Appendix O

Compensatory Mitigation Proposal

Hempstead Lake State Park

Town of Hempstead, Nassau County, New York.

DRAFT Summary of Potential Wetland Mitigation Sites for Project Permit October 3, 2019

To: GOSR -Matthew Accardi, Dean Tarulli

OPRHP – Ron Rausch, Nita Chicatelli, Gabriella CebadaMora, Shari Calnero

From: Louis Berger/WSP - Ed Samanns, Jonathan Carey

1.0 Introduction

The applicant, New York State Office of Parks, Recreation & Historic Preservation (OPRHP), has requested Department of the Army authorization for work at Hempstead Lake State Park, in Hempstead Lake, South Pond and the Northern Ponds, in the Town of Hempstead, Nassau County, New York. The Hempstead Lake State Park project proposes to improve sitewide ecological integrity of the compromised Northern Ponds complex.

At the direction of the Army Corps, OPRHP and GOSR) initiated a wetland mitigation site selection and evaluation process to identify potential compensatory wetland mitigation sites(options?) that could provide required offset less than 3 acres of unavoidable permanent impacts to wetlands and open waters as a part of the overall site resiliency and water quality improvements. The process to identify and evaluate potential mitigation options required several steps, including defining the project impacts to jurisdictional waters of the U.S. by type, defining the limits of the search area, identifying and inspecting potential sites in the field for fatal flaws, and then evaluating the site characteristics to establish appropriate mitigation actions that would result in the restoration, enhancement and/or protection of wetland functions.

The identification and evaluation of potential wetland mitigation sites also considered state and federal guidance on compensatory mitigation. The New York State Department of Environmental Conservation (NYSDEC) 1993 *Freshwater Wetlands Regulation Guidelines on Compensatory Mitigation* have a stated preference that compensatory mitigation for wetlands regulated under Article 25 should be in-kind, located on-site (contiguous with or within the same wetland system as the impacts) and, in order of preference, consist of restoration, creation or enhancement.

The U.S. Army Corps of Engineers (USACE) April 10, 2008 33 CFR Parts 325 and 332 *Compensatory Mitigation for Losses of Aquatic Resources* (Mitigation Rule) and the USACE New York District Regulatory Branch 2005 *Compensatory Mitigation Plan Guidelines* both provide direction on USACE preferences and accepted compensatory mitigation practices. Both documents have stated preferences for compensatory mitigation that is within the same watershed, in-kind, on-site, adjacent to existing or previously occurring aquatic resources, and should be practicable to implement. The Mitigation Rule also has a stated preference, in order, for restoration, enhancement, establishment (creation) and preservation.

The site selection and evaluation process considered these preferences.

Based on the current estimate (9/25/19) of permanent impacts to aquatic resources, the compensatory mitigation plan will need to offset functional losses for the aquatic resources listed in Table 1.

Table 1: Summary of Permanent Wetland Impacts, Habitat Conversions, and Created Wetlands

Aquatic Resource Type	Acres	Wetland Creation by Project (Table 2)	Adjusted for Created Wetlands
Open Water	1.07	0.07	1.0
Emergent Wetland	0.85	0.09	0.76
Scrub Shrub Wetland	1.0	0.0	1.0
Total	2.92	0.16	2.76

Table 2 summarizes the locations and types of the waters that will be created from existing uplands as a result of the project implementation. The additional emergent wetlands and open waters will offset unavoidable impacts to emergent wetlands and open water.

Table 2: Summary of wetlands and waters created through project implementation.

Area	Upland to Emergent (acres)	Upland to Open Water (acres)
NW Pond Dam	0.003	0.021
	0	0.006
NW Pond Sediment Basin	0.090	0.020
	0	0.010
Hempstead Lake Pipe Culvert Removal	0	0.014
TOTAL	0.093	0.071

2.0 Potential Mitigation Options

2.1 Mitigation Site Selection and Site Evaluation Factors

The mitigation site selection process utilized existing resources such as recent aerial photographs, topographic mapping, soil survey and the jurisdictional wetland mapping to aid in the initial identification of potential mitigation sites. The search area was initially restricted to the non-tidal portion of the Mill River watershed. Hempstead Lake State Park (the Park) is located at the collection point of the 6.5-square-mile (4,160-acre), highly developed watershed. The watershed drains to NE Pond (which is approximately 27 acres in surface area), NW Pond (which is approximately 33 acres in surface area), and Hempstead Lake (which is approximately 142 acres in surface area). Two smaller waterbodies, McDonald Pond and South Pond, receive water from Hempstead Lake. Mill River is tidally influenced downstream of South Pond weir structure. Figure 1 depicts the extent of the non-tidal portion of the Mill River watershed.

A detailed review of aerial imagery was performed to initially identify potential sites for wetland mitigation within the watershed. Each location was assessed based on the general requirement below:

- Non-forested land
- Adjacent to existing aquatic resources or areas with mapped hydric soils

- Greater than 3 acres in size and not linear in shape
- Elevation difference under 5 feet (minimal excavation required)
- No steep slopes
- Not associated with existing recreational fields in municipal parks or schools, and no apparent utilities.

2.2 Site Selection Analysis Findings

Upstream of the Park, there are few areas of undeveloped land in the watershed. Undeveloped land above the Park is associated with several golf courses, school athletic fields, municipal parks, and small patches of forest. Two separate large properties with some open, non-forest lands proximate to constructed ponds were observed; however, one of the parcels is associated with the 216-acre Old Westbury Gardens which is on the National Register of Historic Places, and the other consists of two adjoining undeveloped 5-acre lots zoned for residential development. Therefore, no potentially suitable sites were observed in the watershed above the Park, which are also not within Parks' jurisdiction.

