

CONCEPTUAL WETLAND MITIGATION PLAN CHAMPLAIN HUDSON POWER EXPRESS

USACE Application: NAN-2009-01089-EHA

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1.0 INTRODUCTION

The Champlain Hudson Power Express project (herein after “Project”) is a 1,000-megawatt (“MW”) underwater/underground high voltage direct current (“HVDC”) electric transmission system extending from the international border between Canada and the United States to Queens, New York City, New York. Champlain Hudson Power Express Inc. and CHPE Properties Inc. (collectively the “Applicants”) propose to develop the Project to connect clean sources of power generation to load centers in and around New York City.

The Project has been sited to avoid or minimize impacts to sensitive resources. The Applicants have provided a “least environmentally damaging practicable alternative” (LEDPA) analysis and responded to requests from the U.S. Army Corps of Engineers (“USACE”) for additional information and evaluation. Most of the overland portions of the Project route consist of previously disturbed railroad or roadway rights-of-way (“ROWS”) which have been subjected to various routine vegetative maintenance activities. Wetlands within these areas tend to be of lower value than those in less disturbed or non-disturbed areas because the composition of the vegetation and structure of these areas have adapted to the routine vegetative maintenance activities conducted in these areas. The underwater cable route has been thoroughly reviewed by New York state resource agencies and sited to avoid significant habitat and cultural features. The Project has been designed to avoid and/or minimize impacts to tidal and estuarine wetlands to the extent feasible by siting the underwater portions of the cable route within the deeper subtidal zones and by using horizontal directional drill (“HDD”) construction methods for all landfall locations.

This report has been prepared to support the application submitted by the Applicants to the USACE to obtain construction permits for the Project pursuant to Section 404 of the Clean Water Act (“CWA”) and Section 10 of the Rivers and Harbors Act. All wetland and deepwater habitats in the Project area potentially regulated by the USACE under Section 404 CWA and subject to the substantive requirements of Articles 15 – Protection of Waters Program and 24 – Freshwater Wetlands Act of the Environmental Conservation Law (“ECL”) were documented in a Wetland Delineation Report contained in Appendix F of the Supplemental Application submitted to the USACE on February 29, 2012 (“Supplemental Application”).

The goal of this Conceptual Wetland Mitigation Plan (“Plan”) is to summarize the wetland impacts associated with the Project, identify the goals and objectives of the Wetland Mitigation Plan to be developed by the Applicants in collaboration with reviewing agencies, and to identify components of the Wetland Mitigation Plan that will be submitted to the USACE. The Wetland Mitigation Plan will be structured to take into considerations all sections within 33 CFR 332.4 (c) (1-14).

2.0 AVOIDANCE AND MINIMIZATION MEASURES

The proposed Project avoids and minimizes impacts to wetlands, streams, and other regulated resources to the extent possible, rectifies temporary impacts wherever possible, and provides

compensation for minimized, unavoidable negative effects to wetland, streams, and their functions, all consistent with federal and state regulatory requirements and guidance.

The wetland mitigation sequencing (i.e., avoidance, minimization, and compensatory mitigation) will be carried out concurrently with the development of the transmission facility to the greatest extent practicable. The avoidance and minimization measures to be taken are as follows.

2.1 Avoidance Measures

The Applicants have avoided, to the extent feasible, adverse impacts to aquatic resources, including wetlands, streams, and New York State Department of Environmental Conservation (“NYSDEC”) 100-foot adjacent areas by locating the proposed Project transmission facilities primarily within existing railroad and roadway ROWs. In accordance with the CWA Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material, the Applicants developed a LEDPA analysis for the Project, which was submitted to the USACE in April of 2010. 40 CFR 230.10(a)(2) states that an alternative is practical if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose. In response to a letter sent by the USACE in July of 2010, the Applicants provided supplemental materials in August of 2010. The Applicants also developed a summary of alternative analyses which had been conducted from March 2010 through December of that same year. These documents were provided in Appendix D of the USACE application submitted in December of 2010. On July 5, 2011, the USACE identified five additional alternatives to evaluate and the Applicants responded to this request in Appendix I of the Supplemental Application. The Applicants submitted an Updated LEDPA analysis in May of 2013.

Routing of the Project was also a subject of discussion with New York State (“NYS”) agencies, municipalities, utilities and non-governmental agencies as part of the New York State Article VII process. Settlement parties underwent an intensive review of the routing, with a specific focus on locating the cables out of major waterbodies to the extent practical and feasible. In their Joint Proposal for Settlement (“Joint Proposal”), the settlement parties¹ stated that various alternative routes had been considered and rejected so that:

The preferred route as presented in this Joint Proposal was determined to be the best suited for the Facility, since it provides an appropriate balance among the various state interests, and it represents the minimum adverse environmental impact, considering the state of available technology, the nature and economics of the studied alternatives and other pertinent considerations.

¹ Settlement parties endorsing the Joint Proposal for all purposes include: the Applicants, Staff of the NYS Department of Public Service; NYS Department of Environmental Conservation; NYS Department of State; Adirondack Park Agency; NYS Office of Parks, Recreation and Historic Preservation; Palisades Interstate Park Commission; Riverkeeper, Inc.; Scenic Hudson, Inc.; and New York State Council of Trout Unlimited. The New York State Department of Transportation and Vermont Electric Power Company signed the Joint Proposal for the limited purposes of participating in the sections of importance to them.

The signatory parties also noted that they supported the issuance of an Article VII Certificate of Environmental Compatibility and Public Need to the Applicants based on factors that included environmental impact as well as the availability and impact of alternatives. The proposed Project is the only alternative that meets the Applicants' objectives and minimizes the overall environmental impacts to the greatest extent practicable. This finding is consistent with the Applicants' updated LEDPA analysis submitted to the USACE in May 2013 and the Certificate Order issued by the New York State Public Service Commission on April 18, 2013.

The Applicants have utilized Horizontal Directional Drilling (HDD) in their routing to address major engineering challenges (e.g. water crossing, building structures) and avoid impacts to sensitive near-shore environments and endangered species (Karner blue butterfly). However, an HDD installation is a labor and equipment-intensive undertaking with significant logistical and cost concerns. Sufficient land must be available to allow for the establishment of a staging area and the HDD process requires a longer construction schedule to allow for clearing, equipment mobilization and demobilization, and the drilling operation. HDD installations are also significantly more costly than traditional installation (e.g. trenching). For example, it has been suggested that assuming \$1 million per installation would be reasonable for a standard HDD installation. Given the number of wetlands proposed to be traversed in this Project, it is not practical to utilize HDD to avoid wetland impacts.

The use of HDDs along the route for the cables was identified in Attachment A: Revised Project Description and Purpose of the Supplemental Application submitted to the USACE on February 29, 2012.² For the reasons provided above, no new HDDs have been proposed along the route for the cables to avoid impacts to wetlands.

2.2 Minimization Measures

As part of the Joint Proposal, the Applicants agreed to a condition³ which required that they "minimize disruption to regulated wetlands during the construction, operation, and maintenance activities of the Facility." This condition further requires that any activities that may affect regulated wetlands shall be designed and controlled to minimize adverse impacts, giving due consideration to the environmental values and functions of the regulated wetlands and the adjacent area. The Applicants are also required "to the maximum extent practicable, avoid direct impacts to regulated wetlands and construct access roads outside regulated wetlands and adjacent areas." Pursuant to another condition⁴, the Applicants will establish and implement a program to

² Attachment A: Revised Project Purpose and Description, Champlain Hudson Power Express Inc., Supplement to U.S. Army Corps of Engineers Application, No. 2009-1089-EHA (Feb. 10, 2012) ("CHP Supplemental Application"), <http://www.chpexpress.com/docs/regulatory/permit-application/Attachment%20A-3%2020120229.pdf>.

³ Order Granting Certificate of Environmental Compatibility and Public Need at 259, *Application of Champlain Hudson Power Express, Inc. for a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the PSL for the Construction, Operation and Maintenance of a High Voltage Direct Current Circuit from the Canadian Border to New York City*, Case No. 10-T-0139 (N.Y. P.S.C. Apr. 18, 2013), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={A71423C8-B489-4996-9C5A-016C9F334FFC}>.

⁴ *Id.*

monitor the success of wetland and stream restoration upon completion of construction and restoration activities.

For impacts to wetlands and aquatic resources that cannot be avoided, appropriate and practicable measures to minimize impacts will primarily be enacted through the implementation of Best Management Practices (“BMPs”), which provide basic methods and procedures to be followed during construction, operation and maintenance of the Project. Key provisions of the BMP are discussed below and the completed document was provided in Appendix O of the Supplemental Application.

