Draft Environmental Assessment:
Lake Montauk Harbor Navigation Project
Montauk, New York

Prepared By:

US Army Corps of Engineers
New York District

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1.0 Purpose and Need, Authorization, Study Area, and Proposed Action

1.1 Purpose and Need of Project

The Lake Montauk Harbor Navigation Project Study, Montauk, New York (Study), is intended to provide safer navigation to and from Lake Montauk Harbor. The United States Army Corps of Engineers (USACE), New York District (District), is the lead Federal agency for the lake Montauk Point Navigation Project (Project) The Project area is located in the Township of East Hampton, Suffolk County, New York approximately 125 miles east of NY City (Figure 1). The initial Federal navigation project at Lake Montauk Harbor was authorized by the River and Harbor Act of 2 March 1945 (House Document 369, 76th Congress, 1st Session). The existing Lake Montauk Harbor project need is characterized by inadequate authorized channel depths for current vessel usage needs, especially with regard to the larger commercial fishing vessels.

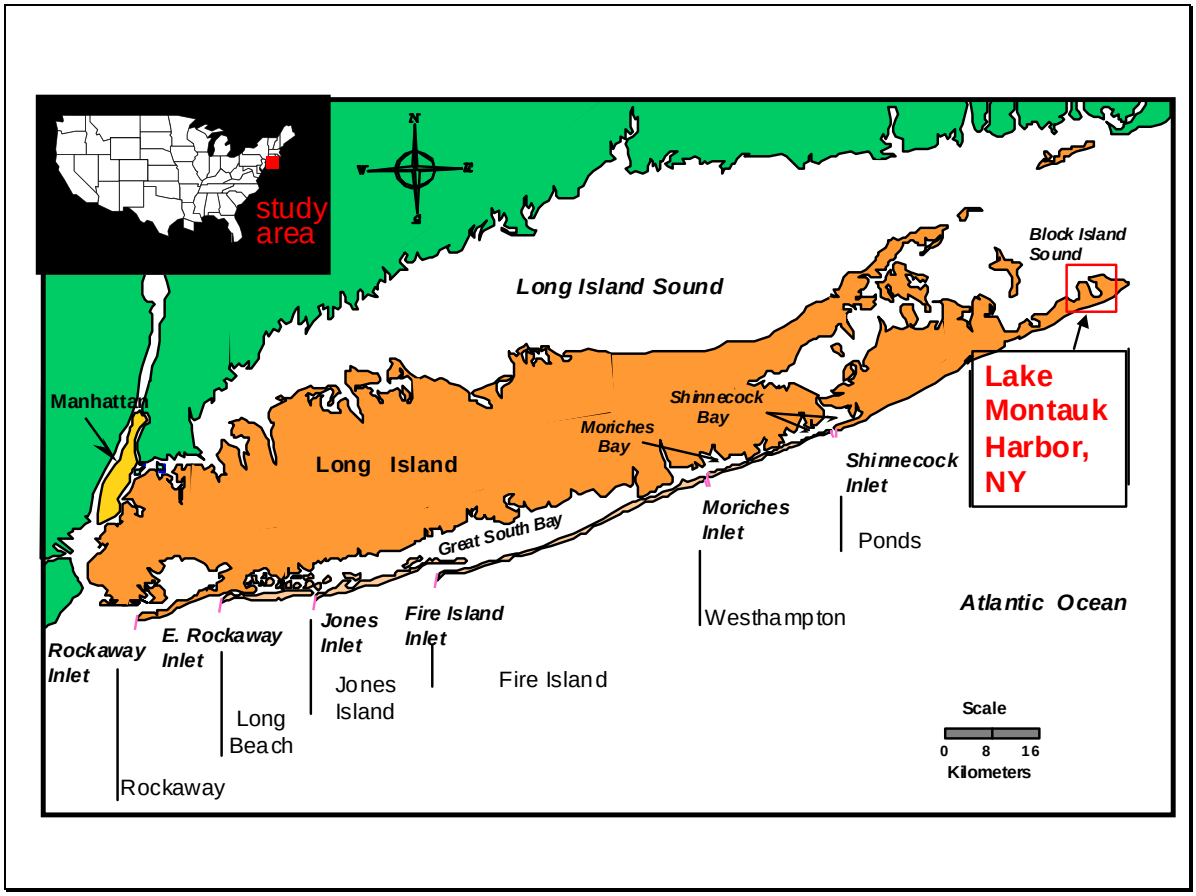


Figure 1. Location of proposed project.

