rock outcrop-Vergennes association, gently sloping through moderately steep	Association	0.57	109.1
Overland	Rock outcrop-Vergennes association, gently sloping through moderately steep	Association	3.78	109.3
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	0.90	109.4
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	4.48	109.5
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	1.93	109.6
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	1.36	109.7
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	1.70	109.8
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	1.99	110.0
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	1.54	110.1
Overland	Kingsbury silty clay, 2 to 6 percent slopes	Consociation	3.20	110.2
Overland	Claverack loamy fine sand, 2 to 6 percent slopes	Consociation	0.19	110.3

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	1.03	110.3
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	0.80	110.3
Overland	Kingsbury silty clay, 2 to 6 percent slopes	Consociation	3.18	110.4
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.17	110.4
Overland	Vergennes silty clay loam, 6 to 12 percent slopes	Consociation	1.25	110.5
Overland	Hollis-Charlton association, moderately steep and steep	Association	0.53	110.6
Overland	Rock outcrop-Vergennes association, gently sloping through moderately steep	Association	3.30	110.6
Overland	Kingsbury silty clay, 2 to 6 percent slopes	Consociation	1.68	110.7
Overland	Hollis-Charlton association, moderately steep and steep	Association	7.86	110.8
Overland	Vergennes silty clay loam, 6 to 12 percent slopes	Consociation	16.70	111.2
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	0.11	111.3
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	0.10	111.5
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	0.72	111.8
Overland	Limerick silt loam	Consociation	0.52	111.9
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	1.70	111.9
Overland	Limerick silt loam	Consociation	3.92	111.9
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	4.01	112.0
Overland	Orthents and Psamments	Undifferentiated group	43.33	112.2
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.96	112.2
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	0.49	112.8
Overland	Saco silt loam	Consociation	0.07	112.9
Overland	Covington silty clay loam	Consociation	0.00	113.2
Overland	Saco silt loam	Consociation	0.06	113.2
Overland	Saco silt loam	Consociation	0.00	113.5
Overland	Saco silt loam	Consociation	0.02	113.6
Overland	Saco silt loam	Consociation	0.99	113.6

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Saco silt loam	Consociation	0.99	113.7
Overland	Limerick silt loam	Consociation	13.78	114.3
Overland	Teel silt loam	Consociation	0.36	114.4
Overland	Teel silt loam	Consociation	0.09	114.6
Overland	Teel silt loam	Consociation	0.06	114.7
Overland	Saco silt loam	Consociation	4.23	114.8
Overland	Teel silt loam	Consociation	0.22	114.8
Overland	Teel silt loam	Consociation	0.18	114.9
Overland	Limerick silt loam	Consociation	1.25	115.0
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	2.04	115.1
Overland	Saco silt loam	Consociation	0.68	115.1
Overland	Orthents and Psamments	Undifferentiated group	1.89	115.2
Overland	Saco silt loam	Consociation	7.76	115.3
Overland	Orthents and Psamments	Undifferentiated group	6.99	115.6
Overland	Teel silt loam	Consociation	4.31	115.8
Overland	Hartland very fine sandy loam, 0 to 2 percent slopes	Consociation	3.80	116.0
Overland	Hartland very fine sandy loam, 0 to 2 percent slopes	Consociation	0.01	116.0
Overland	Orthents and Psamments	Undifferentiated group	0.43	116.3
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	5.35	116.3
Overland	Orthents and Psamments	Undifferentiated group	0.02	116.4
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	1.45	116.5
Overland	Covington silty clay loam	Consociation	1.62	116.6
Overland	Orthents and Psamments	Undifferentiated group	5.98	116.6
Overland	Covington silty clay loam	Consociation	1.73	116.9
Overland	Orthents and Psamments	Undifferentiated group	0.03	116.9
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	16.63	117.0
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.00	117.4
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.06	117.5

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Orthents and Psamments	Undifferentiated group	19.20	117.7
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.85	117.7
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	1.00	117.9
Overland	Hudson silt loam, 6 to 12 percent slopes	Consociation	0.27	118.0
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	1.75	118.1
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	0.02	118.3
Overland	Hollis-Charlton association, moderately steep and steep	Association	0.59	118.6
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	9.19	118.8
Overland	Orthents and Psamments	Undifferentiated group	0.23	119.0
Overland	Vergennes silty clay loam, 12 to 20 percent slopes	Consociation	0.08	119.0
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	2.56	119.1
Overland	Hudson and Vergennes soils, steep and very steep	Undifferentiated group	2.37	119.2
Overland	Vergennes silty clay loam, 6 to 12 percent slopes	Consociation	0.19	119.2
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	4.41	119.3
Overland	Pits, quarry	Consociation	3.63	119.5
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	16.29	119.7
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	4.46	120.5
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	0.01	120.6
Overland	Saco silt loam	Consociation	2.42	120.7
Overland	Hollis-Rock outcrop association, gently sloping and sloping	Association	35.83	120.8
Overland	Limerick silt loam	Consociation	1.87	122.4
Overland	Saco silt loam	Consociation	8.83	122.5
Overland	Limerick silt loam	Consociation	0.08	122.8
Overland	Limerick silt loam	Consociation	0.05	122.9
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	33.60	123.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Saco silt loam	Consociation	0.42	123.0
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.01	123.0
Overland	Hartland very fine sandy loam, 2 to 6 percent slopes	Consociation	8.85	124.4
Overland	Saprists, Aquepts, and Aquents	Undifferentiated group	4.14	124.6
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	16.85	125.0
Overland	Orthents and Psamments	Undifferentiated group	1.09	125.6
Overland	Covington silty clay loam	Consociation	7.51	125.7
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	0.97	126.0
Overland	Orthents and Psamments	Undifferentiated group	2.23	126.0
Overland	Covington silty clay loam	Consociation	12.11	126.1
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	0.20	126.5
Overland	Orthents and Psamments	Undifferentiated group	0.01	126.6
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	7.75	126.7
Overland	Orthents and Psamments	Undifferentiated group	0.02	126.7
Overland	Orthents and Psamments	Undifferentiated group	0.00	126.7
Overland	Orthents and Psamments	Undifferentiated group	0.02	126.7
Overland	Orthents and Psamments	Undifferentiated group	0.04	126.8
Overland	Covington silty clay loam	Consociation	7.97	127.0
Overland	Orthents and Psamments	Undifferentiated group	0.18	127.0
Overland	Claverack loamy fine sand, 2 to 6 percent slopes	Consociation	2.71	127.3
Overland	Orthents and Psamments	Undifferentiated group	0.24	127.3
Overland	Orthents and Psamments	Undifferentiated group	0.00	127.4
Overland	Kingsbury silty clay, 2 to 6 percent slopes	Consociation	16.12	127.5
Overland	Nassau shaly silt loam, undulating through hilly	Consociation	0.10	127.6