During Project planning, a construction schedule will be developed that will optimize efficiency while avoiding and/or minimizing impacts to natural resources. As part of the development of the Joint Proposal, the Applicants agreed that work that must occur within any identified NYSDEC-protected streams (Class C/Standard T or higher Class/Standard streams or regulated adjacent area) will be highly restricted to avoid or minimize impacts to stream banks, water quality, and wildlife. More specifically, most designated trout streams are anticipated to be crossed using the HDD construction method thereby avoiding disturbance of these streams. If a dry crossing is proposed for any of these streams, the Applicants will adhere to the proposed timing restrictions or will discuss and develop, as necessary, mitigation measures with the appropriate agencies. The Applicants also agreed to limit underwater cable installation activities to certain times of the year to avoid life-cycle or migratory impacts to Atlantic sturgeon, American shad, winter flounder, striped bass, and other anadromous fish populations, as well as resident species such as shortnose sturgeon using the affected areas.

To avoid increases in erosion and sedimentation into waterbodies and wetlands from land disturbance in nearby construction areas, the Applicants will install temporary and permanent erosion control measures along the construction corridor and adjacent to soil stockpiles, as needed, and will manage construction stormwater in accordance with a Storm Water Pollution Prevention Plan (“SWPPP”) for the Project. A project-specific SWPPP will be prepared prior to construction as part of the Article VII permitting and compliance.

During construction, excavated soils will be stored within the construction corridor immediately adjacent to the trench or within designated extra work areas. The Applicants will avoid and/or minimize the storage of these soils within wetlands; however, due to the space constraints along the railroad and road ROW’s, it is anticipated that some spoil storage in wetland areas may be required. In these areas, soils will be temporarily stockpiled on construction matting or geotextile fabric to be used to backfill the trench. Any excess soils will be removed and disposed of properly offsite. The Applicants will segregate topsoil in wetlands, except when standing water or saturated soils are present, to prevent the mixing of topsoil with subsoil. This facilitates wetland revegetation by maintaining physical and chemical characteristics of the surface soil and preserving the native seed bank.

In general, the Applicants anticipate that construction equipment working along the overland portions of the route will operate primarily from the railroad bed, railroad access roads, embankments, along the road shoulder, or other upland areas. If any construction equipment

needs to operate within wetlands that are likely to be impacted by soil compaction or rutting, based on conditions at the time of construction, the Applicants will use equipment mats or low-ground-pressure tracked vehicles to avoid and/or minimize impacts to wetland soils. If dewatering is required within the excavated trench, water will be discharged to a well-vegetated upland area, a properly constructed dewatering structure, or through a filter bag.

It is expected that, during construction, potential short-term impacts on water quality may be caused by localized increases in turbidity and downstream sedimentation resulting from trenching within the waterbody. Water quality impacts will be avoided and/or minimized by using construction techniques such as HDD in some areas and by immediately restoring and stabilizing the streambed and banks once construction is completed. At crossings with significant stream flows, the use of dry-ditch crossing methods instead of open cut methods avoids and/or minimizes potential impacts from turbidity and sedimentation, because disturbed sediments within the construction area do not become re-suspended. If needed, stream banks will be reestablished to their original grade and permanently stabilized with seeding by native grasses, mulching, and, if needed, plantings with native shrub seedlings. The site should return to pre-construction conditions within a short period following restoration of the bed and banks.

Some clearing of riparian vegetation adjacent to waterbodies within the construction corridor may be required to conduct trenching and cable installation activities. Clearing of vegetation along stream banks has the potential to reduce the bank stability and increase erosion. Adverse impacts will be avoided and/or minimized through the use of temporary and permanent erosion control measures, and by restoring, stabilizing, and seeding stream banks as soon as possible once construction is completed.

3.0 ESTIMATED WETLAND IMPACTS

A total of 423 wetland areas were identified in the survey area along the overland Project route. Descriptions of wetland vegetation, hydrology, and soils observed within the Project survey area are presented in the Wetland Delineation Survey Summary Report provided in Attachment F of the Supplemental Application. The expected impacts associated with the Project are presented below as well as the underlying assumptions. For the purposes of calculating impacts, a wetland was considered a forested wetland if it was assigned a Cowardin classification (Cowardin et al. 1979) of PFO or a combined classification that included PFO (e.g. PSS/PFO).

A functional assessment of the freshwater wetland resources that may be impacted by construction and/or operation of the proposed Project was conducted in accordance with the Wetlands Functions and Values: Descriptive Approach described in the September 1999 (NAEEP-360-1-30a) supplement to The Highway Methodology Workbook by the New England District of the USACE. The report, presented in Appendix G of the Supplemental Application, assessed the capacity of individual wetlands to provide the 13 functions and values commonly attributed to wetlands and concluded that temporary effects due to removal of vegetation and/or compaction of soil during construction were expected to be minor and would cease once construction is complete. The limited amount of permanent fill in wetlands that will result from

the Project is not anticipated to adversely impact the functions and values of the affected wetlands.

Forested wetlands in the Project ROW perform a range of functions, including groundwater recharge/discharge, floodflow alteration, sediment retention, nutrient removal/retention, and wildlife habitat. As the selective clearing activities will retain low-growing vegetation so that there will not be a change in wetland hydrology, it is anticipated that all but the last of these functions will not be adversely affected. Although the conversion of forested wetlands to scrub-shrub or emergent wetlands may benefit some wildlife species (e.g., shrubland breeding and migratory bird species), there will be both temporary and permanent losses of forested wetland habitat.

3.1 Description of Impacts due to Construction and Vegetative Maintenance

The expected impacts to individual wetlands due to construction and vegetative maintenance activities are summarized in Table 3-1. The assumptions utilized in this analysis are provided below.

**TABLE 3-1
EXPECTED IMPACTS TO WETLANDS DURING CABLE INSTALLATION
ACTIVITIES ALONG THE OVERLAND ROUTE**

Overland Route Segment	Temporary Impacts		Permanent Impacts	
	Forested Wetland (square feet)	Non-Forested Wetland (square feet)	Forested Wetland (square feet)	Non-Forested Wetland (square feet)
Route 22	3,101	18,318		4,022
Whitehall to Rotterdam (CP Railroad)	354,497	1,216,169	15,202	119,554
Rotterdam to Cementon, Haverstraw Bay Bypass (CSX Railroad)	347,699	996,306	72,641	236,866
Total	705,297 (16.2 acres)	2,230,793 (51.2 acres)	87,843 (2.0 acres)	360,442 (8.3 acres)

3.1.1 Permanent Impacts From Cable Installation

Under the terms of the New York State Public Service Commission’s Order, the Applicants must establish a Permanent ROW for the Project, which is no closer than: (a) six feet from the outer surface of the nearest installed cables when the ROW is located within lands entirely owned or controlled by a railroad company or a public highway; and (b) eight feet from the outer surface of the nearest installed cables in other areas⁵. Based on the diameter of the cables and their expected configuration within the trench, the Permanent ROW is expected to be 13-to-17 feet wide centered over the cable trench.

⁵ *Id.* at 275.

Within the Permanent ROW, vegetative management activities will be conducted to prevent the establishment of deep-rooted plants/trees in order to protect the cables. Approximately 2.0 acres of forested wetlands are located within the Permanent ROW and will be converted to scrub-shrub wetlands, resulting in a permanent change to the function and values of these wetlands. For non-forested wetlands within the Permanent ROW (8.3 acres), the majority of these are within maintained railroad and roadway ROWs, so that the existing non-forested wetlands are subject to regular mowing and the potential application of herbicide. As the ROW maintenance planned for the Applicants' Permanent ROW will be consistent if not identical to vegetative control measures already in place, no loss of existing wetland functions or values is expected and therefore there would be no permanent impact. However, compensatory mitigation may be required for non-forested wetlands which are not currently experiencing some form of periodic vegetative management.

3.1.2 Temporary Impacts From Cable Installation

A construction zone will be established which will include the area needed for excavation of the trench, installation of erosion and sediment control measures, and stockpiling of excavated material. Typical construction configurations are provided in Attachment H of the Supplemental Application. The construction zone is shown on the aerial photography figures provided in Attachment C of the Supplemental Application. A portion of the construction zone will overlap with the Permanent ROW (which includes the cable width plus an additional six or eight feet on either side). For the purposes of this analysis, the temporary construction zone was assumed to be 31 to 33 feet wide depending on the width of the Permanent ROW.