The existing authorized project provides for a channel 12 feet deep at Mean Low Water and 150 feet wide, extending from the 12 foot contour in Block Island Sound to the same depth in the existing yacht basin east of Star Island. The length of the existing channel is approximately 0.7 miles (Figure 2). A 50 foot (ft) wide deposition basin is currently maintained at the same depth as the navigation channel (-12'MLLW) along the northeastern end of the channel.

Figure 2. Existing authorized project.

1.2 Study Authority

The study is conducted under the authority of two Congressional resolutions. First, a resolution was adopted by the United States Senate Committee on Environment and Public Works on October 17, 1991:

> *"Resolved by the Committee on Environment and Public Works of the United States Senate, that the Secretary of the Army is hereby requested to review the report of the Chief of Engineers on Lake Montauk Harbor, East Hampton, New York, published as House Document 369, Seventy-sixth Congress, First Session, and other pertinent reports, with a view to determining if further improvements for navigation are advisable at this time. Beneficial use of any dredged material for improvements to the environment should also be considered."*

In accordance with this resolution, the reconnaissance report was completed in May 1995. It recognized that there were problems of insufficient channel and harbor depth for many vessels due to increased vessel size as well as erosion problems related to the navigation project and opportunities for multipurpose solutions. With the findings of erosion problems and opportunities for multipurpose solutions, the scope of the study was further expanded by authority of a resolution adopted by the United States Senate Committee on Transportation and Infrastructure on May 22, 2002:

> *"Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That, the Secretary of the Army is requested to review the report of the Chief of Engineers, published as House Document 369, 76th Congress, 1st Session, and other pertinent reports, to determine whether modifications to the recommendations contained therein in the interest of navigation improvements, to include beneficial uses of dredged material and sand-bypassing, in accordance with Section 110 of the River and Harbor Act of 1962, to determine the need for measures to address storm damage reduction, shoreline protection, environmental restoration and protection and allied purposes in the vicinity of Lake Montauk Harbor, East Hampton, New York."*

1.3 Project Area Description

The study area, Lake Montauk Harbor and vicinity is located on the northern shore of the north fork of Long Island, within the Town of East Hampton, Suffolk County, New York (Figure 3). The study area is approximately 125 miles east of New York City, 21 miles southwest of New London, Connecticut, and about 3 miles west of Montauk Point. Lake Montauk Harbor is approximately 2.0 miles long in a north-south orientation and .7 miles wide, on the average. The brackish lake encompasses 1,037 acres with a mean depth of seven feet. The Lake Montauk watershed encompasses a drainage of $\pm$ 2,760 acres. Six vegetation associations have been identified within the Montauk watershed: tidal wetlands, freshwater wetland, forest vegetation, maritime shrub land, dune vegetation, and pasture land/open field.

Lake Montauk Harbor is a home port and a port of call for commercial and recreational vessels. There are several marinas for commercial vessels, a yacht club, and small-craft facilities on both sides near the entrance to Montauk Harbor. Two rock jetties stabilize the inlet. The east and west jetties are approximately 1,100 and 980 feet in length, respectively, with top elevations of +8' MLW. There is a 500-foot separation between them. The harbor is landlocked on the east, south, and west sides. To the north, it connects with Block Island Sound through the north-south oriented inlet. The study area also encompasses the Block Island Sound shorelines bounded by Fort Pond Bay on the west and Shagwong point on the east. These extended shoreline areas were included in the study area to fully consider the littoral transport system, erosion and accretion problems of the shorelines adjacent to the inlet, and the sources and quantities of material contributing to channel shoaling. The shoreline east of the inlet jetties is accreting and is generally undeveloped parkland. The shoreline to the west of the inlet jetties is eroding and is developed with residential and commercial properties (including rental properties with supporting roads and infrastructure).

Star Island, located south of the inlet within the lake, is 0.5 mile long in a north-south direction and 0.2 mile wide. It is connected to the mainland by a causeway. The U.S. Coast Guard Station is situated at the northern end of Star Island with direct access to the inlet. Coonsfoot Cove is between Star Island and the western shore of the lake. The channel and turning basin servicing Coonsfoot Cove have been maintained by Suffolk County. There has been extensive development of the Coonsfoot Cove area to provide marina services for commercial fishing vessels, charter boats, and pleasure craft.