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Nassau shaly silt loam, undulating through hilly	Consociation	0.09	127.8
Overland	Covington silty clay loam	Consociation	0.00	127.9
Overland	Nassau shaly silt loam, undulating through hilly	Consociation	0.00	127.9
Overland	Covington silty clay loam	Consociation	11.23	128.1
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	0.63	128.4
Overland	Covington silty clay loam	Consociation	0.18	128.6
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	5.12	128.6
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	1.02	128.8
Overland	Orthents and Psamments	Undifferentiated group	26.94	128.9
Overland	Covington silty clay loam	Consociation	0.00	129.1
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.13	129.1
Overland	Covington silty clay loam	Consociation	0.63	129.2
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	1.04	129.3
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	1.08	129.7
Overland	Covington silty clay loam	Consociation	30.89	130.2
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	4.98	131.4
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	3.32	131.6
Overland	Covington silty clay loam	Consociation	0.05	131.7
Overland	Covington silty clay loam	Consociation	0.35	131.7
Overland	Vergennes silty clay loam, 2 to 6 percent slopes	Consociation	0.49	131.7
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	1.62	131.8
Overland	Carlisle muck	Consociation	21.16	131.9
Overland	Claverack loamy fine sand, 2 to 6 percent slopes	Consociation	0.00	132.5
Overland	Covington silty clay loam	Consociation	0.68	132.6
Overland	Claverack loamy fine sand, 2 to 6 percent slopes	Consociation	2.05	132.8
Overland	Covington silty clay loam	Consociation	1.51	132.8
Overland	Kingsbury silty clay, 2 to 6 percent slopes	Consociation	0.20	132.8
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	21.38	132.9
Overland	Wallington silt loam, sandy substratum	Consociation	6.85	133.8

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	0.03	133.9
Overland	Kingsbury silty clay, 0 to 2 percent slopes	Consociation	0.16	133.9
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	23.26	134.0
Overland	Claverack loamy fine sand, 0 to 2 percent slopes	Consociation	0.23	134.1
Overland	Oakville loamy fine sand, 0 to 5 percent slopes	Consociation	1.17	135.1
Overland	Orthents and Psamments	Undifferentiated group	2.37	135.1
Overland	Orthents and Psamments	Undifferentiated group	0.01	135.2
Overland	Limerick-Saco complex	Complex	1.54	135.3
Overland	Hudson silt loam, hilly	Consociation	3.94	135.4
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	4.85	135.5
Overland	Unadilla very fine sandy loam, 8 to 15 percent slopes	Consociation	8.08	135.8
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	3.77	136.1
Overland	Hudson silt loam, hilly	Consociation	12.47	136.3
Overland	Teel silt loam	Consociation	0.00	136.4
Overland	Teel silt loam	Consociation	0.00	136.5
Overland	Teel silt loam	Consociation	0.00	136.5
Overland	Teel silt loam	Consociation	0.01	136.6
Overland	Rhinebeck silt loam, 3 to 8 percent slopes	Consociation	5.02	136.7
Overland	Teel silt loam	Consociation	0.00	136.7
Overland	Teel silt loam	Consociation	0.00	136.7
Overland	Teel silt loam	Consociation	0.51	136.9
Overland	Hudson silt loam, hilly	Consociation	2.90	137.0
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	1.02	137.1
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	0.26	137.2
Overland	Teel silt loam	Consociation	2.15	137.2
Overland	Unadilla very fine sandy loam, 3 to 8 percent slopes	Consociation	3.96	137.3
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	0.02	137.3
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	1.96	137.4
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	2.37	137.5
Overland	Shaker very fine sandy loam	Consociation	0.01	137.5
Overland	Shaker very fine sandy loam	Consociation	0.00	137.5
Overland	Shaker very fine sandy loam	Consociation	2.82	137.6

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Hudson silt loam, hilly	Consociation	2.11	137.7
Overland	Fluvaqvents frequently flooded	Consociation	3.80	137.8
Overland	Elmridge very fine sandy loam, 3 to 8 percent slopes	Consociation	2.74	138.0
Overland	Shaker very fine sandy loam	Consociation	8.09	138.1
Overland	Elmridge very fine sandy loam, 3 to 8 percent slopes	Consociation	3.66	138.4
Overland	Fluvaqvents frequently flooded	Consociation	1.06	138.5
Overland	Wareham loamy sand	Consociation	14.87	138.6
Overland	Madalin mucky silty clay loam	Consociation	1.63	139.2
Overland	Shaker very fine sandy loam	Consociation	1.73	139.3
Overland	Elmridge very fine sandy loam, 3 to 8 percent slopes	Consociation	0.03	139.4
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.03	139.4
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	6.06	139.4
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	2.38	139.6
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	4.63	139.7
Overland	Oakville and Windsor soils, 25 to 35 percent slopes	Undifferentiated group	6.92	139.9
Overland	Hudson silt loam, 8 to 15 percent slopes	Consociation	0.00	140.0
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	0.11	140.0
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	2.23	140.2
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	4.97	140.3
Overland	Cosad fine sandy loam	Consociation	3.65	140.5
Overland	Oakville loamy fine sand, nearly level	Consociation	15.75	140.7
Overland	Cosad fine sandy loam	Consociation	0.01	141.1
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	3.33	141.3
Overland	Rhinebeck silt loam, 3 to 8 percent slopes	Consociation	0.30	141.3
Overland	Cosad fine sandy loam	Consociation	5.89	141.5
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	11.29	141.7
Overland	Wareham loamy sand	Consociation	0.39	142.1
Overland	Oakville loamy fine sand, nearly level	Consociation	10.69	142.2
Overland	Oakville loamy fine sand, undulating	Consociation	5.93	142.6
Overland	Wareham loamy sand	Consociation	4.72	142.9
Overland	Deerfield loamy fine sand, nearly level	Consociation	5.75	143.1
Overland	Oakville loamy fine sand, undulating	Consociation	0.08	143.2
Overland	Wareham loamy sand	Consociation	0.24	143.2