During construction, it is expected that temporary impacts to wetlands will occur within the construction corridor. However, original surface hydrology in disturbed wetland areas will be re-established by backfilling the trench and grading the surface to pre-construction contours. Trenches in wetlands will be backfilled with native wetland soils to the extent practicable and a layer of native topsoil will be installed. The Applicants will seed the ROW to establish temporary cover and stabilize soils, at which point wetlands will then be allowed to revegetate naturally. Emergent wetland vegetation is expected to return quickly following construction (approximately 1 to 2 years). The woody species within the 16.2 acres of forested wetlands outside of the Permanent ROW would be expected to return more slowly naturally, so the Applicants are proposing tree plantings in these areas (see Section 4.0).

3.3 Design Level Reductions

As discussed in Section 2.1, the Applicants are required to “minimize disruption to regulated wetlands during the construction, operation, and maintenance activities of the Facility.” These avoidance and minimization options must be evaluated and documented during the design level stage of the Project. The Applicants anticipate these measures will include but not be limited to:

1. Minor adjustment to location of Permanent ROW: The detailed drawings will include locations where shifting the placement of the cables will allow for an avoidance of some or all of a wetland area.
2. Modifications to cable alignment within the existing ROW: There may be locations where route adjustments in the placement of the cables would allow for avoidance and /or minimization of impacts to wetlands. Options that will be evaluated will include placing the cables on the opposite side of the railroad tracks and alternatives to routing the cables around bridge structures. In some cases, alignments outside of the existing ROW may occur.

These measures would need to be evaluated in the context of: practicability good engineering practices, public safety, and applicable federal and state regulations, as well as undergo review by the involved regulatory agencies.

4.0 MITIGATION GOALS AND OBJECTIVES

The wetland mitigation goal for the Project is to avoid and minimize adverse effects on wetlands and waters to the maximum extent practicable and to provide compensatory mitigation for unavoidable impacts to wetlands and waters. Wetland mitigation is proposed where there would be unavoidable impacts to wetlands due to the Project's construction, operation and maintenance. Alternative mitigation concepts were evaluated based on the guidance and criteria described in the USACE Compensatory Mitigation for Losses of Aquatic Resources Rule (June 9, 2008), the USACE New York District Compensatory Mitigation Guidance (33 CFR Part 332 and Special Public Notice; January 10, 2005) and the U.S. Environmental Protection Agency (USEPA) Compensatory Mitigation for Losses of Aquatic Resources (Federal Register; Vol. 73, No. 70; 4/10/08, pp. 19688 – 19697).

The following mitigation goals and objectives are proposed by the Applicants:

- Restoration of wetland areas outside of the Project's Permanent ROW to pre-construction conditions;
- Tree plantings for forested wetlands outside of the Project's Permanent ROW;
- Provide at least 1 acre of wetland creation, restoration and/or enhancement and at least 10 acres of preservation and protection of wetlands at one or more to-be-selected locations for each acre of permanent wetland impact.

Each of these mitigation goals is described below.

The Applicants will provide to the New York District of the USACE an annual report on the status of the compensatory mitigation activities completed, in each of the five (5) years after

initiation of the activities authorized by the USACE. These reports will be submitted no later than November 15 in each of these years. Data for the reports will be collected between the dates of April 15 and October 15 in the same year it is submitted. If the USACE determines that the previously established success criteria as established in their permit have not been met for at least three consecutive years, the monitoring period will be extended and the Applicants will continue to submit monitoring reports every year until the USACE determines that the success criteria has been met for three consecutive years. These reports will include the following information:

1. A list of dominant plant species, along with their estimated frequency and percent areal cover in each vegetative strata (i.e. tree, shrub and herbaceous) for each cover type within the mitigation site;
2. Color photographs showing representative areas of each cover type within the mitigation site, taken each year during the period between June 1 and August 15;
3. A USACE approved wetland delineation data sheets for each cover type within the mitigation site;
4. Vegetation cover maps, at a scale of one inch equals 100 feet or larger scale, describing the extent (in acres) of each cover type within the mitigation site, for each growing season;
5. Well and gauge data showing water elevations within the mitigation site recorded twice a month during April through September of each year. The location of the monitoring well or gauge will be shown on the plan view engineering drawing; and
6. A remedial plan outlining practicable steps taken or proposed to be taken to ensure the success criteria outlined in USACE permit are met by the specified due date of the next monitoring report.

4.1 Restoration of Wetlands Outside of Permanent ROW

Due to the limited disturbance associated with the temporary use of mats for access paths and structure work areas, matted wetland areas are expected to revegetate naturally following construction and restoration. Consistent with the Certificate Conditions proposed by the Settlement Parties and agreed to by the Applicants⁶, the Applicants will establish and implement a program to monitor the success of wetland restoration outside of the permanent ROW upon completion of construction and restoration activities.

The success of wetland revegetation shall be monitored and recorded annually for the first five (5) years after construction, or longer until wetland re-vegetation is successful. It is anticipated that, due to the length of the transmission facility, monitoring stations would be established, in

⁶ *Id.* at 264.

consultation with USACE, at selected wetlands stratified by representative samples of wetland types impacted by the project. Wetland revegetation will be considered successful when the vegetative cover is at least 85 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 two (2) years, the Applicants will develop and implement (in consultation with USACE and a professional wetland ecologist) a plan to actively revegetate the wetland with native wetland herbaceous plant species and continue to monitor until the 85% performance goal has been met. The Applicants shall also ensure that the vegetation in the newly established wetland does not consist of more than a total of 5% areal coverage of common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), reed canary grass (*Phalaris arundinacea*), Japanese knotweed (*Polygonum cuspidatum*), Tartarian honeysuckle (*Lonicera tartarica*), Eurasian milfoil (*Myriophyllum spicata*), and/or other invasive species.

4.2 Tree Plantings Within Forested Wetlands Outside of Permanent ROW

In order to avoid the temporal loss of wetland functions associated with the proposed forested wetlands impacts, the Applicants propose on-site restoration of forested wetland impact outside of the ROW. Typically forested wetland restoration would include a tree planting density of 400-600 stems per acre. Tree species would be selected in consultation with a professional wetlands ecologist based on the dominant wetland tree species in the area prior to construction and commercial availability, although species of ash is not recommended as a restoration planting due to the presence of the emerald ash borer in the project area. The restoration would also include methods to minimize deer grazing. A wetlands ecologist will be on-site during plantings to monitor work.

Tree plantings will be considered successful if 85 of the planted trees are still viable two years after planting occurs, assuming normal conditions during this period. If revegetation is not successful, the Applicants will develop and implement (in consultation with a professional wetland ecologist) a plan to plant additional trees and continue monitoring until the 85% performance goal has been met. Details on the proposed forest wetland restoration activities will be included in the Wetland Mitigation Plan presented to the USACE for approval.

4.3 Creation, Restoration and/or Enhancement and Preservation of Wetlands in the Watershed

As required under 33 CFR Section 332.3 (f)(2) with regards to compensatory mitigation, the mitigation ratio must be greater than one-to-one to account for the method of compensatory mitigation (e.g., preservation), the likelihood of success, differences between the functions lost at the impact site and the functions expected to be produced by the compensatory mitigation project, temporary losses of aquatic resource functions, the difficulty of restoring or establishing the desired aquatic resource type and functions, and/or the distance between the affected aquatic

resource and the compensation site. The Applicants are proposing a compensation ratio of at least 1 acre of wetland creation, restoration and/or enhancement and at least 10 acres of preservation and/or protection for each acre of permanent wetland impact.

The Applicants propose to create and/or restore wetlands within the watersheds traversed by the Project in areas that may be: (1) currently or were formerly in agricultural production; and (2) disturbed and/or altered by human activity. Potential activities could include encouraging the growth of native species and/or restoring hydrologic connectivity. The Applicants may also meet this goal through the enhancement of existing wetlands within the watersheds traversed by the Project to increase certain desired functions and values.

The Applicants will preserve the selected wetland mitigation site through conservation easements, land transfers or deed restrictions to a recognized conservation organization or the State of New York so as to prohibit future impacts and degradation to existing wetland functions and values.

Section 5 below discusses the mitigation site selection process and the Wetland Mitigation Plan will identify the specific site or sites proposed for wetland creation, restoration and/or enhancements as well as preservation. Detailed measures to be implemented will be based on a site-specific evaluation of the selected wetland mitigation site(s) and associated USACE guidance. The Wetland Mitigation Plan will include a description of the selected wetland mitigation site(s), including the wetland classifications and acreages of each type of wetland occurring on the site(s), the dominant plants in each vegetative layer, watershed context, presence and abundance of invasive species, and habitat functions and values provided by the wetlands.