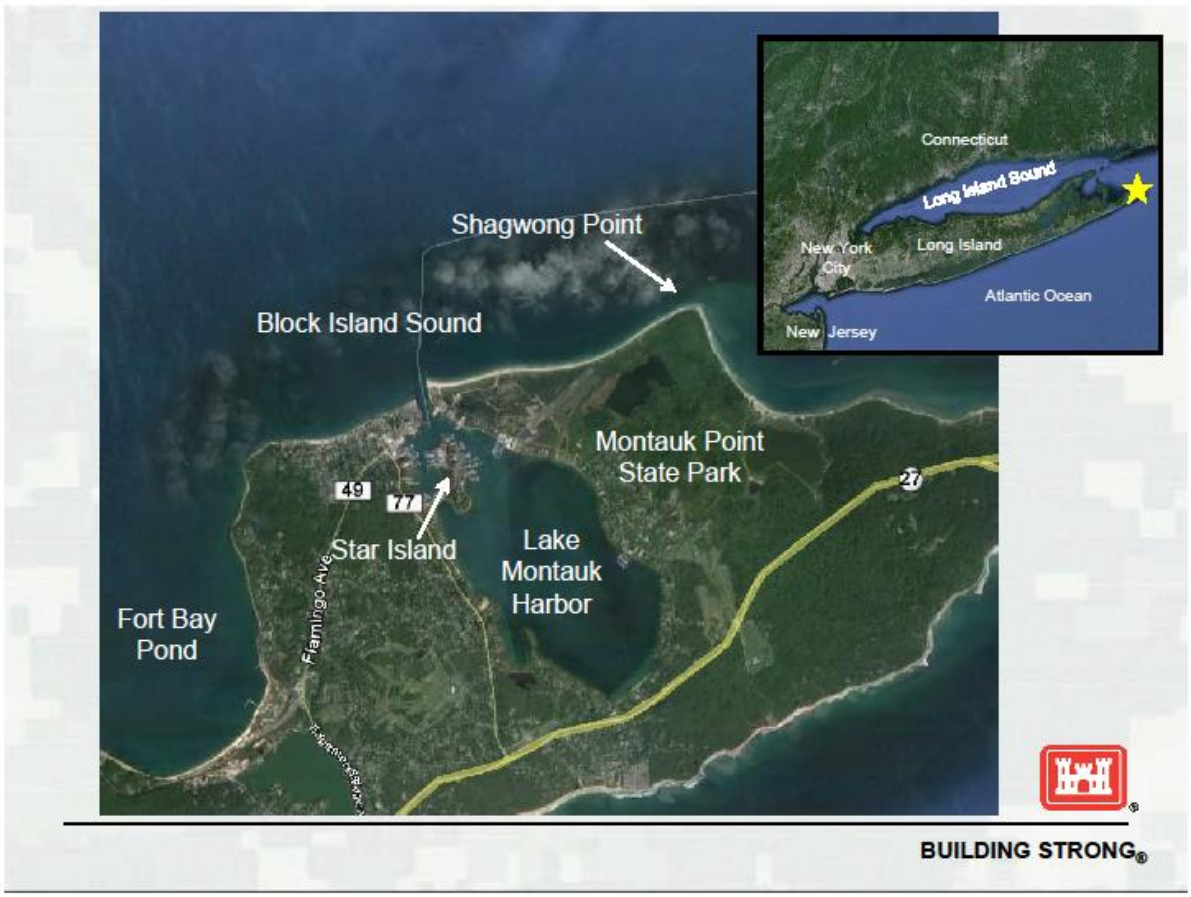


Figure 3. Study Area

1.4 Proposed Action

The project site has experienced harbor channel shoaling and accretion of the shore line east of the inlet and erosion of the shoreline west of the inlet. The existing 12-foot channel and harbor depths are only marginally adequate for many of the current commercial vessels. In addition, maintaining the channel depth and width has become more difficult with the accumulation of

sand on the eastern side of the east jetty and the deterioration of the east jetty through which sand migrates into the Federal navigation channel. As the channel and basin depths decrease, commercial navigation is further limited. Some deeper draft vessels, accounting for a significant portion of the commercial fish landings, must transit the channel only during high tides or must sail under less than their full load capacity to decrease their operating drafts. Maintenance dredging has been historically necessary every 4 to 5 years, and it is anticipated that this dredging will become necessary even more often in the near future. Persistent shoaling, as well as the deteriorating condition of the jetties have also been cited by local interests as potential problems. A large sand shoal, located northeast of Star Island and near the southern portion of the inshore end of the eastern jetty grows and reforms, with the result that it infringes ever more upon the authorized channel dimensions. The effective dimensions of the shoal thereby minimize the area of the channel where vessels can safely transit. Shoaling within the inlet has resulted in delays in commercial activity, under loading of vessels, and potentially unsafe navigation practices. Lake Montauk Harbor is the only harbor of refuge for nearly 50 miles for large fishing and recreational vessels during rough weather conditions. In view of the increasing concerns regarding homeland security issues, this study has been coordinated with the U.S. Coast Guard. Meetings held with that agency indicated that the undertaking of this project would not pose any security risks for the nation.