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Oakville loamy fine sand, undulating	Consociation	4.17	143.3
Overland	Wareham loamy sand	Consociation	4.18	143.4
Overland	Oakville loamy fine sand, undulating	Consociation	24.42	143.7
Overland	Deerfield loamy fine sand, nearly level	Consociation	0.00	144.5
Overland	Oakville loamy fine sand, rolling	Consociation	3.12	144.7
Overland	Oakville loamy fine sand, undulating	Consociation	1.29	144.8
Overland	Oakville loamy fine sand, undulating	Consociation	0.13	144.9
Overland	Oakville loamy fine sand, rolling	Consociation	6.05	144.9
Overland	Wareham loamy sand	Consociation	0.95	145.1
Overland	Oakville loamy fine sand, nearly level	Consociation	6.33	145.2
Overland	Oakville loamy fine sand, undulating	Consociation	4.17	145.4
Overland	Oakville loamy fine sand, nearly level	Consociation	7.75	145.6
Overland	Deerfield loamy fine sand, nearly level	Consociation	2.63	145.9
Overland	Oakville loamy fine sand, nearly level	Consociation	4.39	146.0
Overland	Wareham loamy sand	Consociation	8.23	146.2
Overland	Oakville loamy fine sand, nearly level	Consociation	5.75	146.5
Overland	Oakville loamy fine sand, undulating	Consociation	12.76	146.8
Overland	Oakville loamy fine sand, rolling	Consociation	0.06	147.0
Overland	Oakville loamy fine sand, undulating	Consociation	18.83	147.3
Overland	Oakville loamy fine sand, rolling	Consociation	0.87	147.3
Overland	Windsor loamy sand, undulating	Consociation	1.60	148.1
Overland	Deerfield loamy fine sand, nearly level	Consociation	4.66	148.2
Overland	Windsor loamy sand, undulating	Consociation	13.65	148.4
Overland	Windsor loamy sand, nearly level	Consociation	9.15	148.9
Overland	Windsor loamy sand, undulating	Consociation	5.07	149.3
Overland	Fluvaquents frequently flooded	Consociation	2.49	149.5
Overland	Oakville and Windsor soils, 25 to 35 percent slopes	Undifferentiated group	0.51	149.6
Overland	Windsor loamy sand, undulating	Consociation	14.13	149.7
Overland	Windsor loamy sand, rolling	Consociation	25.12	150.2
Overland	Chatfield-Hollis complex, hilly, very rocky	Complex	1.73	150.3
Overland	Oakville and Windsor soils, 25 to 35 percent slopes	Undifferentiated group	0.68	150.8
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	0.04	151.1
Overland	Rhinebeck silt loam, 3 to 8 percent slopes	Consociation	2.34	151.3
Overland	Rhinebeck silt loam, 0 to 3 percent slopes	Consociation	4.76	151.5
Overland	Rhinebeck silt loam, 3 to 8 percent slopes	Consociation	16.43	151.7

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Hudson silt loam, 8 to 15 percent slopes	Consociation	1.51	152.3
Overland	Deerfield loamy fine sand, undulating	Consociation	6.34	152.4
Overland	Deerfield loamy fine sand, nearly level	Consociation	5.65	152.7
Overland	Windsor loamy sand, nearly level	Consociation	0.16	152.8
Overland	Windsor loamy sand, rolling	Consociation	5.80	152.9
Overland	Windsor loamy sand, undulating	Consociation	5.11	153.2
Overland	Udorthents, smoothed	Consociation	0.55	153.3
Overland	Deerfield loamy fine sand, nearly level	Consociation	4.26	153.4
Overland	Udorthents, smoothed	Consociation	0.06	153.4
Overland	Windsor loamy sand, nearly level	Consociation	0.98	153.4
Overland	Cosad fine sandy loam	Consociation	0.29	153.6
Overland	Windsor loamy sand, undulating	Consociation	2.70	153.6
Overland	Madalin mucky silty clay loam	Consociation	3.07	153.7
Overland	Windsor loamy sand, undulating	Consociation	21.50	153.8
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	5.82	154.8
Overland	Raynham silt loam	Consociation	1.04	154.9
Overland	Hoosic gravelly sandy loam, nearly level	Consociation	0.10	155.0
Overland	Deerfield loamy fine sand, undulating	Consociation	5.60	155.0
Overland	Deerfield loamy fine sand, nearly level	Consociation	0.12	155.2
Overland	Wareham loamy sand	Consociation	0.80	155.2
Overland	Claverack loamy fine sand, 0 to 3 percent slopes	Consociation	1.55	155.3
Overland	Cosad fine sandy loam	Consociation	1.28	155.3
Overland	Wareham loamy sand	Consociation	2.21	155.4
Overland	Windsor loamy sand, undulating	Consociation	0.25	155.4
Overland	Windsor loamy sand, undulating	Consociation	49.00	155.5
Overland	Deerfield loamy fine sand, nearly level	Consociation	0.01	155.7
Overland	Windsor loamy sand, rolling	Consociation	0.15	156.1
Overland	Charlton loam, 8 to 15 percent slopes	Consociation	0.24	156.4
Overland	Deerfield loamy fine sand, nearly level	Consociation	2.02	157.4
Overland	Chenango silt loam, loamy substratum, rolling	Consociation	1.15	157.5
Overland	Limerick-Saco complex	Complex	3.33	157.7
Overland	Sun silt loam	Consociation	2.14	157.8
Overland	Fluvaquents frequently flooded	Consociation	4.26	157.9
Overland	Mosherville-Hornell complex, undulating	Complex	3.72	158.1
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	4.54	158.2

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Manlius-Nassau complex, undulating, rocky	Complex	19.02	158.4
Overland	Deerfield loamy fine sand, nearly level	Consociation	3.13	158.6
Overland	Allis silt loam	Consociation	11.09	159.3
Overland	Mosherville-Hornell complex, undulating	Complex	4.88	159.8
Overland	Allis silt loam	Consociation	9.05	160.0
Overland	Sun silt loam	Consociation	0.28	160.3
Overland	Mosherville-Hornell complex, undulating	Complex	4.25	160.4
Overland	Broadalbin silt loam, 3 to 8 percent slopes	Consociation	3.70	160.5
Overland	Broadalbin silt loam, 3 to 8 percent slopes	Consociation	0.00	160.7
Overland	Manlius-Nassau complex, undulating, rocky	Complex	11.63	160.7
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.56	160.8
Overland	Mosherville silt loam, 3 to 8 percent slopes	Consociation	5.32	161.2
Overland	Mosherville silt loam, 0 to 3 percent slopes	Consociation	6.47	161.4
Overland	Sun silt loam	Consociation	0.00	161.6
Overland	Mosherville silt loam, 3 to 8 percent slopes	Consociation	0.25	161.7
Overland	Sun silt loam	Consociation	6.96	161.7
Overland	Mosherville silt loam, 3 to 8 percent slopes	Consociation	1.26	161.9
Overland	Mosherville silt loam, 3 to 8 percent slopes	Consociation	5.66	162.0
Overland	Broadalbin silt loam, 3 to 8 percent slopes	Consociation	0.98	162.1
Overland	Sun silt loam	Consociation	3.90	162.3
Overland	Mosherville silt loam, 0 to 3 percent slopes	Consociation	3.74	162.4
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	4.39	162.6
Overland	Mosherville-Hornell complex, undulating	Complex	6.84	162.7
Overland	Oakville loamy fine sand, undulating	Consociation	0.99	163.0
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.92	163.1
Overland	Mosherville-Hornell complex, undulating	Complex	20.02	163.2
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.03	163.5
Overland	Allis silt loam	Consociation	17.24	164.0
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.10	164.3
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.11	164.4
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.35	164.5