After designing the wetland creation, restoration and/or enhancement measures, the Applicants will develop a monitoring plan consistent with the measures proposed. The wetland mitigation monitoring plan will evaluate the success of the wetland creation, restoration and/or enhancement activities based on success criteria typically used by the USACE and outlined in the USACE-New York District's Compensatory Mitigation Guidelines (USACE 2005) and Compensatory Mitigation Plan Checklist (USACE 2005). The monitoring plan will be included in the proposed Wetland Mitigation Plan and will identify the frequency of monitoring, parameters to be monitored (e.g., planting success, invasive species abundance and/or distribution, etc.), and monitoring report contents, and submission schedule for the monitoring reports.

The goal of wetland preservation will be met once the Applicants provide individual verification that the specified acreage has been preserved and protected. The Applicants will submit a status report at the conclusion of the monitoring activities at the wetland creation, restoration and/or enhancement sites identifying whether any changes have taken place since the submittal of the Wetland Mitigation Plan. This report will note obvious changes in vegetation (e.g., fire or insect infestation that killed numerous trees) or hydrology (e.g., blocking of drainage ditches) that would have an impact on the functions and values of the wetlands. As noted above, preservation activities will be done in addition to wetland creation, restoration and/or enhancement.

5.0 MITIGATION SITE SELECTION

In developing this Plan, the Applicants have completed the following initial screening activities to identify potential creation/restoration/enhancement and preservation sites.

5.1 Creation, Restoration and/or Enhancement of Wetlands

As part of the mitigation for the Project, the Applicants will identify wetland creation/restoration/enhancement sites located in the greater Albany County and Schenectady County New York region to mitigate for impacts to wetlands resulting from construction and operation of the Project. The selection of sites will be based on feasibility and efficiency, as described below. Because of the relatively small total acreage of permanent impact, the Applicants will consolidate wetland creation/restoration/enhancement measures into a single location to maximize functions and values of the mitigated area to the extent practical. Centralizing the creation/restoration/enhancement measures into a single location will increase the likelihood of success and the value to the surrounding landscape. The Applicants anticipate relying on easements to secure the land required to implement the creation/restoration/enhancement project(s) and there would be a preference for utilizing lands which are currently under long-term protection. If the lands are not currently protected, the Applicants will have the lands deed restricted to prevent their future development.

The Applicants are proposing that the wetland creation/restoration/enhancement sites come from one or more of the following options:

5.1.1 On-Site Mitigation

On-site mitigation is generally defined as being on the same drainage and close to the disturbed wetland, which for this Project would be adjacent to the Project ROW. Because the Project is primarily located in railroad and road ROWs and the Permanent ROW will be managed for compatibility with transmission lines, there will be limitations on where these activities would be feasible and efficient. Therefore, the Applicants propose to follow the site selection and screening process outlined in Appendix C of this document, which calls for a review of available databases and records followed by a site survey, to identify suitable locations for mitigation.

As a proof of concept, the Applicants completed a desktop review of the route within the greater Albany County and Schenectady County area. Wetlands delineated during field surveys were reviewed and potential sites were evaluated using aerial photos, existing information, available parcel databases, review of state and federal databases that contain resource information, and field notes. This initial analysis indicates that there may be suitable sites for creation, restoration and/or enhancement of wetlands in close proximity to the Project's permanent ROW. The Applicants are providing two of these potential sites as examples of the type of sites that would be considered for mitigation activities, with the provision that there has been no landowner contact or windshield survey conducted as of this date.

Glenville Site

The Glenville Site is located south of the Schenectady County Airport in Schenectady County, New York. The site is bordered to the north by Maple Avenue and the Canadian Pacific Railway, to the south by the Mohawk River, to the west by Freeman Bridge Road, and to the east by Alpaus Avenue. An existing electric transmission line ROW also borders sections of the site to the south. Review of the Project's GIS database and aerial photography of the site reveals that current vegetative communities on the site are primarily dominated by forested, scrub-shrub, and herbaceous habitat types (i.e., Project wetland ID number C42). Many areas on the site are mapped as wetland by the USFWS National Wetlands Inventory and the NYSDEC. According to the USDA (2013), soils on the site are dominated by Cut and fill land (Cu), Madalin silty clay loam (Ma), and Raynham silt loam (Ra) soil types.

The wetland delineation conducted along the proposed Project route in this area reveals that the dominant wetland vegetation includes green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), silver maple (*A. saccharinum*), silky dogwood (*Cornus amomum*), and various willow species (*Salix* spp.). Invasive species were identified during the Project wetland delineation activities and include common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), multiflora rose (*Rosa multiflora*), and common buckthorn (*Rhamnus cathartica*). Aerial photographic interpretation of this area also suggests anthropogenic disturbances including trails, agricultural effects (to the southeast of the site), and other disturbances.

Rotterdam Site

The Rotterdam Site is located southeast of the Rotterdam Square Mall, north of the Canadian Pacific Railway, and to the west of a large industrial area that is located to the west of I-890 in Schenectady County, New York. Review of the Project's GIS database and aerial photography of the site illustrates that current vegetative communities on the site are primarily dominated by forested, scrub-shrub, and herbaceous habitat types (i.e., Project wetland ID number C57). Many areas on the site are mapped as wetland by the USFWS National Wetlands Inventory and the NYSDEC. According to the USDA (2013), soils on the site are dominated by Wayland silt loam (Wy), Saprists and Aquents (SA), and Colonie and Plainfield (CPE) soil types. Poentic Kill flows through the southern portion of the site north of the Canadian Pacific Railway and proposed Project route. Aerial photographic interpretation for this area suggests anthropogenic impacts including trails, old roads, and other disturbances.

The final site selection will be determined by on-site field review, landowner negotiations, and consultations with USACE. The sites deemed appropriate for mitigation will be included in the Wetland Mitigation Plan. The site(s) will be described in terms of wetland resources, hydrology, major land use(s), access, soil types, invasive species, and wildlife usage as appropriate.

5.1.2 Off-Site Mitigation

Off-site mitigation is generally defined as being within the same watershed as the disturbed wetland but not immediately adjacent to the Project site. Starting with the conservation agencies and organizations that were previously contacted about potential mitigation projects, the Applicants would look to partner with a third party to identify suitable creation, restoration, and/or enhancement sites.

As an example of the types of sites the Applicants might pursue, The Nature Conservancy has provided two potential creation/restoration/enhancement projects.

Ruggles West

The Nature Conservancy has created seven acres of Karner blue butterfly habitat on the frontage of this parcel through selective clearing and planting of wild blue lupine and the other meadow species that are required for its habitat. This restoration has also resulted in the improvement of Blanding's turtle nesting habitat, as the turtles utilize the newly opened sandy areas for nesting. On this parcel, there are several areas along the road frontage that currently are overrun with stands of invasive common reed which TNC would like to eliminate through careful herbicide application. This effort will reduce the risk of these invasive non-natives moving into the other wetland complexes in and around this parcel and compromising their integrity. Since these wetlands are critical habitat for a threatened species this remediation is especially important. TNC's preliminary estimate is that the impacted area covers between 1/4 and 1/3 of an acre.

Wilton Wildlife and Park Trail Relocation

The Preserve & Park currently has over 15 miles of public recreation trails throughout the almost 2,400 acre preserve. These trails are located on a patchwork of properties owned by various partner organizations involved in the project. The unique sandplains topography of this region results in a mosaic of dry, sandy uplands between wetlands, bogs and vernal pools. In numerous locations the trail network has utilized existing logging roads and historic routes that have often travel directly through or bisect sensitive wetland areas. The Preserve & Park has gathered data identifying these locations and proposes a number of trail relocations and the installation of boardwalk and other improvements to reduce or eliminate impacts on wetlands and vernal pools. Mapping to determine precise wetland acreage has not been undertaken, but TNC estimates that approximately three wetland acres might be affected by these changes. Work would be performed either by seasonal staff or a professional contractor.

The Applicants have also identified a private landowner in Clifton Park who owns a 54-acre parcel near the Colonie Reservoir. The property is former agricultural land. There is currently a large amount of wetlands on the property of both emergent and scrub-shrub types which were delineated as part of a potential development project. Based on available information, there appears to be the potential for a moderate amount of enhancement as well as for the creation of forested wetlands on the property in former agricultural fields.