The site search also considered potential opportunities within Hempstead State Park and adjoining lands. Approximately 12 locations were initially identified and two additional sites along the Mill River and outside of the Park were identified by GOSR. A subsequent field inspection was conducted on September 10, 2019 to assess site conditions, establish approximate limits for each site, and identify the type(s) of mitigation appropriate for each site. As a result of the site inspections, two of the sites were dismissed upon inspection because the areas were too small in size and constrained by either a lack of connection to existing aquatic resources or a potential conflict with existing infrastructure and a third site was incorporated into another potential site. Following the field inspection, each site within the Park were examined by OPRHP to determine if the use of a site would conflict with current community use of the Park or agency policy. This review led to the removal of two potential sites and the identification of a separate site. The off-site locations, which are not within Parks' jurisdiction, were also removed since one location is within a tidal portion of the Mill River and the other site consists of existing upland and wetland forest on publicly owned land.

The mitigation approach(s) for each potential mitigation site are based in the descriptions defined in the 2008 Mitigation Rule as outlined below:

• Re-establishment (restoration): the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

• Rehabilitation: the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.

• Establishment (creation): manipulation of the physical, chemical or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a net gain in aquatic resource area and functions.

• Enhancement: the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

• Preservation: the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

2.3 Summary of On-Site Conceptual Mitigation Sites

Table 1 in Attachment 1 provides a summary of the conceptual mitigation sites that were evaluated as suitable to provide compensatory mitigation for the referenced project. Figure 2 in Attachment 2 depicts the locations and extent of each site. Representative photographs of each site are provided in Attachment 3. Additional site investigations will be required to further define the extent of each of the mitigation sites and develop a detailed mitigation proposal.

All of the mitigation sites are on-site and proximate to the wetlands and waters that will be impacted by the proposed project. Due to their proximity to the affected aquatic resources, these sites have a higher potential to offset the loss of functions associated with the affected wetlands and open waters. The description of each mitigation site below briefly describes the current site condition, existing perturbations that limit wetland functions, if present, and opportunities to restore or enhance aquatic resource functions, or to prevent future degradation of aquatic resource functions.

- **Northwest Pond**

Site 1: *Phragmites* (Common Reed) Removal and Native Plant Establishment

This site consists of four potential locations totaling approximately 0.14 acres along the northern limit of the Northwest Pond and one 0.18 acres just below the Northwest Pond dam outlet that contain dense stands of the invasive plant *Phragmites australis* (Common reed). The dense reed stands limit proper wetland functions such as biodiversity and wildlife habitat and, if left untreated, will continue to expand and degrade additional emergent wetland acreage and functions.

Wetland enhancement will be performed at each of these locations through the replacement of *Phragmites* with native herbaceous wetland plants and fully restore each site to an emergent wetland dominated by native wetland plant species. Any trash and floatables debris found within these areas will be removed. Depending upon site elevations, portions of these areas could be established as scrub shrub wetlands. The enhancement of these wetlands will result in a gain in wetland functions for wildlife habitat and water quality. There are multiple areas with nearly pure native emergent wetland plant communities associated with different wetland hydroperiods within the Northwest Pond that can serve as reference wetlands.

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Photographs 1 and 2 depict some of these areas on the NW Pond.

Photo 1. *Phragmites* in northeast corner of NW Pond. Photo 2: Phragmites patch in northwest corner.

Site 1a: Pond Margin Wetland Restoration

Three sections of the Northwest Pond shoreline contain narrow bands of upland characterized by sand and gravel with sparse vegetation. These areas were formerly shallow open water prior to the dam failure and, with the lower elevation of the proposed dam repair, would remain as upland. Since these locations are only slightly above the water level of the pond and outside the jurisdictional wetland boundary, they were identified as suitable for wetland restoration. Restoration will require shallow excavation of approximately one foot to re-establish wetland hydrology within the upper soil profile and establishing native wetland plant species. These locations could provide for the restoration of approximately 0.2 acres of additional scrub shrub wetlands.

The re-establishment of these former wetland areas would return the natural and historic functions to the former aquatic resource and result in an overall gain in wetland functions.

Photographs 3 and 4 provide examples of these areas.

Photo 3: Upland area for potential restoration. Photo 4: Upland area with sparse vegetation.

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Site 2/3: Floatables & Sediment Discharge Control, Reduction, and Removal

The proposed project includes the installation and long term operation of a floatables removal device and a sediment detention basin on the existing stormwater outfall on the western side of the Northwest Pond. The operation of the floatables removal device will effectively remove a current threat to the long term functions and health of wetlands and open waters within approximately 7.9 acres of open water and 7.6 acres of emergent wetlands in the Northwest Pond (Table 3), the extent of which is highlighted with hatching in Figure 2. The benefits of removing floatables and sediment loading extend downstream as well to Hempstead Lake.

The effect of floatables within the existing wetlands is visible within the existing marsh and developing scrub shrub habitats where the debris takes up volume and space that would normally be occupied by live plants and support both biological and biochemical activity within the soil matrix. As the plastic materials degrade, they become a source of microplastic pollution that will be transported downstream to the bay and ocean as well as trapped in the sediments.

Sediment accumulation within the scrub shrub habitat near the outfall is apparent; during the field inspection several inches of recently accumulated sand was observed. Invasive plant species such as Japanese knotweed (*Fallopia japonica*) and tree-of-heaven (*Ailanthus altissima*) are beginning to establish in this area, suggesting that the accumulating sediments are creating drier site conditions within the delineated wetland. Part of the sediment load is also being transported to and deposited within the open water area where an expanding fan of deposition is observable. The current sediment loading will continue to degrade aquatic resources resulting in the loss wetland habitat through conversion to uplands, and the conversion of open water habitat, currently utilized by migratory waterfowl, to emergent marsh.