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.02	164.7
Overland	Palms muck	Consociation	7.09	164.8
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	6.74	164.9
Overland	Broadalbin-Manlius-Nassau, complex, rolling	Complex	0.00	164.9
Overland	Broadalbin-Manlius-Nassau, complex, rolling	Complex	0.01	164.9
Overland	Broadalbin-Manlius-Nassau, complex, rolling	Complex	0.00	165.0
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.15	165.3
Overland	Mosherville-Hornell complex, undulating	Complex	5.73	165.3
Overland	Palms muck	Consociation	0.04	165.3
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	15.98	165.7
Overland	Allis silt loam	Consociation	1.88	165.9
Overland	Broadalbin-Manlius-Nassau, complex, rolling	Complex	1.92	166.3
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	13.52	166.4
Overland	Mosherville-Hornell complex, undulating	Complex	1.19	166.5
Overland	Allis silt loam	Consociation	0.29	166.7
Overland	Mosherville-Hornell complex, undulating	Complex	3.01	167.0
Overland	Allis silt loam	Consociation	1.06	167.1
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.02	167.1
Overland	Manlius-Nassau complex, undulating, rocky	Complex	7.73	167.2
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	14.72	167.5
Overland	Broadalbin-Manlius-Nassau, complex, undulating	Complex	0.08	167.8
Overland	Nunda silt loam, 3 to 8 percent slopes	Consociation	0.02	168.0
Overland	Ilion silt loam	Consociation	2.79	168.1
Overland	Nunda silt loam, 3 to 8 percent slopes	Consociation	0.70	168.1
Overland	Burdett-Scriba channery silt loams, 0 to 3 percent slopes	Complex	0.01	168.2
Overland	Ilion silt loam, 0 to 3 percent slopes	Consociation	5.63	168.3
Overland	Burdett-Scriba channery silt loams, 0 to 3 percent slopes	Complex	0.00	168.3
Overland	Fredon silt loam	Consociation	3.14	168.5
Overland	Teel silt loam	Consociation	2.45	168.6
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	2.10	168.7

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Teel silt loam	Consociation	2.38	168.8
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	3.33	168.9
Overland	Fluvaquents, loamy	Consociation	0.01	169.0
Overland	Raynham silt loam	Consociation	19.50	169.0
Overland	Colonie loamy fine sand, 3 to 15 percent slopes	Consociation	0.66	169.2
Overland	Elnora loamy fine sand	Consociation	2.43	169.5
Overland	Madalin silty clay loam	Consociation	0.01	169.6
Overland	Madalin silty clay loam	Consociation	0.01	169.7
Overland	Madalin silty clay loam	Consociation	12.10	170.0
Overland	Cut and fill land	Consociation	15.46	170.5
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.73	171.0
Overland	Wayland silt loam	Consociation	0.00	171.1
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	6.32	171.2
Overland	Wayland silt loam	Consociation	3.87	171.4
Overland	Cut and fill land	Consociation	2.43	171.6
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	0.54	171.6
Overland	Cut and fill land	Consociation	1.10	171.8
Overland	Nunda channery silt loam, 3 to 8 percent slopes	Consociation	0.32	171.8
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	4.95	171.8
Overland	Burdett-Scriba channery silt loams, 0 to 3 percent slopes	Complex	9.40	172.0
Overland	Nunda channery silt loam, 3 to 8 percent slopes	Consociation	1.41	172.1
Overland	Cut and fill land	Consociation	48.90	172.5
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	0.00	174.5
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	44.50	174.5
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	0.40	174.6
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	0.15	175.9
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	0.01	176.0
Overland	Wayland silt loam	Consociation	0.05	176.0
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	0.03	176.1
Overland	Colonie loamy fine sand, 0 to 3 percent slopes	Consociation	2.92	176.4
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	0.00	176.4
Overland	Made land	Consociation	0.12	176.5
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	0.09	176.5

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	0.05	176.5
Overland	Plainfield loamy sand, 0 to 3 percent slopes	Consociation	8.59	176.5
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	0.14	176.6
Overland	Gravel pits	Consociation	4.12	176.7
Overland	Colonie and Plainfield soils, steep	Undifferentiated group	0.04	176.7
Overland	Fluvaquents, loamy	Consociation	0.13	176.9
Overland	Mardin gravelly silt loam, 3 to 8 percent slopes	Consociation	3.79	177.1
Overland	Plainfield loamy sand, 0 to 3 percent slopes	Consociation	0.28	177.1
Overland	Plainfield loamy sand, 0 to 3 percent slopes	Consociation	31.73	177.3
Overland	Plainfield loamy sand, 3 to 10 percent slopes	Consociation	0.23	178.2
Overland	Granby loamy fine sand	Consociation	2.26	178.2
Overland	Junius loamy fine sand	Consociation	8.34	178.7
Overland	Wayland silt loam	Consociation	0.12	178.7
Overland	Wayland silt loam	Consociation	0.21	178.8
Overland	Cheektowaga fine sandy loam	Consociation	1.11	179.0
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.01	179.0
Overland	Madalin silty clay loam	Consociation	7.94	179.1
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.15	179.1
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.05	179.2
Overland	Junius loamy fine sand	Consociation	0.02	179.2
Overland	Junius loamy fine sand	Consociation	0.01	179.3
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.86	179.4
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.12	179.4
Overland	Colonie loamy fine sand, 3 to 15 percent slopes	Consociation	0.14	179.5
Overland	Elnora loamy fine sand	Consociation	3.33	179.5
Overland	Cheektowaga fine sandy loam	Consociation	1.80	179.6
Overland	Junius loamy fine sand	Consociation	0.31	179.6
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.77	179.7
Overland	Elnora loamy fine sand	Consociation	0.02	179.7
Overland	Junius loamy fine sand	Consociation	1.16	179.7