As with on-site mitigation, the final site selection will be determined by on-site field review, landowner negotiations, and consultations with USACE. The sites deemed appropriate for mitigation will be included in the Wetland Mitigation Plan. The site(s) will be described in terms of wetland resources, hydrology, major land use(s), access, soil types, invasive species, and wildlife usage, as appropriate.

5.2 Preservation and Protection of Wetlands

In accordance with 33 CFR 332.3 (h) Preservation, each proposed wetland preservation site to be used as compensatory mitigation shall consider all sections within 33 CFR 332.3 (h) with each section fully addressed within the mitigation plan. In particular, the Applicants will look to ensure that the criteria within 33 CFR 332.2 (h) (1) (iv) has been met.

As part of their initial screening process, the Applicants contacted 17 agencies and organizations with an interest in wetland protection and enhancement, as shown below in Table 5-1. Two conservation organizations, the Mohawk Hudson Land Conservancy and the Nature Conservancy, provided preservation project suggestions within the watershed where impacts are expected to occur. An overview of these sites is provided in Appendix A of this document and Appendix B provides the NWI and NYSDEC wetland acreage for each site.

**TABLE 5-1
CONSERVATION GROUPS CONTACTED DURING
MITIGATION SITE SELECTION PROCESS**

Albany County Soil and Water Conservation District
Albany Pine Bush Preserve
Catskill Center for Conservation and Development
Columbia Land Conservancy
Greene County Soil and Water Conservation District
Greene Land Trust
Huyck Preserve and Biological Research Station
Mohawk Hudson Land Conservancy
The Nature Conservancy, New York State Chapter
New Baltimore Conservancy
New York Natural Heritage Program,
New York State Department of Environmental Conservation
Rensselaer Land Trust
Scenic Hudson
Schenectady County Soil and Water Conservation District
Trust for Public Land
The Woodlawn Preserve

The Applicants will identify the site or sites proposed for preservation in consultation with the USACE and provide these locations in the Wetland Mitigation Plan. A description of the area(s) to be preserved or protected will be included.

6.0 CONCEPTUAL WETLAND MITIGATION IMPLEMENTATION PLAN

There are several components in the design and implementation of mitigation plans that are necessary procedures to follow in order to ensure success of a mitigation effort. Good planning and associated design are necessary activities in order to enhance project success.

The goal of the Implementation Plan is to identify potential required design factors, as well as any necessary constraints that would interfere with the successful creation, restoration and/or enhancement efforts at a proposed location. Some of the objectives to attain this goal include: examining current vegetation communities in the proposed wetland creation/restoration/enhancement area; examining current hydrologic and soil conditions in the proposed wetland restoration/enhancement area; determining the most appropriate wetland creation/restoration/enhancement techniques; determining the most appropriate species to be planted, determining the most efficient and effective means to accomplish planting; and ensuring the development of a diverse native plant community that minimizes interferences by invasive species.

In order to complete the objectives, several study tasks will be required prior to the implementation of proposed wetland creation/restoration/enhancement measures in order to provide the detailed information needed for final site design and implementation. These study elements are briefly described below.

Condition of Existing Wetlands

This task will include a site investigation of the identified wetlands at or near where creation/restoration/enhancement activities would occur. Qualified field staff would determine existing site uses, identify areas of disturbance, obtain soils information, and develop an understanding of the sites surface water runoff and hydrological inputs. Existing habitat as well as potential habitat will be evaluated at this time.

Site Preparation

The above information will be used to document the characteristics of a site and guide the creation/restoration/enhancement design. The boundary of the proposed wetland mitigation site will be clearly shown on drawings and identified on-site, so as to separate the required mitigation from other wetland sites that may be in the area as well as to facilitate compliance inspections. Additional field reconnaissance will occur (as required) to further characterize the site and determine site preparation needs. As part of site preparation, wetland areas to remain undisturbed will be flagged prior to any field activities.

Vegetative Establishment

A landscape restoration plan will be developed to promote the introduction of native species in the mitigation area(s) that will develop into natural plant communities. The design will be

modified to meet the planned function and value of the planned plant community for the mitigation area (e.g., attracting wildlife). The basic species will be selected for restoration in the mitigation area based on their nativity, adaptability to site conditions, and relatively high wildlife value or association with specific species of concern.

The final design will include specifications for any clearing and grading, planting, the sequence of operations, final quantification of materials and costs, development of best management practices and additional constraints, and monitoring and maintenance plans. This document will be submitted with the Wetland Mitigation Plan for the USACE's approval.

7.0 CONCLUSIONS

The Applicants will provide a Wetland Mitigation Plan, which will include the mitigation phasing and monitoring details, after further consultation with the USACE. This Plan will be structured to take into considerations all sections within 33 CFR 332.4 (c) (1-14). Each of the sections of the referenced CFR would be fully addressed in the Wetland Mitigation Plan, with an explanation provided should there be any sections that are not applicable for this Project. The proposed mitigation site(s) will be clearly demarcated by metes and bounds on maps and information provided about existing wetlands (including its Cowardin classification). The document will also include a remedial action plan which outlines all practicable steps to be taken or proposed to be taken to ensure the successful compensatory mitigation at the mitigation site(s) as well as the additional corrective actions to be performed by the Applicants, such as funding additional planting or removal of invasive species, should the mitigation goals not be met.

APPENDICES

APPENDIX A
SITE SELECTION OF POTENTIAL PRESERVATION SITES

1.0 ORGANIZATIONS

Two conservation organizations provided preservation project suggestions within the watershed where impacts are expected to occur: Mohawk Hudson Land Conservancy and The Nature Conservancy. The options provided are described below.

1.1 Mohawk Hudson Land Conservancy

The Mohawk Hudson Land Conservancy is working to acquire conservation easements within the Vly Swamp/Black Creek Marsh in the Towns of New Scotland and Guilderland, Albany County. This large wetland complex associated with Black Creek and its tributaries is surrounded by upland forest and agricultural fields. This site is listed in the New York State Open Space Plan (2009) and is describe as:

“these two adjacent wetland systems, located directly below the Helderberg Escarpment ... support a significantly high biological diversity, including an amphibian species diversity that rivals the entire New England region. The area also supports multi-use recreation and is included on the National Audubon Society’s compilation of Important Bird Areas in New York State. DEC has continued its efforts to acquire parcels that would enhance public use and access opportunities associated with the Black Creek Marsh Wildlife Management Area, and some protection efforts have recently been initiated in Vly Swamp; however, certain additional parcels associated with this wetland complex and important buffer areas remain vulnerable and should be protected before opportunities to do so are lost due to residential subdivision and development pressure.”

The National Audubon Society’s Important Bird Areas Historical Results (2004) described the area as:

This site is listed in the 2009 Open Space Conservation Plan as a priority site under the project name Black Creek Marsh/Vly Swamp. The NYS DEC manages 450 acres for wildlife conservation, of which a 65-acre field is being managed for grassland species. About 70 acres are owned by the Town of Guilderland, and several hundred acres of the Indian Ladder Farms (ILF) (which adjoins the Black Creek Marsh to the south) has recently been put under a conservation easement and will remain as a working farm and orchard. However, loss of open space and uplands adjoining the marsh are continually occurring and can be expected to intensify. Much of the upland and farmland adjoining the marsh is for sale and likely to be developed. Current local land use and zoning is not adequate to protect the important wildlife habitats at the site. Conversion of adjoining lands to housing would be detrimental to the marsh habitat and wetland bird populations.

According to Executive Director Jill Knapp, the conservancy evaluated the parcels under private ownership and 4,257 acres were rated as medium or higher. The organization identified three parcels as priorities based on their overall rating and interest of the land owners (see Table 1). Figure 1 shows the location of these three parcels.

