EXPANDED ENVIRONMENTAL ASSESSMENT FORM (EAF)

FOR

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species Yaphank, NY

TOWN OF BROOKHAVEN
SUFFOLK COUNTY, NEW YORK
NP&V #09024

Prepared for: Town Board
Town of Brookhaven
One Independence Hill
Farmingville, New York 11738

Prepared by: Nelson, Pope & Voorhis, LLC
Village Environmental Planning Consultant
572 Walt Whitman Road
Melville, New York 11747

February 2013

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Date: February 19, 2013

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1.0 Introduction

This document provides an analysis of the anticipated impacts of the Proposed Action, which includes sediment removal from Upper and Lower Lakes in Yaphank, New York. The project is proposed in order to control invasive aquatic vegetation that has impacted the lakes. Nelson, Pope & Voorhis, LLC (NP&V) completed a study for Suffolk County in 2010, entitled, *Feasibility Study to Eradicate Aquatic Invasive/Nuisance Species in Canaan Lake, North Patchogue and Upper and Lower Lakes, Yaphank*. This study characterized the environmental, physical and chemical characteristics of these water bodies in an effort to identify options for control of the invasive plant infestations. A preferred alternative emerged from this study, involving the proposed selective removal of soft organic sediments from the lakes.

This document is an Expanded Environmental Assessment Form (EAF) prepared to assist the Town Board in assessing the potential adverse environmental impacts of the proposed dredging. A Full EAF (Parts I and II) have been prepared and are included in **Appendix A** of this document. The Expanded EAF ensures that the Board takes a "hard look" at the Proposed Action prior to issuing a Determination of Significance pursuant to 6NYCRR Part 617, the State Environmental Quality Review Act (SEQRA) as administered by the Town of Brookhaven Town Board.

This document includes **Section 2.0**, Description of the Proposed Action, followed by **Section 3.0**, Natural Resources and **Section 4.0**, Human Environmental Resources which analyze the existing conditions, potential impacts as a result of the proposed project and measures proposed to mitigate potential impacts of the proposed project. **Section 5.0** provides a Summary of the pertinent impacts and associated mitigation and Conclusion.

2.0 DESCRIPTION OF PROPOSED ACTION

The following section describes the need for the project, the benefits of the project, the project location, a detailed project description and permits and approvals required for the project. An analysis of impacts on environmental resources is provided in **Sections 3.0** and **4.0**.

2.1 Project Background, Need, Objective and Benefits

2.1.1 Project Background

As previously indicated, the proposed project is a result of a study performed by NP&V in 2010, entitled *Feasibility Study to Eradicate Aquatic Invasive/Nuisance Species in Canaan Lake, North Patchogue and Upper and Lower Lakes, Yaphank* (hereafter "Feasibility Study). This study characterized the environmental, physical and chemical characteristics of these water bodies in an effort to identify options for control of the invasive plant infestations. A preferred alternative emerged from this study, involving the proposed selective removal of soft organic sediments from the lakes. Upon the emergence of this preferred alternative, the Town began to investigate the feasibility of dredging both lakes. Meetings were held with the community, Town and County officials, the New York State Department of Environmental Conservation (NYSDEC) and dredge contractors in order receive input on dredge methods, dewatering/disposal locations and potential challenges anticipated in order to implement dredging activities. As a result of this cooperative effort, a proposed dredging project was developed, which is further described in **Section 2.3** below.

2.1.2 Public Need and Municipality Objectives/Objectives of the Project Sponsor

As indicated in the Feasibility Study, impacts of the presence and density of the invasive plants are twofold: 1) the plants degrade the habitat for species utilizing the lakes and 2) the density of the plants inhibits recreational activities on the lakes (e.g., fishing and kayaking). The public need is directly related to the loss of habitat and recreational use of the lakes. Community meetings held during the Feasibility Study revealed a strong interest in reclaiming recreational use of the lakes that is currently hindered by the presence and density of the invasive aquatic plants. As such, it is the objective of the Town to restore both the habitat and recreational value of these lakes to more natural conditions. As indicated in the Feasibility Study, one of the remedies likely to result in the lakes restoration is dredging of the lake bottoms to remove accumulated soft sediments that the invasive plants thrive on, which will ultimately result in achieving the Town's objective.

2.1.3 Benefits of the Proposed Project

As indicated in **Section 2.1.2**, the benefits of the proposed project are directly related to the public need and the objectives of the Town. Removal of soft sediments is anticipated to result in a reduction in plant density within the lakes which will restore both the habitat and recreational

use of the lakes. A reduction in plant density and soft sediment removal is anticipated to result in habitat improvement through the removal of nutrients which degrade water quality resulting in an increase in invasive plants and lake eutrophication and restored opportunities for kayak/canoe use and fishing on the lakes. Ancillary benefits include the potential for downstream habitat improvement as a result of the removal of accumulated sediments and nutrients from upstream habitats.

2.2 Project Location

Upper and Lower Lakes are located in the hamlet of Yaphank, Town of Brookhaven, Suffolk County, New York (**Figure 1**). Upper lake is located on the north side of Mill Road, west of Yaphank-Middle Island Road (C.R. 21) and east of the German-American Settlement. The lake is surrounded primarily by residential and vacant uses. Other uses in the vicinity of the lake include commercial, institutional and agricultural uses.

Lower Lake is located on the west side of Yaphank Avenue (C.R. 21), north of Long Island Avenue and south of Main Street (C.R. 21). Lower Lake is surrounded by a mix of uses, including vacant land, residential, commercial and institutional uses. Further beyond the lake are residential and agricultural uses, two cemeteries and the Long Island Expressway (LIE; NYS Route 495). The lakes are located within the Carman's River Wild Scenic and Recreational River corridor and the Middle Island-Yaphank Critical Environmental Area.

The dewatering site (known as the Brookhaven Rail Terminal or "BRT" site) is located on the southeast corner of the LIE and Patchogue-Yaphank Road (CR 101). This site is currently being excavated for implementation of the BRT site plan and is surrounded by agricultural and vacant land. Agricultural, commercial, and vacant land is located farther from the site. The nearest residence is located approximately 350 feet north of the BRT site, north of the LIE.

2.3 Project Description

2.3.1 General Site and Project Description

The proposed project involves dredging of the soft organic sediments from Upper and Lower Lakes in Yaphank. Upper Lake is owned by the Town of Brookhaven, and Lower Lake is owned primarily by the Town of Brookhaven, with two (2) exceptions: Suffolk County owns a small area near the spillway; and, there is a very small area of privately owned underwater land within the cove on the south-central side of Lower Lake. Upper Lake is approximately 19.70 acres in size of which approximately 13.42 acres is proposed to be dredged, while Lower Lake is approximately 26.26 acres in size of which approximately 23.86 acres will be dredged.

The project involves use of a hydraulic dredge that will access both lakes from roads crossing the dams at the outlet side of each lake. Contractors have the option of using a dredge with a draft of up to 5 feet, and dredge pipe of up to 16 inches in diameter. The larger dredge is needed due to the distance to, and elevation of, the dewatering location which is distant from the lakes as will

be described below. This size dredge would also have the advantage of being able to remove plant material as part of the dredging process. With the anticipated use of a 5-foot draft/16-inch dredge, the majority of soft sediment will be removed from both lakes, and some limited areas of hard sediment will be removed as a result of the proposed bottom contours of the lakes to allow access for the 5 foot draft equipment. A small area of Upper Lake and the upper reaches of Lower Lake would not be able to be dredged without significant changes in the hard bottom depth of the lakes. As a result, these areas will be subject to further work as a later phase after the major initial dredging is completed. It is anticipated that follow up work will be needed to remove rhizomes, remove limited areas of soft sediment and remove any remaining or re-established invasive plants near the edges or within the lakes as will be described below.

Based on soundings conducted by the Town in 2007, Upper Lake contains approximately 58,800 cubic yards (CY) and Lower Lake contains approximately 53,500 CY of soft sediment (total 112,200 CY). The proposed project includes the removal of this soft sediment, and some hard sediment as a result of the depth limitations of the necessary equipment. Dredge bottom contours were created to estimate the expected volume of material to be dredged with the 5-foot draft/16-inch dredge needed to pump material to the currently identified dewatering location. Contours are strategically designed to maximize removal of soft sediment and minimize removal of hard sediment, resulting in 63,200 CY of material that will be removed from Upper Lake and 50,000 CY of material from Lower Lake (total 113,300 CY)[1]. The dredge volume for Lower Lake is smaller than the soft sediment volume as the upper reaches of the lake do not provide sufficient depth for dredge access (5-foot draft).

Final quantities of dredge material will be determined through updated surveys before and after the selected dredging contractor completes the work. Dredging will occur within those accessible areas of each lake identified as containing aquatic invasive plants, and will not occur within 10 feet of the shoreline of each lake. Dredging will occur during a window of time prescribed by the New York State Department of Environmental Conservation (NYSDEC) for protection of reptiles, amphibians and aquatic fish species during spawning periods; dredging will be permitted only between June 1 and October 31. Dredge material will be piped to the BRT site for dewatering for which approximately 20 acres of land has been made available for dewatering activities.

2.3.2 Dredging Methodology

Dredging is proposed to occur only within the areas outlined on permit plans prepared by NP&V (see **Appendix B**) and corresponds to the area of invasive species identified in the 2010 NP&V Feasibility Study. Dredging will involve the "launch" of a hydraulic dredge, which is a barge mounted with an intake device and a pump, that removes a "slurry" of sediment, roots and water from the lake bottom and pumps or conveys it through the pipe to a dewatering location as will be described in subsequent sections. Piping utilized is between 8 and 16 inches in diameter. Dredges that utilize piping in this size have a draft of to 5 feet.

[1] All dredged material quantities are estimates based on the 2007 soundings data collected by the Town.

The dredge will be trucked to the job site using a flatbed, removed from the flatbed and placed in the lake using a crane. The launch site for Upper Lake will be off of Mill Road at the south end of the lake near the dam, where truck access can be achieved and the dredge placed in water with a sufficient depth to float the rig. The launch site for Lower Lake will be off of Yaphank Avenue at the east end of the lake near the dam.

An optional first stage to the project would involve removal of the vegetative mass (leaf and stems) from the lakes, prior to dredging of roots and bottom sediments. This would involve placing a small barge fitted with a harvesting rake within each lake and placing the vegetative material on a separate barge or boat for transport to a shoreside location where it would be temporarily dewatered and loaded into trucks for transport to the Brookhaven Landfill in Yaphank or an appropriate compost site. If harvesting is employed, the screen grate installation and protocols described below will be deployed at the spillways. Harvesting would occur as a first stage, prior to dredging. Harvesting equipment would remain and would be immediately deployed at Lower Lake such that floating vegetation and stems would be removed prior to the invasive aquatic plants going to seed. Lake access, staging and parking areas for Upper Lake include:

- G-A Settlement access to southwest side of lake
- G-A Settlement field west of lake
- Town Park at southeast corner of lake
- Fire Department parking east of lake

Lake access staging and parking areas for Lower Lake include:

- NYSDEC (County owned) boat launch at southeast corner of lake
- Chase Bank site on north central side of lake

Locations for dewatering of harvested plant matter include the German-American Settlement lake-front property and Swezey House Park for Upper Lake, and the Chase Bank and NYSDEC boat launch (owned by Suffolk County) for Lower Lake. The selected contractor will determine if harvesting is needed based on their equipment and approach to removal of plant material and sediment. Any locations used will be open areas that will be restored after completion.

A screen grate (1” minus) will be installed at the outlet of each lake to ensure that floating plant material or debris is prevented from being transported downstream during dredging and/or plant harvesting (if harvesting is conducted before dredging). It is proposed that Upper Lake be dredged first so that any release of plant material downstream (not expected), will be removed during the dredging of Lower Lake. The screen grate at the lake being dredged will be checked at least twice daily during dredging operations and will be cleaned to remove accumulated material. Cleaning will be simplified by the use of duplicate screen grates where one is removed and a clean grate immediately installed to ensure continuous operation. If inspections determine that plant material is accumulating on the screen grate, more frequent inspections and cleanings will be instituted to ensure flow through the spillway.

During the dredging and/or harvesting of Upper Lake, a grate will be installed at the spillway to Lower Lake. This will be checked once daily during dredging operations to determine if any plant material is being transported downstream in the Carmans River to the spillway at Lower Lake. This screen grate will likewise be cleaned of debris, and if inspection demonstrates an accumulation of debris, the frequency of inspections and cleaning will be increased as necessary to ensure that the screen grate remains functional. During the dredging and/or harvesting of Lower Lake, the spillway screen grate will be used as indicated above, and the area downstream up to ¼ mile from the spillway will be checked once daily to determine if any release of plant material has occurred. If there is any observed material downstream of the grate, an additional turbidity curtain will be installed between the dredge area and the spillway.

Once the dredge is placed within the lake, it will be moved into place and cables will be set to anchors to control the horizontal location of the dredge within the intended area to be dredged. This process will be repeated at each dredge location. The intended dredge depth will be achieved by control of the depth of the intake based on the lake profiles and specific probing of the dredge location to detect hard bottom or achieve the design depth. Once the intended depth is achieved, the dredge will be staged to a new area for dredging to the proposed project depth.

Dredging will not occur within 10 feet of the shoreline of each lake, or to a location where the lake bottom depth limits the access of the dredge to a separation distance from the shoreline. Further, the depth of soft sediment decreases near the shores of the lakes and depicted in the lake profiles. Therefore, dredging will not occur in areas where this is an accumulation of soft sediments of less than 1 foot, thus further ensuring protection of the shoreline of the lakes.

The dredge will be moved within the lake to various locations until soft sediments are removed and hard bottom is exposed pursuant to the contours and profiles depicted on the attached plans (**Appendix B**). At each location, a turbidity curtain will be installed around the area of dredging area. This will be achieved with a fine mesh synthetic fabric that permits the flow of water, but traps suspended sediment. The curtain will have floats at the top and weights at the bottom and will be of dimensions that span the surface to bottom in the dredging area to ensure that it is effective in containing suspended sediments. This will contain the dredging operation and restrict turbid areas only to the immediate area of dredging. The turbidity curtain is also expected to contain plant material within the area to be dredged. The use of a hydraulic dredge is expected to reduce the potential for any turbidity within the lake being dredged, as the dredge withdraws sediment, water and plant material from the lake as the intake is moved. If the selected contractor finds that additional precautions are needed, or if any downstream turbidity is observed during dredging, a second silt curtain will be installed between work site and the lake spillway before any further dredging occurs.

Once initial dredging is complete, it is expected that follow-up work will be required. A smaller dredge and/or diver assisted suction harvesting (DASH) (or non-diver assisted suction harvesting) will occur in the undredged portions of the lakes that contain organic sediment and invasive plants, as well as along the edges of the lakes and along the lake bottom. This operation will remove vegetation and organic sediment not able to be removed by initial dredging, and will also remove propagules which may have settled on the lake bottom after completion of the larger

scale dredging. This may occur on several occasions or yearly, depending on the necessity of additional sediment and plant removal.

It is estimated that less than 2,000 CY of additional material would be removed from Upper Lake and less than 15,000 CY would be removed from Lower Lake during these follow-up dredging events. Landside access and equipment locations for Upper Lake include: the Town Park and the German-American Settlement shoreside property. Landside access and equipment locations for Lower Lake include: the NYSDEC boat launch and the Chase bank property on the north side of the lake.

2.3.3 Sediment Conveyance, Dewatering & Material Disposal Methodology

Sediment Conveyance

During dredging, material will be pumped from the lake through assembled PVC pipe (16 inches or less) to an approved dewatering location. The current expected location is at the southeast corner of the Long Island Expressway and Sills Road, Yaphank, at the BRT site, though other sites can be pursued and approved for dewatering if necessary.

The dredged material will be routed to a dewatering location using PVC pipe. The contractor will determine pipe routing from among a series of potential routes that have been identified to and from the lakes. Routing options and approximate distances to and from Upper Lake include:

1. Patchogue-Yaphank Road to the BRT site (6,200 ± feet from south end of lake)
2. Carmans River bed to former access within Camp Olympia to Gerrard Street to Long Island Avenue and south beneath an existing tunnel under the LIE, then east along the north side of Suffolk County land to the BRT site (9,400 ± feet from south end of lake)

Routing options and approximate distances to and from Lower Lake include:

1. Former access within Camp Olympia to Gerrard Street to Long Island Avenue and south beneath an existing tunnel under the LIE, then east along the north side of Suffolk County land to the BRT site (8,100 ± feet from the north end of the lake)
2. Brookhaven Country Day School[2] to Gerrard Street to Long Island Avenue and south beneath an existing tunnel under the LIE, then east along the north side of Suffolk County land to the BRT site (6,100 ± feet from the central part of the lake)
3. NYSDEC operated boat launch (Suffolk County owned) to Long Island Avenue and south beneath an existing tunnel under the LIE, then east along the north side of Suffolk County land to the BRT site (6,700 ± feet from the south end of the lake)

The dredge pump will remove the sediment/slurry from the lake and pump it through the conveyance pipes. Distances of up to about 5,000 feet can be achieved using the dredge pump. Distances greater than 5,000 feet will require one or more booster pumps along the path of the pipe, depending upon the distance and location within each Lake. Upper Lake is approximately

[2] Brookhaven Country Day School has agreed to allow access after 8/15 of each season, once their programs end.

2,400 feet in length and Lower Lake is approximately 4,100 feet in length. The following table of approximate distances includes the length of the lake.

Table 2-1
CONVEYANCE PIPING DISTANCES

Upper Lake – Conveyance Pipe Distances

Route	Route Length	Length of Lake	Total
Route 1	6,200’	2,400’	8,600’
Route 2	9,400’	2,400’	11,800’

Lower Lake – Conveyance Pipe Distances

Route	Route Length	Length of Lake	Total
Route 1	8,100’	4,100’	12,200’
Route 2	6,100’	2,300’/2,600’*	8,400’/8,700’*
Route 3	6,700’	4,100’	10,800’

* Note: Distances are east and west of landing location of pipe in central Lower Lake.

The route between the dredging areas and the dewatering site is not a straight line. Conveyance pipe will need to be placed in gradual “arcs” in order to change the direction of the pipe route. These “arcs” will have a radius of 180 or less and will require temporary use of land in the areas of pipe alignment in order to make these arcs. In addition, the 16 inch dredge may require 1-2 booster pumps depending upon the length of piping from the lake to the dewatering area. Booster pumps will be strategically placed to minimize impact on natural and human environments. In addition, booster pumps will require a water source in the form of a well at the location of each pump in order to provide the hydraulic medium to allow the dredged material slurry to be pumped along the pipe route. The selected dredging contractor will prepare and execute a protocol for monitoring the pipe connections to ensure that there are no leaks or blowouts during dredging.

Water return will occur via one or more of the same routes. It will be most advantageous to use the same route for one lake for both dredged material conveyance and water return; however, different combinations of routes may be used depending on access to the various routes, where dredging is occurring within each lake and total distance. Return water must be discharged at least 50 feet above the spillway in each lake.

The contractor will determine the location and need for booster pumps depending upon the capabilities of their equipment. Given the length of the run, it will be possible to locate booster pumps in a variety of locations, and as a result, place such equipment in a location that minimizes impact to surrounding land uses (natural and human environment).

Dredge Material Dewatering & Disposal

BRT plans to make 20 acres of land available for dewatering of dredged material; this land is already approved to be cleared in connection with proposed improvements at BRT. The BRT dewatering location has a natural grade that slopes from southwest to northeast. On-site soil will be used to create berms or dykes that will contain the sediment and water. Sediment will "drop out" as settling occurs and dewatering liquid will recharge to groundwater or accumulate in lower lying areas of the dewatering location. As suspended material settles in the dewatering location, non-turbid water will continue to recharge or can be returned to Lower Lake via a return water pipe and pump, if necessary. Any water returned to Lower Lake must be discharged a minimum of 50 feet upstream of the spillway.

The selected contractor has the option to create dyked "cells" for separate settling and recharge to ensure that suitable soils are present for effective percolation. If recharge areas are prone to silt accumulation and clogging, the recharge areas can be rotated and/or clogged areas can be periodically "scraped" to remove fine material and promote recharge. Provided adequate settling occurs, there may be an option to utilize the NYS Department of Transportation (NYSDOT) recharge basin adjoining the BRT site for recharge of water during dry weather periods only.

After the material within the containment area is dewatered (approximately 6-9 months), it will be loaded into trucks and transported to the Brookhaven Landfill at Yaphank. An option to request a Beneficial Use Determination (BUD) from NYSDEC to allow the material to be tilled-in with soil at the dewatering site to remain on the BRT site and be used as a soil amendment for landscaping can be pursued by the Town, if desired. It is noted that this option will require further NYSDEC review of sediment quality testing results and issuance of a BUD under 6NYCRR Part 360.

2.3.4 Sediment and Erosion Control

The lake dredging is not expected to cause erosion. The method of launching the dredge by crane, and using ramps, open areas with groundcover and/or sandy beach areas for small boat and equipment access will minimize the potential for erosion in proximity to the lakes. Conveyance piping is likewise not expected to cause erosion. Pipes will be placed on the ground surface, and in areas of road crossings, placed below pavement level, backfilled and restored after removal and project completion. Conveyance pipes will also be checked for leaks to ensure no release of water along the route.

The dewatering location is an active construction site. Regrading and redevelopment of the Brookhaven Rail Terminal will be in progress during the dredged material dewatering. BRT is making 20 acres available in the central part of the BRT site while other parts of the rail terminal site plan are being implemented. The 20 acres is in an area of the site plan that is subject to soil removal and regrading to establish suitable elevations for the remainder of the BRT use. The BRT site slopes from southwest to northeast and will continue to trend in that direction. Dewatering involves creation of a perimeter berm with a slope of not more than 1:3. Since the 1:3 slope will be on the interior of the BRT site, no off site impacts are expected as a result of

erosion and sediment transport. It is recommended that the downslope side of the dyked area be protected with a silt fence so that off-site transport is precluded in areas which could potential be susceptible due to the overall topographic trend of the property.