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.37	179.7
Overland	Cheektowaga fine sandy loam	Consociation	0.12	179.8
Overland	Cheektowaga fine sandy loam	Consociation	0.07	179.8
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.38	179.8
Overland	Madalin silty clay loam	Consociation	0.71	179.8
Overland	Madalin silty clay loam	Consociation	0.80	179.8
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.59	179.8
Overland	Hudson silty clay loam, 3 to 8 percent slopes	Consociation	0.72	179.9
Overland	Claverack loamy fine sand, 0 to 3 percent slopes	Consociation	0.59	179.9
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	1.47	179.9
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.85	180.0
Overland	Cheektowaga fine sandy loam	Consociation	2.35	180.1
Overland	Claverack loamy fine sand, 0 to 3 percent slopes	Consociation	0.62	180.1
Overland	Granby loamy fine sand	Consociation	0.01	180.1
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	1.81	180.2
Overland	Cheektowaga fine sandy loam	Consociation	5.98	180.3
Overland	Cosad loamy fine sand	Consociation	3.80	180.5
Overland	Granby loamy fine sand	Consociation	0.81	180.5
Overland	Stafford loamy fine sand	Consociation	0.08	180.5
Overland	Cosad loamy fine sand	Consociation	0.56	180.7
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	1.41	180.7
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	0.61	180.8
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	1.12	180.8
Overland	Stafford loamy fine sand	Consociation	0.65	180.8
Overland	Colonie loamy fine sand, rolling	Consociation	0.38	180.9
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	1.26	180.9
Overland	Shaker fine sandy loam	Consociation	1.62	180.9
Overland	Colonie loamy fine sand, rolling	Consociation	1.07	181.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Shaker fine sandy loam	Consociation	0.55	181.0
Overland	Colonie loamy fine sand, 3 to 8 percent slopes	Consociation	0.04	181.1
Overland	Raynham very fine sandy loam	Consociation	3.67	181.1
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	0.32	181.2
Overland	Shaker fine sandy loam	Consociation	0.31	181.2
Overland	Elnora loamy fine sand, 3 to 8 percent slopes	Consociation	3.45	181.3
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	0.82	181.3
Overland	Raynham very fine sandy loam	Consociation	0.09	181.3
Overland	Stafford loamy fine sand	Consociation	1.03	181.4
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	1.47	181.5
Overland	Raynham very fine sandy loam	Consociation	1.33	181.5
Overland	Birdsall mucky silt loam	Consociation	0.77	181.6
Overland	Raynham very fine sandy loam	Consociation	1.38	181.6
Overland	Raynham very fine sandy loam	Consociation	2.69	181.7
Overland	Shaker fine sandy loam	Consociation	0.84	181.7
Overland	Shaker fine sandy loam	Consociation	0.13	181.8
Overland	Elmridge fine sandy loam, 0 to 3 percent slopes	Consociation	0.70	181.9
Overland	Colonie loamy fine sand, 3 to 8 percent slopes	Consociation	0.09	181.9
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	1.86	181.9
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	0.38	182.0
Overland	Raynham very fine sandy loam	Consociation	0.76	182.0
Overland	Raynham very fine sandy loam	Consociation	0.02	182.0
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	0.81	182.0
Overland	Shaker fine sandy loam	Consociation	1.05	182.0
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	0.50	182.1
Overland	Raynham very fine sandy loam	Consociation	0.63	182.1
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.30	182.1
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	1.10	182.1
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.44	182.2
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	0.47	182.2
Overland	Shaker fine sandy loam	Consociation	1.42	182.2
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.92	182.3

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.34	182.3
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	1.57	182.3
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.26	182.4
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	0.19	182.4
Overland	Raynham very fine sandy loam	Consociation	0.35	182.4
Overland	Raynham very fine sandy loam	Consociation	0.08	182.4
Overland	Shaker fine sandy loam	Consociation	1.34	182.4
Overland	Shaker fine sandy loam	Consociation	0.29	182.4
Overland	Colonie loamy fine sand, 3 to 8 percent slopes	Consociation	0.44	182.5
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	3.72	182.5
Overland	Raynham very fine sandy loam	Consociation	0.33	182.6
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	5.71	182.7
Overland	Unadilla silt loam, 15 to 25 percent slopes	Consociation	2.24	183.0
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	0.67	183.0
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	14.61	183.1
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	0.79	183.2
Overland	Colonie loamy fine sand, hilly	Consociation	1.01	183.7
Overland	Colonie loamy fine sand, hilly	Consociation	0.82	183.8
Overland	Riverhead fine sandy loam, 0 to 3 percent slopes	Consociation	1.55	183.9
Overland	Riverhead fine sandy loam, 8 to 15 percent slopes	Consociation	0.71	183.9
Overland	Riverhead fine sandy loam, 3 to 8 percent slopes	Consociation	1.41	183.9
Overland	Udorthents, loamy	Undifferentiated group	9.02	184.0
Overland	Sudbury fine sandy loam, 0 to 3 percent slopes	Consociation	1.89	184.2
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	5.57	184.5
Overland	Udorthents, loamy-Urban land complex	Complex	0.03	184.6
Overland	Valois gravelly loam, 3 to 8 percent slopes	Consociation	2.00	184.7
Overland	Udorthents, loamy-Urban land complex	Complex	0.00	184.7
Overland	Udorthents, loamy-Urban land complex	Complex	5.33	184.8
Overland	Udorthents, loamy	Undifferentiated group	34.90	185.0
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	1.30	186.5
Overland	Ilion silt loam	Consociation	5.80	186.5
Overland	Burdett silt loam, 0 to 3 percent slopes	Consociation	2.33	186.8

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	13.79	186.9
Overland	Raynham very fine sandy loam	Consociation	0.00	187.3
Overland	Nunda silt loam, 3 to 8 percent slopes	Consociation	0.01	187.4
Overland	Raynham very fine sandy loam	Consociation	0.00	187.4
Overland	Burdett silt loam, 0 to 3 percent slopes	Consociation	3.82	187.5
Overland	Ilion silt loam	Consociation	5.44	187.6
Overland	Chenango gravelly silt loam, loamy substratum, 3 to 8 percent slopes	Consociation	0.15	187.8
Overland	Udorthents, loamy-Urban land complex	Complex	6.76	187.8
Overland	Pits, gravel	Consociation	0.18	187.9
Overland	Udorthents, loamy	Undifferentiated group	5.04	188.1
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	2.86	188.4
Overland	Chenango gravelly silt loam, loamy substratum, 3 to 8 percent slopes	Consociation	1.28	188.5
Overland	Nunda silt loam, 3 to 8 percent slopes	Consociation	1.03	188.5
Overland	Urban land	Consociation	2.19	188.6
Overland	Udorthents, loamy-Urban land complex	Complex	14.56	188.7
Overland	Shaker fine sandy loam	Consociation	1.49	189.2
Overland	Riverhead fine sandy loam, 3 to 8 percent slopes	Consociation	2.39	189.3
Overland	Chenango gravelly silt loam, loamy substratum, rolling	Consociation	2.04	189.4
Overland	Unadilla silt loam, 8 to 15 percent slopes	Consociation	1.08	189.5
Overland	Riverhead fine sandy loam, 3 to 8 percent slopes	Consociation	1.48	189.5
Overland	Scio silt loam, 3 to 8 percent slopes	Consociation	0.12	189.6
Overland	Sudbury fine sandy loam, 0 to 3 percent slopes	Consociation	4.59	189.6
Overland	Riverhead fine sandy loam, 3 to 8 percent slopes	Consociation	0.01	189.7
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	1.53	189.8
Overland	Riverhead fine sandy loam, 3 to 8 percent slopes	Consociation	0.13	189.8
Overland	Teel silt loam	Consociation	1.06	189.8
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	3.05	189.9
Overland	Chenango channery silt loam, fan, 3 to 8 percent slopes	Consociation	0.94	190.0
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.32	190.1