FIGURE 1
MOHAWK HUDSON LAND CONSERVANCY PRIORITY PARCELS

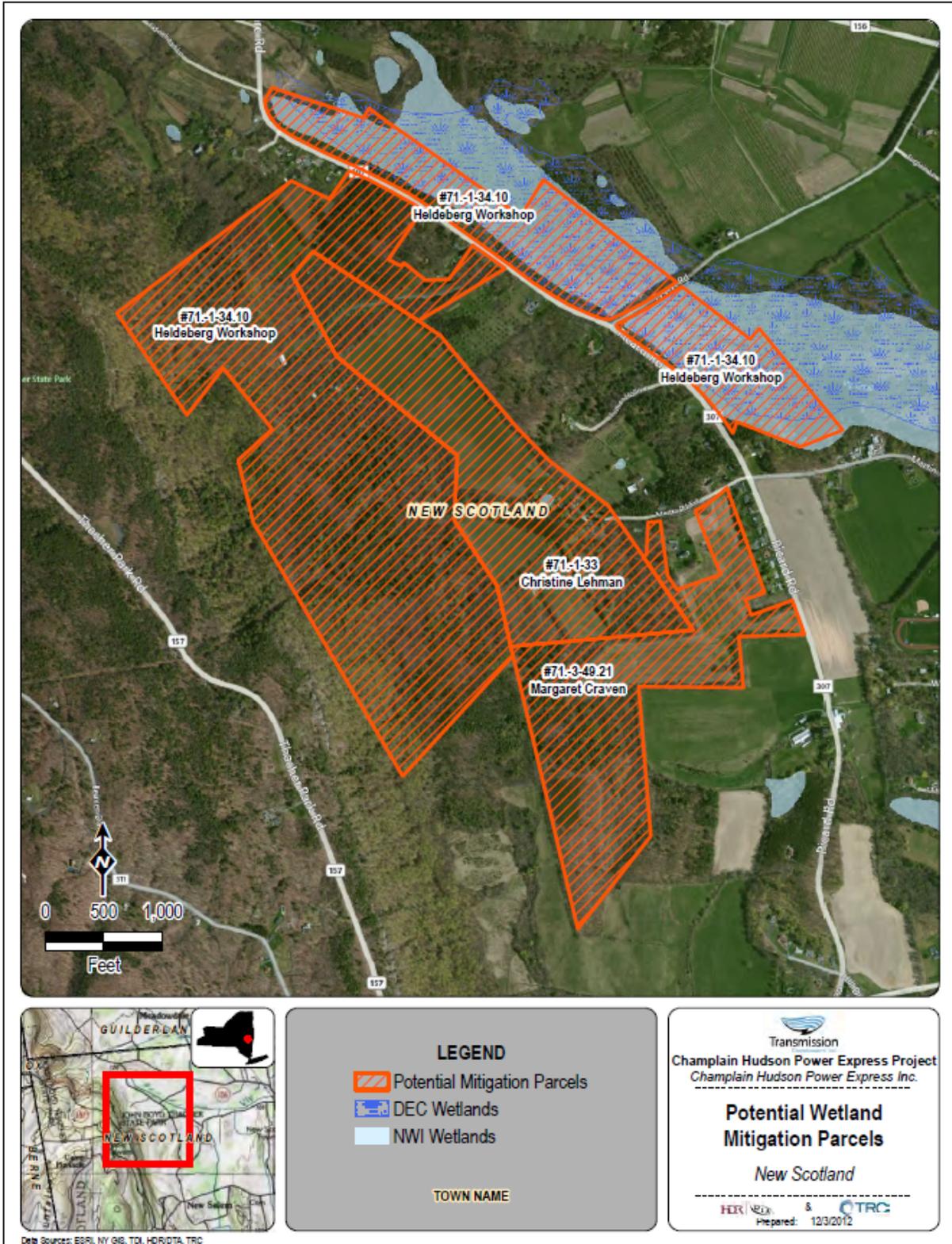


TABLE 1
MOHAWK HUDSON LAND CONSERVANCY PRIORITY PARCELS

Owner	Priority	Acreage	Assessed Value	Land Value
Christine Lehman	High	78	\$279,000	\$120,400
Margaret Craven	Medium	68	\$106,700	\$106,700
Heldeberg Workshop	High	237	\$496,100	\$440,600

The Applicants calculated wetland acreage on these properties based on information provided by the National Wetland Inventory (NWI) and the New York State Department of Environmental Conservation (NYSDEC). Based on this data, the Heldeberg Workshop property would be an acceptable alternative (NWI: 55.84 acres; DEC 52.66 acres) while the Lehman and Craven properties do not appear to have any significant wetland resources.

1.2 The Nature Conservancy - Eastern New York Chapter

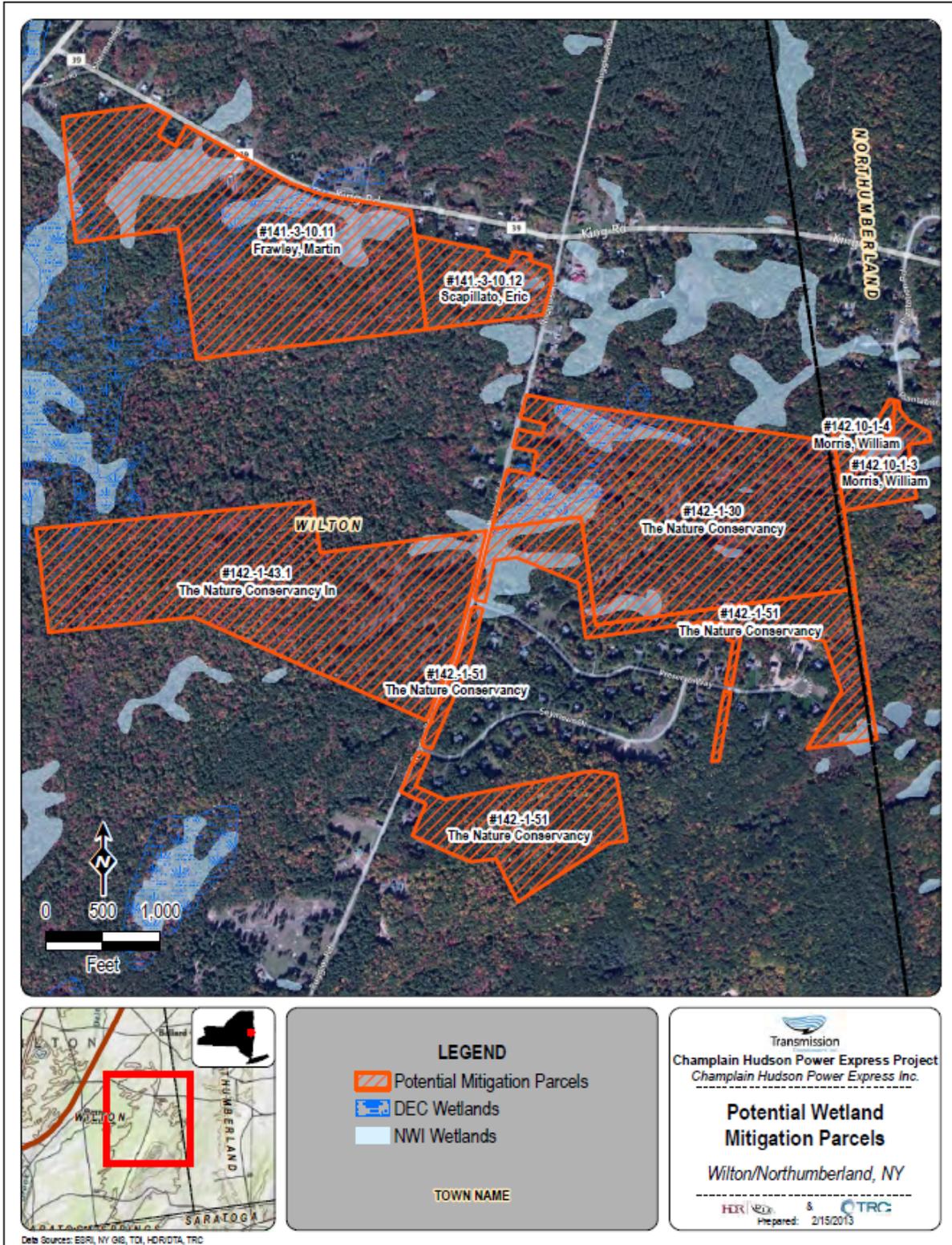
The Eastern New York Chapter of The Nature Conservancy (“TNC”) provided five properties which were considered suitable preservation sites. Two of these properties represents a preservation option for which funding is necessary for the purchase of the properties. Three properties are preservation options for which the lands are currently held by the land trust but for which funding is requested to retire the debt and allow the properties to be transferred to the State of New York. TNC maintains that these sites are not permanently protected until they are placed under state protection.

Wilton Wildlife Preserve and Park

Four of the properties are within the Wilton Wildlife Preserve and Park. According to Mark King of TNC, the Wilton Wildlife Preserve and Park is a collaborative project of TNC, the Town of Wilton, Saratoga County and the New York State Department of Environmental Conservation. The goal of the project is to conserve a large area of open space within the rapidly growing Town of Wilton, protecting biodiversity and creating outdoor recreational and educational opportunities. The Nature Conservancy’s involvement in the project focuses on preserving and enhancing the last and best remaining Karner blue butterfly population in the northeast and the significant wetlands located in the in the area that provide refuge for the endangered Blanding turtle. Toward that end we have acquired more than 700 acres and restored 150 acres of Karner blue butterfly habitat that also benefits Blanding turtle nesting.