2.4 Construction Schedule and Operations

The dredge will operate no more than six (6) days per week (Monday through Saturday), twelve (12) hours per day (7:00 AM to 7:00 PM). The selected contractor will review and conform with the applicable requirements of the Brookhaven Noise Control Ordinance, Chapter 50 in the location and operation of equipment. The 5-foot draft/16-inch dredge has a pumping capacity of 5,500 gallons per minute (gpm). Review of streamflow data for the Carmans River finds that Lower Lake has a baseflow of 8,528 gpm, and a recorded peak flow of 62,840 gpm. As a result, the full schedule of pumping can be maintained for Lower Lake while maintaining streamflow. Streamflow data for Upper Lake finds a baseflow of 1,683 gpm, and a peak flow of 15,710 gpm.[3] As a result, during low streamflow periods (less than 7,000 gpm), a modified pumping schedule of not more than 8 hour days, 5-days per week, will be required. This will allow the lake and streamflow to rebound for 16 hours per day, with full flow for 2-days per week. The selected contractor will obtain or measure streamflow at the upper reaches of Upper Lake to ensure adequate flow is maintained during dredging operations. Alternatively, the contractor may choose to maintain the full daily pumping schedule by returning the dewatering liquid from the dewatering site to Upper at least 50 feet upstream of the spillway.

The operation will require support equipment such as conveyance piping, a small boat, anchors and swing cables for the dredge, employee parking and staging areas adjoining each lake (Town Park for Upper Lake and the NYSDEC Boat Launch, owned by Suffolk County, for Lower Lake).

Temporary road diversion may be needed to use a lane for staging; however, any such diversion will be short term and temporary, and once the dredge is launched, the flatbed truck and crane will be removed from the public road until dredging is completed when the process will be duplicated in reverse to remove the dredge.

2.5 Permits and Approvals Required

A number of approvals will ultimately be required for the proposed project. A list of anticipated approvals is provided in **Table 2-2**.

[3] Peak discharge for Upper/Lower Lakes is per NYSDEC Dam Inventory Database and baseflow is per 2007 engineer's report; baseflow for Lower Lake is per mean of USGS Station 01304998 (referenced in the 2010 NP&V report, *Feasibility Study to Eradicate Aquatic Invasive/Nuisance Species in Canaan Lake, North Patchogue and Upper and Lower Lakes, Yaphank).*

Table 2-2
PERMITS AND APPROVALS REQUIRED

Board/Agency	Type of Permit/Approval
ACOE	Nationwide Permit #27 Concurrence
NYSDOS	Coastal Consistency Concurrence
NYSDEC	Article 24, WSRR & Part 360 Authorization
Town Board/Division of Environmental Protection	Chapter 81 Wetland/Waterways permits
SCDPW	Roadwork Access Authorization

The NYSDEC will determine the nature of the Part 360 authorizations that apply to the project and issue appropriate permits based on the final program for dredging and dredged material handling. The Central Pine Barrens Joint Planning and Policy Commission has expressed interest in the project and provided a SEQRA coordination letter in response to the Town Board lead agency coordination request. There are several committees/organizations that have expressed interest in the project and in particularly promote the restoration of the lakes by appropriate and feasible measures. These include the Coalition to Save the Yaphank Lakes (a non-profit entity), and the Carmans River Task Force (a Town sponsored committee).

3.0 NATURAL ENVIRONMENTAL RESOURCES

3.1 Topography & Soils

3.1.1 Existing Conditions

Topography

Existing bathymetry of both Upper and Lower lakes are depicted on the Permit Plans (**Appendix B**). "Hard bottom" or the base of the lake that is comprised of coarse sediments is depicted on the plans. Soft sediment that has accumulated on top of the hard bottom is depicted in **Figures 2** and **3** and is further described below.

As illustrated, Upper Lake is deep near the spillway at the southern portion of the lake (maximum hard bottom depth of 8') and shallow at the northern portion of the lake (average hard bottom depth of one foot). The north central portion of the lake averages a hard bottom depth of five feet while the south central portion of the lake averages a hard bottom depth of six feet. A shallow area exists in the center of the lake with an average hard bottom depth of four feet. The depth of the lake decreases sharply along the shoreline. As indicated in the Feasibility study, many of the shallow depth areas are a result of accumulated soft sediment on the lake bottom. Soft sediment depth generally ranges from 0 to 2 feet, with deeper areas of 2-3 feet in the center of the lake, and isolated areas with greater than 3 feet of muck along the northeastern shoreline of the lake.

Similarly, Lower Lake is deep near the spillway at the eastern portion of the lake (maximum hard bottom depth of 7') is four to five feet deep in the central portion of the lake and one to two feet deep in the western portion of the lake. As with Upper Lake, the depth of the lake decreases sharply along the shoreline. The feasibility study indicates a soft sediment accumulation of 0 to 3 feet, with a small deeper area containing more than 3 feet of soft sediment in the lower portion of the lake.

Regional topography surrounding the BRT site generally trends from southwest to northeast (**Figure 4**). Elevations in the highest portion of the site in the southwest corner average 105 feet above sea level (asl) while elevations in the lowest portion of the site in the northeast corner of the property average 50 feet asl. Currently, this site is being cleared and graded for use by the Brookhaven Rail terminal and as such, site specific topography is changing.

Soils

Sediments in Upper and Lower Lakes were characterized in the Feasibility Study and further sediment testing and analysis was prepared once preparation of dredging applications began. The Feasibility Study described the sediments as follows:

> "Sediments in Upper and Lower Lake generally consisted of fine grains and were enriched in organic matter, ranging from 10 – 60 percent organic matter. The exception to this trend was the northern most site within Lower Lake which displayed very low levels of sedimentary organic matter (~1%). Higher levels of organic matter in sediments in all other regions likely indicate high levels of nutrients fluxing from sediments into overlying waters."

Subsequent sediment testing was performed for the purposed of identifying potential disposal locations once dewatering activities are complete. The goal of sediment testing was to sample and analyze the chemical properties of sediments at select stations in both lakes in order to determine the quality of sediments for handling and disposal purposes. A sediment testing work plan was approved by NYSDEC and implemented by NP&V staff. The sediment testing program involved sampling of the following parameters using the identified test methods.

Parameter/Contaminants	United States Environmental Protection Agency (USEPA) SW-846 Method
Total Organic Carbon (TOC)	9060 A
Pesticides	8081 A
Herbicide (Silvex)	8151
Total Aroclors of PCB's	8082
Volatile Organics (VOC's)	8260 B
Semi-Volatile Organics (SVOC's)	8270 C
Metals	6010 B
Hexavalent Chromium	7196A
Cyanide	9012A

Phase I sampling was completed in November of 2011 and results are documented in a report dated February 21, 2012. Based on Phase I testing, Phase II testing was completed in April 2012. All test results have been submitted to NYSDEC. Results from both rounds of sampling were similar, finding detectable concentrations of some volatile organic compounds (VOC's), metals and some pesticides. Several parameters of concern were identified for further sampling in order to address some exceedances of Part 375 and Class B material guidance values. Specifically, concentrations of acetone and hexavalent chromium warranted further sampling and analysis.

A sediment pilot testing program was devised to do determine the degradation/volatilization of acetone once removed from the lake. This involved removal of sediment from a station in Upper Lake to two (2) walled-off "pits" or "piles" created using haybales on top of a polypropylene sheet located near the lake shore. One pile was left static and one was mixed with a shovel at 2-week intervals. Sediment samples were removed from each pile at 2-week intervals between July 24, 2012 and September 10, 2012 and analyzed for acetone. It was found that the pile that was mixed achieved acetone at less than the limit of detection (and less than the guidance value) within 2-weeks, and the pile that was static achieved acetone at less than the limit of detection (and guidance value) within 6-weeks. This provides a conclusion that once the material is exposed to the atmosphere, acetone will degrade/volatilize to an acceptable concentration after 6-weeks of dewatering.

A further sampling was conducted for hexavalent chromium at station LL-8 in Lower Lake. This was completed in July 2012 and involved collection of one sample for TCLP (Toxicity Characteristic Leaching Procedure) analysis of the sample. This further sampling found that the sediment quality was below the TCLP guidance value for hexavalent chromium.

All analytical results have been furnished directly to NYSDEC in advance of this permit application submission, and have been analyzed by the appropriate state representatives. The results of the sediment sampling program has found that the material is acceptable for disposition at the Brookhaven Landfill at Yaphank, subject to approval by the Town.

The Soil Survey of Suffolk County, New York (**Warner et al., 1975**) provides a complete categorization, mapping and description of soil types found in the county. Soils are classified based on profiles of the surface soils down to the parent material, which is slightly changed by leaching and/or the action of plant roots. An understanding of soil character is important in environmental planning as it aids in determining vegetation type, slope, engineering properties and land use limitations. These descriptions are general, however, and soils can vary greatly within an area, particularly soils of glacial origin. The slope identifiers named in this subsection are generalized based upon regional soil types; the more detailed subsection on topography should be consulted for analysis of slope constraints. Soils in the area of the proposed dewatering on the BRT site are anticipated to be sandy and well drained, as the soils on the site are identified as CpE – Carver and Plymouth Sands, HaA – Haven Loam, PlA – Plymouth Loamy Sand and RdA – Riverhead Sandy Loam (**Figure 5**). Specific descriptions of these soils are as follows:

Carver and Plymouth sands, 15-35% slopes (CpE) - The Carver series consists of deep, excessively drained coarse-textured soils. This soil type is found almost exclusively on moraines except for a few steep areas on side slopes along some of the more deeply cut drainage channels on outwash plains. The hazard for erosion is moderate to severe.

Haven loam 0-2% slopes (HaA) - This map unit consist of deep, well drained, medium textured soils that formed in a loamy or silty mantle over stratified coarse sand and gravel. Most of these areas are on outwash plains; some are on moraines and generally are on top of low-lying hills. The hazard of erosion is slight and internal drainage is good. Natural fertility is low.

Plymouth loamy sand, 0-3% slopes (PlA) - Consists of deep, excessively drained, coarse-textured soils that form a mantle of loamy sand or sand over thick layers of stratified coarse sand and gravel. These soils are mainly on outwash plains south of the Ronkonkoma moraine. The areas are generally level, but undulate in some areas. The hazard of erosion is slight.

Riverhead Sandy Loam, 0-3% slopes (RdA) - Consists of deep, excessively drained, coarse - textured soils that formed in a mantle of sandy loam or fine sandy loam over thick layers of coarse sand and gravel. This soil is generally found on outwash plains, and the areas are large and uniform. Hazard of erosion is slight.

3.1.2 Anticipated Impacts

<u>Topography</u>
As described in **Section 2.3.1**, the proposed project will result in the removal of 63,200 CY of material from Upper Lake and 50,000 CY of material from Lower Lake (total 113,300 CY). The majority of this will consists of accumulated soft sediment; however, as a result of the size dredge needed to complete the project in a timely fashion, some hard bottom sediment will be

removed as well. Proposed hard bottom lake contours are illustrated on the Permit Plans (**Appendix B**). Generally, both lakes will deepen and as a result, a reduction in plant matter will occur, further resulting in a reduction of sediment accumulation as the plant matter contributes to trapping and creation of soft sediments. As such, the proposed project will benefit the lakes as the lakes will be returned to a state which is closer to their natural conditions. This will result in a beneficial impact to both lakes.

As previously indicated, topography on the BRT site will be permanently altered as a result of the activities associated with that project. Dewatering of sediments will only temporarily impact the topography of the BRT site as once dewatering is completed, the sediments will be removed and transported to the Brookhaven Landfill, or will remain on the site as enriched soil (mixed with sand/loam) for groundcover in accordance with a BUD issued by NYSDEC. While an option for retaining sediments on the BRT site is available, , this option will only be utilized through the beneficial use determination. As such, neither scenario is expected to result in a significant adverse impact with respect to topography.

Soils

During dredging activities, sediments suspended in the water column as a result of dredging will be contained via the use of silt curtains surrounding the dredging area. As described in **Section 2.3.2**, use of these curtains will reduce turbidity in the lake. The use of a hydraulic dredge is expected to reduce the potential for any turbidity within the lake being dredged, as the dredge withdraws sediment, water and plant material from the lake as the intake is moved. Any permit issued will specify that no turbidity will be permitted downstream of the dredging operation. As a result, if the contractor finds that additional precautions are needed, or if any downstream turbidity is observed during dredging, a second silt curtain will be installed between work site and the lake spillway before any further dredging occurs. Additionally, dredging will not occur within 10 feet of the shoreline or in areas that have less than one foot of accumulated soft sediment to prevent erosion along the shoreline of each lake. As such, impacts associated with release of sediment during dredging are minimized.

As indicated in **Section 3.1.1**, sediment testing revealed high concentrations of acetone and hexavalent chromium. As a result, a sediment pilot testing program was devised to determine the degradation/volatilization of acetone once removed from the lake. This involved removal of sediment from a station in Upper Lake to two (2) walled-off “pits” or “piles” created using haybales on top of a polypropylene sheet located near the lake shore. One pile was left static and one was mixed with a shovel at 2-week intervals. Sediment samples were removed from each pile at 2-week intervals between July 24, 2012 and September 10, 2012 and analyzed for acetone. It was found that the pile that was mixed achieved acetone at less than the limit of detection (and less than the guidance value) within 2-weeks, and the pile that was static achieved acetone at less than the limit of detection (and guidance value) within 6-weeks. This provides a conclusion that once the material is exposed to the atmosphere, acetone will degrade/volatilize to an acceptable concentration after 6-weeks of dewatering.

Further sediment sampling was conducted for hexavalent chromium at station LL-8 in Lower Lake. This was completed in July 2012 and involved collection of one sample for TCLP

(Toxicity Characteristic Leaching Procedure) analysis of the sample. This further sampling found that the sediment quality was below the TCLP guidance value for hexavalent chromium.

The results of the sediment sampling program has found that the material is acceptable to be dewatered at the BRT site, and is acceptable for disposition at the Brookhaven Landfill at Yaphank, subject to approval by the Town. Additionally, silt fencing will be utilized along the downslope site of the dredging piles to prevent erosion and sediment runoff. As a result, no significant impacts associated with sediments are anticipated to occur as a result of the proposed project.

3.1.3 Proposed Mitigation

- Use of a silt curtain surrounding the dredging area will minimize turbidity within the lakes.
- No dredging will occur within 10 feet of the shoreline or in areas where soft bottom sediments are less than 1 foot in depth.
- The selected dredging contractor will be responsible for submitting to the Town and NYSDEC an approvable protocol for monitoring the pipe connections to ensure that there are no leaks or blowouts during dredging. The protocol must be submitted and approved by the Town and NYSDEC before dredging commences.
- Sediments will be dewatered for a minimum of six weeks to ensure all acetone present in the sediments will volatilize prior to disposal.
- Erosion control measures in the form of a silt fence will be employed on the downslope side of the dewatering area dyke on the BRT site.
- If a beneficial use of the dewatered material is approved for the BRT site, the dredge material will be utilized to aid in BRT site restoration.

3.2 Water Resources

3.2.1 Existing Conditions

As indicated in the Feasibility Study, Upper Lake is classified by the NYSDEC as having B(T) water quality. Surface water quality classification "B" indicates the best usage of Upper Lake's waters is primary and secondary contact recreation and fishing. Lower Lake is classified by the NYSDEC as having C(T) water quality. Surface water quality classification "C" indicates the best usage of Lower Lake's waters is for fishing. The symbol (T) after the classification means that these waters are also trout waters (**Figure 6**).

As part of the Feasibility Study, water quality testing was performed for each lake. During sampling, Upper and Lower Lake displayed mixed water quality. Chlorophyll levels were generally low, ranging from 1 - 4 µg chlorophyll *a* / L for most sites. These levels generally fit within EPA's classification of oligotrophic (low nutrient) to mesotrophic (moderate amount of nutrients) waters with regard to chlorophyll *a.* The exception to this trend were the southernmost sites of both lakes which had levels of chlorophyll *a* which often exceeded 12 µg/L and fit within the eutrophic (high nutrients) category.

Dissolved oxygen levels were often high, exceeding 8 mg/L during most sampling seasons. The exception to this was the August sampling period when surface oxygen levels were <3mg/L at all sampling locations. Levels were even lower within the bottom portion of the lake (<2 mg/L). Long term monitoring by the Coalition to Save the Yaphank Lakes had also recorded hypoxic conditions during the summer and fall months in both Upper and Lower Lake. These results are indicative of hypoxia as defined by the NYSDEC and are harmful to some fish species and life stages. Also of note is that the hypoxic conditions were found even in surface waters, suggesting fish within the lakes may not have had a refuge from hypoxia; surface oxygen levels are often higher than those at depth.

The temperatures in Upper and Lower Lake followed an expected seasonal pattern. Temperatures within the northern most site of Upper Lake, however, remained cool during summer, despite the extremely hot atmospheric temperatures; lake temperatures remained below 20ºC while air temperatures approached 30ºC. These differences suggest that there were high rates of groundwater flow within the northern most reaches of Upper Yaphank Lake since groundwater is always cool (10 – 15ºC).

Nutrient levels in Upper and Lower Lake were mixed. Concentrations of dissolved inorganic nitrogen (nitrate) were elevated throughout sampling events. Nitrate levels often exceeded 1.4 mg/L while multiple ammonium samples exceeded 1.4 mg/L. Nitrite levels were low (<0.1 mg/L). Concentrations of orthophosphate were also low, at 0.008 mg/L on average. Collectively, the nutrient profile within Upper and Lower Lake suggests the system is strongly phosphorus limited, with levels of nitrogen and silicate in excess.

The secchi disc depth in Upper and Lower Lake averaged 1.4 and 0.7 m, respectively, and was often equal to the total water column depth, although there were multiple instances where water clarity was significantly obscured by the overgrowth of macroalgae. These levels generally fit within EPA's classification of eutrophic waters with regard to secchi depth . The presence of high densities of macroalgae which preclude light penetration in conjunction with extremely high levels of nutrients and low levels of chlorophyll a suggest that the proliferation of phytoplankton in Upper and Lower Lake was restricted by macroalgae.

In summary, the water quality of Upper and Lower Lakes is generally good for wildlife and recreation during most of the year, with low levels of phytoplankton biomass, high levels of oxygen, and light penetration to the bottom in many cases. Problematic aspects include elevated levels of nitrate and the obvious overgrowth of macroalgae which can obscure light conditions during the summer. The southernmost sites in both lakes were prone to high levels of chlorophyll *a*, suggesting an elevated residence time in this region. The occurrence of widespread hypoxia in August indicates this system is not currently providing ideal fish habitat.

3.2.2 Anticipated Impacts

As a result of the concentration of certain organic and inorganic constituents found in sediments (**Section 3.1.1**), it was determined that testing of the water removed during dredging was

necessary to ensure that the quality was appropriate to recharge to groundwater or to the river system without further treatment. As a result, an additional pilot sampling program was conducted for the water that will either be recharged to Class GA groundwaters or returned to the river system. This dewatering pilot program was devised to simulate the conditions of settling of solids that will occur in the dredged material dewatering areas, and then test the water quality to determine if the material is suitable as recharge and/or to return to Lower Lake. The pilot testing for dewatering liquids that was specified in a work plan approved by NYSDEC, consisted of the following steps:

- Collect 2-3 cubic feet (CF) of sediment from test location of lake (to be determined by NYSDEC). Use boat and auger and appropriately trained personnel to obtain sample.
- Obtain, construct or purchase a water tight bin of sufficient size to contain sediment and 2x the volume of the sample. Place sample in bin.
- Add 2x the volume of the sample of clean water to the bin and mix very well.
- Allow sample to settle in the bin, uncovered. Wait until all suspended materials have settled.
- Decant liquid sample, clear of suspended solids, from retained water in the bin. Run liquid samples for VOC's, SVOC's, pesticides and metals consistent with elevated parameters previously tested in Phase I, II and sediment pilot study sampling (analytes to be provided by NYSDEC). Ensure that lab splits sample and saves water from sample not run.
- Obtain laboratory results, review/analyze data, prepare summary letter and submit to NYSDEC and Town.

This pilot testing was completed during December 2012. A description of the work performed and the results is provided below.

- A combination of bottom muck and water totaling about 2.5 cubic feet was extracted from station at LL-8 on December 21, 2012 at 8:00 AM. Sample extraction was performed by 40-hour trained personnel using appropriate protocols.
- The sediment/water volume was collected using a decontaminated bucket auger and was placed in a decontaminated drum.
- The drum was sealed with a bolt/ring system and brought to NP&V offices at 572 Walt Whitman Road, Melville by 9:00 AM on 12/21/12.
- Time-series samples were collected by qualified, trained personnel for analysis by a NYS certified laboratory; samples were kept at 4 degrees centigrade and transported to the lab using appropriate chain of custody and holding time procedures for analysis.
- The first sample was collected at 11:09 AM on 12/21/12; the sample appeared to be turbid with fine sediment – analysis found that all analytes were below Class GA guidance values.
- The second sample was collected on 12/22/12 at 10:04 AM; the sample appeared to be turbid with fine sediment – analysis found that all analytes were below Class GA guidance values.
- The third sample was collected on 12/24/12 at 12:56 PM; the sample was less turbid but still murky with fine sediment; analysis found that all analytes were below Class GA guidance values.

In summary, 3 time-series samples were collected by qualified, trained professionals after the drum was allowed to settle. The first sample was 2 hours after the drum was allowed to settle, the second was about 25 hours after, and the third was about 76 hours after the agitation ceased. All analytes were less than the limit of detection except for acetone, which varied from 18.8 ug/l to 18.7 ug/l to 17.8 ug/l over time. The Class GA guideline is 50 ug/l, therefore, all acetone

samples were less than the applicable guidance values. As a result, no impacts are anticipated to be associated with water removed from dredging activities.