Without the proposed intervention the degradation of the emergent marsh and open water habitats will continue. Since both the floatables catcher and sediment basin will remove two threats to a portion of the wetlands and open waters, prevent the further decline and loss of wetland functions, and improve water quality functions, there is a mitigative value to this action.

In addition to the actions described above, the floatables trash and debris within the emergent and shallow open water area will be collected and removed from the site and the disturbed area reseeded as necessary to establish native plant coverage. There are significant amounts of trash spread throughout the marsh and shallow open water that, collectively, may affect approximately 5 to 10 percent of area.

The enhancement of the wetlands and open waters will result in a gain in nutrient storage and transformation, water quality, and wildlife habitat functions by increasing the functional capacity for these functions through additional plant growth, plant-water interactions, and soil biochemical processes, and wildlife foraging habitat. In addition, the enhancement will provide for the long term protection of these improved functions.

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Photographs 5 through 7 depict the accumulating floatables and trash in the NW Pond wetlands and the suppression of plant cover.

Photo 5: Debris accumulated in shoreline area.

Photo 6: Example of debris within emergent wetland impairing vegetation growth.

Photo 7: Example of debris within open water and emergent wetland
blocking vegetation growth and soil functions.

Site 4: Invasive Plant Species Control and Prevention

As noted above, the recently established emergent and scrub shrub wetlands in the Northwest Pond area are beginning to be colonized by invasive plant species around the periphery of the site and in areas of recent sediment accumulation. The entire affected area encompasses approximately 18.9 acres of jurisdictional wetlands comprised of 2.46 acres of scrub shrub wetland and 16.44 acres of emergent wetland (Table 3). Aside from the five densest *Phragmites* patches that are addressed under Site 1, there are additional small patches of *Phragmites*, Japanese knotweed, purple loosestrife (*Lythrum salicaria*), tree-of-heaven and Asiatic bittersweet throughout the emergent and scrub shrub wetlands on the periphery of the site. Without monitoring and intervention to control and remove these plants on an annual basis, the high quality emergent marsh habitat will be overtaken and degraded by these and other invasive plant species in a ten to twenty year timeframe. Invasive species make up approximately 8 to 12 percent of the cover within the wetlands.

Under this enhancement action, OPRHP will initiate the immediate removal of these species throughout the site and provide for future annual inspections and control. As needed, a native seed mix will be applied to establish native plant cover in locations where dense invasive plant cover is removed. The replacement and control of invasive plant species with native plant species will result in an immediate gain in wetland functions for wildlife habitat and biodiversity, while the long term management of invasive plants will remove a current threat to the diverse wetlands habitat.

OPRHP has indicated previously that it is developing a Park-wide invasive species management program and would incorporate a specific long term monitoring and management plan for the protection of the emergent and scrub shrub plant communities in the NW pond that will prevent its degradation and loss of functions from invasive plant species.

Photographs 8 and 9 depict some of the *Phragmites* patches that have recently colonized the wetlands

Photo 8: Stand of *Phragmites* mixed with native wetland vegetation.

Photo 9: *Phragmites* interspersed with native vegetation.

- **Northeast Pond**

Site 5: Invasive Plant Removal, Floatables Removal and Native Planting

Site 5 is associated with a 2.3 acre portion of the forested wetland at the northern end of the North Pond. It is divided into three separate mitigation areas described below and summarized in Table 3.

- 5A – This 0.7 acre segment is dominated by a dense stand of *Phragmites.* This wetland area will be enhanced through the replacement of *Phragmites* with native shrubs and herbaceous species to establish scrub shrub habitat similar to the buttonbush swamp located just downstream of the site. Any accumulated floatables debris would also be removed.
- 5B – This 1.5 acre portion of the forested wetland has an understory and herbaceous layer affected by dense patches of invasive plant species such as Japanese knotweed and multiflora rose (*Rosa multiflora*). The invasive plant species will be removed, and native trees, shrubs and herbaceous plants will be established to improve wetland functions for wildlife and water quality. Any accumulated floatable debris will also be removed.

- 5C – This 0.1 acre forested area has accumulated a dense layer of floatable debris that has altered the wetland characteristics of the area, including preventing plant growth and altering normal wetland hydrology. The restoration of this site will require excavation of the accumulated debris, raking of the soil surface to remove debris buried within accumulated sediment, and replanting with native shrubs and herbaceous plant species.
- 6 - In addition, a small 0.33 acre upland forest surrounded by the adjoining forested wetlands mentioned above, will also be treated to remove invasive plant species. The upland forest serves as a buffer to the existing wetlands and the removal of invasive species in this area and replacement with native plants will further support the adjacent wetlands and prevent re-establishment of invasive plants.

The enhancement of the forested and emergent wetland under 5A and 5B will result in a gain in nutrient storage and transformation, water quality, biodiversity, and wildlife habitat functions through the replacement of invasive plant species that dominate the area with native species, as well as through the removal of accumulated debris and trash.

The restoration of the wetland area associated with area 5C will result in the gain in aquatic resource area and functions through the removal of the dense layer of floatables and the restoration of wetland hydrology and native plant community.

Photographs 10 through 13 depict the invasive species and accumulated floatables throughout the forested wetland.

Photo 10: Area 5A with dense understory of invasive plants.

Photo 11: Area 5A (foreground) with invasive plants, and Area 5B (background) with dense *Phragmites*.

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Photo 12: Area 5B with dense *Phragmites* stand.