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Udorthents, loamy	Undifferentiated group	6.48	190.1
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	0.79	190.4
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	8.42	190.4
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.01	190.6
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	1.46	190.7
Overland	Madalin silt loam	Consociation	0.00	190.7
Overland	Madalin silt loam	Consociation	0.05	190.8
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	1.34	190.8
Overland	Chenango channery silt loam, fan, 3 to 8 percent slopes	Consociation	2.50	190.9
Overland	Castile gravelly loam, 0 to 3 percent slopes	Consociation	1.79	191.0
Overland	Nunda silt loam, 3 to 8 percent slopes	Consociation	1.91	191.0
Overland	Wayland silt loam	Consociation	1.24	191.1
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	3.04	191.2
Overland	Burdett silt loam, 0 to 3 percent slopes	Consociation	2.14	191.3
Overland	Burdett silt loam, 3 to 8 percent slopes	Consociation	2.38	191.4
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	2.89	191.5
Overland	Elmridge fine sandy loam, 3 to 8 percent slopes	Consociation	0.16	191.6
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	2.24	191.6
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	2.02	191.7
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.31	191.7
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	1.38	191.8
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	4.12	191.9
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.11	191.9
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.01	191.9
Overland	Madalin silt loam	Consociation	1.69	192.0
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	3.56	192.1
Overland	Raynham very fine sandy loam	Consociation	1.36	192.2
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	3.71	192.3

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Hudson silt loam, 8 to 15 percent slopes	Consociation	0.00	192.4
Overland	Hudson silt loam, 8 to 15 percent slopes	Consociation	0.77	192.5
Overland	Hudson silt loam, hilly	Consociation	1.02	192.5
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.71	192.5
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.80	192.5
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	5.11	192.6
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	2.47	192.8
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	1.79	192.9
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	15.74	193.0
Overland	Udorthents, clayey-Urban land complex	Complex	64.80	193.6
Overland	Udorthents, clayey-Urban land complex	Complex	0.21	193.6
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	0.00	195.9
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	1.63	196.0
Overland	Scio silt loam, 0 to 3 percent slopes	Consociation	0.66	196.2
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	4.36	196.4
Overland	Wakeland silt loam	Consociation	0.48	196.5
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	3.75	196.6
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	0.11	196.6
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	1.72	196.8
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	0.33	196.8
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.77	196.8
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	6.23	196.9
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.23	197.0
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	3.04	197.2
Overland	Udorthents, clayey-Urban land complex	Complex	30.94	197.3
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.01	198.2
Overland	Colonie loamy fine sand, 3 to 8 percent slopes	Consociation	0.18	198.5
Overland	Udipsamments-Urban land complex	Complex	1.12	198.6
Overland	Stafford loamy fine sand	Consociation	1.67	198.6
Overland	Elnora loamy fine sand, 0 to 3 percent slopes	Consociation	10.06	198.7
Overland	Udipsamments, smoothed	Undifferentiated group	6.38	199.1
Overland	Elnora loamy fine sand, 0 to 3 percent slopes	Consociation	7.59	199.4

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Colonie loamy fine sand, 3 to 8 percent slopes	Consociation	0.65	199.5
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	8.92	199.7
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	2.94	199.9
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.55	200.1
Overland	Claverack loamy fine sand, 3 to 8 percent slopes	Consociation	0.39	200.2
Overland	Hudson silt loam, 8 to 15 percent slopes	Consociation	1.99	200.2
Overland	Urban land-Udorthents complex, 0 to 8 percent slopes	Complex	0.54	200.3
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	4.97	200.3
Overland	Hudson silt loam, hilly	Consociation	0.01	200.4
Overland	Hudson silt loam, hilly	Consociation	2.38	200.5
Overland	Raynham very fine sandy loam	Consociation	0.41	200.6
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	0.73	200.7
Overland	Wakeland silt loam	Consociation	2.50	200.7
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	1.62	200.8
Overland	Udorthents, clayey-Urban land complex	Complex	1.86	200.8
Overland	Hudson silt loam, 25 to 45 percent slopes	Consociation	2.56	200.9
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	9.86	201.0
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	0.61	201.0
Overland	Madalin silt loam	Consociation	1.74	201.4
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	3.04	201.5
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	18.46	201.6
Overland	Hudson silt loam, 3 to 8 percent slopes	Consociation	0.59	202.2
Overland	Nassau channery silt loam, undulating	Consociation	0.91	202.2
Overland	Udorthents, loamy	Undifferentiated group	19.11	202.5
Overland	Urban land-Udorthents complex, 0 to 8 percent slopes	Complex	11.04	203.4
Overland	Rhinebeck silty clay loam, 0 to 3 percent slopes	Consociation	9.31	203.8
Overland	Rhinebeck silty clay loam, 3 to 8 percent slopes	Consociation	2.73	204.1

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Urban land-Udorthents complex, 0 to 8 percent slopes	Complex	0.00	204.1
Overland	Hudson and Vergennes soils, 8 to 15 percent slopes	Undifferentiated group	0.92	204.2
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.83	204.2
Overland	Covington and Madalin soils	Undifferentiated group	12.60	204.3
Overland	Nassau channery silt loam, steep, very rocky	Complex	0.24	204.7
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	4.80	204.8
Overland	Riverhead loam, rolling	Consociation	20.95	205.0
Overland	Valois-Nassau complex, undulating	Complex	0.22	205.0
Overland	Chenango gravelly loam, 0 to 3 percent slopes	Consociation	0.33	205.8
Overland	Tioga loam	Consociation	1.08	205.9
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	1.85	205.9
Overland	Nassau channery silt loam, rolling, very rocky	Complex	9.50	206.0
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	13.24	206.3
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	12.84	206.9
Overland	Nassau channery silt loam, steep, very rocky	Complex	0.07	207.2
Overland	Valois-Nassau complex, hilly	Complex	0.22	207.2
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	5.23	207.5
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.64	207.7
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	3.87	207.8
Overland	Hudson and Vergennes soils, 25 to 50 percent slopes	Undifferentiated group	1.56	207.9
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	2.71	208.0
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	1.26	208.1
Overland	Hudson and Vergennes soils, 25 to 50 percent slopes	Undifferentiated group	1.35	208.1
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	3.82	208.2
Overland	Nassau channery silt loam, rolling, very rocky	Complex	0.04	208.2