As indicated in **Section 2.3.3**, booster pumps that utilize individuals wells may be required for sediment conveyance. The 16 inch dredge may require 1-2 booster pumps depending upon the length of piping from the lake to the dewatering area. A smaller dredge (8 or 10") will require 2-4 booster pumps. Booster pumps will be strategically placed to minimize impact on surrounding residents. In addition, booster pumps will require a water source in the form of a well at the location of each pump in order to provide the hydraulic medium to allow the dredged material slurry to be pumped along the pipe route. Any wells which exceed 45 gallon per minute (gpm) pumpage will obtain the appropriate NYSDEC well permit, if required. As a result, impacts to groundwater as a result of booster pump wells are anticipated to be small and temporary in nature as booster pumps and wells will be properly removed and abandoned once dredging activities are complete.

In general, water quality within the lakes is anticipated to improve as a result of the proposed dredging, as sediments containing high nutrient levels which promote algal blooms, the proliferation of invasive plants and lake eutrophication will be removed from the lakes. As the one of the major factors contributing to poor water quality from the lakes, impacts associated with the lakes are anticipated to only be beneficial.

3.2.3 Proposed Mitigation

- The proposed project involves dredging only; no herbicides will be used as part of this project.
- Any booster pump wells in excess of 45 gpm, will obtain a NYSDEC private well permit.
- Any booster pump wells will be properly abandoned once dredging activities are complete.
- As noted in **Section 2.4**, if streamflow into Upper Lake is less than 7,000 gpm, the pumping schedule will be reduced to 8-hours per day, 5-days per week. An alternative option to allow the dredge contractor to maintain the full daily pumping schedule, would be to return the dewatering liquid from the dewatering site to an Upper Lake discharge at least 50 feet upstream of the spillway.
- The dewatering area will provide a means for settling of suspended solids so that non-turbid water will be returned to Lower Lake and discharged at least 50 feet upstream of the spillway.

3.3 Ecology

3.3.1 Existing Conditions

The existing ecological resources within the lakes were inventoried and described in the Feasiblity Study. The following pertinent ecological information is excerpted from that study.

Vegetation

NYSDEC Inventory (2006)
NYSDEC inventoried native and exotic (invasive) plant species on both of the Yaphank lakes in August, 2006. A total of 17 native plant species in Upper Lake, and three native plants in Lower Lake were encountered. Results of the NYSDEC data collected via the Point Intercept Rake Toss Relative Abundance Method (PIRTRAM), are presented as percent abundance of plants relative to the overall qualitative abundance scale (dense, moderate, etc) used in PIRTRAM. Dense refers to "difficult to bring into the boat", moderate = a "rake full", sparse = a "handful", and trace = a "fingerful." *Cabomba caroliniana* (fanwort) and *Myriophyllum heterophyllum* (variable-leaf watermilfoil) were encountered in both lakes. Upper Lake exhibited dense abundance of *Cabomba*, but only found *Myriophyllum* floating at the launch point near the Mill House Inn parking lot. Lower Lake exhibited dense abundance of *Cabomba* and *Myriophyllum* throughout.

Town Inventory (2007)
The Town of Brookhaven utilized the Point Intercept Rake Toss Relative Abundance Method in fall 2007 to determine relative invasive species density in Upper and Lower Lakes. Upper Lake exhibited dense weed growth throughout its lower half, with only a few of the areas exhibiting moderate growth. The upper half of Upper Lake was largely free of weeds with only one area of sparse weed growth. In Lower Lake, the Town inventory documented less but still moderately dense amounts of invasive plants in the lower two-thirds of the lake and no invasive plants in the upper one-third of the lake.

B. Laing Inventory (2009)
The November 2009 aquatic vegetation survey conducted by B. Laing Associates encountered a total of three (3) invasive species and fourteen (14) native species (13 of which were in Upper Lake). **Tables 3-1** and **3-2** below provide a list of aquatic vegetation encountered and identified at Upper and Lower Lakes in November 2009, respectively.

Table 3-1
AQUATIC VEGETATION INVENTORY AT UPPER LAKE

	Latin Name	**Common Name**
*	*Cabomba caroliniana*	Fanwort
	Chlorophyta sp.	Green algae
	Juncus sp.	Rush species
	Lemna minor	Lesser duckweed
	Ludwigia palustris	Water purslane
*	*Myriophyllum heterophyllum*	Variable-leaf watermilfoil
	Nuphar sp.	Yellow water lily
	Peltandra virginica	Arrow arum
*	*Phragmites australis*	Common reed
	Potamogeton epihydrus	Ribbon leaf pondweed
	Potamogeton natans	Floating leaf pondweed

Potamogetum pectinatus	Narrowleaf pondweed
Potamogeton pusillus	Small pondweed
Sphagnum sp	Sphagnum moss
Utricularia purpurea	Purple bladderwort
Vallisneria americanum	Eel grass

* denotes species is invasive.

Table 3-2
AQUATIC VEGETATION INVENTORY AT LOWER LAKE

	Latin Name	**Common Name**
	Helenium autumnale	Sneezeweed
	Ludwigia palustris	Water purslane
*	*Myriophyllum heterophyllum*	Variable-leaf watermilfoil
	Nuphar sp.	Yellow water lily
*	*Phragmites australis*	Common reed
	Polygonum sp.	Polygonum species
	Potamogeton natans	Floating leaf pondweed
	Potamogeton sp.	Pondweed species
	Potamogeton pusillus	Small pondweed

* denotes species is invasive.

The November 2009 survey encountered very similar results to the Town's fall 2007 survey. The lower half of Upper Lake exhibited dense growth of invasive plants, while its upper half exhibited very dense growth of native plants. Lower Lake exhibited a slight northwest expansion of invasive plant growth in the 2009 survey, with sparse to dense cover of native plants in its remaining northern portion. **Figures 7** and **8** illustrate the invasive plant species distribution in Upper and Lower Lakes at the time of the report. As of November 2009, *Cabomba caroliniana* was the dominant invasive plant encountered in Upper Lake, with only a single small patch of *Myriophyllum heterophyllum* and *Phragmites australis* encountered at the southeast end adjacent to the beach at the Swezey Avey House. However, during the same time period, the 2009 inventory of Lower Lake only encountered the dense presence of the invasive *M. heterophyllum* throughout the lake, and an emergent stand of *P. australis* along the shoreline near its outlet. No *C. caroliniana* was observed during the 2009 inventory of Lower Lake.

<u>Fish & Other Wildlife</u>

Fish
The NYSDEC currently stocks Brown and Rainbow trout in Upper and Lower Lakes during cooler months of the year. The lakes also support a mix of warm water fish species, including a good population of largemouth bass and sunfish in Lower Lake. A list of naturally reproducing and stocked fish species is provided in **Table 3-3**.

Public access to Upper Lake is via Town of Brookhaven's Swezey Avey House, which offers a beach, playground, community center and picnic area. Public access to Lower Lake is via a concrete DEC boat ramp located off of Yaphank Avenue (Route 21).

Table 3-3
FISH SPECIES PRESENT IN UPPER & LOWER LAKES

Common Name	Latin Name	Status
Largemouth bass	*Micropterus salmoides*	Naturally reproducing
Bluegill Sunfish	*Lepomis macrochirus*	Naturally reproducing
Yellow Perch	*Perca flavescens*	Naturally reproducing
Pumpkinseed Sunfish	*Lepomis gibbosus*	Naturally reproducing
Black Crappie *	*Pomoxis nigromaculatus*	Naturally reproducing
Brown Bullhead	*Ictalurus nebulosus*	Naturally reproducing
Brown Trout	*Salmo trutta*	Stocked
Rainbow Trout	*Oncorhyncus mykiss*	Stocked

* = Upper Lake only

Alewives
Seatuck Environmental Association in conjunction with the SSER currently conducts alewife spawning volunteer monitoring surveys on Long Island each spring. These surveys began in 2006 to document existing spawning runs and to guide habitat protection and restoration projects. The survey has since documented populations of alewives remaining in a number of tributaries around Long Island. Of those sampled, "the Carmans River appears to support the largest and most stable run, providing a potentially important source population to support restoration efforts along the South Shore" (**Kelder, 2009**).

Most monitoring sites on the Carmans River occur downstream of Hard's Lake Dam, the first (southernmost) dam on the river. The spring 2010 survey included some limited volunteer monitoring at C-Gate Dam, but no fish were observed. Though no formal observations documented alewives above C-Gate Dam, a member of the local Art Flick Chapter of Trout Unlimited reported seeing two schools of approximately twelve alewives each in 2009 near the "F Gate" of Southaven County Park (approximately 1.8 miles upstream of the Hard's Lake fish ladder and 0.7 miles upstream of the C-Gate Dam about mid-way to the USGS Gauge). In 2010, a Trout Unlimited member observed one school of alewife (approximately 6-12) above the USGS gauge, indicating that at least some alewife are passing the weir gauge, likely during high flows following rain events.

Other Wildlife – Mammals
The lakes are expected to support a number of mammal species. **Table 3-4** is a list of the mammal species that are expected to occur on the property because of existing conditions on-site and in the surrounding area. This list is not meant to be all-inclusive but is intended to provide a list of the most common species.

Table 3-4
MAMMALS

Common Name	Latin Name
big-brown bat	Eptesicus fuscus
Eastern pipistrelle	Pipistrellus subflavus
little-brown bat	Myotis lucifugus
long-tailed weasel	Mustela frenata
meadow-jumping mouse	Zapus hudsonicus
mink	Mustela vison
muskrat	Ondarta zibethicus
red bat	Lasiurus borealis
silver-haired bat	Lasionycteris noctivagans

Other Wildlife – Birds
A variety of avian species that depend on water for foraging or breeding may utilize the lakes. **Table 3-5** is a list of the bird species observed or expected on site given the habitats present.

Table 3-5
BIRDS

Common Name	Latin Name
American black duck	Anas rubripes
belted kingfisher	Megaceryle alcyon
Canada goose	Branta canadensis
common loon	Gavia immer
double-crested cormorant	Phalacrocorax auritus
great blue heron	Ardea herodias
green heron	Butorides striatus
green-winged teal	Anas crecca
lesser scaup	Aythya affinis
mallard	Anas platyrhynchos
osprey	Pandion haliaetus
peregrine falcon	Falco peregrinus
red-winged blackbird	Agelaius phoeniceus
ring-necked duck	Aythya collaris
rough-winged swallow	Stelgidopteryx ruficollis
tree swallow	Tachycineta bicolor
wood duck	Aix sponsa

Other Wildlife - Amphibians and Reptiles
According to the NYSDEC, three species of turtles are known to utilize the lakes: spotted turtle (Chlemys guttata), snapping turtle (*Chelydra serpentina*), and the non-native red-eared slider (*Trachemys scripta elegans*). A variety of amphibians may also utilize the lakes during breeding season. **Table 3-6** below represents a list of species that may potentially utilize both lakes.

Table 3-6
REPTILES AND AMPHIBIANS

Common Name	Latin Name
bull frog	*Rana catesbeiana*
common gray treefrog	*Hyla versicolor*
green frog	*Rana clamitans*
Eastern garter snake	*Thamnophis sirtalis*
eastern milk snake	*Lampropettis d. triangulum*
Eastern ribbon snake	*Thamnophis s. sauritus*
Northern ringneck snake	*Diadophis punctatus*
Northern water snake	*Natrix sipedon sipedon*
painted turtle	*Chrysemys picta*
snapping turtle	*Chelydra serpentina*
stink pot	*Sternotherus odoratue*
Fowler's toad	*Bufo woodhousei fowleri*
Spotted turtle	*Chlemys guttata*
Red-eared slider	*Trachemys scripta elegans*

Rare, Threatened & Endangered Species

Correspondence with the NY Natural Heritage Program in December 2010 (**Appendix C-1**) indicated several current records for the Upper and Lower Lake area, including a Coastal plain pond community at Weeks Pond in Southaven County Park located below Lower Lake; screw-stem (*Bartonia paniculata ssp. paniculata* – endangered; last reported in 1997) in a fen-like area along Carmans River south of the Long Island Expressway; button sedge (*Carex bullata* – endangered; last reported in 2001) along the muddy banks of the Carmans River in the vicinity of the Long Island Expressway (LIE); Collins' sedge (*Carex collinsii* – endangered; last reported 1987) in red maple swamp northwest of Upper Lake and adjacent to river; few-flowered nutrush (*Scleria pauciflora var. caroliniana* – endangered; last reported in 1985) at Weeks Pond north of the LIE; whip nutrush (*Scleria triglomerata* – threatened; last reported in 1991) at Weeks Pond; and, fibrous bladderwort (*Utricularia striata* – threatened; last reported in 2004) at Weeks Pond. These species are listed as threatened or endangered in New York State, but are not federally listed. Among them, only those species which are located along the banks of the Carmans River below Lower Lake (screw-stem and button sedge) would be vulnerable to changes in water quality as a result of invasive/nuisance species control measures.

Historically, pale duckweed (*Lemna valdiviana*), an endangered floating plant, was last encountered in Upper Lake in 1938. This species has not been encountered at this location since 1938. No endangered species were ever recorded within Lower Lake.

Regulatory

A variety of agencies regulate actions within freshwater wetlands including the Army Corp of Engineers (ACOE), the New York State Department of State (NYSDOS), the NYSDEC, and the

Town. The following provides a discussion of each applicable regulatory aspect of the proposed dredging project.

The ACOE regulates all activities which occur within "waters of the United States" which are generally defined as wetlands and waterways that have a significant nexus to navigable waters. As a result, the proposed dredging project falls within the regulation of the ACOE. In order to streamline permits for common and/or beneficial actions, the ACOE issued Nationwide Permits that cover such actions. It is believed that the proposed project falls within Nationwide Permit #27 - "Aquatic Habitat Restoration, Establishment, and Enhancement Activities." This permit authorizes "Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services." It is noted that this permit is effective for a project with a two-year timeframe.

The NYSDOS regulates activities within Significant Coastal Fish & Wildlife Habitat (SCF&WH) Areas. Both lakes are located within the Carman's River SCF&WH (**Figure 9**) and as a result, Coastal Consistency Concurrence would be required from the NYSDOS prior to the initiation of dredging activities. This requires an evaluation of the project's consistency with NYSDOS applicable coastal policies. A copy of this evaluation can be found in **Appendix C-2**.

The NYSDEC regulates freshwater wetlands through Article 24, and Wild, Scenic and Recreational Rivers (WSRR) through Article 15, Title 27. Both Upper and Lower Lake are identified on the NYSDEC Freshwater Wetland Maps as part of wetland system number B-2, which are Article 24 regulated wetlands (**Figure 10**). Additionally, the lakes are located within the Recreational portion of the Carman's River WSRR (**Figure 11**). Article 24 requires a permit for work performed within a designated wetland or within 100 feet of a designated wetland, while Article 15, Title 27 requires a permit for activities within the designated WSRR corridor.

Finally, the Town also regulates activities within wetlands through Town Code Chapter 81, Wetlands and Waterways. This chapter regulates activities within wetlands and within 150 feet of wetlands. The proposed project would require a Chapter 81 permit from the Town prior to initiation of dredging activities.

3.3.2 Anticipated Impacts

<u>Vegetation</u>

The proposed dredging activities will result in the removal of vegetation from the lakes. As described in **Section 3.3.1**, the majority of vegetation encountered within the lakes is comprised of invasive species that are known to degrade the natural lake habitats. As described in **Section 2.3.2**, dredging activities may be preceded by vegetation harvesting. Regardless of whether or not this harvesting step is taken, lake vegetation will be removed. It is noted that some native species will be removed as a result of dredging activities; however, this is unavoidable due to the

size of the dredge needed for the size of each lake but will be limited as a result of the planned dredging of target areas dominated by invasives.

The proposed project has been designed to ensure that inadvertent transport of aquatic invasive species will not occur. The use of the turbidity curtain will assist in controlling the transport of vegetative matter from the area of active dredging. A screen grate will be installed at the spillway of each lake and will be cleaned at a frequency appropriate for the potential accumulation of material. The area within ¼ mile downstream of Lower Lake will be monitored during dredging of Lower Lake to ensure that no downstream transport of plant material occurs. If further measures are needed, an additional turbidity curtain will be added between the dredging area and the spillway of each lake. The sequence of dredging provides mitigation whereby Upper Lake is dredged first; this will allow any downstream transport of material to Lower Lake to be removed at the time Lower Lake is dredged. These measures will control dredging and limit potential for downstream impacts as a result of dredging.

The dredging program has been designed to minimize disturbance to vegetation surrounding the lakes. Lake access will involve temporary parking of trucks and cranes to access the lake for launching the dredge. The Town Park on Upper Lake will involve staging within grass and treed areas, and access to the lake from a sand beach area. Lower Lake activities may involve use of the Chase Bank site for staging and lake access; this site has groundcover vegetation in an open area and some shorefront vegetation along the lake. The Brookhaven Country Day School site may be used for routing of the conveyance pipe. This site has open earth paths in the valley that slopes up to higher elevation areas, and ground cover vegetation in the open area on the east side of the site where a pipe may traverse to the paved portions of the site. The Camp Olympia former access road may be a location for pipe routing; this area was a compacted dirt road. Roadside areas along Patchogue-Yaphank Road, Sills Road, Gerrard Street and Long Island Avenue may be used for routing of conveyance pipe, as well as the river bed of the Carmans River. In each of these cases, areas involve paved or stabilized areas, compacted earth trails, open areas with groundcover vegetation (primarily grass), or the open sandy bottom river bed of the Carmans River. As a result, significant erosion and/or loss of vegetation are not expected.

Any vegetation that is damaged will be restored with native species once the project is completed. It is noted that the BRT site to be used for dredged material dewatering will be restored in several phases. The sediment, once dewatered will be loaded and trucked from the site and transported to the Brookhaven Landfill in Yaphank[4]. Once complete, the dykes will be regraded to final grade according to the BRT site plan. BRT will then complete their site plan which will involve the permanent stabilization of the site for their intended use.

<u>Fish & Other Wildlife</u>

Dredging will occur only during the NYSDEC defined window of June 1 through October 31 to avoid potential impacts to spawning fish, turtle and amphibian populations. While wildlife species may utilize the lakes during the dredging window, it is expected these species will avoid the areas actively being dredged due to the localized disturbance. Despite this, incidental loss of

[4] Unless sediment remains on the site through NYSDEC authorization under a Beneficial Use Determination (BUD).

fish and wildlife species may occur as a result of the proposed dredging; however, this loss will be small and is not anticipated to impact fish and wildlife populations. In addition, dredging of the lakes will only be temporary [5] (estimated to be completed during one season) and as such, no long term negative impacts are anticipated to fish and wildlife. In fact, it is anticipated that fish and wildlife will ultimately benefit from the proposed project as dredging will improve the habitat within the lakes. Shoreline protection and erosion protection are addressed through controlled access, use of existing impacted areas and restoration if needed (not expected) and as such, impacts to fish and wildlife along the shorelines along the lakes are not anticipated. Consequently, fish, wildlife, vegetation, wetland resources and other ecological communities will not be adversely impacted and in fact, the project is expected to improve environmental conditions for ecological resources.

Rare, Threatened and Endangered Species

The rare, threatened and endangered species identified within the Carmans River in **Section 3.3.1** above are species that occur in wetland or upland habitats; no species that solely occur in waterbodies were identified by the NYNHP along the Carmans River. As the proposed project only involves dredging of the lakes, and pipe routes will utilize existing disturbed, compacted and/or cleared areas, no impacts to rare, threatened or endangered species are anticipated as a result of the proposed dredging.

Regulatory

As detailed in **Section 3.3.1** above, permits for the proposed dredging activities will be required from the ACOE, NYSDOS, NYSDEC and Town. Permit applications have been submitted or are in the process of being submitted to applicable agencies and dredging activity will not occur until all applicable permits have been secured. The Town has worked with the NYSDEC to ensure the project has been designed to meet all concerns associated with the proposed project and as such, no regulatory impacts are anticipated as a result of the proposed project.

3.3.3 Proposed Mitigation

- All areas of activity (i.e., dredge launch, lake access, staging and parking, conveyance pipe routes and the dewatering location) have been selected such that they involve paved, compacted, open and groundcover stable locations in order to minimize disturbance to natural vegetation.
- Dredging will only occur only between June 1 and October 31.
- Upper Lake will be dredged first so that any downstream lake deposition of plant or sediment matter will be removed during dredging of Lower Lake.
- A 1" minus screen grate will be installed at the spillway to each lake during dredging and/or harvesting. The screen grate will be checked and cleaned at a frequency appropriate for the observed conditions regarding accumulation of plant material.
- The area ¼ mile downstream of Lower Lake will be checked for release of plant material during dredging of Lower Lake.

[5] It is feasible to complete dredging in one season with the larger dredge; if smaller equipment is used, the activity would take place over 1-3 seasons. However, the duration each season is limited to the period from June 1 to October 31 and the number of seasons is also limited. The overall effort is restore the natural environmental health and aesthetics of the lakes, and as a result, fish and wildlife would benefit from the implementation of this controlled action.

- If additional protection is needed as a result of observations of turbidity or release of plant material, a second turbidity curtain will be installed between the dredge and the lake outlet.
- Any vegetation disturbed during the course of the project will restored after the project is complete. The BRT site will be rough graded after removal of dewatered dredged material, and will be stabilized by BRT as part of the completion of their site plan.
- Dredging activities will not commence until appropriate permits/authorizations from ACOE, NYSDOS, NYSDEC and the Town are secured.

4.0 HUMAN ENVIRONMENTAL RESOURCES

4.1 Visual/Aesthetics, Noise & Odors

4.1.1 Existing Conditions

Visual/Aesthetics

Currently, the aesthetics of the lakes are impacted by the presence and density of the invasive plants within the lakes. The lack of clear, open water is visually detrimental to persons wishing to utilize the lakes for recreational purposes. The lakes had been used for fishing, swimming, boating and general enjoyment; however, these recreational activities have been compromised as a result of the spread of nuisance aquatic vegetation. Photographs depicting the compromised views of the lake are provided in **Appendix D**.