The proposed action, which will identify the Tentatively Selected Plan (TSP), will result from an environmentally sustainable, economically efficient and navigationally safe and sufficient array of alternatives designed to address and resolve the issues identified in this study. As such, this EA provides analyses, as applicable and appropriate, for each alternative identified as feasible for implementation after the initial array of alternatives have been screened out during plan formulation due to unacceptable adverse impacts to the environment, and/or due to lack of compliance with economic and/or navigational needs and/or safety requirements. The proposed action for this study is to identify the National Economic Development Plan (NED) and the Environmentally Preferred Plan (EPP), which will be limited to identifying the preferred new channel configuration (eg. depth, width) that meets the navigational needs of the Federally-authorized channel.

2.0 Plan Formulation; Identification of Study Plan Alternatives

2.1 No Action/Without Project Condition

Continuance of the Operation and Maintenance (O&M) program of the currently authorized 0.7 mile Federal channel (Figure 4) will be maintained at 12 ft MLW depth and 150 ft width for the No Action/Without Project (WOP) condition. This alternative would continue the existing practice of maintenance dredging to a Federally-authorized depth of -12 ft. MLW assuming an approximate 3-4 year dredging cycle. No navigation improvements would be provided, therefore, some of the fully-loaded fishing vessels would be required to wait for higher tides to transit so as not to scour the channel bottom. This option provides a basis for calibration of benefits. Under the No Action/WOP condition it is assumed that the east jetty inner section would continue to deteriorate and there would be a fully saturated sediment fillet accumulated on the east side of the east jetty. The annual channel dredging rate is assumed to increase with the dredging cycle shortened, accordingly, to maintain authorized depth, thereby incurring increased O&M costs, as

well as delaying environmental recovery for the aquatic ecosystem due to increased maintenance requirements.

The recreational, charter and party boat traffic will remain unchanged. The channel shoaling rate is expected to increase as the east jetty allows more littoral material to deposit in the channel. The continued growth of the flood shoal located south of the east jetty will require more frequent maintenance dredging as the side slope of the shoal encroaches into the channel.

Additional bulk heading might be needed along the shore west of the western jetty to protect the residential structures, particularly between Stations 33+00 and 42+00 as well as continued repairs to bulkheads already constructed, so environmental impacts may occur due to new bulk heading and repairs to existing bulkheads. For the narrow beaches seaward of the bulkheads and in dunes and low bluffs not protected by bulkheads degradation and lowering of the remaining beach will continue to occur leaving little, if any, shorebird foraging area. Finally, for the shore east of the east jetty there will be continued but limited growth of the updrift fillet in terms of beach width and elevation.

2.2 Array of Alternative Plans

Measures that warranted continued consideration were assembled into alternative plans. In the final array of alternatives, the following list of alternatives remained after preliminary, initial screening criteria and were applied via analyses of dredge volume calculation as follows:

Three channel deepening and widening options for the channel and deposition basin were considered for this analysis:

1) No action alternative
2) Dredging of the 150ft wide channel and dredging of the 50 ft wide deposition basin to depths ranging from -14+2 to -18+2 ft MLLW
3) Uniform dredging of both the 150 ft wide channel and 100 ft wide deposition basin to depths ranging from -14+2 to -18+2 ft MLLW.

For each option dredge depths of the channel ranged from the existing depth of -12ft MLLW to --18ft MLLW, with two additional feet allotted for over dredging. In total 21 alternative configurations were assessed during the estimated volume computation (Table 1). Typical channel configurations for select alternatives are shown in Figures 5 through 8.

Table 1: Estimated Volume Calculation for Each Alternative

	Dredge Depth + Over Dredging (ft)						
Alternatives	**12+2**	**13+2**	14+2	15+2	16+2	17+2	18+2
Channel and Depo Deepening	26,409	40,413	52,837	84,869	111,176	138,203	166,311
Channel Only Deepening	11,904	21,752	38,115	57,968	79,465	102,030	125,612
Channel Deepening + Depo (authorized depth)	26,409	31,387	47,750	67,603	89,100	111,665	135,247