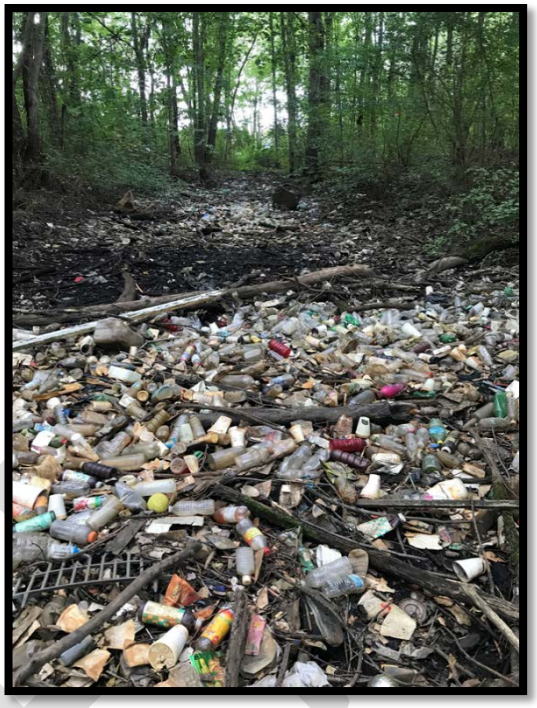

Photo 13: Area 5C with dense layers of floatables.

Site 7/7a: Debris/Floatables Removal in Pond Shoreline Wetlands

The accumulation of floatable debris around the shoreline of the Northeast Pond within forested, emergent and shallow open waters has resulted in the reduction, and in some cases, loss of wetland functions. During the field investigation debris accumulation was observed around the periphery of the pond and consistently extended from the jurisdictional wetland line and into the shallow waters edge. Prior site investigations during a drawdown included observation of debris extending below the ordinary water line. The affected area is between the wetland jurisdictional line and the shallow open water zone extending approximately 10 to 15 feet beyond the pond shoreline.

The proposed mitigation within this area consists of approximately 1.23 acres of wetland enhancement (Table 3: Site 7) and 0.40 acre of wetland restoration (Table 3: Site 7a). The areas of wetland enhancement include the shallow shoreline zone of the pond and portions of the adjoining emergent and forested wetlands that have accumulated debris that has suppressed plant growth and reduced normal biotic activity. Wetland enhancement will require the removal of the accumulated debris and seeding of the affected area to promote native plant establishment. Pockets of emergent wetland plants would also be established within the shallow water zone of the pond. The wetland enhancement actions will result in a gain in wetland functions for water quality and wildlife habitat.

The wetland restoration areas have the deeper layers of accumulated floatable debris within an estimated 0.3 acre of forested wetlands and 0.1 acre of emergent wetlands. These areas have suppressed vegetation growth and altered wetland hydrology due to the dense layers of debris. A more detail survey of the shoreline will be required to document the full extent of these areas. To restore wetland functions in areas affected by dense floatable debris, the material will be removed, and native plants established in the affected areas through seeding and planting of plugs of herbaceous species. Pockets of emergent

wetland plants would also be established within the shallow water zone of the pond. The proposed restoration will result in a gain in aquatic resource area and functions.

Photographs 14 through 17 depict examples of the accumulated floatables along the Northeast Pond shoreline and the areas of suppressed vegetation growth and altered functions.

Photo 14: View of accumulated floatables debris.

Photo 15: Accumulated trash suppressing plant growth.

Photo 16: Dense floatable trash requiring restoration.

Photo 17: Red arrows point to floatables trash accumulated on wetland shoreline.

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Site 8: Floatables Discharge Control

The proposed project includes the installation and long term operation of a floatables removal device on the Mill River where it enters the Park above the Northeast Pond. The installation and operation of the device will effectively remove a current threat to the health of approximately 24 acres of forested and emergent wetlands and open waters within the Northeast Pond (Table 3), the extent of which is highlighted with hatching in Figure 2. The benefits of removing floatables extend downstream to Northwest Pond as well to Hempstead Lake.

The effect of floatables within the existing wetlands is visible within the existing shoreline open water and emergent wetlands, forested wetlands and forested floodplain areas where the accumulated debris takes up volume and space that would normally be occupied by live plants and support both biological and biochemical activity within the soil matrix. As the plastic materials degrade, they become a source of microplastic pollution that will be transported downstream to the bay and ocean as well as trapped in the sediments. Without the proposed intervention the degradation of the wetland and open water habitats will continue.

This project will protect the wetland enhancement and restoration gains obtained under Site 5 and Site 7/7a described above.

3.0 Next Steps

Following review and preliminary acceptance by the USACE, the conceptual mitigation sites will be advanced to develop a complete mitigation proposal that will include a design for each site, a description of the construction approach, planting plan, anticipated wetland functional improvements, and a post-construction monitoring and maintenance plan. Additional field studies will be required to prepare the mitigation proposal, including refining the limits of each mitigation site and the mitigation approach that will be employed. Final site selection will be completed by OPRHP, in consultation with USACE .