These properties, which are shown on Figure 2, were described by TNC as follows:

**FIGURE 2
THE NATURE CONSERVANCY PRIORITY PARCELS**



Frawley Property

The Nature Conservancy purchased a portion of the Frawley property (#141.-3-10.11) in 2011 and has a right of first refusal on the remaining Frawley lands, including this 90 acre property. Unlike the property previously purchased from the family, this parcel is much wetter, perhaps as much as 40 or 50 acres of wetland. The property is also likely to include some Blandings turtle habitat. TNC appraised this property in 2010 and it was valued at \$265,000. However, the property includes several greenhouses and other structures that TNC would not want to acquire and TNC believes that acquiring a subdivision of 60-70 acres would have an estimated cost of \$120,000- \$150,000. No contact has been made with the owner at this time to confirm this assumption. A review of NWI and NYSDEC datasets indicated that there were 18.72 and 11.28 acres, respectively, of wetlands on the parcel.

Grande Property

Currently owned by TNC, The Grande property within the Wilton Wildlife Preserve and Park covers 100 acres and is shown on Figure 2 as TNC lots 142-1-30 and 142-1-51. The property was acquired to protect high quality wetlands interspersed with sandy uplands. A Blanding's turtle radio tracking project indicated extensive use of both wetland and uplands on the property by turtles. The parcel is part of an effort to create an extensive wetland corridor between Miller Swamp in Wilton and wetlands in neighboring Northumberland for a variety of wildlife species. TNC is seeking to recover \$77,000 for the purchase of the property. While NWI and NYSDEC datasets state that there are 17.97 and 14.11 acres, respectively, of wetlands on the parcel, TNC estimates that approximately 50 acres of the parcel are forested wetlands.

Morris Parcels

This project would involve the acquisition of two parcels (#142.10-1-4 and #142.10-1-3) within a recent subdivision that is located in the heart of Saratoga County's Blanding's turtle habitat. During the subdivision process the NYSDEC identified these two parcels as the most critical for the Blanding's turtle (NYS threatened) due to the presence of a natural overwintering pond and other wet areas. This is one of the only ponds used for overwintering of this small and isolated population and is therefore crucial to its long-term viability. To avoid disturbance to the turtle habitat the developer made the lots larger than typical for the sub-division, but the DEC-recommended deed restrictions to protect the wetlands on the parcels were never incorporated into the subdivision approvals with the town. TNC proposes to purchase two of these parcels and then their donation to the NYSDEC who currently owns property to the south of the Morris properties. While TNC has not secured appraisals on the parcels, they estimate the cost of acquiring and transferring the properties to NYS will be in the range of \$50,000 to \$70,000. A review of NWI and NYSDEC datasets indicated that there were 1.09 and 0 acres, respectively, of wetlands on the parcel.

Boswell Parkside (aka Ruggles West)

The Boswell Parkside property (#142.-1-42.1) was slated for high end residential development before the Nature Conservancy acquired the property. This parcel exhibited the typical local pattern of sandy upland areas surrounded by extensive wetlands. These features attract developers as well as the local wildlife species that depend on these characteristics. The restoration of Karner blue butterfly habitat on the upland areas of the property resulted in open, sunny areas that benefited the threatened Blanding's turtles and they were found nesting at sites in the newly restored habitat within the first year. These turtles might otherwise have nested in the backyards and disturbed areas of residences as has happened in other locations. The Boswell property covers 98 acres, of which TRC estimates that 60 acres are forested wetlands (although NWI mapping only shows 1.77 acres of wetlands). The Nature Conservancy is seeking to recover \$75,000 toward paying down the cost of this \$575,000 acquisition.

Albany Pine Bush Preserve

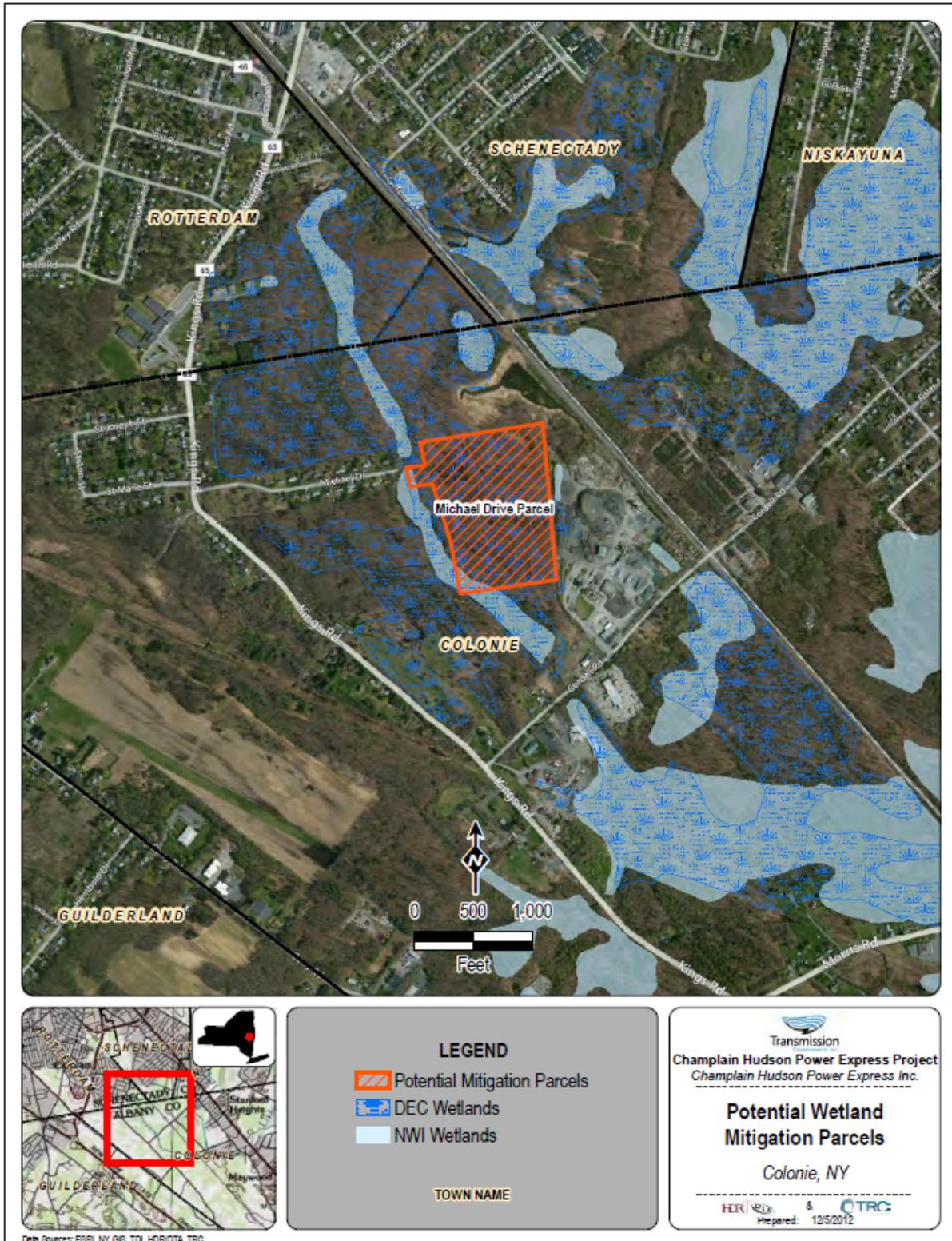
The remaining property is located in the Albany Pine Bush Preserve ("APB"). Like the effort in Wilton, the APB is a joint undertaking of the Nature Conservancy, municipalities including, Albany, Colonie, and Guilderland, the State of New York (DEC and Parks) and Albany County. The project is overseen by the Albany Pine Bush Preserve Commission, a legislatively created entity that coordinates education, habitat restoration and prescribed burning, recreation and the many other aspects of this multifaceted effort. TNC plays a key role in the acquisition and protection of land and the restoration of Karner blue butterfly habitat. Within the APB, land acquisition is often ahead of funding, resulting in debt for land that must be recovered to allow future acquisition. The APB shares many ecological characteristics with Wilton as both were formed through similar geologic events, thus in many places sandy uplands and dune are surrounded by extensive wetlands, particularly in the western portions of the preserve.