**values reported in cu.yd.*

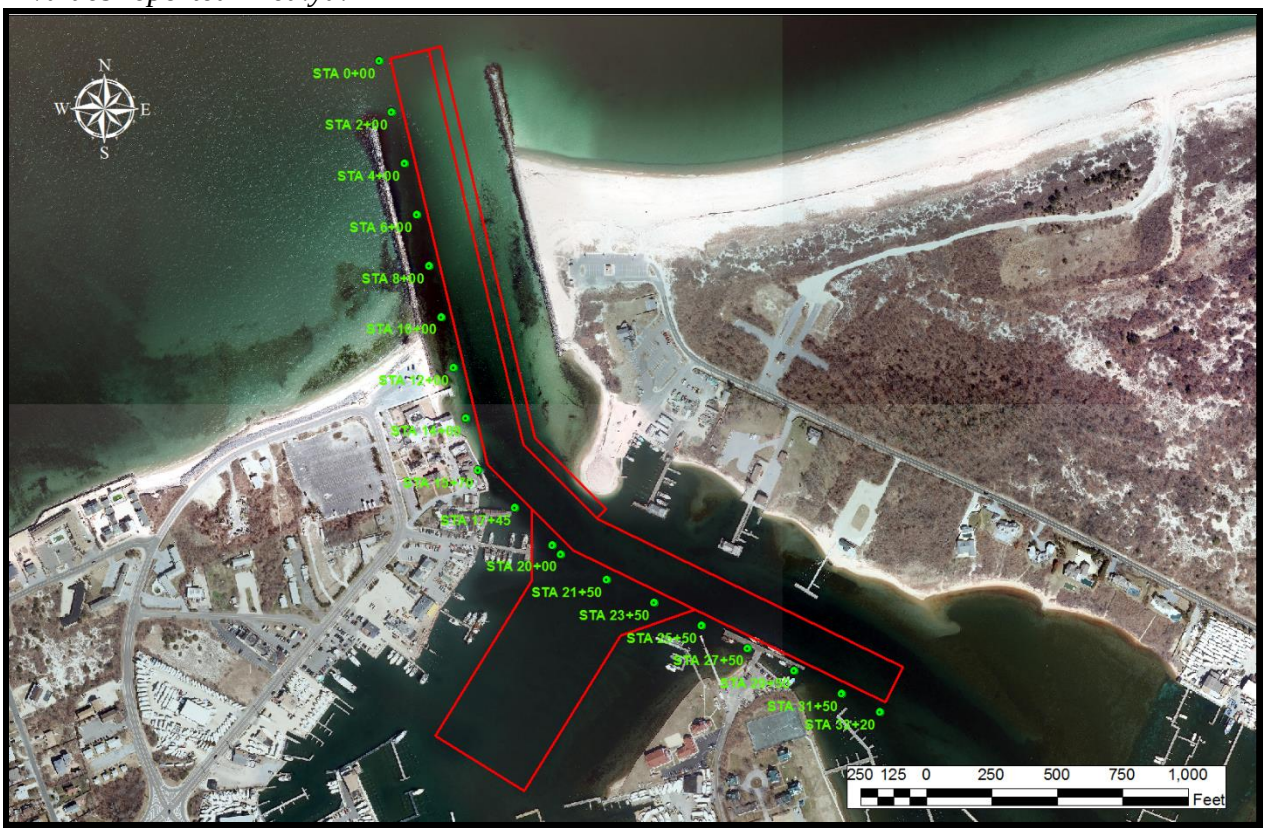


Figure 4: Lake Montauk Harbor. Navigation channel and deposition basin are shown in red. Channel stationing is marked in green.

Figures 5-8 show typical cross-sections of the alternatives at select depths. Note that the side slopes are a standard 1 vertical on 3 horizontal.

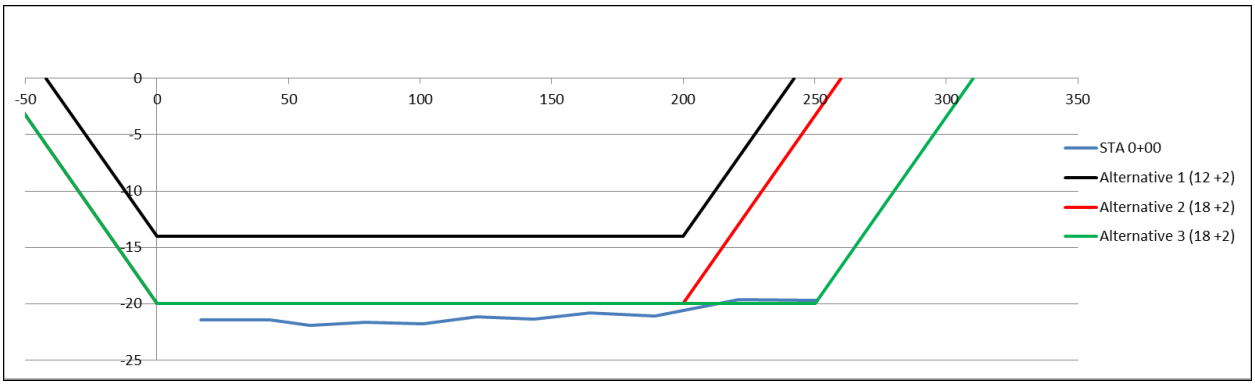


Figure 5: Select Channel Alternatives at Station 0+00. All channel side slopes are 1V:3H.