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ATTACHMENT 1

SUMMARY TABLE OF POTENTIAL MITIGATION SITES

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Table 3: Summary of Potential Conceptual Wetland Mitigation Sites to provide Compensatory Mitigation for the Hempstead Lake State Park Project

Site Number	On-Site Locations	Wetland Type (Existing)	Mitigation Type	Wetland Type (Proposed)	Approximate Area (ac)
	Northwest Pond				
1	*Phragmites* Removal & Native Plant Establishment	Phragmites/Emergent	Enhancement	Scrub Shrub	0.32
1a	Pond Margin Wetland Restoration	Bare soil/sparse vegetation	Restoration	Scrub Shrub	0.20
2/3	Floatables & Sediment Discharge Control, Reduction and Removal	Open water	Enhancement	Open water	7.90
2/3		Emergent	Enhancement	Emergent	7.60
4	Invasive Species Control and Prevention	Scrub shrub	Enhancement	Scrub shrub	2.46
4		Emergent	Enhancement	Emergent	16.44
	Northeast Pond				
5a	Invasive Plant/Floatables Removal & Native Plant Establishment	Phragmites/Emergent	Enhancement	Scrub Shrub	0.70
5b	Invasive Plant/Floatables Removal & Native Plant Establishment	Wetland forest	Enhancement	Wetland forest	1.50
5c	Floatables Removal & Native Plant Establishment	Dense floatables/Trash	Restoration	Wetland forest	0.10
6	Upland Forest Invasive Plant Removal/Native Plant Establishment	Upland Forest buffer	No credit	Upland Forest buffer	0.33
7	Debris/Floatables Removal in Pond Shoreline Wetlands	Forested wetland	Enhancement	Forested wetland	0.30
7		Emergent	Enhancement	Emergent	0.10
7		Open water	Enhancement	Open water	0.83
7a	Debris/Floatables Removal in Pond Shoreline Wetlands	Forested wetland	Restoration	Forested wetland	0.30
7a		Emergent	Restoration	Emergent	0.10
8	Floatables Discharge Control	Open water	Enhancement	Open water	21.50
8		Forested wetland	Enhancement	Forested wetland	1.60
8		Emergent	Enhancement	Emergent	0.90
	Total On-Site				**62.52**

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ATTACHMENT 2

FIGURES

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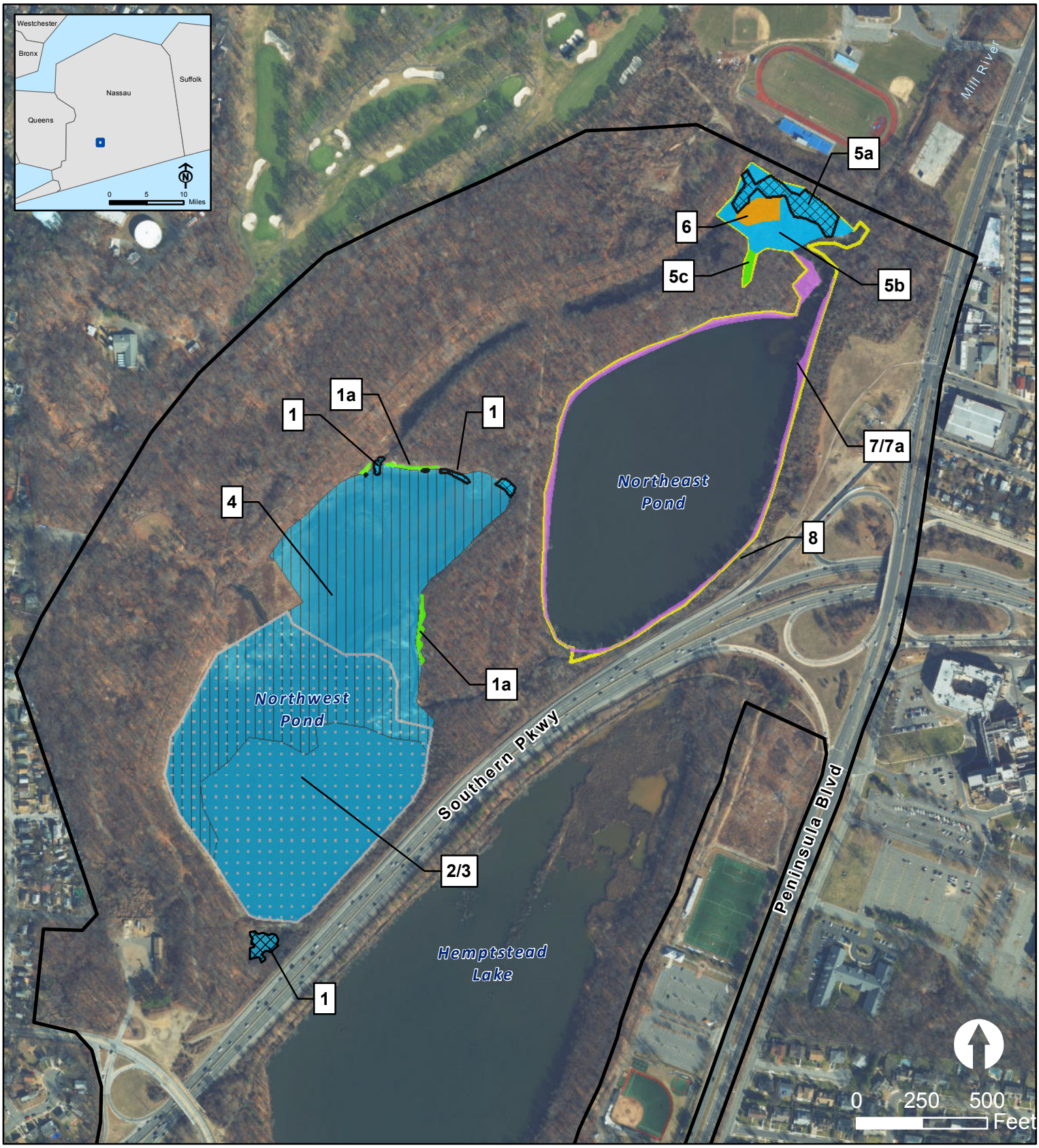
Figure 1: The non-tidal Mill River watershed above South Pond dam.