The BRT site is currently under construction. This site will be under construction during the single season dredging project, and will ultimately be used as a rail terminal. The site is proximate to the LIE and Sills Road and is not considered to be a visual/aesthetic resource to the community.

Noise & Odors

Existing sources of noise surrounding the lakes is associated with the regular traffic and use of the residences and commercial uses that surround the lakes. No significant noise generators are located in the vicinity of the lakes as uses surrounding the lakes are primarily residential, vacant land, and commercial uses that do not generate large amounts of noise/activity. Construction noise is currently being generated at the BRT site, however, the site is located in an industrial area, adjacent to farmland, and is not in proximity to any public uses or residences that would be impacted by construction related noise.

As with existing noise, no significant odors are currently generated from the lakes or the BRT site. The lakes and surrounding area consists of vacant land and residences that do not generate odors. As the BRT site is an industrial area, odors generated from the site would be from construction vehicles, which are separated from residential and public uses.

4.1.2 Anticipated Impacts

Visual/Aesthetics

Removal of the invasive plants is anticipated to improve the aesthetics of the lakes by returning the lakes to their more natural conditions of clearer, open water. The improvement of the lake aesthetics is also anticipated to improve the recreational value of the lakes as the desirability to utilize the lakes will increase. Temporary aesthetic impacts may occur as a result of the proposed dredging operations and piping; however, these impacts are anticipated to be minimal as the project has been designed to utilize existing disturbed or unutilized lands to the maximum extent practicable. Conveyance pipe impacts will be minimized by ensuring the integrity of the pipe, burying and then restoring road crossings and placing booster pumps in areas to avoid impact to human and natural environments. All terrestrial activity will occur in already disturbed

areas and potential erosion impacts will be controlled through use of haybales/silt fence if necessary, and restoration after the project is complete.

The aesthetics of the BRT site will unchanged from that of an industrial construction area during the duration of the proposed project. It is not anticipated that the dewatering area will be visible from any surrounding roadways, residences, or public recreational sites. As a result, no impacts to aesthetic resources are anticipated at the BRT site from the proposed dewatering activities.

Overall, the project is necessary to restore the environmental and aesthetic health of the lakes, and while there may be short-term impacts, these will be of limited duration as a result of the dredging "window" of June 1 through October 31, as well as the intent to complete the project within one season (or at most, 3). Short term impacts will be limited by hours of operation and inherent project design factors as outlined in **Sections 2.3** and **2.4**.

Noise & Odors

Noise associated with active dredging may be generated as part of the proposed project. However, as dredging activities will be limited to the period from June 1 through October 31 and the maximum time dredging may occur is from 7 AM to 7 PM, six (6) days per week, noise impacts will be limited. Dredging activities themselves are not anticipated to produce odors; however, dewatering of dredge material may produce odors on the BRT site.[6] As the BRT dewatering area is located a minimum of 350 feet south of the nearest residence (which is located north of the LIE), dewatering odors are not anticipated to reach residences or public use areas.

It is noted that the community participates through a task force put in place by the Town with the express purpose of pursing the restoration of the lakes and an environmentally acceptable manner. This group seeks to restore the cultural and historic importance, and scenic and aesthetic resource that these lakes represent within the Yaphank community. As a result, temporary inconveniences associated with dredging of the lakes are known and will be understood by the community in order to accomplish the greater benefit of lake restoration. This may include temporary noise and odors which will occur during the operation itself. These inconveniences are short term and temporary, and as a result of the limited period of time of potential impacts, will be understood and managed within the community. Further, the operation will be limited to the period from June 1 through October 31 and the maximum time dredging may occur is from 7 AM to 7 PM, six (6) days per week. As a result, impacts associated with noise and odors from the proposed project are anticipated to be temporary.

4.1.3 Proposed Mitigation

- Dredging will occur from 7 AM to 7 PM, six (6) days per week; an abbreviated schedule may be instituted if warranted.
- The contractor will review and conform with the applicable requirements of the Brookhaven Noise Control Ordinance, Chapter 50 in the location and operation of equipment.

[6] It is noted that during the dredge material drying "Pilot" testing described in **Section 3.1.1**, no significant odors were detected in the enclosures created for experimental drying of sediments.

4.2 Transportation

4.2.1 Existing Conditions

Two county roads and several local roads currently surround the lakes. Upper Lake is located on the north side of Mill Road, west of Yaphank-Middle Island Road (CR 21). Lower Lake is located on the west side of Yaphank Avenue (CR 21), north of Long Island Avenue and south of Main Street (CR 21). These roadways carry local traffic through the area. Currently, no diversions or obstructions are impacting traffic flow along these roadways.

4.2.2 Anticipated Impacts

The proposed project involves use of a hydraulic dredge that will access both lakes from roads crossing the dams at the outlet side of each lake. The dredge will be trucked to the job site using a flatbed, removed from the flatbed and placed in the lake using a crane. The launch site for Upper Lake will be off of Mill Road at the south end of the lake near the dam, where truck access can be achieved and the dredge placed in water with a sufficient depth to float the rig. The launch site for Lower Lake will be off of Yaphank Avenue at the east end of the lake near the dam. Temporary road diversion may be needed to use a lane for staging; however, any such diversion will be short term and temporary, and once the dredge is launched, the flatbed truck and crane will be removed from the public road until dredging is completed when the process will be duplicated in reverse to remove the dredge.

During dredging, material will be pumped from the lake through assembled PVC pipe (16 inches or less) to an approved dewatering location. The current expected location is at the southeast corner of the Long Island Expressway and Sills Road, Yaphank, the site of the Brookhaven Rail Terminal (BRT), though other sites can be pursued and approved for dewatering if available. Several possible conveyance routes to the anticipated BRT dewatering site are proposed including, Sills Road, the Carmans River bed from Upper Lake to Camp Olympia, a former access road within Camp Olympia, Brookhaven Country Day School, and the NYSDEC Boat Launch (owned by Suffolk County), near the outlet of Lower Lake. Conveyance across the Long Island Expressway would use either the Sills Road overpass or a tunnel beneath the Long Island Expressway between Suffolk County farmland parcels east of Sills Road and West of Yaphank Avenue. Other road crossings will be achieved by temporary pavement sawcuts to place pipe below road grade under backfill; roads would be backfilled, compacted and resurfaced after completion of the project. Appropriate temporary traffic diversion methods will be employed by the contractor at the time of placement and removal of the conveyance pipe. In general, as road diversions and sawcuts will be temporary in nature, impacts to local traffic and roadways will be minimal.

4.2.3 Proposed Mitigation

- Road crossings needed for conveyance pipe will be achieved by temporary pavement sawcuts to place pipe below road grade under backfill; roads would be backfilled, compacted and resurfaced after completion of the project. Appropriate temporary traffic diversion methods will be employed by the contractor at the time of placement and removal of the conveyance pipe.

5.0 SUMMARY AND CONCLUSION

5.1 Summary

The proposed dredging project is consistent with the 2010 NP&V feasibility report, *Feasibility Study to Eradicate Aquatic Invasive/Nuisance Species in Canaan Lake, North Patchogue and Upper and Lower Lakes, Yaphank*. Invasive plants, once introduced to a lake system, spread and effectively outcompete other native species resulting in their exclusion and causing unfavorable conditions for fish and natural systems by reducing light, increasing plant density within the lake, limiting passage for fish, and changing the bio-geochemical processes that naturally occur. This results in impairment of the lake that causes the loss of recreational opportunities and aesthetic degradation. Removal of invasive aquatic plants from the lakes is necessary to restore the lakes.

The analyses and discussions of the anticipated impacts to the Study Area's resources discussed in **Sections 3.0** and **4.0** indicates that there is a potential for some impacts (such as temporary changes in water flows, temporary noise impacts, temporary transportation impacts), these impacts are not significant or adequate mitigation is in place. Specifically;

- The proposed project will result in the removal of 63,200 CY of material from Upper Lake and 50,000 CY of material from Lower Lake (total 113,300 CY). The majority of this will consists of accumulated soft sediment; however, as a result of the size dredge needed to complete the project in a timely fashion, some hard bottom sediment will be removed as well. Generally, both lakes will deepen and as a result, a reduction in plant matter will occur, further resulting in a reduction of sediment accumulation as the plant matter contributes to trapping and creation of soft sediments. As such, the proposed project will benefit the lakes as the lakes will be returned to a state which is closer to their natural conditions. This will result in a beneficial impact to both lakes.

- As previously indicated, topography on the BRT site will be permanently altered as a result of the activities associated with that project. Dewatering of sediments will only temporarily impact the topography of the BRT site as once dewatering is completed, the sediments will be removed and transported to the Brookhaven Landfill. While an option for a beneficial use of the sediments by incorporating the dewatered sediments into the site for restoration is an option the Town may pursue, this option will only be utilized if it can be beneficial to the BRT site. As such, neither scenario is expected to result in significant adverse impacts to the BRT site.

- Sediment testing revealed high concentrations of acetone and hexavalent chromium. As a result, a sediment pilot testing program was devised to determine the degradation/volatilization of acetone once removed from the lake. Results of the pilot testing program revealed that the sample sediment pile that was mixed achieved acetone at less than the limit of detection (and less than the guidance value) within 2-weeks, and the pile that was static achieved acetone at less than the limit of detection (and guidance value) within 6-weeks. This provides a conclusion that once the material is exposed to the atmosphere, acetone will degrade/volatilize to an acceptable concentration after 6-weeks of dewatering. Further sediment sampling was conducted for hexavalent chromium at station LL-8 in Lower Lake. This was completed in July 2012 and involved collection of one sample for TCLP (Toxicity Characteristic Leaching Procedure) analysis of the sample. This further sampling found that the sediment quality was below the TCLP guidance value for hexavalent chromium. The results of the sediment sampling program

has found that the material is acceptable to be dewatered at the BRT site, and is acceptable for disposition at the Brookhaven Landfill at Yaphank, subject to approval by the Town. Additionally, silt fencing will be utilized along the downslope site of the dredging piles to prevent erosion and sediment runoff. As a result, no significant impacts associated with sediments are anticipated to occur as a result of the proposed project.

- As a result of chemical constituents found in both the water and sediments it was determined that testing of the water removed during dredging was necessary to ensure that the quality was appropriate to recharge to groundwater or to the river system without further treatment. Testing of lake water was performed to determine recharge suitability. All analytes were less than the limit of detection except for acetone, which varied from 18.8 ug/l to 18.7 ug/l to 17.8 ug/l over time. The Class GA guideline is 50 ug/l, therefore, all acetone samples were less than the applicable guidance values. As a result, no impacts are anticipated to be associated with water removed from dredging activities.

- Booster pumps that utilize individuals wells may be required for sediment conveyance. The 16 inch dredge may require 1-2 booster pumps depending upon the length of piping from the lake to the dewatering area. A smaller dredge (8 or 10") will require 2-4 booster pumps. Booster pumps will be strategically placed to minimize impact on surrounding residents. In addition, booster pumps will require a water source in the form of a well at the location of each pump in order to provide the hydraulic medium to allow the dredged material slurry to be pumped along the pipe route. Any wells which exceed 45 gallon per minute (gpm) pumpage will obtain the appropriate NYSDEC well permit, if required. As a result, impacts to groundwater as a result of booster pump wells are anticipated to be small and temporary in nature as booster pumps and wells will be properly removed and abandoned once dredging activities are complete.

- The proposed dredging activities will result in the removal of vegetation from the lakes. The majority of vegetation encountered within the lakes is comprised of invasive species that are known to degrade the natural lake habitats. Dredging activities may be preceded by vegetation harvesting. Regardless of whether or not this harvesting step is taken, lake vegetation will be removed. It is noted that some native species will be removed as a result of dredging activities; however, this is unavoidable due to the size of the dredge needed for the size of each lake.

- The proposed project has been designed to ensure that inadvertent transport of aquatic invasive species will not occur. The use of the turbidity curtain will assist in controlling the transport of vegetative matter from the area of active dredging. A screen grate will be installed at the spillway of each lake and will be cleaned at a frequency appropriate for the potential accumulation of material. The area within ¼ mile downstream of Lower Lake will be monitored during dredging of Lower Lake to ensure that no downstream transport of plant material occurs. If further measures are needed, an additional turbidity curtain will be added between the dredging area and the spillway of each lake. The sequence of dredging provides mitigation whereby Upper Lake is dredged first; this will allow any downstream transport of material to Lower Lake to be removed at the time Lower Lake is dredged. These measures will control dredging and limit potential for downstream impacts as a result of dredging.

- Dredging will occur only during the NYSDEC defined window of June 1 through October 31 to avoid potential impacts to spawning fish, turtle and amphibian populations. While wildlife species may utilize the lakes during the dredging window, it is expected these species will avoid the areas actively being dredged due to the localized disturbance. Despite this, incidental loss of

fish and wildlife species may occur as a result of the proposed dredging; however, this loss will be small and is not anticipated to impact fish and wildlife populations. In addition, dredging of the lakes will only be temporary (estimated to be completed during one season) and as such, no long term negative impacts are anticipated to fish and wildlife. In fact, it is anticipated that fish and wildlife will ultimately benefit from the proposed project as dredging will improve the habitat within the lakes.

- Permits for the proposed dredging activities will be required from the ACOE, NYSDOS, NYSDEC and Town. Permit applications have been submitted or are in the process of being submitted to applicable agencies and dredging activity will not occur until all applicable permits have been secured.

- Removal of the invasive plants is anticipated to improve the aesthetics of the lakes by returning the lakes to their more natural conditions of clearer, open water. The improvement of the lake aesthetics is also anticipated to improve the recreational value of the lakes as the desirability to utilize the lakes will increase. Temporary aesthetic impacts may occur as a result of the proposed piping and dredge located within the lake, however, these impacts are anticipated to be minimal as the project has been designed to utilize existing disturbed or unutilized lands to the maximum extent practicable.

- Noise associated with active dredging may be generated as part of the proposed project. However, as dredging activities will be limited to the period from June 1 through October 31 and the maximum time dredging may occur is from 7 AM to 7 PM, six (6) days per week, noise impacts will be limited. Dredging activities themselves are not anticipated to produce odors; however, dewatering of dredge material may produce odors on the BRT site. As the BRT dewatering area is located a minimum of 350 feet south of the nearest residence (which is located north of the L.I.E.), dewatering odors are not anticipated to reach residences or public use areas.

- The proposed project involves use of a hydraulic dredge that will access both lakes from roads crossing the dams at the outlet side of each lake. The dredge will be trucked to the job site using a flatbed, removed from the flatbed and placed in the lake using a crane. The launch site for Upper Lake will be off of Mill Road at the south end of the lake near the dam, where truck access can be achieved and the dredge placed in water with a sufficient depth to float the rig. The launch site for Lower Lake will be off of Yaphank Avenue at the east end of the lake near the dam. Temporary road diversion may be needed to use a lane for staging; however, any such diversion will be short term and temporary, and once the dredge is launched, the flatbed truck and crane will be removed from the public road until dredging is completed when the process will be duplicated in reverse to remove the dredge.

5.2 Conclusion

In conclusion, based on the analyses contained herein, the Proposed Action is not expected to cause any significant adverse environmental impacts on the lakes and surrounding community. Rather, the Proposed Action has been designed to enhance and restore the lakes which are valued local resources.

With respect to the Proposed Action, the investigations described in this document are useful in determining the importance of the impacts based on the criteria included in the format for an Expanded EAF. The criteria are as follows:

- Probability of the impact occurring,
- The duration of the impact,
- Its irreversibility, including permanently lost resources of value,
- Whether the impact can or will be controlled,
- The regional consequence of the impact,
- The potential divergence from local needs and goals,
- Whether known objections to the project relate to this impact.

The environmental review process is a balancing process. The Proposed Action would remove invasive aquatic vegetation and nutrient rich soft sediments in order to ensure the lakes are preserved, protected and enhanced. The potential impacts identified in this document will be either insignificant or beneficial, so that no substantial adverse impacts are expected.

This report has been structured to describe in detail the Proposed Action and to discuss and analyze the issues and impacts that would concern the Town Board and community. The information contained in this document will be used by the Town Board to determine the environmental significance of the Proposed Action.

Based on the contents of this Expanded EAF, it is respectfully submitted that no significant adverse impacts have been identified with respect to the Proposed Action. If the Town Board is in agreement, a Negative Declaration under Title 6, New York Code of Rules and Regulations Part 617.7 could be considered.

FIGURES

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FIGURE 1
LOCATION MAP

Source: ESRI Web Mapping Service
Scale: 1 inch = 1,500 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

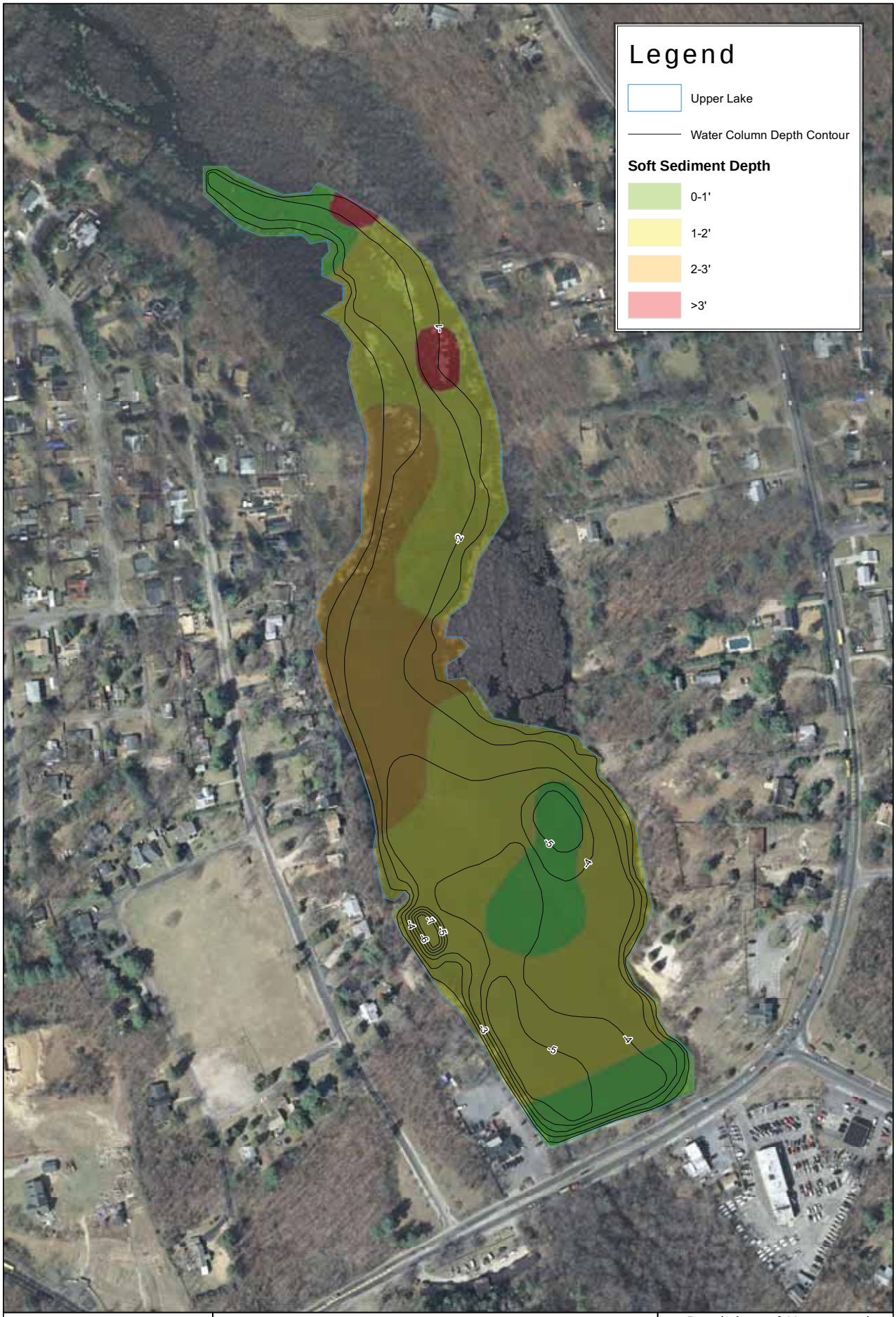

FIGURE 2
BATHYMETRY/SEDIMENTS - UPPER LAKE

Source: B. Laing, 2009

Scale: 1 inch = 200 feet

N

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

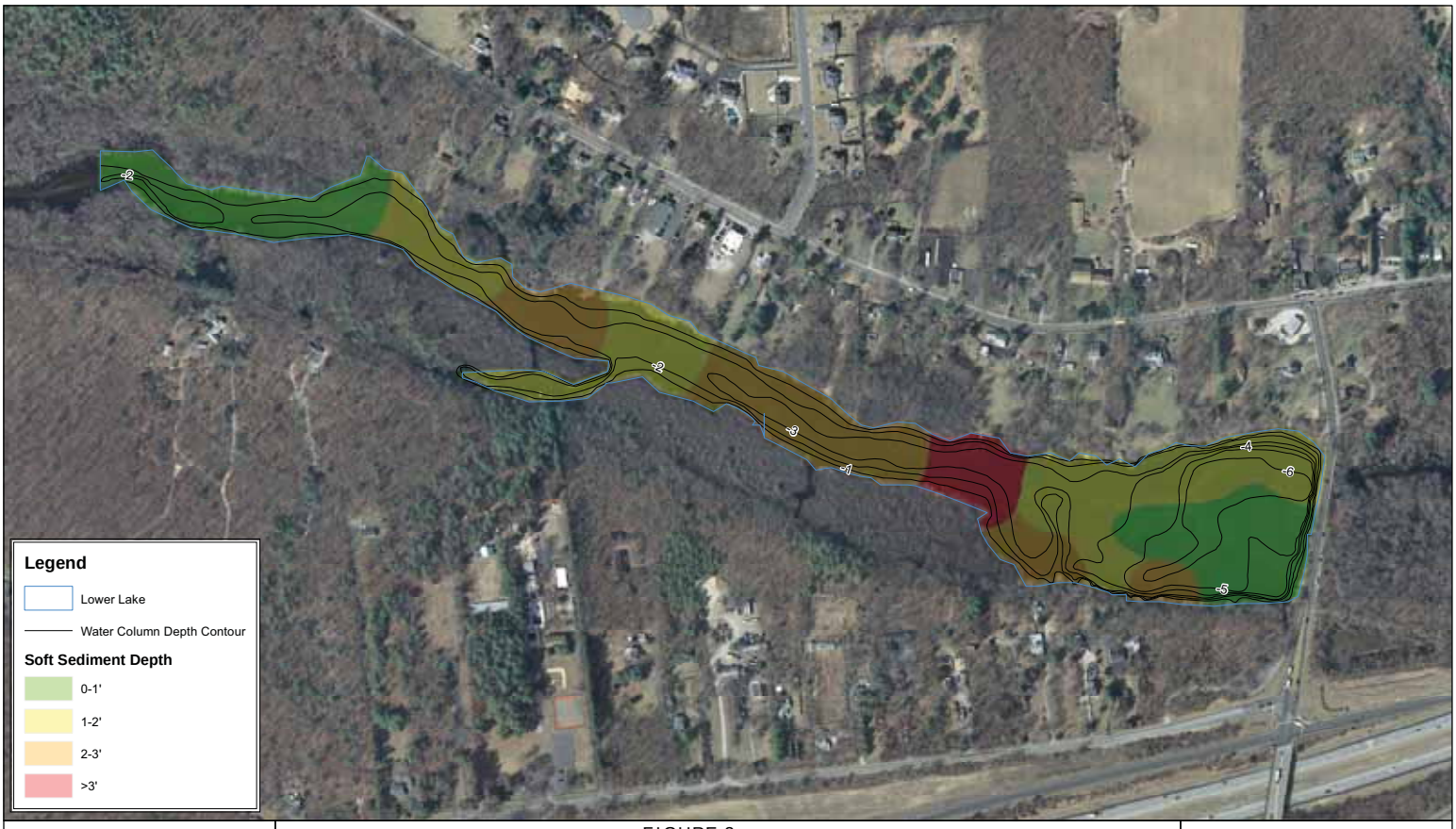

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FIGURE 3
BATHYMETRY / SEDIMENTS - LOWER LAKE