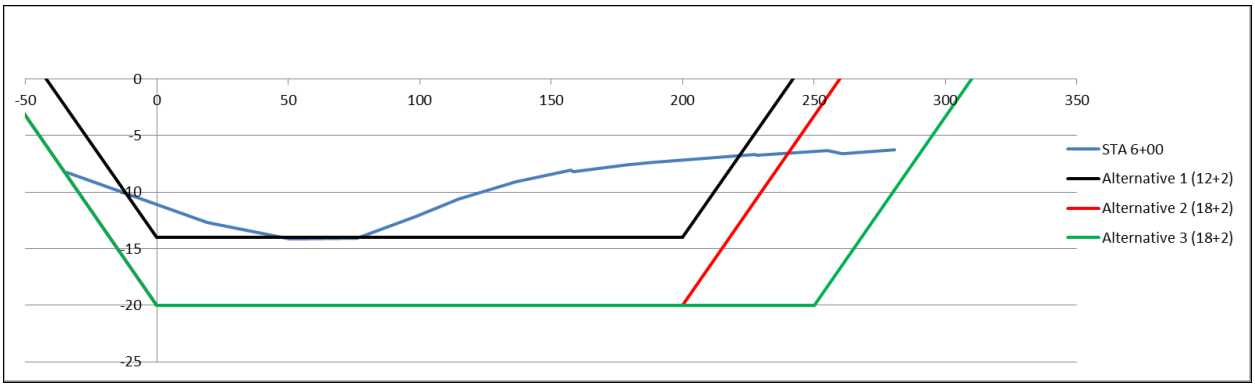


Figure 6: Select Channel Alternatives at Station 6+00. All channel side slopes are 1V:3H.

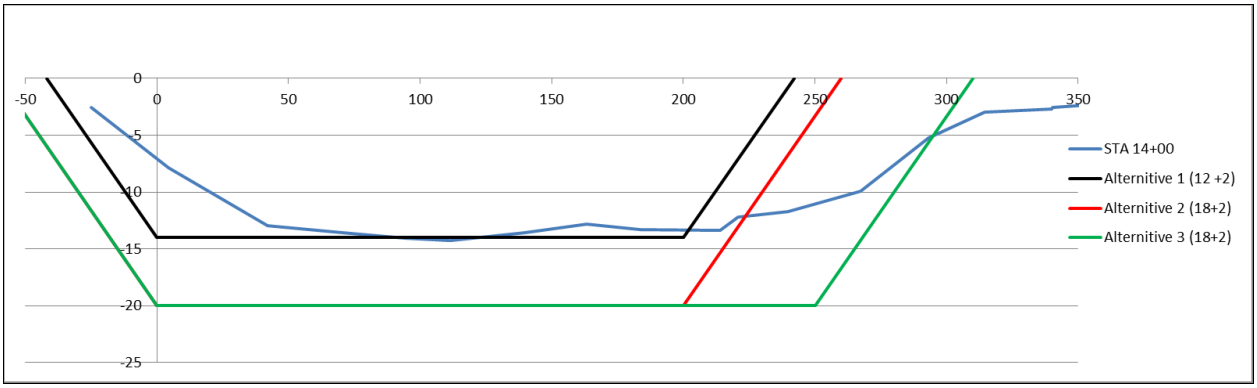


Figure 7: Select Channel Alternatives at Station 14+00. All channel side slopes are 1V:3H.