Restoration
Restoration/Enhancement
Enhancement
Enhancement (Floatables Control)
Upland Invasive Species Removal
Invasive Species Control and Prevention
Floatables and Sediment Discharge Control, Reduction and Removal
Phragmites Removal

Potential Mitigation Areas
Hempstead Lake State Park

Sources:
ESRI Imagery Map Service, 2019.
Louis Berger, 2019.

Louis Berger

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch

DEC 03 2019

SUBJECT: Department of the Army Permit Application Number NAN-2019-01262-EME by New York State Department of Parks, Recreation and Historic Preservation for work at Hempstead Lake State Park, in Hempstead Lake and Northern Ponds, in the Town of Hempstead, Nassau County, New York.

NYS Office of Parks, Recreation & Historic Preservation
Attn: Scott Fish, Regional Capital Program Facilities Manager
P.O. Box 247
Babylon, NY 11702

Dear Mr. Fish:

The comment period for the Department of the Army public notice for the proposed Hempstead Lake State Park project, dated October 11, 2019, has closed; two comments were received. In accordance with 33 CFR 325.2(a)(3), you are hereby provided the opportunity to address the following comments, and provide any clarification that will resolve outstanding concerns expressed by commenters:

1) The total wetland/water fill will be 2.36 acres. The (Public Notice) states that compensatory wetlands will be established from uplands, and it appears that some wetland enhancement will also occur. We would appreciate an opportunity to review the mitigation plan when it is completed by the applicant and submitted to the Corps.

2) Most of the wetland/water fill is associated with two new "wetland detention basins" to be constructed in (the Northeast) Pond and the (Northwest) Pond. (The Northeast) Pond (21 acres, per the National Wetland Inventory) and (the Northwest) Pond (30 acres) flow into Hempstead Lake. The purposes of the new basins are primarily water quality improvement and habitat enhancement. Have the northern ponds and Hempstead Lake been subjected to algal blooms or excessive growth of aquatic plants?

In addition, while the information in your DA application was sufficient for a public notice as described in 33 CFR 332.4(b), before we can complete our review of the proposed work and make a permit decision, you must provide a Compensatory Mitigation Plan in accordance with 33 CFR 332.4(c), including the twelve (12) required elements (Enclosed) of a mitigation plan described in paragraphs c(2) through c(13).

The Corps has determined, based on the project information provided, compensatory mitigation is required for the loss of 1.849-acres of waters of the United States, including special aquatic sites.

We are in receipt of your document titled "Draft Summary of Potential Wetland Mitigation Sites for Project Permit" (Initial Proposal), dated October 3, 2019, prepared by Louis Berger, which included the results of a wetland mitigation site selection and evaluation process to identify potential compensatory wetland mitigation sites and options.

In reference to Table 3 of the Initial Proposal (Enclosed), titled "Summary of Potential Conceptual Wetland Mitigation Sites to Provide Compensatory Mitigation for the Hempstead Lake State Park Project", the Corps has determined the combination of proposed work at the following 'sites', as described in the Initial Proposal, may be sufficient to replace lost aquatic functions resulting from project impacts:

Site 1: Phragmites (Common Reed) Removal and Native Plant Establishment (0.32-acre of enhancement);
Site 1a: Pond Margin Wetland Restoration (0.2-acre of restoration);
Site 4: Invasive Plant Species Control and Prevention (2.46-acres of enhancement to scrub shrub and 16.44-acres of enhancement to emergent);
Sites 5 (a-c): Invasive Plant Removal, Floatables Removal and Native Planting (0.7-acre of enhancement to emergent, 1.5-acres of enhancement to forested, 0.1-acre restoration to forested);
Site 7: Debris/Floatables Removal in Pond Shoreline Wetlands (0.3-acre enhancement to forested, 0.1-acre enhancement to emergent;
Site 7a: Debris/Floatables Removal in Pond Shoreline Wetlands (0.3-acre restoration to forested, 0.1-acre of restoration to emergent).

This office does not consider proposed work at sites 2, 3 and 8, as described in Table 3 of the Initial Proposal, to be suitable compensatory mitigation for project impacts to aquatic resources.

The combination of the proposed compensatory mitigation elements at sites 1, 1a, 4, 5, 7, and 7a would result in a total of approximately 5.064-acres of compensatory mitigation, including approximately 0.7-acre of restoration at a 1:1 ratio (0.7-acre), and approximately 21.82-acre of enhancement at an estimated 5:1 ratio (4.364-acre). In addition, this office also recognizes the project work would result in the restoration of approximately 0.93-acre of existing upland which would be converted to wetland. Refer to the enclosed document titled "USACE Acceptable Components of Potential Compensatory Mitigation Sites and Options from Table 3 of OCT 2019 Initial Proposal".

Please submit the requested information, including your response to the public notice comments and Final Compensatory Mitigation Plan, to this office within **30 days** of the date of this letter. Also, be advised that since the proposed work involves the discharge of dredged or fill material into WOTUS, a Clean Water Act Section 401 Water

DEC 03 2019

Quality Certification must be obtained or waived by the New York State Department of Environmental Conservation prior to any Department of the Army permit decision.

Note the Department of the Army Application Number has been changed from NAN-2017-01267-EME to **NAN-2019-01262-EME**; therefore, the current 18-digit DA Application Number must be used in all future correspondence.