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	2.34	208.3
Overland	Hudson and Vergennes soils, 25 to 50 percent slopes	Undifferentiated group	5.17	208.4
Overland	Hudson and Vergennes silty clay loams, 8 to 15 percent slopes, severely eroded	Undifferentiated group	0.04	208.4
Overland	Nassau channery silt loam, hilly, very rocky	Complex	0.51	208.6
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	4.04	208.7
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	5.30	208.8
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	0.12	209.0
Overland	Nassau channery silt loam, rolling, very rocky	Complex	3.24	209.1
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	12.20	209.2
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.52	209.7
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	1.34	209.7
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.93	209.8
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	3.84	209.9
Overland	Hudson and Vergennes silty clay loams, 8 to 15 percent slopes, severely eroded	Undifferentiated group	2.10	210.0
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	2.65	210.1
Overland	Wayland silt loam	Consociation	0.42	210.1
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	1.98	210.2
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	1.45	210.3
Overland	Wayland silt loam	Consociation	1.25	210.3
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	1.62	210.4
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	11.21	210.5
Overland	Wayland silt loam	Consociation	0.00	210.5
Overland	Elmridge very fine sandy loam, 3 to 8 percent slopes	Consociation	3.77	211.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.08	211.0
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	1.85	211.1
Overland	Shaker very fine sandy loam	Consociation	0.36	211.1
Overland	Shaker very fine sandy loam	Consociation	9.28	211.2
Overland	Udorthents, loamy	Consociation	4.63	211.6
Overland	Shaker very fine sandy loam	Consociation	10.34	211.8
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	9.54	212.2
Overland	Covington and Madalin soils	Undifferentiated group	0.99	212.5
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	6.31	212.6
Overland	Nassau channery silt loam, rolling	Consociation	0.16	212.7
Overland	Covington and Madalin soils	Undifferentiated group	0.26	212.9
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	3.77	212.9
Overland	Covington and Madalin soils	Undifferentiated group	7.23	213.1
Overland	Nassau channery silt loam, rolling	Consociation	0.13	213.1
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	6.33	213.4
Overland	Covington and Madalin soils	Undifferentiated group	0.31	213.5
Overland	Covington and Madalin soils	Undifferentiated group	2.36	213.6
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	18.71	213.7
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.11	214.1
Overland	Wayland silt loam	Consociation	1.91	214.5
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	3.04	214.6
Overland	Covington and Madalin soils	Undifferentiated group	1.04	214.7
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	11.30	214.7
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	1.11	215.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.15	215.2
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.00	215.2
Overland	Covington and Madalin soils	Undifferentiated group	1.96	215.3
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	12.11	215.4
Overland	Covington and Madalin soils	Undifferentiated group	0.02	215.6
Overland	Covington and Madalin soils	Undifferentiated group	83.16	215.9
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	0.48	216.0
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	0.14	216.0
Overland	Wayland silt loam	Consociation	0.00	216.0
Overland	Wayland silt loam	Consociation	0.00	216.0
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	0.73	216.2
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	0.07	216.4
Overland	Wayland silt loam	Consociation	1.96	216.4
Overland	Valois-Nassau complex, undulating	Complex	0.49	217.0
Overland	Valois-Nassau complex, hilly	Complex	1.23	217.7
Overland	Nassau channery silt loam, hilly, very rocky	Complex	3.10	219.5
Overland	Nassau channery silt loam, rolling, very rocky	Complex	2.41	219.7
Overland	Nassau channery silt loam, hilly, very rocky	Complex	8.25	219.8
Overland	Covington and Madalin soils	Undifferentiated group	9.73	220.1
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.17	220.3
Overland	Nassau channery silt loam, hilly, very rocky	Complex	0.00	220.4
Overland	Nassau channery silt loam, rolling	Consociation	0.86	220.5
Overland	Nassau channery silt loam, hilly, very rocky	Complex	11.39	220.5
Overland	Nassau channery silt loam, rolling	Consociation	0.63	220.9
Overland	Udorthents, loamy	Consociation	0.10	220.9
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	0.49	221.0
Overland	Hudson and Vergennes soils, 25 to 50 percent slopes	Undifferentiated group	0.18	221.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Nassau channery silt loam, steep, very rocky	Complex	5.00	221.0
Overland	Nassau channery silt loam, rolling	Consociation	1.97	221.2
Overland	Nassau channery silt loam, steep, very rocky	Complex	1.47	221.3
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	2.82	221.4
Overland	Nassau channery silt loam, rolling, very rocky	Complex	0.01	221.4
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.37	221.5
Overland	Nassau channery silt loam, rolling	Consociation	0.08	221.5
Overland	Riverhead loam, 0 to 3 percent slopes	Consociation	7.95	221.6
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.02	221.7
Overland	Riverhead loam, rolling	Consociation	0.00	221.7
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.58	221.9
Overland	Hudson and Vergennes soils, 25 to 50 percent slopes	Undifferentiated group	2.76	222.0
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	7.53	222.1
Overland	Kingsbury and Rhinebeck soils, 0 to 3 percent slopes	Undifferentiated group	3.44	222.4
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	1.61	222.5
Overland	Hudson and Vergennes soils, 8 to 15 percent slopes	Undifferentiated group	4.13	222.6
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	23.79	222.8
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.06	222.8
Overland	Farmington gravelly silt loam, rolling, rocky	Complex	0.20	223.0
Overland	Hudson and Vergennes soils, 8 to 15 percent slopes	Undifferentiated group	12.90	223.9
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	0.00	224.2
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	9.43	224.3
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.14	224.3
Overland	Covington and Madalin soils	Undifferentiated group	0.07	224.7