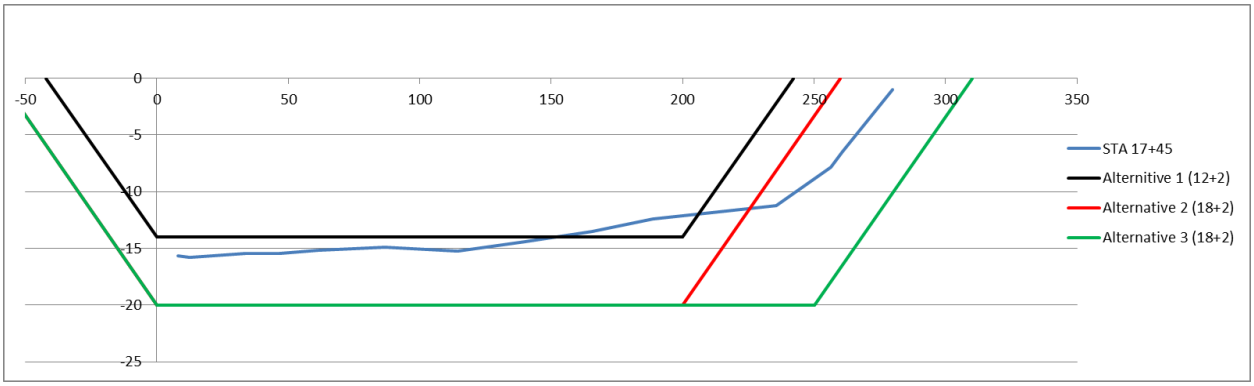


Figure 8: Select Channel Alternatives at Station 17+45. All channel side slopes are 1V:3H.

3.0 Existing Conditions and Potentially Affected Environment

3.1 Existing Conditions

General. The topography of the Montauk Peninsula is generally hilly, with rolling topography and numerous depressions and includes the project area. Soils of the Lake Montauk watershed can be characterized as deep and excessively to moderately drained. The soil texture is silt loam and/or fine sandy loam in the surface layer, and silt loam, loam, and/or fine sandy loam in the subsurface layer. Offshore sediments are influenced by strong currents and generally consist of coarse material such as gravels and sands, including the sediments found within the Lake Montauk Inlet. Sediments within the lake in general contain significantly higher proportions of fine particles, muds and silts. Ground water recharge for Montauks principle aquifer is precipitation which amounts to about 50 inches a year. Suffolk County Water Authority supplies water to most dwellings on the west of Lake Montauk.

Aesthetics and Scenic Resources. The existing project site consists of the northern portion of Lake Montauk, the Marina, the inlet and the shorelines and surface waters of Long Island/Block Island Sound. The harbor and marina provides boating and fishing opportunities as well as other activities relevant to such facilities. The beach and the areas contiguous with the inlet and jetties facilitate swimming, fishing, windsurfing, sun bathing, beach strolling, picnicking and bird watching, as well as a quality view shed for the surrounding environs. Presently west of the inlet there is a substantial amount of eroded shoreline within the project area due to recent erosion and the damage to the land forms as well as aging shore protection structures

Aesthetic and scenic resources in the study area are derived from the water vistas and the open coastal nature of much of the project site. The value of these areas have been enhanced through the area's use for recreation and open space. West of the immediate project site is county park land which is undeveloped and provides for camping opportunities. Due to the open space offered by the parkland the area east of the inlet offers natural scenic resources associated with views of the Long Island Sound, and Block Island Sound, as well as adjacent undisturbed uplands to the south. The Project area attracts sightseers interested in views of natural scenic resources that include vistas of open water, as well as the potential for wildlife observation, such as migratory waterfowl.

Development within the study area has been modest, and consists primarily of the facilities related to the harbor and its marinas but also includes restaurants and several motels. Part of this development has been residential and includes the lake shore, as well as the somewhat more densely populated district west of the lake along the beach out to Culloden Point. Within the vicinity of Lake Montauk is Montauk Point (at 6 miles east) which has the Montauk Lighthouse and six associated historic structures which sustain an enormous popular interest by the public, and which have a close association with maritime history. The aesthetic quality of the Lighthouse complex is enhanced by the landscape of Montauk Point. Montauk Point is also a very popular destination for tourists and sportsman.

Transportation. The study area is linked to adjacent population center (Village of Montauk) by two roads: West Lake Drive, County Road 77 which parallels the western shore of Lake Montauk and Montauk Highway (State Route 27) which runs on an east-west axis through the center of Montauk peninsula, and functions as the main transportation route along the east end of the south fork of the Long Island. There is also a network of streets that interconnect the residential area west of the lake. The main route from this development is Sound View Drive which connects to West Lake Drive and Montauk Highway. Sound View Drive will likely become the main artery for transport of equipment and supplies etc. during the shore protection phase of the project. Access to the project site is also possible from the water, however there are few places to put ashore besides at those facilities within the harbor.

The study area is served by the Long Island Rail Road and the Suffolk County Transit System's Bus Route 10c.