Source: B. Laing, 2009
Scale: 1 inch = 300 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

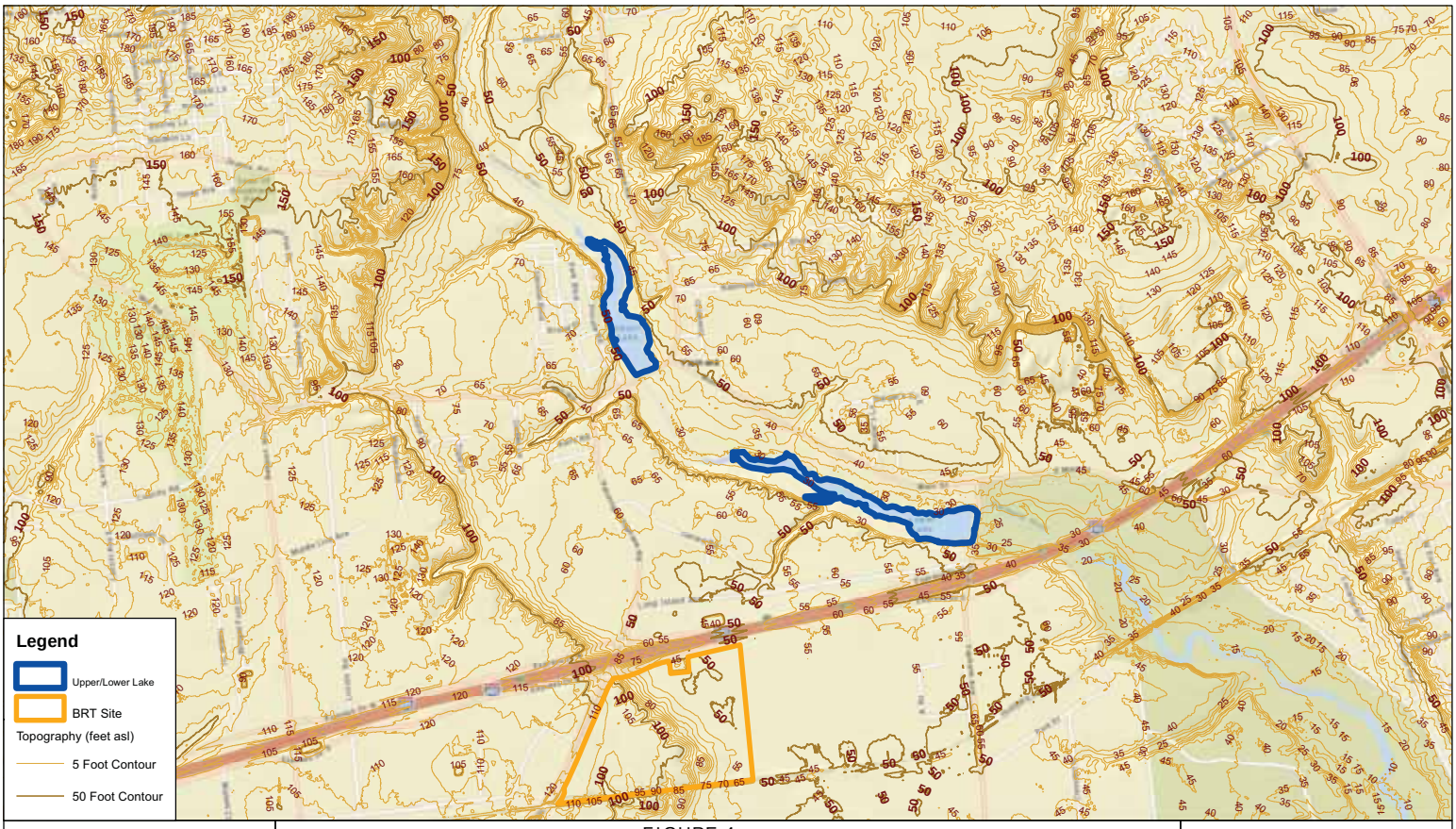

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FIGURE 4
REGIONAL TOPOGRAPHY

Source: ESRI Web Mapping Service; Suffolk County LiDAR, 2006
Scale: 1 inch = 1,500 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

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FIGURE 5
SOILS - BRT SITE

Source: ESRI Web Mapping Service; SSURGO Soil Database
Scale: 1 inch = 300 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

NELSON, POPE & VOORHIS, LLC
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FIGURE 6
WATER CLASSIFICATION - UPPER AND LOWER LAKES

Source: ESRI Web Mapping Service; NYSDEC
Scale: 1 inch = 700 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

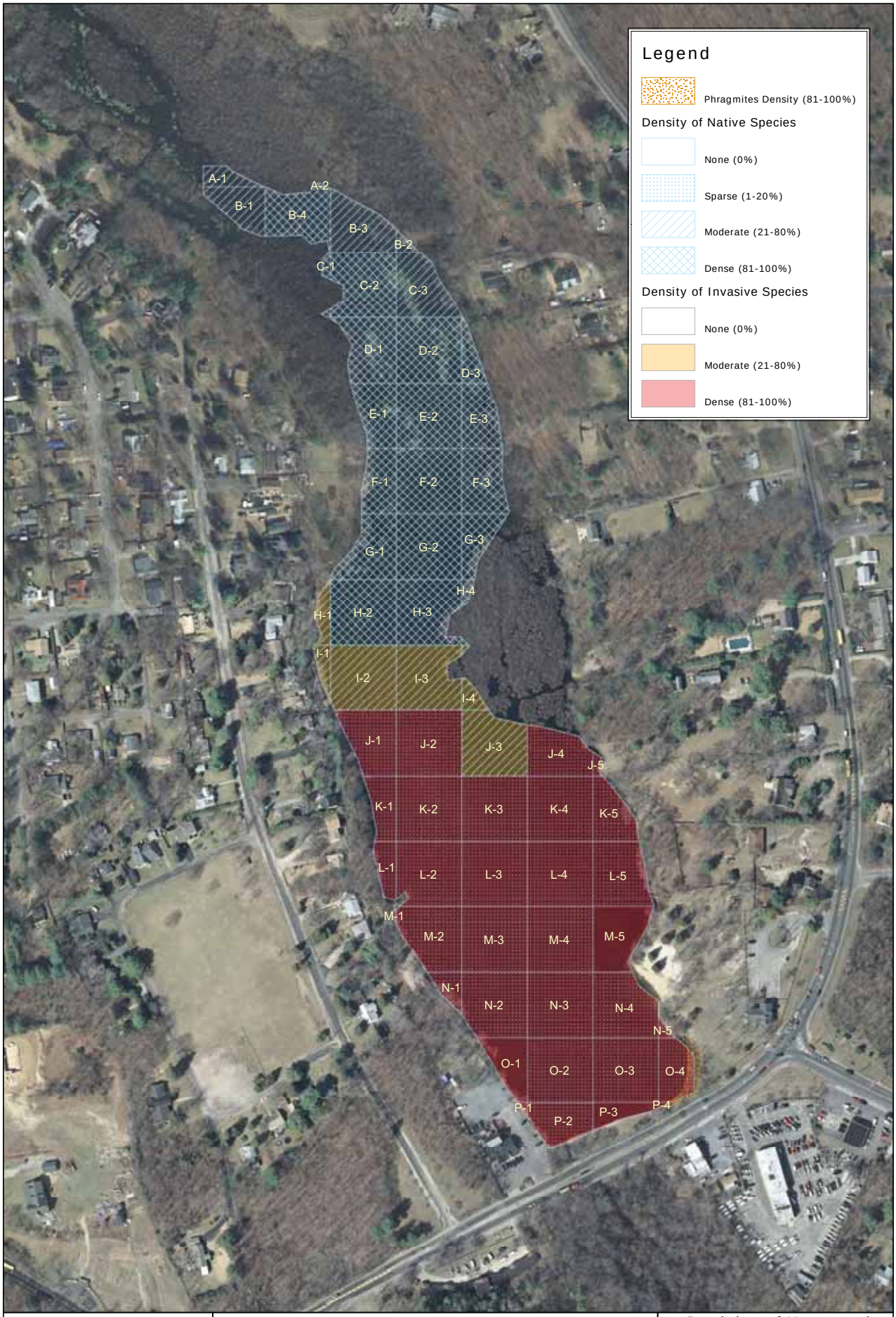

FIGURE 7
PLANT SPECIES - UPPER LAKE

Source: B. Laing, 2009; NYSGIS Orthoimagery Service, 2010
Scale: 1 inch = 200 feet

N

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

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FIGURE 8
PLANT SPECIES - LOWER LAKE

Source: B. Laing, 2009; NYSGIS Orthoimagery Service, 2010
Scale: 1 inch = 300 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

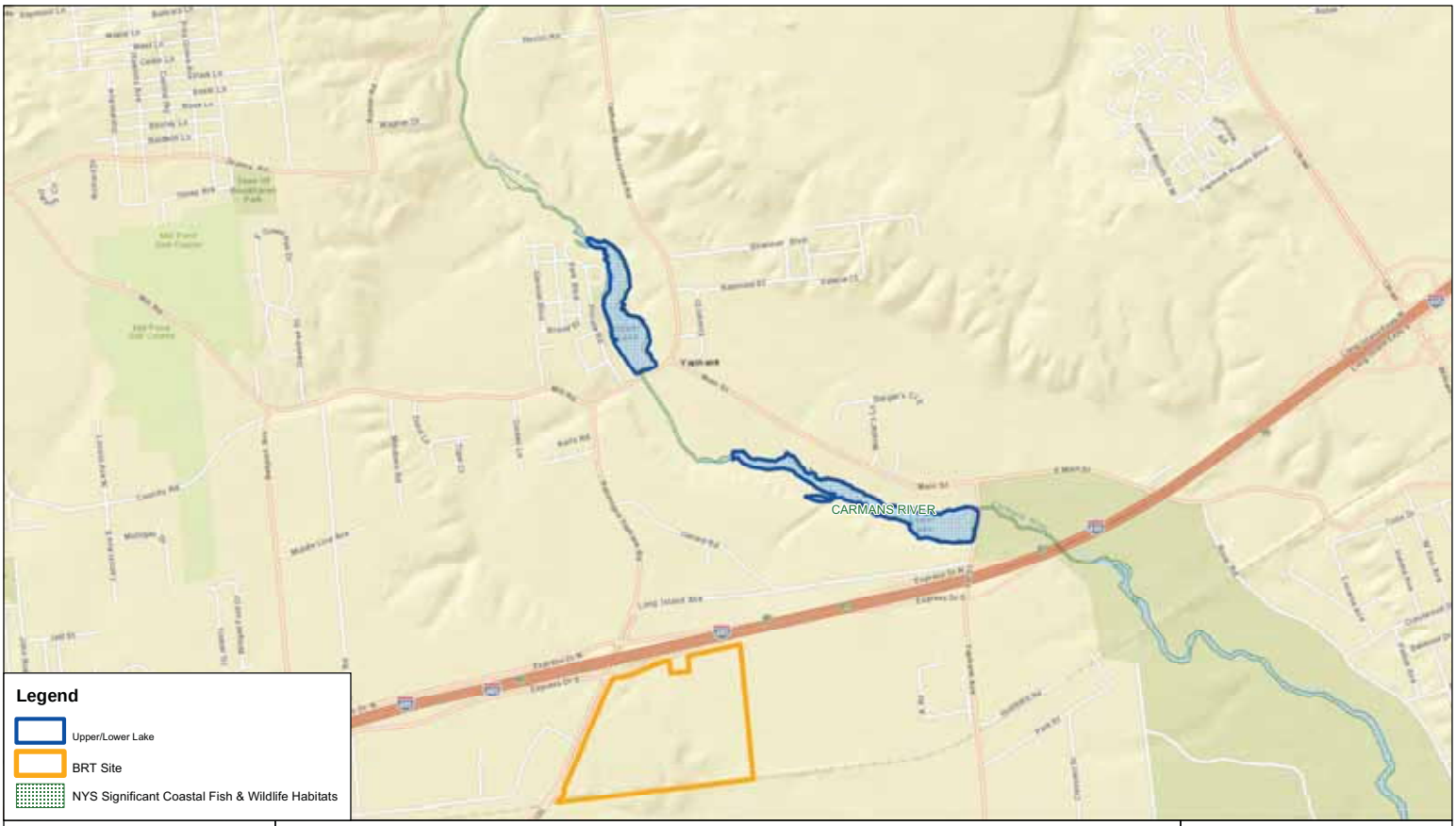

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FIGURE 9
NYS SIGNIFICANT COASTAL FISH & WILDLIFE HABITATS

Source: ESRI Web Mapping Service; NYSDOS
Scale: 1 inch = 1,500 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

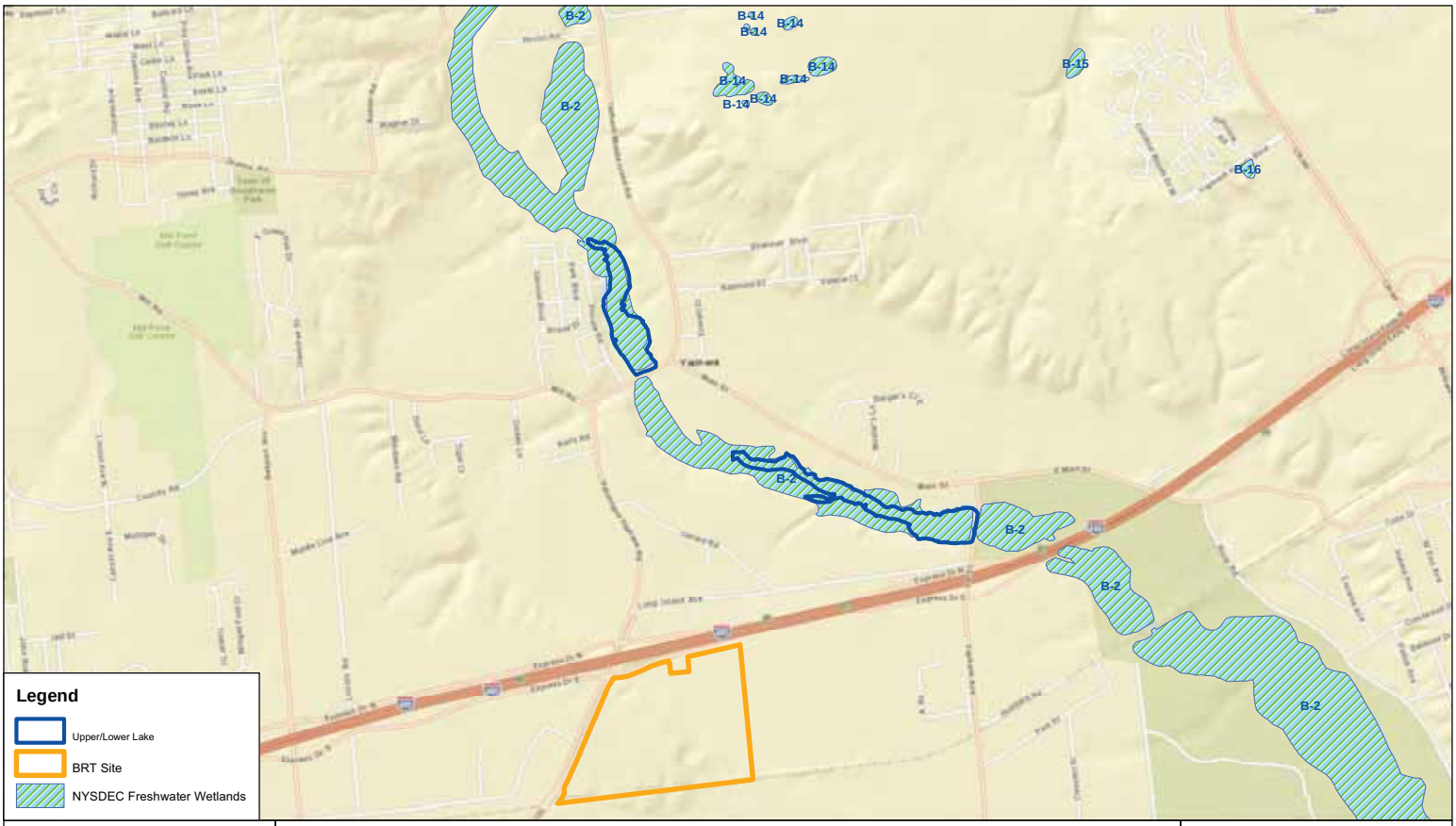

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FIGURE 10
NYSDEC FRESHWATER WETLANDS MAP

Source: ESRI Web Mapping Service; NYSDEC
Scale: 1 inch = 1,500 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

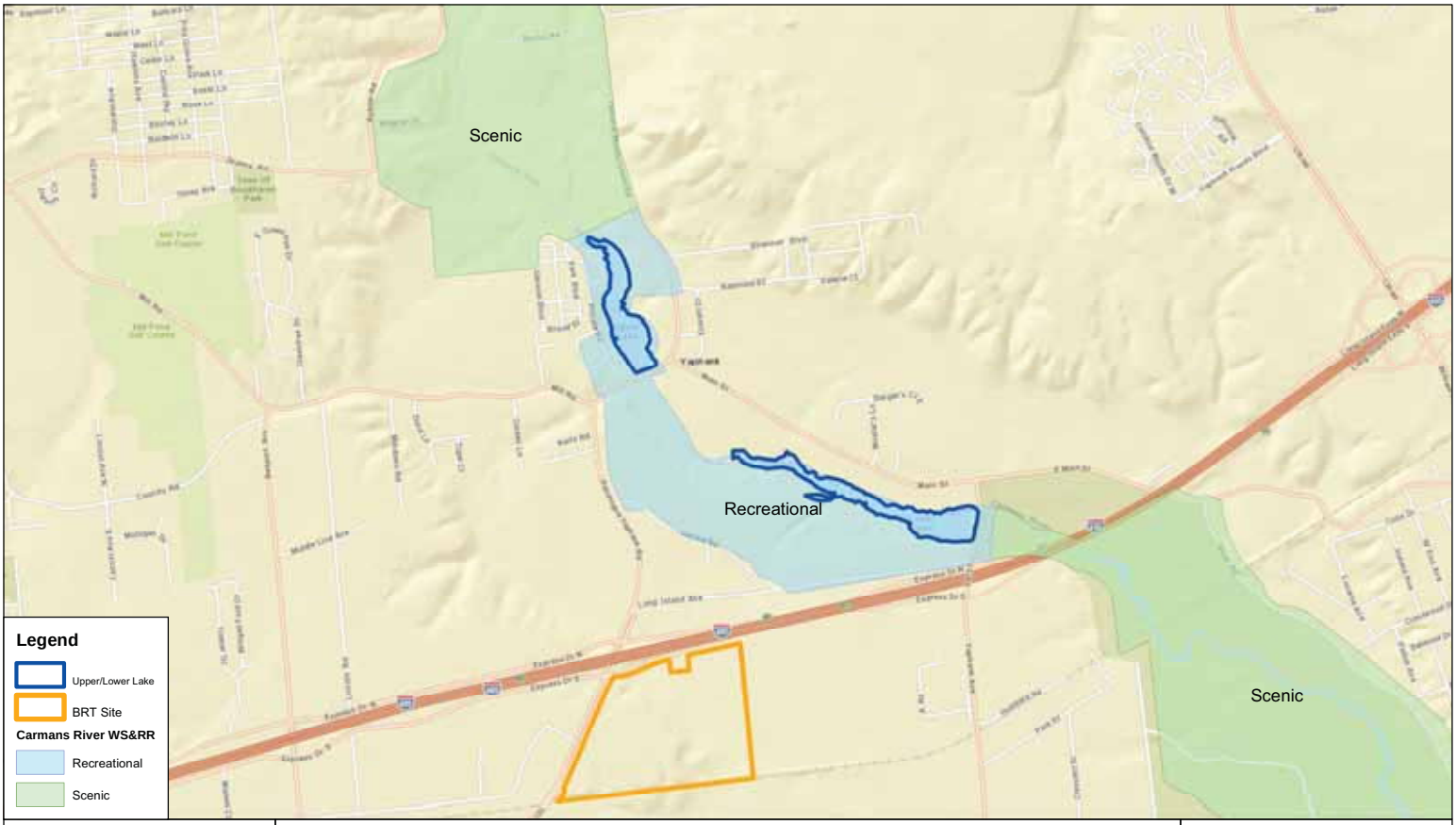

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FIGURE 11
NYS WILD, SCENIC AND RECREATIONAL RIVERS MAP

Source: ESRI Web Mapping Service; NYSDEC
Scale: 1 inch = 1,500 feet

Dredging of Upper and Lower Lakes for Control of Aquatic Invasive Species
Yaphank, NY
Expanded EAF

APPENDICES

APPENDIX A

Full Environmental Assessment Form (EAF) Parts I and II

617.20
Appendix A
State Environmental Quality Review
FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

THIS AREA FOR LEAD AGENCY USE ONLY

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☐ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which will not have a significant impact on the environment, therefore a negative declaration will be prepared.