Sincerely,

Lisa A. Grudzinski
Project Manager, Eastern Permits Section

Enclosures

Electronic Copy Furnished
Governor's Office of Storm Recovery, Attn: Matt Accardi
NYS Office of Parks, Recreation & Historic Preservation, Attn: Gabriella Cebada Mora
US Department of Housing and Urban Development, Attn: Donna Mahon

Table 3: Summary of Potential Conceptual Wetland Mitigation Sites to provide Compensatory Mitigation for the Hempstead Lake State Park Project

Site Number	On-Site Locations	Wetland Type (Existing)	Mitigation Type	Wetland Type (Proposed)	Approximate Area (ac)
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1a	Pond Margin Wetland Restoration	Bare soil/sparse vegetation	Restoration	Scrub Shrub	0.20
2/3	Floatables & Sediment Discharge Control, Reduction and Removal	Open water	Enhancement	Open water	7.90
2/3		Emergent	Enhancement	Emergent	7.60
4	Invasive Species Control and Prevention	Scrub shrub	Enhancement	Scrub shrub	2.46
4		Emergent	Enhancement	Emergent	16.44
	Northeast Pond				
5a	Invasive Plant/Floatables Removal & Native Plant Establishment	Phragmites/Emergent	Enhancement	Scrub Shrub	0.70
5b	Invasive Plant/Floatables Removal & Native Plant Establishment	Wetland forest	Enhancement	Wetland forest	1.50
5c	Floatables Removal & Native Plant Establishment	Dense floatables/Trash	Restoration	Wetland forest	0.10
6	Upland Forest Invasive Plant Removal/Native Plant Establishment	Upland Forest buffer	No credit	Upland Forest buffer	0.33
7	Debris/Floatables Removal in Pond Shoreline Wetlands	Forested wetland	Enhancement	Forested wetland	0.30
7		Emergent	Enhancement	Emergent	0.10
7		Open water	Enhancement	Open water	0.83
7a	Debris/Floatables Removal in Pond Shoreline Wetlands	Forested wetland	Restoration	Forested wetland	0.30
7a		Emergent	Restoration	Emergent	0.10
8	Floatables Discharge Control	Open water	Enhancement	Open water	21.50
8		Forested wetland	Enhancement	Forested wetland	1.60
8		Emergent	Enhancement	Emergent	0.90
	Total On-Site				**62.52**

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USACE Accepted Components of Potential Compensatory Mitigation & Options From Table 3 of OCT 2019 Initial Proposal

SITE NUMBER	WETLAND TYPE	MITIGATION TYPE	PROPOSED WETLAND TYPE	ACRES	Ratio		
1	Emergent	Enhancement	Scrub Shrub	0.32			
1a	Upland	Restoration	Scrub Shrub	0.2			(re-establishment of former scrub-shrub wetlands that dried when pond water elevation dropped)
4	Scrub Shrub	Enhancement	Scrub Shrub	2.46			
4	Emergent	Enhancement	Emergent	16.44			
5a	Emergent	Enhancement	Scrub Shrub	0.7			
5b	Forested	Enhancement	Forested	1.5			
5c	Upland	Restoration	Forested	0.1			(re-establishment of former forested wetlands now buried under floatables)
7	Forested	Enhancement	Forested	0.3			
7	Emergent	Enhancement	Emergent	0.1			
7a	Forested	Restoration	Forested	0.3			(re-establishment of former emergent wetlands now buried under floatables-NE Pond shoreline)
7a	Emergent	Restoration	Emergent	0.1			(re-establishment of former emergent wetlands now buried under floatables-NE Pond shoreline)
Project	Upland	Creation	Emergent	0.093			
Totals			Restoration	0.7	(1:1)	0.7	
			Enhancement	21.82	(5:1)	4.364	
			Proposed			5.064	
			Total Impact Acres to Mitigate			2.92	Includes impacts to Open Water
			Total Wetland Acres to Mitigate			1.849	Includes impacts to special aquatic sites before off-set
			Project work off-set	0.093	(1:1)		Includes project components resulting in conversion of upland to wetland (creation)
			TOTAL remaining acres of special aquatic sites to mitigate			1.756	[1.849 (impacts to special aquatic sites) minus .093 (creation via project work)]

standards. The DA permit or instrument must clearly specify the conditions under which the financial assurances are to be released to the permittee, sponsor, and/or other financial assurance provider, including, as appropriate, linkage to achievement of performance standards, adaptive management, or compliance with special conditions.

(5) A financial assurance must be in a form that ensures that the district engineer will receive notification at least 120 days in advance of any termination or revocation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the district engineer at least 120 days before the assurance is revoked or terminated.

(6) Financial assurances shall be payable at the direction of the district engineer to his designee or to a standby trust agreement. When a standby trust is used (e.g., with performance bonds or letters of credit) all amounts paid by the financial assurance provider shall be deposited directly into the standby trust fund for distribution by the trustee in accordance with the district engineer's instructions.

(o) *Compliance with applicable law.* The compensatory mitigation project must comply with all applicable federal, state, and local laws. The DA permit, mitigation banking instrument, or in-lieu fee program instrument must not require participation by the Corps or any other federal agency in project management, including receipt or management of financial assurances or long-term financing mechanisms, except as determined by the Corps or other agency to be consistent with its statutory authority, mission, and priorities.

§ 332.4 Planning and documentation.

(a) *Pre-application consultations.* Potential applicants for standard permits are encouraged to participate in pre-application meetings with the Corps and appropriate agencies to discuss potential mitigation requirements and information needs.