Michael Drive property

The Michael Drive property, located in the Town of Colonie at the western edge of the preserve, was acquired by the Nature Conservancy from Albany County. The property is shown on Figure 3. The county foreclosed on the 30 acre property and was set to auction the land when TNC stepped in to protect the land. Though valued at more than \$40,000, TNC negotiated a price of \$20,000.

The parcel is mostly forested wetland intersected by roads and trails that provided access for significant illegal dumping of a wide range of materials. The APB Commission, working with TNC, has removed more several tons of material from the site. TNC is seeking to recover the \$20,000 purchase price of the Michael Drive property so it can be transferred to New York State DEC and become a part of the legislatively protected preserve. While NWI and NYSDEC surveys do not indicate that there are any significant wetland complexes on the property, TNC estimated that the majority of the property could be forested wetland and so it remained as a potential option.

FIGURE 3
THE NATURE CONSERVANCY PRIORITY PARCELS – MICHAEL DRIVE



APPENDIX B
NWI AND NYSDEC WETLAND ACREAGES FOR POTENTIAL
PRESERVATION SITES

**TABLE 1
NATIONAL WETLAND INVENTORY ACREAGES**

Parcel	Attribute	Wetland Type	Acres
Lehman, Christine	PUBHh	Freshwater Pond	0.22
Craven, Margaret	N/A	None	0.00
Heldeberg Workshop	PEM1E	Freshwater Emergent Wetland	6.73
Heldeberg Workshop	PEM1E	Freshwater Emergent Wetland	3.32
Heldeberg Workshop	PFO1E	Freshwater Forested/Shrub Wetland	7.70
Heldeberg Workshop	PFO1E	Freshwater Forested/Shrub Wetland	17.30
Heldeberg Workshop	PFO4/1E	Freshwater Forested/Shrub Wetland	4.60
Heldeberg Workshop	PFO4E	Freshwater Forested/Shrub Wetland	1.80
Heldeberg Workshop	PFO5Fb	Freshwater Forested/Shrub Wetland	4.75
Heldeberg Workshop	PSS1E	Freshwater Forested/Shrub Wetland	6.83
Heldeberg Workshop	PSS1Eb	Freshwater Forested/Shrub Wetland	2.81
Frawley, Martin	PFO1/4B	Freshwater Forested/Shrub Wetland	14.02
Frawley, Martin	PFO1/4E	Freshwater Forested/Shrub Wetland	1.06
Frawley, Martin	PFO1/SS1E	Freshwater Forested/Shrub Wetland	3.64
Scapillato, Eric	PFO1E	Freshwater Forested/Shrub Wetland	0.50
Grande Property	PEM1E	Freshwater Emergent Wetland	0.03
Grande Property	PEM1E	Freshwater Emergent Wetland	0.56
Grande Property	PFO1/4B	Freshwater Forested/Shrub Wetland	4.26
Grande Property	PFO1/4B	Freshwater Forested/Shrub Wetland	5.89
Grande Property	PFO1/SS1E	Freshwater Forested/Shrub Wetland	4.26
Grande Property	PFO1E	Freshwater Forested/Shrub Wetland	0.11
Grande Property	PFO1E	Freshwater Forested/Shrub Wetland	1.32
Grande Property	PSS1E	Freshwater Forested/Shrub Wetland	0.95
Grande Property	PSS1E	Freshwater Forested/Shrub Wetland	0.59
Morris Parcels	PEM1E	Freshwater Emergent Wetland	0.98
Morris Parcels	PEM1E	Freshwater Emergent Wetland	0.11
Boswell Parkside	PFO1/4B	Freshwater Forested/Shrub Wetland	1.77
Michael Drive Parcel	PFO1C	Freshwater Forested/Shrub Wetland	0.96

TABLE 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION WETLAND ACREAGES

Parcel	Wetland ID	Class	Acres
Lehman, Christine	N/A	N/A	0
Craven, Margaret	N/A	N/A	0
Heldeberg Workshop	V-31	1	52.66
Frawley, Martin	GA-29	2	9.38
Frawley, Martin	Q-11	1	1.90
Scapillato, Eric	N/A	N/A	0
Grande Property	GA-30	2	14.11
Morris Parcels	N/A	N/A	0
Boswell Parkside	Q-11	1	0.46
Michael Drive Parcel	S-4	1	15.06

APPENDIX C

**WETLAND CREATION/RESTORATION/ENHANCEMENT
MITIGATION SITE SELECTION AND SCREENING METHODS**

1.0 Initial Site Selection and Screening Methods

Given the need to identify additional mitigation types for the Project, preliminary research will be conducted to identify potential wetland creation/restoration/enhancement areas in proximity to the impacted wetlands along the Project's ROW, which would have the greatest potential to restore and maintain the values and functions of the wetland systems to be impacted. The research efforts are described below. The search for wetland creation/restoration/enhancement sites will be guided by the following assumptions:

- A reliable, permanent existing water supply (ground water or surface water) that is capable of supporting wetlands should be available;
- Sites should be in a topographic location that is sustainable for wetlands in perpetuity;
- Creation/restoration/enhancement should not adversely impact existing wetlands;
- Sites should be accessible for construction, monitoring, and proper maintenance (e.g., weed control);
- Restored/enhanced wetland sites should have the potential to provide similar functions and values of impacted wetlands;
- Restored/enhanced wetland sites should have the potential to increase functions and values of existing impacted wetlands along the Project's ROW;
- Sites should be 1 acre or greater (preferred), or in an area where multiple sites occur (for construction and monitoring practicality);
- Sites should be within the same or nearby watershed as the impacted wetlands (i.e., it would be preferable to locate wetland creation/restoration/enhancement sites adjacent to the Project's ROW); and
- Disturbed or degraded sites with currently reduced function/value as habitat are preferred.

2.0 Research Efforts

The Applicants propose to identify potential wetland creation/restoration/enhancement areas by reviewing information such as the Project's GIS database, aerial photographs to identify degraded wetlands, review of property ownership maps to identify publicly owned lands, and windshield inspections to evaluate conditions in identified wetland creation/restoration/enhancement areas.

3.0 GIS Database Review

The Applicants will review the GIS database that has been specifically designed for the Project. The database contains a significant amount of data that can be used to identify and screen potential wetland/enhancement mitigation areas. Examples of electronic information contained in the Project's database include, but are not limited to:

- The Project's currently proposed alignment;
- Wetland and stream digital data showing all mapped environmental features along the proposed Project's ROW;
- Copies of wetland delineation datasheets for wetlands identified along the Project's ROW;
- Mapped surface waters;
- Major utility crossings;

- Topographical conditions along the proposed ROW;
- Mapped NYSDEC lands;
- NYSDEC wetlands;
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory maps;
- Soils information; and
- Land use information.

4.0 Aerial Photographic Review

The Applicants will supplement review of the information contained within the Project's GIS database with the review of aerial photographs to identify degraded or impacted wetlands adjacent to the Project's ROW. If this process does not identify any potential wetland creation/restoration/enhancement areas adjacent to the Project's ROW, the Applicants propose to widen the search for potential wetland mitigation areas to other areas within the same watershed of the impacted wetlands.

5.0 Review of Property Ownership Maps

The Applicants will review property ownership maps to identify publicly owned properties or properties in conversation use as these areas often have higher potential for mitigation success. If the Applicants are unable to identify potential wetland creation/restoration/enhancement areas owned publicly, privately owned properties will also be investigated.

6.0 Windshield Survey

Following the identification of potential wetland creation/restoration/enhancement areas, the Applicants propose to conduct a windshield survey of the identified wetland creation/restoration/enhancement sites. This will include inspection of identified potential wetland mitigation sites in order to gather additional baseline information regarding the sites potential for wetland creation/restoration/enhancement. Examples of information to be obtained during the windshield survey include, but are not limited to: digital photographs, observed dominant vegetative species (including invasive species), and a description of the sites overall condition. Investigators will be directed to note degraded wetland conditions, areas of disturbance, and identify potential restoration/enhancement opportunities.

A reliable source of surface or ground water supportive of wetland hydrology will be a key consideration when assessing opportunities and constraints for potential wetland restoration/enhancement areas. During the windshield surveys, areas will be eliminated if excessive grading requirements, poor access, existing high-quality wetland habitat characterizes a location, or if the area offers minimal potential for wetland creation/restoration/enhancement activities.

7.0 Limitations

Possible land use conflicts will not have been identified and considered at this stage of assessing potential wetland restoration/enhancement sites. Land use conflicts will be considered during development of the Wetland Mitigation Plan.