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore a CONDITIONED negative declaration will be prepared.*

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore a positive declaration will be prepared.

*A Conditioned Negative Declaration is only valid for Unlisted Actions

Upper and Lower Lake Aquatic Invasive Species & Sediment Removal

Name of Action

Town of Brookhaven, Town Board

Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

website

Date

PART 1--PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action Upper and Lower Lake Aquatic Invasive Species & Sediment Removal

Location of Action (include Street Address, Municipality and County)

Southwest of Main Street and Yaphank Avenue, and northwest of Mill Road and Main Street, Yaphank

Name of Applicant/Sponsor Town of Brookhaven

Address One Independence Hill

City / PO Farmingville State NY Zip Code 11738

Business Telephone 631-451-9100

Name of Owner (if different) Same as above

Address

City / PO State Zip Code

Business Telephone

Description of Action:

The proposed project includes the hydraulic dredging of Upper and Lower Lake in Yaphank for the purpose of invasive species control. Approximately 58,800 cubic yards of sediment will be dredged from Upper Lake, and ± 53,500 cubic yards of material will be dredged from Lower Lake. The project includes use of turbidity curtains around the area of active dredging, screening at lake outlet and minimized impact from lake access. Dredging will occur during the period from June 1st through October 31st for ecological protection of aquatic species. Dredge material will be conveyed to an upland dewatering site using 8" to 10" PVC pipe and booster pump(s). Material will be dewatered at the Brookhaven Rail Terminal (BRT) site located on the southeast corner of Patchogue-Yaphank Road and the Long Island Expressway and disposed of at an approved upland location.

Please Complete Each Question--Indicate N.A. if not applicable

A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: ☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
   ☑ Forest ☐ Agriculture ☐ Other _____

2. Total acreage of project area: 43.31 acres.

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	_____ acres	20 acres
Forested	20* acres	_____ acres
Agricultural (Includes orchards, cropland, pasture, etc.)	_____ acres	_____ acres
Wetland (Freshwater or tidal as per Articles 24,25 of ECL)	_____ acres	_____ acres
Water Surface Area	23.31 acres	23.31 acres
Unvegetated (Rock, earth or fill)	_____ acres	_____ acres
Roads, buildings and other paved surfaces	_____ acres	_____ acres
Other (Indicate type) _____	_____ acres	_____ acres

* Note: Forested area is BRT site which is being cleared under approvals for the rail terminal site plan.

3. What is predominant soil type(s) on project site? PlA, HaA, RdA, RdB, At

   a. Soil drainage: ☑ Well drained 50 % of site ☐ Moderately well drained _____% of site.
   ☑ Poorly drained 50 % of site

   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? N/A acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ☐ Yes ☒ No

   a. What is depth to bedrock ± 1,400 (in feet)

5. Approximate percentage of proposed project site with slopes:

   ☑ 0-10% 100 % ☐ 10- 15% _____ % ☐ 15% or greater _____ %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? ☒ Yes ☐ No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? ☐ Yes ☒ No

8. What is the depth of the water table? ± 45 (in feet)

9. Is site located over a primary, principal, or sole source aquifer? ☒ Yes ☐ No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? ☒ Yes ☐ No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered? ■ Yes ☐ No

According to:

NYS DEC Natural Heritage Program database

Identify each species:

Screw-stem (Bartonia paniculata), Button Sedge (Carex bullata), Collins' Sedge (Carex collinsii), Few-flowered Nutrush (Scleria pauciflora), Whip Nutrush (Scieria triglomerata), Fibrous Bladderwort (Utricularia striata).
Trumpet Swan (Cygnus buccinator)

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?

☐ Yes ■ No

Describe:

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

■ Yes ☐ No

If yes, explain:

Upper and Lower Lakes are a recreational and open space resource in the community. The recreational value of the lakes is compromised by aquatic invasive plants. The purpose of the project is to remove the invasive species to preserve the environmental and recreational value.

14. Does the present site include scenic views known to be important to the community? ■ Yes ☐ No

Views of Upper and Lower Lake.

15. Streams within or contiguous to project area:

Carmans River

a. Name of Stream and name of River to which it is tributary

Carmans River terminates at Great South Bay.

16. Lakes, ponds, wetland areas within or contiguous to project area:

Upper Lake and Lower Lake

b. Size (in acres):

±46

17. Is the site served by existing public utilities? ☐ Yes ☐ No N/A

a. If YES, does sufficient capacity exist to allow connection? ☐ Yes ☐ No

b. If YES, will improvements be necessary to allow connection? ☐ Yes ☐ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☒ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? ☒ Yes ☐ No

20. Has the site ever been used for the disposal of solid or hazardous wastes? ☐ Yes ☒ No

B. Project Description

Note: Ordinary historic sediment deposition has occurred from stormwater runoff. Separate measures are being undertaken to control runoff.

1. Physical dimensions and scale of project (fill in dimensions as appropriate).

a. Total contiguous acreage owned or controlled by project sponsor: 23.31* acres.

*Note: 20 acres to be used for dewatering with permission of BRT.

b. Project acreage to be developed: N/A acres initially; _____ acres ultimately.

c. Project acreage to remain undeveloped: 23.31 acres.

d. Length of project, in miles: N/A (if appropriate)

e. If the project is an expansion, indicate percent of expansion proposed. N/A %

f. Number of off-street parking spaces existing N/A ; proposed _____

g. Maximum vehicular trips generated per hour: N/A (upon completion of project)?

h. If residential: Number and type of housing units:

	One Family	Two Family	Multiple Family	Condominium
Initially	N/A			
Ultimately				

i. Dimensions (in feet) of largest proposed structure: N/A height; _____ width; _____ length.

j. Linear feet of frontage along a public thoroughfare project will occupy is? _____ ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site? 112,300 tons/cubic yards.

3. Will disturbed areas be reclaimed ☒ Yes ☐ No ☐ N/A

a. If yes, for what intended purpose is the site being reclaimed?

Aesthetics and recreation.

b. Will topsoil be stockpiled for reclamation? ☐ Yes ☐ No N/A

c. Will upper subsoil be stockpiled for reclamation? ☐ Yes ☐ No N/A

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 20 acres.

Note: Forested area is BRT site which is being cleared under approvals for the rail terminal site plan.

5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?

☐ Yes ☒ No

6. If single phase project: Anticipated period of construction: 12* months, (including demolition)

7. If multi-phased:

* Note: Dredging will only occur between June 1 and Oct. 31 over a 4 month window. Number of phases/seasons depends on contractor capabilities and hours of operation. Dewatering area will be excavated once sediment is dry (6±months). A single season project may be on the order of 12 months subject to the above factors.

a. Total number of phases anticipated 2 (number)

b. Anticipated date of commencement phase 1: Jun month 2013 year, (including demolition)

c. Approximate completion date of final phase: Oct month 2014 year.

d. Is phase 1 functionally dependent on subsequent phases? ☐ Yes ☒ No

8. Will blasting occur during construction? ☐ Yes ☒ No

9. Number of jobs generated: during construction 12; after project is complete 0

10. Number of jobs eliminated by this project 0 .

11. Will project require relocation of any projects or facilities? ☐ Yes ☒ No

If yes, explain:

12. Is surface liquid waste disposal involved? ☒ Yes ☐ No

Dewatering liquid expected to be pumped back to the lake/river system from where is originated.

a. If yes, indicate type of waste (sewage, industrial, etc) and amount

b. Name of water body into which effluent will be discharged

13. Is subsurface liquid waste disposal involved? ☒ Yes ☐ No Type Some leaching of dewatering liquid to class GA groundwater is expected.

14. Will surface area of an existing water body increase or decrease by proposal? ☐ Yes ☒ No

If yes, explain:

15. Is project or any portion of project located in a 100 year flood plain? ☒ Yes ☐ No

16. Will the project generate solid waste? ☒ Yes ☐ No

a. If yes, what is the amount per month? N/A tons

b. If yes, will an existing solid waste facility be used? ☒ Yes ☐ No

c. If yes, give name Brookhaven Landfill ; location Yaphank

d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? ☐ Yes ☒ No

e. If yes, explain:

17. Will the project involve the disposal of solid waste? ☐ Yes ☒ No

    a. If yes, what is the anticipated rate of disposal? _____ tons/month.

    b. If yes, what is the anticipated site life? _____ years.

18. Will project use herbicides or pesticides? ☐ Yes ☒ No

19. Will project routinely produce odors (more than one hour per day)? ☒ Yes ☐ No

20. Will project produce operating noise exceeding the local ambient noise levels? ☒ Yes ☐ No

21. Will project result in an increase in energy use? ☐ Yes ☒ No

    If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity N/A gallons/minute.

23. Total anticipated water usage per day N/A gallons/day.

24. Does project involve Local, State or Federal funding? ☒ Yes ☐ No

    If yes, explain:

Town of Brookhaven funding for dredging and sediment transport.

25. Approvals Required:

			Type	Submittal Date
City, Town, Village Board	■ Yes	☐ No	Town of Brookhaven wetlands and waterways permit	Pending
City, Town, Village Planning Board	☐ Yes	■ No		
City, Town Zoning Board	☐ Yes	■ No		
City, County Health Department	☐ Yes	■ No		
Other Local Agencies	☐ Yes	■ No		
Other Regional Agencies	■ Yes	☐ No	Pine Barrens-no jurisdiction determination or approval	Pending
State Agencies	■ Yes	☐ No	NYS DEC dredging permit/ wetlands permit/wild, scenic recreational rivers permit	Pending
Federal Agencies	■ Yes	☐ No	ACOE Nationwide permit	Pending

C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? ☐ Yes ■ No

If Yes, indicate decision required:

☐ Zoning amendment ☐ Zoning variance ☐ New/revision of master plan ☐ Subdivision

☐ Site plan ☐ Special use permit ☐ Resource management plan ☐ Other

2. What is the zoning classification(s) of the site?

Upper and Lower Lakes - A-1 Residence
Dewatering Area - L-2 Industrial

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

N/A

4. What is the proposed zoning of the site?

Same as existing.

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

N/A

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? ☒ Yes ☐ No

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

Land Use - Residential, Commercial, Vacant land, Industrial, County facilities.

Zoning - A-1 Residential, L-1 and L-2 Industrial.

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile? ☒ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? N/A

   a. What is the minimum lot size proposed? _____

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection?

☐ Yes ☒ No

a. If yes, is existing capacity sufficient to handle projected demand? ☐ Yes ☐ No

12. Will the proposed action result in the generation of traffic significantly above present levels? ☒ Yes ☐ No

a. If yes, is the existing road network adequate to handle the additional traffic. ☒ Yes ☐ No

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name Prepared by Charles J. Voorhis, CEP, AICP Date 12/10/12

Signature

Title Consultant to Town; Nelson, Pope & Voorhis

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.

PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

Responsibility of Lead Agency

General Information (Read Carefully)

! In completing the form the reviewer should be guided by the question: Have my responses and determinations been **reasonable?** The reviewer is not expected to be an expert environmental analyst.

! The **Examples** provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.

! The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.

! The number of examples per question does not indicate the importance of each question.

! In identifying impacts, consider long term, short term and cumulative effects.

Instructions (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer **Yes** if there will be **any** impact.

b. **Maybe** answers should be considered as **Yes** answers.

c. If answering **Yes** to a question then check the appropriate box(column 1 or 2)to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an Impact will be potentially large (column 2) does not mean that it is also necessarily **significant**. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the **Yes** box in column 3. A **No** response indicates that such a reduction is not possible. This must be explained in Part 3.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
Impact on Land			
1. Will the Proposed Action result in a physical change to the project site? NO ☐ YES ☒			
Examples that would apply to column 2			
• Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%.	☐	☐	☐ Yes ☐ No
• Construction on land where the depth to the water table is less than 3 feet.	☒	☐	☐ Yes ☐ No
• Construction of paved parking area for 1,000 or more vehicles.	☐	☐	☐ Yes ☐ No
• Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface.	☐	☐	☐ Yes ☐ No
• Construction that will continue for more than 1 year or involve more than one phase or stage.	☒	☐	☐ Yes ☐ No
• Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Construction or expansion of a santary landfill.	☐	☐	☐ Yes	☐ No
• Construction in a designated floodway.	■	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)

■ NO ☐ YES

• Specific land forms:	☐	☐	☐ Yes	☐ No

Impact on Water

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)

☐ NO ■ YES

Examples that would apply to column 2

• Developable area of site contains a protected water body.	■	☐	☐ Yes	☐ No
• Dredging more than 100 cubic yards of material from channel of a protected stream.	■	☐	☐ Yes	☐ No
• Extension of utility distribution facilities through a protected water body.	☐	☐	☐ Yes	☐ No
• Construction in a designated freshwater or tidal wetland.	☐	☐	☐ Yes	☐ No
• Other impacts:	■	☐	☐ Yes	☐ No

Dredging is anticipated to provide a benefit to the lakes which are currently impacted by the presence of invasive species.

4. Will Proposed Action affect any non-protected existing or new body of water?

■ NO ☐ YES

Examples that would apply to column 2

• A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease.	☐	☐	☐ Yes	☐ No
• Construction of a body of water that exceeds 10 acres of surface area.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
5. Will Proposed Action affect surface or groundwater quality or quantity? ☐ NO ☒ YES				
Examples that would apply to column 2				
• Proposed Action will require a discharge permit.	☐	☐	☐ Yes	☐ No
• Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action.	☐	☐	☐ Yes	☐ No
• Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity.	☐	☐	☐ Yes	☐ No
• Construction or operation causing any contamination of a water supply system.	☐	☐	☐ Yes	☐ No
• Proposed Action will adversely affect groundwater.	☐	☐	☐ Yes	☐ No
• Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity.	☐	☐	☐ Yes	☐ No
• Proposed Action would use water in excess of 20,000 gallons per day.	☐	☐	☐ Yes	☐ No
• Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions.	☒	☐	☐ Yes	☐ No
• Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow residential uses in areas without water and/or sewer services.	☐	☐	☐ Yes	☐ No
• Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities.	☐	☐	☐ Yes	☐ No
• Other impacts:	☒	☐	☐ Yes	☐ No

Surface water quality will be improved through the removal of sediments containing high levels of nutrients.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
   ☐ NO ☒ YES

Examples that would apply to column 2

• Proposed Action would change flood water flows	☐	☐	☐ Yes	☐ No
• Proposed Action may cause substantial erosion.	☒	☐	☐ Yes	☐ No
• Proposed Action is incompatible with existing drainage patterns.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow development in a designated floodway.	☐	☐	☐ Yes	☐ No
• Other impacts:	☒	☐	☐ Yes	☐ No

The dewatering site will have drainage flow altered, however, water separated from the dredge material will be piped back to the river.

IMPACT ON AIR

7. Will Proposed Action affect air quality?
   ☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will induce 1,000 or more vehicle trips in any given hour.	☐	☐	☐ Yes	☐ No
• Proposed Action will result in the incineration of more than 1 ton of refuse per hour.	☐	☐	☐ Yes	☐ No
• Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow an increase in the amount of land committed to industrial use.	☐	☐	☐ Yes	☐ No
• Proposed Action will allow an increase in the density of industrial development within existing industrial areas.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON PLANTS AND ANIMALS

8. Will Proposed Action affect any threatened or endangered species?
   ☐ NO ☒ YES

Examples that would apply to column 2

• Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site.	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Removal of any portion of a critical or significant wildlife habitat.	☐	☐	☐ Yes	☐ No
• Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.	☐	☐	☐ Yes	☐ No
• Other impacts:	■	☐	☐ Yes	☐ No

Project will occur in areas with known rare/threatened/endangered species, however, project will occur outside of breeding season.

9. Will Proposed Action substantially affect non-threatened or non-endangered species?

☐ NO ■ YES

Examples that would apply to column 2

• Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species.	☐	☐	☐ Yes	☐ No
• Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation.	☐	☐	☐ Yes	☐ No
• Other impacts:	■	☐	☐ Yes	☐ No

Project will occur within two lakes known to be utilized by a variety of fish and wildlife, however, project will occur outside of breeding season.

IMPACT ON AGRICULTURAL LAND RESOURCES

10. Will Proposed Action affect agricultural land resources?

■ NO ☐ YES

Examples that would apply to column 2

• The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.)	☐	☐	☐ Yes	☐ No
• Construction activity would excavate or compact the soil profile of agricultural land.	☐	☐	☐ Yes	☐ No
• The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land.	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff).	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON AESTHETIC RESOURCES

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
☐ NO ☒ YES

Examples that would apply to column 2

• Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural.	☐	☐	☐ Yes	☐ No
• Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource.	☐	☐	☐ Yes	☐ No
• Project components that will result in the elimination or significant screening of scenic views known to be important to the area.	☐	☐	☐ Yes	☐ No
• Other impacts:	☒	☐	☐ Yes	☐ No

Project will result in a reduction in plant material in the lakes improving the visual quality of the lakes.

IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places.	☐	☐	☐ Yes	☐ No
• Any impact to an archaeological site or fossil bed located within the project site.	☐	☐	☐ Yes	☐ No
• Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory.	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON OPEN SPACE AND RECREATION

13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?
☐ NO ☒ YES

Examples that would apply to column 2

• The permanent foreclosure of a future recreational opportunity.	☐	☐	☐ Yes	☐ No
• A major reduction of an open space important to the community.	☐	☐	☐ Yes	☐ No
• Other impacts:	☒	☐	☐ Yes	☐ No

Project will result in improved recreational access to the lakes as the lakes cannot currently be utilized due to plant density.

IMPACT ON CRITICAL ENVIRONMENTAL AREAS

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?
☐ NO ☒ YES

List the environmental characteristics that caused the designation of the CEA.

Project is located in the Middle Island-Yaphank CEA. The project will improve the natural conditions of the lakes by removing invasive species.

Examples that would apply to column 2

• Proposed Action to locate within the CEA?	☒	☐	☐ Yes	☐ No
• Proposed Action will result in a reduction in the quantity of the resource?	☐	☐	☐ Yes	☐ No
• Proposed Action will result in a reduction in the quality of the resource?	☐	☐	☐ Yes	☐ No
• Proposed Action will impact the use, function or enjoyment of the resource?	☒	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

IMPACT ON TRANSPORTATION

15. Will there be an effect to existing transportation systems?

☐ NO ☒ YES

Examples that would apply to column 2

• Alteration of present patterns of movement of people and/or goods.	☒	☐	☐ Yes	☐ No
• Proposed Action will result in major traffic problems.	☒	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

Short term traffic impacts may occur as a result of construction activities.