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	5.74	224.7
Overland	Hudson and Vergennes soils, 8 to 15 percent slopes	Undifferentiated group	1.24	224.9
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	13.55	225.0
Overland	Farmington gravelly silt loam, steep, rocky	Complex	4.46	225.4
Overland	Udorthents, loamy	Consociation	11.22	225.7
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	12.28	226.3
Overland	Covington and Madalin soils	Undifferentiated group	0.19	226.5
Overland	Udorthents, loamy	Consociation	4.09	226.7
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	9.88	226.9
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.75	227.0
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.63	227.3
Overland	Farmington gravelly silt loam, steep, rocky	Complex	1.84	227.4
Overland	Hudson and Vergennes soils, 3 to 8 percent slopes	Undifferentiated group	0.02	227.4
Overland	Hudson and Vergennes soils, 8 to 15 percent slopes	Undifferentiated group	1.77	227.5
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	2.35	227.6
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.21	227.7
Overland	Riverhead loam, 3 to 8 percent slopes	Consociation	4.95	227.7
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	0.00	227.8
Overland	Fluvaquents-Udifluvents complex, frequently flooded	Complex	0.06	227.9
Overland	Covington and Madalin soils	Undifferentiated group	2.06	227.9
Overland	Hudson and Vergennes silty clay loams, 15 to 25 percent slopes, severely eroded	Undifferentiated group	1.10	227.9
Overland	Farmington gravelly silt loam, hilly, rocky	Complex	2.14	228.0
Overland	Kingsbury and Rhinebeck soils, 3 to 8 percent slopes	Undifferentiated group	0.06	228.1
Overland	Riverhead loam, 3 to 8 percent slopes	Consociation	0.06	228.1

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Overland	Udorthents, loamy	Consociation	4.51	228.1
Overland	Medisaprists-Hydraquents, tidal marsh	Complex	0.06	228.2
Overland	Medisaprists-Hydraquents, tidal marsh	Complex	0.17	228.2
Overland	Medisaprists-Hydraquents, tidal marsh	Complex	0.00	228.3
Hudson River	Rock outcrop-Hollis complex, moderately steep	Complex	0.64	288.1
Hudson River	Charlton-Paxton complex, extremely stony, moderately steep	Complex	3.27	288.2
Hudson River	Chatfield-Rock outcrop complex, hilly	Complex	2.20	295.7
Hudson River	Chatfield-Rock outcrop complex, rolling	Complex	2.06	295.8
Hudson River	Chatfield-Rock outcrop complex, hilly	Complex	1.29	295.9
Hudson River	Chatfield-Rock outcrop complex, rolling	Complex	1.60	296.0
Hudson River	Ipswich muck	Consociation	2.81	296.0
Hudson River	Yalesville sandy loam, 15 to 25 percent slopes	Consociation	1.18	296.1
Hudson River	Udorthents, wet substratum	Consociation	6.67	296.2
Hudson River	Yalesville sandy loam, 8 to 15 percent slopes	Consociation	0.00	296.3
Hudson River	Ipswich muck	Consociation	2.39	296.5
Hudson River	Urban land	Consociation	0.71	296.5
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	6.44	296.6
Hudson River	Hinckley gravelly loamy sand, 0 to 3 percent slopes	Consociation	0.01	296.8
Hudson River	Hinckley gravelly loamy sand, 15 to 25 percent slopes	Consociation	10.43	296.9
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	1.17	297.1
Hudson River	Ipswich muck	Consociation	0.55	297.3
Hudson River	Ipswich muck	Consociation	1.48	297.4
Hudson River	Haven loam, 3 to 8 percent slopes	Consociation	8.25	297.5
Hudson River	Wethersfield gravelly silt loam, 15 to 25 percent slope s	Consociation	1.28	297.5
Hudson River	Pits, gravel	Consociation	0.03	297.7
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	0.07	297.9
Hudson River	Urban land	Consociation	2.06	297.9
Hudson River	Hinckley gravelly loamy sand, 0 to 3 percent slopes	Consociation	0.01	298.0
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	0.12	298.0

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Hudson River	Udorthents, smoothed	Consociation	6.05	298.0
Hudson River	Hinckley gravelly loamy sand, 0 to 3 percent slopes	Consociation	0.25	298.1
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	12.64	298.2
Hudson River	Hinckley-Urban land complex, 0 to 8 percent slopes	Complex	5.63	298.7
Hudson River	Urban land	Consociation	0.73	298.7
Hudson River	Hinckley gravelly loamy sand, 3 to 8 percent slopes	Consociation	8.44	298.9
Hudson River	Holyoke-Rock outcrop complex, rolling	Complex	0.49	299.0
Hudson River	Holyoke-Rock outcrop complex, rolling	Complex	4.02	299.3
Hudson River	Urban land	Consociation	0.09	299.4
Hudson River	Wethersfield gravelly silt loam, 3 to 8 percent slopes	Consociation	0.04	299.4
Hudson River	Wethersfield-Urban land complex, 2 to 8 percent slopes	Complex	6.82	299.5
Hudson River	Holyoke-Rock outcrop complex, hilly	Complex	9.18	299.8
Hudson River	Wethersfield gravelly silt loam, 3 to 8 percent slopes	Consociation	0.32	299.8
Hudson River	Wethersfield gravelly silt loam, 8 to 15 percent slopes	Consociation	2.86	300.1
Hudson River	Holyoke-Rock outcrop complex, hilly	Complex	2.47	300.2
Hudson River	Holyoke-Rock outcrop complex, very steep	Complex	9.18	300.3
Hudson River	Udorthents, smoothed	Consociation	1.19	300.6
Hudson River	Holyoke-Rock outcrop complex, hilly	Complex	26.27	300.8
Hudson River	Holyoke-Rock outcrop complex, rolling	Complex	0.00	301.1
Hudson River	Wethersfield gravelly silt loam, 8 to 15 percent slopes	Consociation	5.36	301.8
Hudson River	Wethersfield gravelly silt loam, 3 to 8 percent slopes	Consociation	14.52	301.9
Hudson River	Wethersfield gravelly silt loam, 8 to 15 percent slopes	Consociation	0.04	302.0
Hudson River	Udorthents, smoothed	Consociation	0.15	302.2
Hudson River	Udorthents, smoothed	Consociation	2.36	302.4
Hudson River	Wethersfield-Urban land complex, 2 to 8 percent slopes	Complex	0.34	302.4
Hudson River	Wethersfield gravelly silt loam, 3 to 8 percent slopes	Consociation	2.75	302.5
Hudson River	Wethersfield gravelly silt loam, 8 to 15 percent slopes	Consociation	0.80	302.5

Segment	Map Unit Name	Map Unit Type	Acres of ROI	MP
Hudson River	Holyoke-Rock outcrop complex, hilly	Complex	2.18	302.6
Hudson River	Holyoke-Rock outcrop complex, very steep	Complex	2.96	302.7
New York City Metropolitan Area	Water	Water	See note	324.0
New York City Metropolitan Area	Urban Land	Consociation	See note	330.3
New York City Metropolitan Area	Water	Water	See note	331.4
New York City Metropolitan Area	Urban Land	Consociation	See note	336.1

Note: Soils in the New York City Metropolitan Area Segment have not been surveyed by the Natural Resources Conservation Service, and thus acreages of soils within the ROI in this segment are not available.

Key:

MP = milepost

ROI = region of influence (within 100 feet on either side of the transmission line)