(b) *Public review and comment.* (1) For an activity that requires a standard DA permit pursuant to section 404 of the Clean Water Act, the public notice for the proposed activity must contain a statement explaining how impacts associated with the proposed activity are to be avoided, minimized, and compensated for. This explanation shall address, to the extent that such information is provided in the mitigation statement required by § 325.1(d)(7) of this chapter, the proposed avoidance and minimization and the amount, type, and location of any proposed compensatory mitigation, including any out-of-kind compensation, or indicate an intention to use an approved mitigation bank or in-lieu fee program. The level of detail provided in the public notice must be commensurate with the scope and scale of the impacts. The notice shall not include information that the district engineer and the permittee believe should be kept confidential for business purposes, such as the exact location of a proposed mitigation site that has not yet been secured. The permittee must clearly identify any information being claimed as confidential in the mitigation statement when submitted. In such cases, the notice must still provide enough information to enable the public to provide meaningful comment on the proposed mitigation.

(2) For individual permits, district engineers must consider any timely comments and recommendations from other federal agencies; tribal, state, or local governments; and the public.

(3) For activities authorized by letters of permission or general permits, the review and approval process for compensatory mitigation proposals and plans must be conducted in accordance with the terms and conditions of those permits and applicable regulations including the applicable provisions of this part.

(c) *Mitigation plan*—(1) *Preparation and approval.* (i) For individual permits, the permittee must prepare a draft mitigation plan and submit it to the district engineer for review. After addressing any comments provided by the district engineer, the permittee must prepare a final mitigation plan, which must be approved by the district engineer prior to issuing the individual permit. The approved final mitigation

plan must be incorporated into the individual permit by reference. The final mitigation plan must include the items described in paragraphs (c)(2) through (c)(14) of this section, but the level of detail of the mitigation plan should be commensurate with the scale and scope of the impacts. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and the name of the specific mitigation bank or in-lieu fee program to be used.

(ii) For general permits, if compensatory mitigation is required, the district engineer may approve a conceptual or detailed compensatory mitigation plan to meet required time frames for general permit verifications, but a final mitigation plan incorporating the elements in paragraphs (c)(2) through (c)(14) of this section, at a level of detail commensurate with the scale and scope of the impacts, must be approved by the district engineer before the permittee commences work in waters of the United States. As an alternative, the district engineer may determine that it would be more appropriate to address any of the items described in paragraphs (c)(2) through (c)(14) of this section as permit conditions, instead of components of a compensatory mitigation plan. For permittees who intend to fulfill their compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, their mitigation plans need include only the items described in paragraphs (c)(5) and (c)(6) of this section, and either the name of the specific mitigation bank or in-lieu fee program to be used or a statement indicating that a mitigation bank or in-lieu fee program will be used (contingent upon approval by the district engineer).

(iii) Mitigation banks and in-lieu fee programs must prepare a mitigation plan including the items in paragraphs (c)(2) through (c)(14) of this section for each separate compensatory mitigation project site. For mitigation banks and in-lieu fee programs, the preparation and approval process for mitigation plans is described in §332.8.

(2) *Objectives.* A description of the resource type(s) and amount(s) that will be provided, the method of compensation (*i.e.*, restoration, establishment, enhancement, and/or preservation), and the manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed, ecoregion, physiographic province, or other geographic area of interest.

(3) *Site selection.* A description of the factors considered during the site selection process. This should include consideration of watershed needs, on-site alternatives where applicable, and the practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the compensatory mitigation project site. (See §332.3(d).)

(4) *Site protection instrument.* A description of the legal arrangements and instrument, including site ownership, that will be used to ensure the long-term protection of the compensatory mitigation project site (see §332.7(a)).

(5) *Baseline information.* A description of the ecological characteristics of the proposed compensatory mitigation project site and, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other site characteristics appropriate to the type of resource proposed as compensation. The baseline information should also include a delineation of waters of the United States on the proposed compensatory mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about

the impact site, not the mitigation bank or in-lieu fee project site.

(6) *Determination of credits.* A description of the number of credits to be provided, including a brief explanation of the rationale for this determination. (See § 332.3(f).)

(i) For permittee-responsible mitigation, this should include an explanation of how the compensatory mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.

(ii) For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

(7) *Mitigation work plan.* Detailed written specifications and work descriptions for the compensatory mitigation project, including, but not limited to, the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water, including connections to existing waters and uplands; methods for establishing the desired plant community; plans to control invasive plant species; the proposed grading plan, including elevations and slopes of the substrate; soil management; and erosion control measures. For stream compensatory mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

(8) *Maintenance plan.* A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

(9) *Performance standards.* Ecologically-based standards that will be used to determine whether the compensatory mitigation project is achieving its objectives. (See § 332.5.)

(10) *Monitoring requirements.* A description of parameters to be monitored in order to determine if the compensatory mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting on monitoring results to the district engineer must be included. (See § 332.6.)

(11) *Long-term management plan.* A description of how the compensatory mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management. (See § 332.7(d).)

(12) *Adaptive management plan.* A management strategy to address unforeseen changes in site conditions or other components of the compensatory mitigation project, including the party or parties responsible for implementing adaptive management measures. The adaptive management plan will guide decisions for revising compensatory mitigation plans and implementing measures to address both foreseeable and unforeseen circumstances that adversely affect compensatory mitigation success. (See § 332.7(c).)

(13) *Financial assurances.* A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the compensatory mitigation project will be successfully completed, in accordance with its performance standards (see § 332.3(n)).

(14) *Other information.* The district engineer may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the compensatory mitigation project.

§ 332.5 Ecological performance standards.

(a) The approved mitigation plan must contain performance standards that will be used to assess whether the project is achieving its objectives. Performance standards should relate to the objectives of the compensatory mitigation project, so that the project can be objectively evaluated to determine if it is developing into the desired resource type, providing the expected functions, and attaining any other applicable metrics (e.g., acres).

(b) Performance standards must be based on attributes that are objective and verifiable. Ecological performance standards must be based on the best