IMPACT ON ENERGY

16. Will Proposed Action affect the community's sources of fuel or energy supply?

☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality.	☐	☐	☐ Yes	☐ No
• Proposed Action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two family residences or to serve a major commercial or industrial use.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

NOISE AND ODOR IMPACT

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

☐ NO ☒ YES

Examples that would apply to column 2

• Blasting within 1,500 feet of a hospital, school or other sensitive facility.	☐	☐	☐ Yes	☐ No
• Odors will occur routinely (more than one hour per day).	☐	☐	☐ Yes	☐ No
• Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures.	☐	☐	☐ Yes	☐ No
• Proposed Action will remove natural barriers that would act as a noise screen.	☐	☐	☐ Yes	☐ No
• Other impacts:	☒	☐	☐ Yes	☐ No

Dredge material may release odors from decomposition, however, material will be dewatered in an existing industrial area located a minimum of 350 feet from the nearest residence.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change	

IMPACT ON PUBLIC HEALTH

18. Will Proposed Action affect public health and safety?
☒ NO ☐ YES

• Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission.	☐	☐	☐ Yes	☐ No
• Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.)	☐	☐	☐ Yes	☐ No
• Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids.	☐	☐	☐ Yes	☐ No
• Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.	☐	☐	☐ Yes	☐ No
• Other impacts:	☐	☐	☐ Yes	☐ No

IMPACT ON GROWTH AND CHARACTER OF COMMUNITY OR NEIGHBORHOOD

19. Will Proposed Action affect the character of the existing community?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%.	☐	☐	☐ Yes	☐ No
• The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project.	☐	☐	☐ Yes	☐ No
• Proposed Action will conflict with officially adopted plans or goals.	☐	☐	☐ Yes	☐ No
• Proposed Action will cause a change in the density of land use.	☐	☐	☐ Yes	☐ No
• Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community.	☐	☐	☐ Yes	☐ No
• Development will create a demand for additional community services (e.g. schools, police and fire, etc.)	☐	☐	☐ Yes	☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Proposed Action will set an important precedent for future projects.	☐	☐	☐ Yes ☐ No
• Proposed Action will create or eliminate employment.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

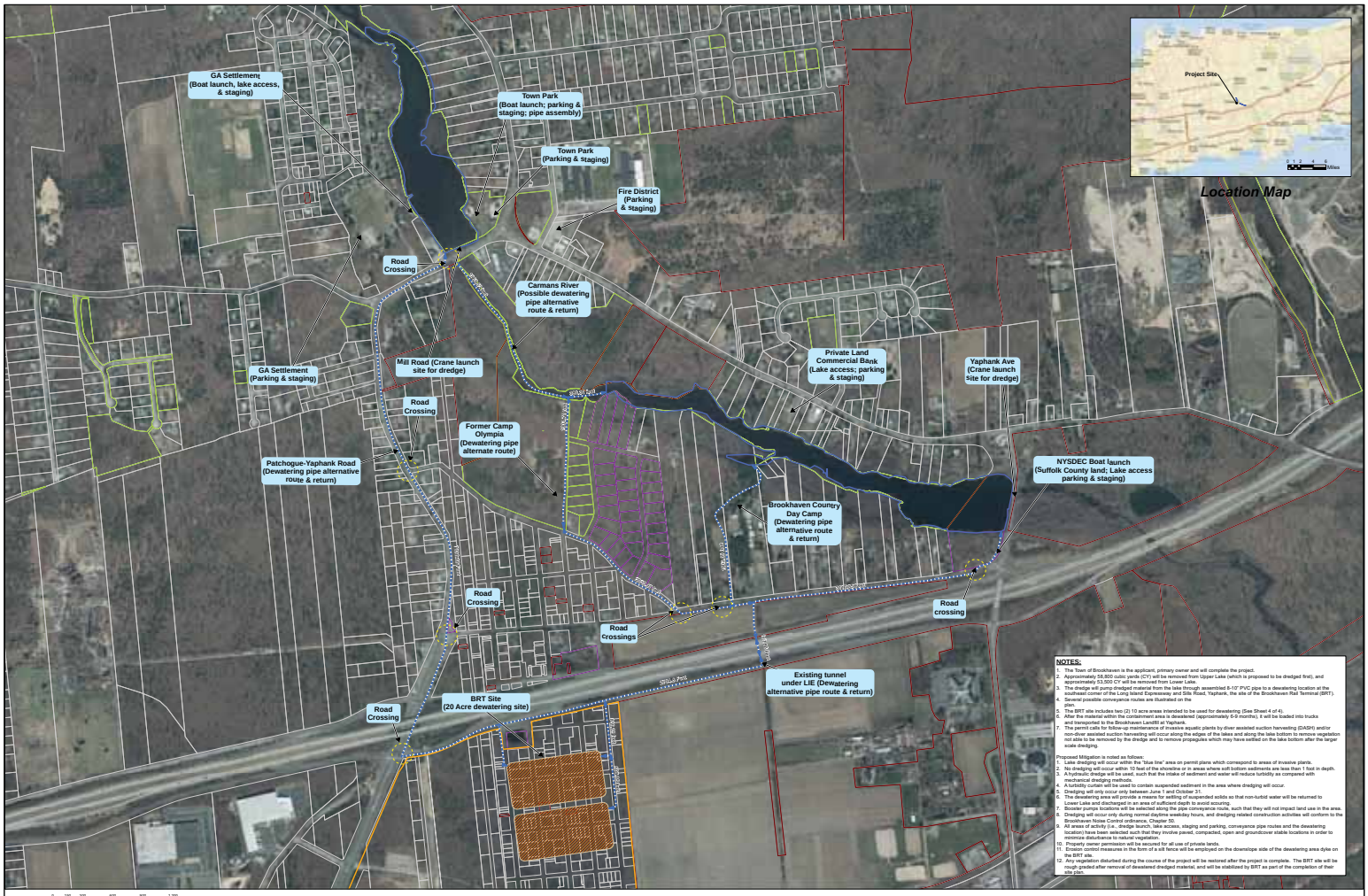
20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?

☒ NO ☐ YES

If Any Action in Part 2 Is Identified as a Potential Large Impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3

APPENDIX B

Permit Plans



Upper & Lower Lake Aquatic Invasive Species & Sediment Removal

Yaphank, NY

Legend

- Upper/Lower Lake Dredge Area
- BRT Site
- Tax Parcels
- Dewatering Pipe & Return
- BRT Site Dewatering Areas

Publicly Owned Lands

- Town of Brookhaven
- New York State
- Suffolk County
- Federally Owned

Owner/Applicant:
Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

Sheet No.
1 of 4

Overall Permit Plan

Drawn By: LU

Checked by: CV

Date: 10/17/2012

Upper & Lower Lake Aquatic Invasive Species & Sediment Removal

Yaphank, NY

Legend

- Upper/Lower Lake Dredge Area
- Dewatering Pipe
- Tax Parcels

Topography

- 2 Foot Contour
- 10 Foot Contour

Publicly Owned Lands

- Town of Brookhaven
- New York State
- Suffolk County
- Federally Owned

Owner/Applicant:
Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

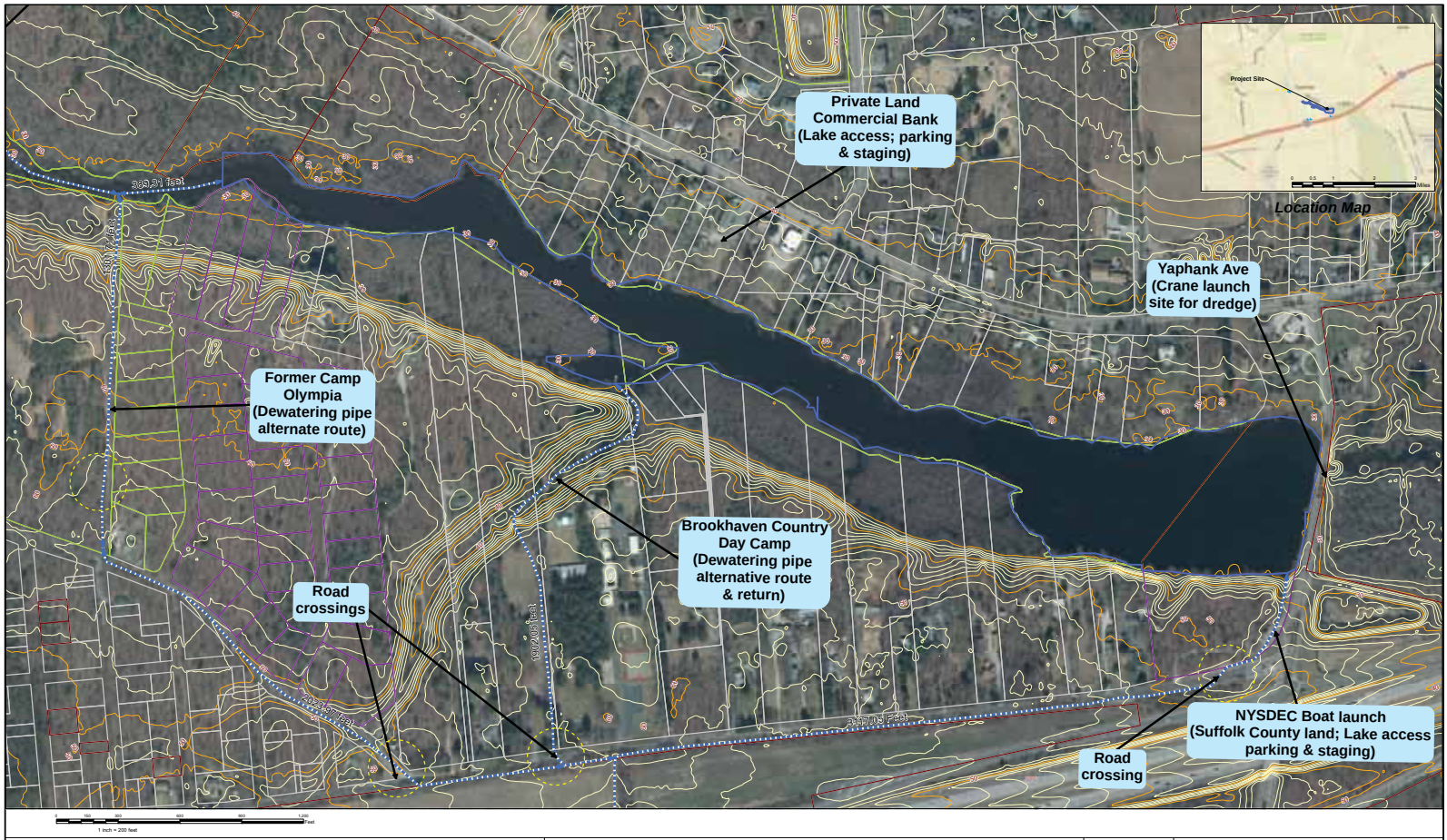
Sheet No. 2 of 4

Permit Plan - Upper Lake

Drawn By: LU

Checked by: CV

Date: 11/06/2012



Upper & Lower Lake Aquatic Invasive Species & Sediment Removal

Yaphank, NY

Legend

- Lower Lake Dredge Area
- Tax Parcels
- Dewatering Pipe
- Topography
  - 2 Foot Contour
  - 10 Foot Contour
- Publicly Owned Lands
  - Town of Brookhaven
  - New York State
  - Suffolk County
  - Federally Owned

Owner/Applicant:
Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

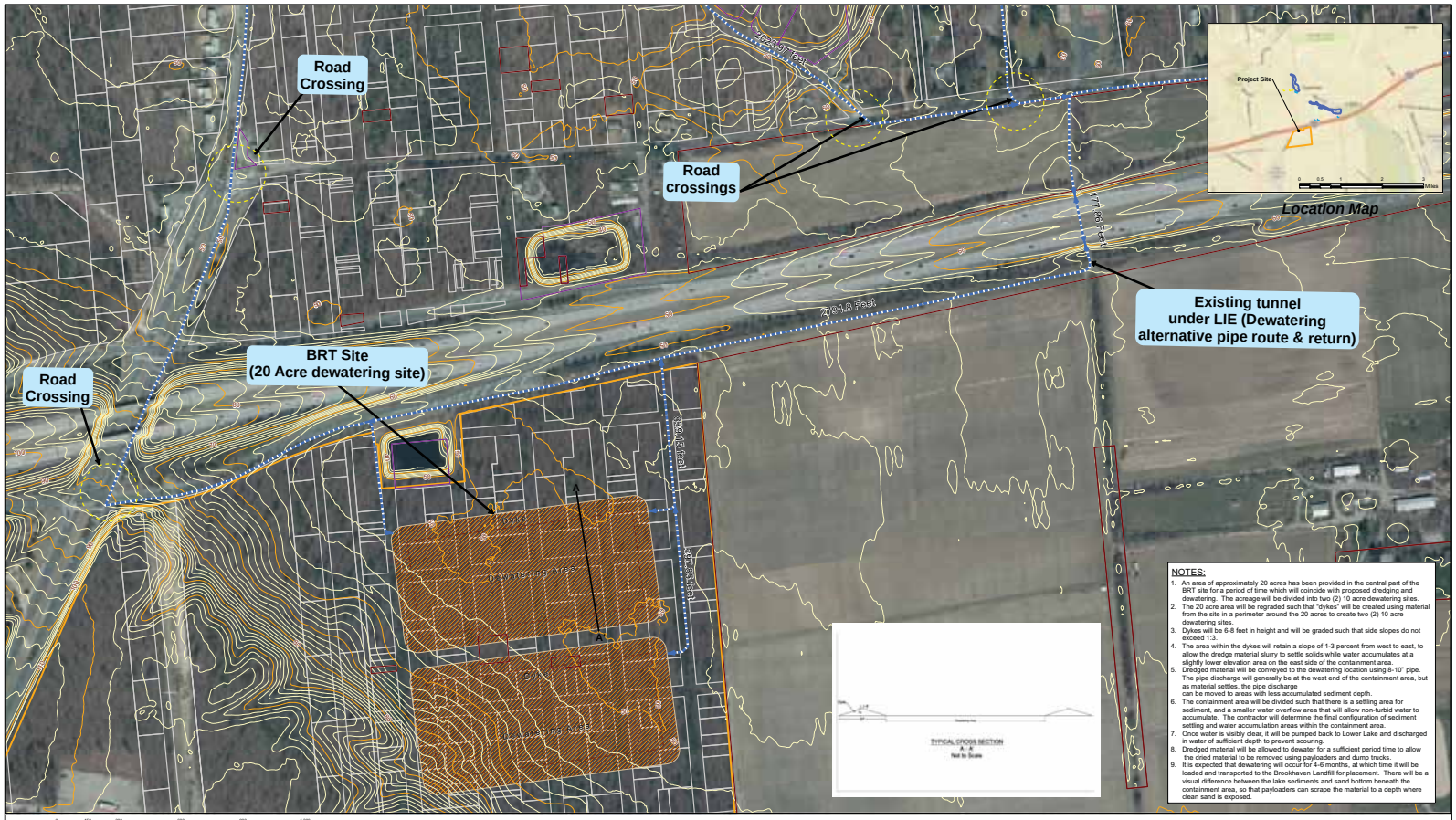
Sheet No.
3 of 4

Permit Plan - Lower Lake

Drawn By: LU

Checked by: CV

Date: 10/17/2012



NOTES:

1. An area of approximately 20 acres has been provided in the central part of the BRT site for a period of time which will coincide with proposed dredging and dewatering. The acreage will be divided into two (2) 10 acre dewatering sites.
2. The 20 acre area will be regraded such that "dykes" will be created using material from the site in a perimeter around the 20 acres to create two (2) 10 acre dewatering sites.
3. Dykes will be 6-8 feet in height and will be graded such that side slopes do not exceed 1:3.
4. The area within the dykes will retain a slope of 1-3 percent from west to east, to allow the dredge material slurry to settle solids while water accumulates at a slightly lower elevation area on the east side of the containment area.
5. Dredged material will be conveyed to the dewatering location using 8-10" pipe. The pipe discharge will generally be at the west end of the containment area, but as material settles, the pipe discharge can be moved to areas with less accumulated sediment depth.
6. The containment area will be divided such that there is a settling area for sediment, and a smaller water overflow area that will allow non-turbid water to accumulate. The contractor will determine the final configuration of sediment settling and water accumulation areas within the containment area.
7. Once water is visibly clear, it will be pumped back to Lower Lake and discharged in water of sufficient depth to prevent scouring.
8. Dredged material will be allowed to dewater for a sufficient period time to allow the dried material to be removed using payloaders and dump trucks.
9. It is expected that dewatering will occur for 4-6 months, at which time it will be loaded and transported to the Brookhaven Landfill for placement. There will be a visual difference between the lake sediments and sand bottom beneath the containment area, so that payloaders can scrape the material to a depth where clean sand is exposed.

Upper & Lower Lake Aquatic Invasive Species & Sediment Removal

Yaphank, NY

Legend

- BRT Site
- BRT Site Dewatering Areas
- Dewatering Pipe
- Tax Parcels

OverallLiDAR Topography

- 2 Foot Contour
- 10 Foot Contour

Publicly Owned Lands

- Town of Brookhaven
- New York State
- Suffolk County
- Federally Owned

Owner/Applicant:
Town of Brookhaven
One Independence Hill
Farmingville, NY 11738

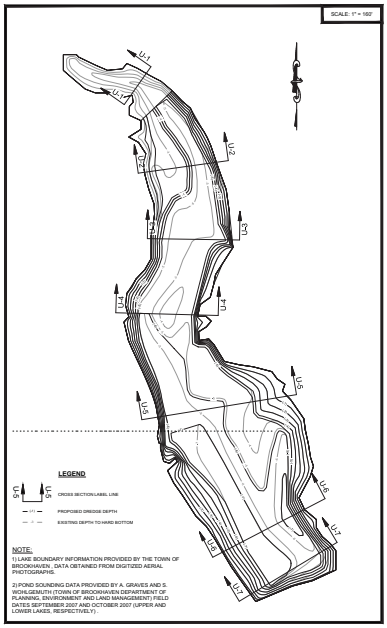
Sheet No.
4 of 4

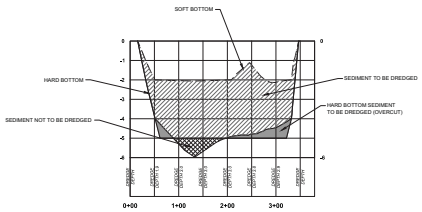
Permit Plan - BRT Dewatering Site

Drawn By: LU

Checked by: CV

Date: 10/17/2012





SECTION U-3

SCALE:
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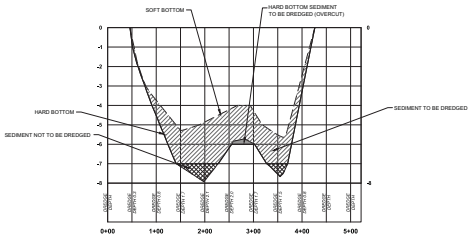
VERT.: 1" = 2'



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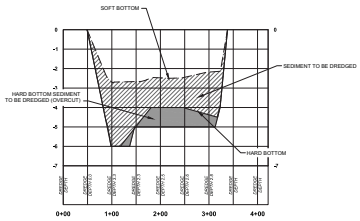

SECTION U-4

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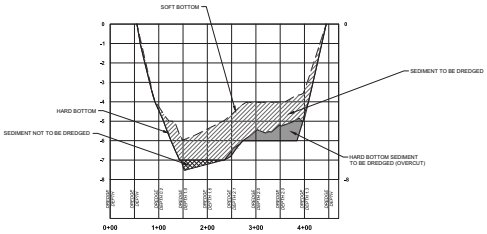

SECTION U-7

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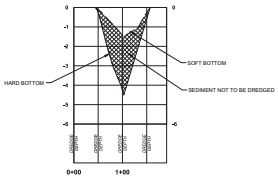

SECTION U-1

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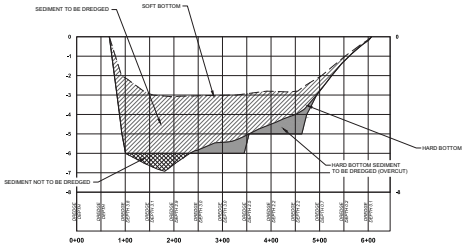

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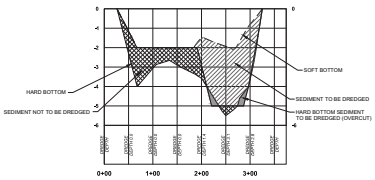


SECTION U-2

SCALE:
HORZ.: 1" = 80'
VERT.: 1" = 2'

UPPER LAKE CROSS SECTION AND DREDGE MAP

1-4-13

SHEET 1 OF 2

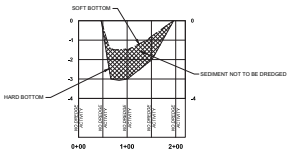
PLANS PREPARED FOR

THE TOWN OF BROOKHAVEN

BY

NELSON & POPE AND NP&V

572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747
PHONE (631) 427-5665 FAX (631) 427-5820
WWW.NELSONPOPE.COM / WWW.NELSONPOPEVOORHIS.COM



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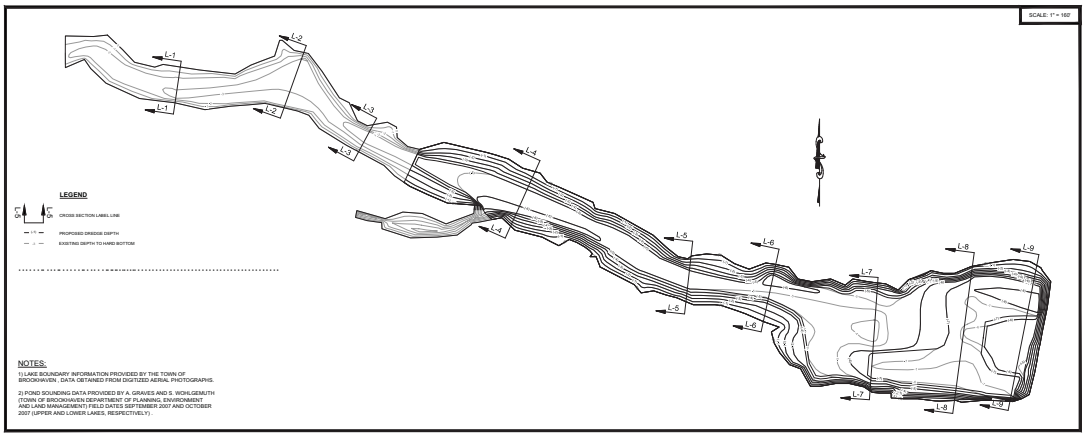

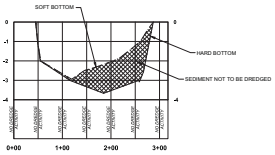

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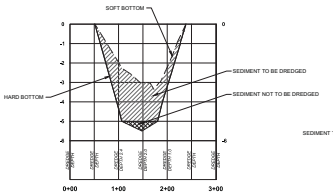

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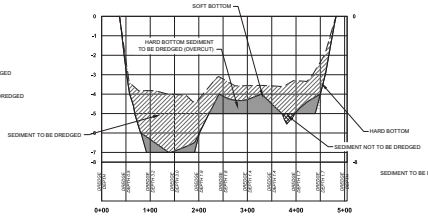

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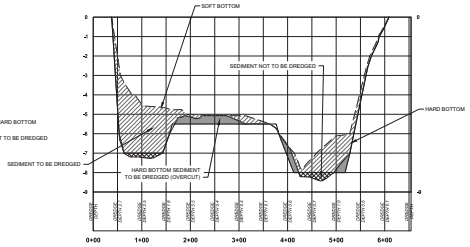

SECTION L-9

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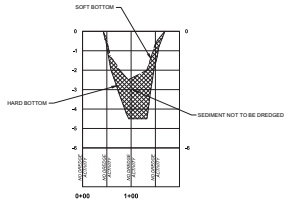

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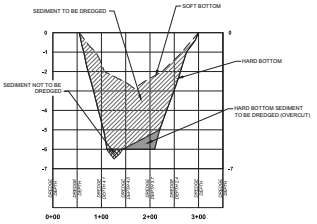

SECTION L-4

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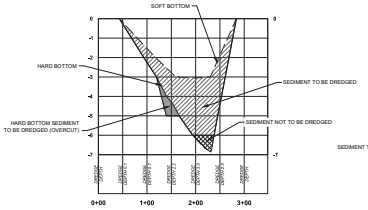

SECTION L-6

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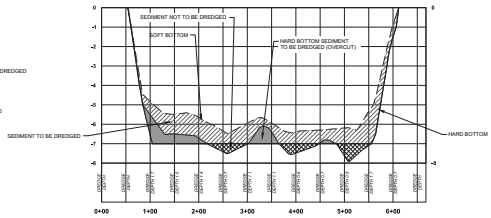

SECTION L-8

SCALE:
HORZ.: 1" = 80'
VERT.: 1" = 2'

LOWER LAKE
CROSS SECTIONS AND DREDGE MAP

1-4-13

SHEET 2 OF 2

PLANS PREPARED FOR

THE TOWN OF BROOKHAVEN

BY

N&P AND NP&V

572 WALT WHITMAN ROAD, MELVILLE, N.Y. 11747
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WWW.NELSONPOPE.COM / WWW.NELSONPOPEVOORHIS.COM

APPENDIX C

Ecology Related Documents

Appendix C-1

Letter from the NYNHP

December 29, 2010

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov

December 29, 2010

RECEIVED
JAN 03 2011 SQQ
NELSON & POPE

Sara N. da Silva Quintal
Nelson Pope &Voorhis
572 Walt Whitman Road
Melville, NY 11747

Dear Ms. Da Silva Quintal:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment of the proposed Control Study of Aquatic Nuisance Species – Upper and Lower Lakes only, of Carmans River, in Yaphank and Carmans River, Yaphank, area as indicated on the map you provided, located in Town of Brookhaven, Suffolk County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site o r in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g. regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

1338

This project location is adjacent to a designated Significant Coastal Fish and Wildlife Habitat. This habitat is part of New York State's Coastal Management Program (CMP), which is administered by the NYS Department of State (DOS). Projects which may impact the habitat are reviewed by DOS for consistency with the CMP. For more information regarding this designated habitat and applicable consistency review requirements, please contact:

Jeff Zappieri - (518) 474-6000P
NYS Department of State
Office Coastal, Local Government and Community Sustainability
1 Commerce Plaza, 99 Washington Avenue,
Albany, NY 12231

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

Tara Salerno jp

Tara Salerno, Information Services
New York Natural Heritage Program

Enc. # 1338
cc: Reg. 1

Natural Heritage Report on Rare Species and Ecological Communities

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

~The information in this report includes only records entered into the NY Natural Heritage databases as of the date of the report. This report is not a definitive statement on the presence or absence of all rare species or significant natural communities at or in the vicinity of this site.
~Refer to the User's Guide for explanations of codes, ranks and fields.
~Location maps for certain species and communities may not be provided 1) if the species is vulnerable to disturbance, 2) if the location and/or extent is not precisely known, 3) if the location and/or extent is too large to display, and/or 4) if the animal is listed as Endangered or Threatened by New York State.

Natural Heritage Report on Rare Species and Ecological Communities

COMMUNITIES

Coastal plain pond

This occurrence of Coastal Plain Pond is considered significant from a statewide perspective by the NY Natural Heritage Program. It is either an occurrence of a community type that is rare in the state or a high quality example of a more common community type. By meeting specific, documented significance criteria, the NY Natural Heritage Program considers this occurrence to have high ecological and conservation value.

Office Use 6213

NY Legal Status: Unlisted
NYS Rank: S2
Federal Listing:
Global Rank: G3G4
Last Report: 1985-07-16
EO Rank:
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: This is an excellent example, but very near the Long Island Expressway which is subject to runoff. This is a round, shallow pond with woods cleared from the margin, surrounded by wet meadow and successional shrubland.

VASCULAR PLANTS

Bartonia paniculata ssp. paniculata

Screw-stem

Office Use 12329

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5T5 - Secure
Last Report: 1997-08-22
EO Rank: Extant
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: The plants are in a seepy/inundated sphagnaceous area along the river.

Carex bullata

Button Sedge

Office Use 4232

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5 - Secure
Last Report: 2001-07
EO Rank: Good
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: There are over 500 clumps in good habitat. The plants are on the wet, muddy banks of Carmens River in a small sedge meadow dominated by Carex stricta.

Carex collinsii

Office Use

Collins' Sedge

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
6805
Federal Listing:
Global Rank: G4 - Apparently secure
Last Report: 1987-06-29
EO Rank: Good
County: Suffolk
SC
Town: Brookhaven
Location: Carmans River Yaphank
General Quality and Habitat: Good scattered population in good, protectable habitat. The red maple swamp is along Carmen's River.

Scleria pauciflora var. caroliniana

Office Use

Few-flowered Nutrush

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
1690
Federal Listing:
Global Rank: G5T4T5 - Apparently secure
Last Report: 1985-06-07
EO Rank: Fair
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: There are two plants at the upper edge of the pond in successional pine barrens. This is a round, shallow pond with woods cleared from the margin. The plants are in a successional pine barrens.

Scleria triglomerata

Office Use

Whip Nutrush

NY Legal Status: Threatened
NYS Rank: S1 - Critically imperiled
3839
Federal Listing:
Global Rank: G5 - Secure
Last Report: 1991-08-29
EO Rank: Fair
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: This is a fair population in good, protectable habitat. The plants were observed in a round, shallow pond with woods cleared from the pond margin. The plants are growing at the wet/dry interface around a disturbed pond in successional habitat.

Utricularia striata

Office Use

Fibrous Bladderwort

NY Legal Status: Threatened
NYS Rank: S2 - Imperiled
6832
Federal Listing:
Global Rank: G4G5 - Apparently secure
Last Report: 2004-08-26
EO Rank: Excellent or Good
County: Suffolk
Town: Brookhaven
Location: Weeks Pond
General Quality and Habitat: There are hundreds of vigorous plants in good habitat. Group 1: Plants were within Eleocharis acicularis in mud at the edge of a coastal plain pond. Group 2: This is a coastal plain pond shore. The plants are in the low vegetation and the mud around the edge of the pond.

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7 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, from NYSDEC at http://www.dec.ny.gov/animals/7494.html (for animals), and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

More detailed information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org. For descriptions of all community types, go to http://www.dec.ny.gov/animals/29384.html and click on Draft Ecological Communities of New York State.

NY Natural Heritage Program, NYS DEC, 625 Broadway, 5th Floor,
Albany, NY 12233-4757
(518) 402-8935

HISTORICAL RECORDS

The following plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier, or there is uncertainty regarding their continued presence.
There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown and therefore location maps are generally not provided.
If appropriate habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there.

Natural Heritage Report on Rare Species and Ecological Communities

BUTTERFLIES and SKIPPERS

Erynnis persius persius

Persius Duskywing

Office Use 459

NY Legal Status: Endangered
NYS Rank: S1 - Critically imperiled
Federal Listing:
Global Rank: G5T1T3 - Critically imperiled
Last Report: -----05-17
EO Rank: Historical, no recent information
County: Suffolk
Town: Brookhaven
Location: Yaphank
Directions: The specimen label reports the location as "Yaphank".
General Quality and Habitat:

ESU

M

DRAGONFLIES and DAMSELFLIES

Anax longipes

Comet Darner

Office Use 12585

NY Legal Status: Unlisted
NYS Rank: S2 - Imperiled
Federal Listing:
Global Rank: G5 - Secure
Last Report: 1908-07-26
EO Rank: Historical, no recent information
County: Suffolk
Town: Brookhaven
Location: Yaphank
Directions: The dragonfly was seen in Yaphank in Brookhaven on Long Island.
General Quality and Habitat: The dragonfly was observed in a small town on Long Island.

VASCULAR PLANTS

Crataegus uniflora

Dwarf Hawthorn

NY Legal Status: Endangered
Federal Listing:
Last Report: 1907-07-14

NYS Rank: S1 - Critically imperiled
Global Rank: G5 - Secure
EO Rank: Historical, no recent information

Office Use 4037

County: Suffolk
Town: Brookhaven
Location: Yapank
Directions: Specimen label: Yaphank.
General Quality and Habitat:

M

Lechea tenuifolia

Slender Pinweed

NY Legal Status: Threatened
Federal Listing:
Last Report: 1912-09-01

NYS Rank: S2 - Imperiled
Global Rank: G5 - Secure
EO Rank: Historical, no recent information

Office Use 3562

County: Suffolk
Town: Brookhaven
Location: Yapank
Directions: Specimen label: Yaphank.
General Quality and Habitat:

M

Lemna valdiviana

Pale Duckweed

NY Legal Status: Endangered
Federal Listing:
Last Report: 1938-08-31

NYS Rank: S1 - Critically imperiled
Global Rank: G5 - Secure
EO Rank: Historical, no recent information

Office Use 3611

County: Suffolk
Town: Brookhaven
Location: Upper Yaphank Lake
Directions: Upper Yaphank Lake.
General Quality and Habitat:

M

Symphyotrichum concolor var. concolor

Silvery Aster

NY Legal Status: Endangered
Federal Listing:
Last Report: 1911-09-28

NYS Rank: S1 - Critically imperiled
Global Rank: G5T5 - Secure
EO Rank: Historical, no recent information

Office Use 3802

County: Suffolk
Town: Brookhaven
Location: Yaphank
Directions: Specimen label: Yaphank and vicinity. Vicinity of Longwood and Moriches Fork.
General Quality and Habitat:

M

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6 Records Processed

More detailed information about many of the rare and listed animals and plants in New York, including biology, identification, habitat, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.acris.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, from NYSDEC at http://www.dec.ny.gov/animals/7494.html (for animals), and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Appendix C-2

NYSDOS Coastal Consistency Evaluation

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Federal Consistency Assessment Form

An applicant, seeking a permit, license, waiver, certification or similar type of approval from a federal agency which is subject to the New York State Coastal Management Program (CMP), shall complete this assessment form for any proposed activity that will occur within and/or directly affect the State's Coastal Area. This form is intended to assist an applicant in certifying that the proposed activity is consistent with New York State's CMP as required by U.S. Department of Commerce regulations (15 CFR 930.57). It should be completed at the time when the federal application is prepared. The Department of State will use the completed form and accompanying information in its review of the applicant's certification of consistency.

A. APPLICANT (please print)

1. Name: Town of Brookhaven, c/o Tom Carrano

2. Address: 1 Independence Hill, Farmingville, NY 11738

3. Telephone: Area Code (631) 451-6455

B. PROPOSED ACTIVITY

1. Brief description of activity:

Dredging of ±63,200 CY of sediment from Upper Lake and ±50,000 CY of sediment from Lower Lake for invasive species control.

2. Purpose of activity:

Control of aquatic invasive species that have established in the lakes.

3. Location of activity:

Suffolk	Brookhaven	Yaphank
County	City, Town, or Village	Street or Site Description

4. Type of federal permit/license required: NWP No. 27

5. Federal application number, if known:

6. If a state permit/license was issued or is required for the proposed activity, identify the state agency and provide the application or permit number, if known:

NYSDEC Permit in Process, #1-4722-06150/00001

C. COASTAL ASSESSMENT Check either "YES" or "NO" for each of these questions. The numbers following each question refer to the policies described in the CMP document (see footnote on page 2) which may be affected by the proposed activity.

1. Will the proposed activity result in any of the following:	YES	NO
a. Large physical change to a site within the coastal area which will require the preparation of an environmental impact statement? (11, 22, 25, 32, 37, 38, 41, 43)	☐	☒
b. Physical alteration of more than two acres of land along the shoreline, land under water or coastal waters? (2, 11, 12, 20, 28, 35, 44)	☒	☐
c. Revitalization/redevelopment of a deteriorated or underutilized waterfront site? (1)	☐	☒
d. Reduction of existing or potential public access to or along coastal waters? (19, 20)	☐	☒
e. Adverse effect upon the commercial or recreational use of coastal fish resources? (9,10)	☐	☒
f. Siting of a facility essential to the exploration, development and production of energy resources in coastal waters or on the Outer Continental Shelf? (29)	☐	☒
g. Siting of a facility essential to the generation or transmission of energy? (27)	☐	☒
h. Mining, excavation, or dredging activities, or the placement of dredged or fill material in coastal waters? (15, 35)	☒	☒
i. Discharge of toxics, hazardous substances or other pollutants into coastal waters? (8, 15, 35)	☐	☒
j. Draining of stormwater runoff or sewer overflows into coastal waters? (33)	☐	☒
k. Transport, storage, treatment, or disposal of solid wastes or hazardous materials? (36, 39)	☐	☒
l. Adverse effect upon land or water uses within the State's small harbors? (4)	☐	☒

2. Will the proposed activity affect or be located in, on, or adjacent to any of the following:	YES	NO
a. State designated freshwater or tidal wetland? (44)	☒	☐
b. Federally designated flood and/or state designated erosion hazard area? (11, 12, 17,)	☒	☐
c. State designated significant fish and/or wildlife habitat? (7)	☒	☐
d. State designated significant scenic resource or area? (24)	☐	☒
e. State designated important agricultural lands? (26)	☐	☒
f. Beach, dune or barrier island? (12)	☐	☒
g. Major ports of Albany, Buffalo, Ogdensburg, Oswego or New York? (3)	☐	☒
h. State, county, or local park? (19, 20)	☒	☐
i. Historic resource listed on the National or State Register of Historic Places? (23)	☐	☒

3. Will the proposed activity require any of the following:	YES	NO
a. Waterfront site? (2, 21, 22)	☒	☐
b. Provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (5)	☐	☒
c. Construction or reconstruction of a flood or erosion control structure? (13, 14, 16)	☐	☒
d. State water quality permit or certification? (30, 38, 40)	☒	☐
e. State air quality permit or certification? (41, 43)	☐	☒

4. Will the proposed activity occur within and/or affect an area covered by a State approved local waterfront revitalization program? (see policies in local program document)	☐	☒

D. ADDITIONAL STEPS

1. If all of the questions in Section C are answered "NO", then the applicant or agency shall complete Section E and submit the documentation required by Section F.

2. If any of the questions in Section C are answered "YES", then the applicant or agent is advised to consult the CMP, or where appropriate, the local waterfront revitalization program document*. The proposed activity must be analyzed in more detail with respect to the applicable state or local coastal policies. On a separate page(s), the applicant or agent shall: (a) identify, by their policy numbers, which coastal policies are affected by the activity, (b) briefly assess the effects of the activity upon the policy; and, (c) state how the activity is consistent with each policy. Following the completion of this written assessment, the applicant or agency shall complete Section E and submit the documentation required by Section F.

E. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with the State's CMP or the approved local waterfront revitalization program, as appropriate. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program, or with the applicable approved local waterfront revitalization program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Lara Urbat, Nelson Pope & Voorhis

Address: 572 Walt Whitman Road, Melville, NY 11747

Telephone: Area Code (631) 427-5665

Applicant/Agent's Signature: _____ Date: 1/28/2013

F. SUBMISSION REQUIREMENTS

1. The applicant or agent shall submit the following documents to the **New York State Department of State, Office of Coastal, Local Government and Community Sustainability, Attn: Consistency Review Unit, 1 Commerce Plaza, 99 Washington Avenue - Suite 1010, Albany, New York 12231.**

a. Copy of original signed form.
b. Copy of the completed federal agency application.
c. Other available information which would support the certification of consistency.

2. The applicant or agent shall also submit a copy of this completed form along with his/her application to the federal agency.

3. If there are any questions regarding the submission of this form, contact the Department of State at (518) 474-6000.

*These state and local documents are available for inspection at the offices of many federal agencies, Department of environmental Conservation and Department of State regional offices, and the appropriate regional and county planning agencies. Local program documents are also available for inspection at the offices of the appropriate local government.

UPPER AND LOWER LAKES, YAPHANK
CONFORMANCE WITH NEW YORK STATE
COASTAL ZONE MANAGEMENT POLICIES

1. Will the proposed activity <u>result</u> in any of the following:

b) Physical alteration of more than two acres of land along the shoreline, land under water or coastal waters? (2, 11, 12, 20, 28, 35, 44)

Policy 2 *Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 11 *Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 12 *Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 20 *Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 28 *Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 35 *Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.*
Response: The proposed project has been designed through consultation with NYSDEC, Suffolk County and the Town of Brookhaven. Proposed dredging activities are currently undergoing NYSDEC review and will adhere to all requirements proposed by the NYSDEC. The NYSDEC has already indicated that a dredging window of June 1st through October 31st for protection of aquatic species. The lakes and surrounding wetlands are anticipated to benefit from the sediment and invasive species removal as the species are currently impacting the quality of the habitat and water within the lakes.

Policy 44 *Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.*
Response: The proposed project is intended to result in the improvement and restoration of the lakes. The lakes and surrounding wetlands are anticipated to benefit from the sediment and invasive species

removal as the species are currently impacting the quality of the habitat and water within the lakes. Protection of wetlands will occur through erosion control measures, grates and silt screens installed around the dredging areas. A screen grate (1" minus) will be installed at the outlet of each lake to ensure that floating plant material or debris is prevented from being transported downstream during dredging and/or plant harvesting (if harvesting is conducted before dredging). It is proposed that Upper Lake be dredged first so that any release of plant material downstream (not expected), will be removed during the dredging of Lower Lake. The screen grate at the lake being dredged will be checked at least twice daily during dredging operations and will be cleaned to remove accumulated material. Cleaning will be simplified by the use of duplicate screen grates where one is removed and a clean grate immediately installed to ensure continuous operation. If inspections determine that plant material is accumulating on the screen grate, more frequent inspections and cleanings will be instituted to ensure flow through the spillway.

h) Mining, excavation , or dredging activities, or the placement of dredged or fill material in coastal waters? (15, 35)

Policy 15 *Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.*

Response: As the proposed project is located far inland of tidal influences, no tidal drift processes occur in the project location. No beaches will be impacted as a result of the proposed dredging, and no erosion is anticipated as a result of the sediment removal.

Policy 35 *Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.*

Response: The proposed project has been designed through consultation with NYSDEC, Suffolk County and the Town of Brookhaven. Proposed dredging activities are currently undergoing NYSDEC review and will adhere to all requirements proposed by the NYSDEC. The NYSDEC has already indicated that a dredging window of June 1st through October 31st for protection of aquatic species. The lakes and surrounding wetlands are anticipated to benefit from the sediment and invasive species removal as the species are currently impacting the quality of the habitat and water within the lakes.

2. Will the proposed activity <u>affect</u> or be <u>located</u> in, on, or adjacent to any of the following:

a) State designated freshwater or tidal wetlands? (44)

Policy 44 *Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.*

Response: The proposed project is intended to result in the improvement and restoration of the lakes. The lakes and surrounding wetlands are anticipated to benefit from the sediment and invasive species removal as the species are currently impacting the quality of the habitat and water within the lakes. Protection of wetlands will occur through erosion control measures, grates and silt screens installed around the dredging areas. A screen grate (1" minus) will be installed at the outlet of each lake to ensure that floating plant material or debris is prevented from being transported downstream during dredging and/or plant harvesting (if harvesting is conducted before dredging). It is proposed that Upper Lake be dredged first so that any release of plant material downstream (not expected), will be removed during the dredging of Lower Lake. The screen grate at the lake being dredged will be checked at least twice daily during dredging operations and will be cleaned

to remove accumulated material. Cleaning will be simplified by the use of duplicate screen grates where one is removed and a clean grate immediately installed to ensure continuous operation. If inspections determine that plant material is accumulating on the screen grate, more frequent inspections and cleanings will be instituted to ensure flow through the spillway.

b) Federally designated flood and/or state designated erosion hazard area? (11, 12, 17)

Policy 11 *Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.*

Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 12 *Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.*

Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 17 *Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.*

Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

c) State designated significant fish and/or wildlife habitat? (7)

Policy 7 *Significant coastal fish and wildlife habitats will be protected, preserved, and where practical, restored so as to maintain their viability as habitats.*

Response: The proposed project has been designed through consultation with NYSDEC, Suffolk County and the Town of Brookhaven. Proposed dredging activities are currently undergoing NYSDEC review and will adhere to all requirements proposed by the NYSDEC. The NYSDEC has already indicated that a dredging window of June 1st through October 31st for protection of aquatic species. The lakes and surrounding wetlands are anticipated to benefit from the sediment and invasive species removal as the species are currently impacting the quality of the habitat and water within the lakes.

h) State, county, or local park? (19, 20)

Policy 19 *Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.*

Response: The proposed project will enhance public access and use of the lakes as the removal of invasive species will result in a restoration of the lakes navigability. Currently, the lakes contain a high density of invasive vegetation such that boaters and kayakers cannot maneuver through the lakes. The proposed project will restore the recreational use of the lakes.

Policy 20 *Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.*

Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

3. Will the proposed activity require any of the following:

a) Waterfront site? (2, 21, 22)

Policy 2 *Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 21 *Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water-related uses along the coast.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

Policy 22 *Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

d) State water quality permit or certification? (30, 38, 40)

Policy 30 *Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species. No municipal, industrial or commercial discharges are proposed.

Policy 38 *The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.*
Response: The proposed project will utilized a site within the existing watershed for sediment dewatering. Water will be collected and piped back to the river system. Water quality is anticipated to improve as a result of the proposed project as sediments containing pollutants will be removed and flow through the lakes will be improved.

Policy 40 *Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.*
Response: N/A – this policy does not apply to the proposed project as the project only involves dredging for the removal of invasive species.

APPENDIX D

Project Area Photographs

1. View of plant masses within the water—Upper Lake.

2. View of *Cabomba* in Upper Lake.

3. View of *Myriophyllum* in Lower Lake.

4. View invasive plant density and dense *Phragmites* along shoreline in Lower Lake.

5. View of invasive plant density within Lower Lake.

6. View of invasive plant density along Lower Lake shoreline.