Storm Water. Limited stormwater infrastructure data is available for the Lake Montauk Watershed. Data was compiled from the Town, the Peconic Estuary Program (PEP) and field visits to identify infrastructure locations. The Town's data was collected in 2012 as part of their MS4 reporting requirements, and the data collected by PEP was compiled in 2000 as an initial dataset for the Peconic Estuary. Several direct outfall pipes are located along the lake shoreline. Additionally, several areas of direct overland flow were identified by the Town or PEP along the shoreline. As a result, it can be surmised that at a minimum, areas located in close proximity to the lake shoreline have some direct discharge to the lake. There is evidence of upland catchment, as illustrated by the abundance of catch basins located in the northwest portion of the watershed. Similar catchment facilities may be provided in other areas of the watershed; however, complete data illustrating drainage infrastructure within the watershed is unavailable at this time.

Sanitary. No private or municipally owned sewage treatment plants are located within the watershed. As a result, all property owners have individual sanitary systems for each building. The age and functionality of these systems is unknown as some structures have been expanded or restored, while others have had very little change since being built. This is particularly true in the Ditch Plains neighborhood located south of the lake. Many of the residences located in this neighborhood were built between the 1950's and the 1970's, and may not have had upgrades to the sanitary systems. This area also has shallow depth to groundwater (less than 8 feet), suggesting that some sanitary systems may not have adequate separation distance to groundwater and therefore are not functioning properly. As a result, these systems could be contributing nitrogen and coliform pollution to the lake and to the Atlantic Ocean.

Hazardous, Toxic, and Radioactive Waste. A preliminary Hazardous, Toxic, Radioactive Waste (HTRW) assessment was performed for regulated sites at the recommended search distances from the study site in accordance with the American Society for Testing and Material (ASTM) E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

An assessment of Hazardous, Toxic, and Radioactive Waste (HTRW) in the study area was conducted by reviewing recent state and Federal data sources. No HTRW sites or New York State-listed Inactive Hazardous Waste Disposal Sites have been identified within the study area (NYSDEC 1998b, USEPA 2002). The initial reconnaissance report (USACE 2005) for the Project included a survey for HTRW in and around the study area. No evidence of HTRW was identified within the study area. However, there were two sites nearby that contain HTRW.

The Montauk landfill is located several miles away from the Project area and was investigated for potential seepage from septic lagoons. However, there is no evidence that any seepage would impact Lake Montauk or any locations within the project study area. Camp Hero, a former military installation, is approximately 3.6 miles southeast of the Project area. Potential HTRW at Camp Hero consisted of underground storage tanks (oil storage), above ground storage tanks, transformers, and a deteriorating sewage treatment plant. Although some seepage from these HTRW sources may have occurred at Camp Hero, there is a very low probability that the contaminants would impact the Project area.

The project site itself, consisting primarily of sand with no history of dumping or nearby outfalls, is not considered to offer an HTRW threat

Land Use. The Lake Montauk watershed area is approximately 2,728 acres in size, the majority of which is occupied by Recreation & Open Space (24.94%), Medium Density Residential 18.61%), Transportation/Utilities (13.15%) and Low Density Residential (10.94%) uses. Vacant Land also occupies a significant portion of the watershed, as it currently comprises 22.08% of lands. Although High Density Residential (4.43%), Commercial (3.18%), Agricultural (0.86%) and Marinas (0.54%) occupy a much smaller portion of the watershed, these uses represent the remainder of the major uses that occupy lands. All other uses within the watershed occupy less than 0.5% of the overall land mass.

Geology. Long Island belongs to the inner part of the Atlantic Coastal Plain. The main body of Long Island divides into two branches at the head of Great Peconic Bay. The backbone of the Island in the main body consists principally of two moraine ridges of Pleistocene age, the Harbor Hill Moraine and the Ronkonkoma Moraine. The moraine and outwash accumulations, associated with the glacial or recent epochs, constitute the greater portion of both the surface and underlying materials throughout the entire island.

The geology underlying the Lake Montauk watershed is comprised of six geologic units. The first and deepest is comprised of crystalline bedrock. Above this bedrock lie the sedimentary deposits which form the three major water-bearing units that underlie the area. Lying immediately atop the bedrock is the Raritan formation, which is comprised of the Lloyd sand

layer and an overlying clay layer. Directly above the Raritan formation is the Magothy formation. The Magothy formation is comprised of fine to medium sand mixed with silt and clay and some beds of coarse sand and gravel.

Soil. Surveys identify the majority of the Lake Montauk study site as lying within an area characterized entirely by Montauk-Montauk, sandy variant-Bridgehampton Association soils. Soils of this association are characterized as deep, rolling and hilly, excessively-drained and moderately well-drained to well-drained soils, having medium to coarse-textured soils on moraines. It is noted that Montauk soils within this association have a fragipan or compact layer that is at a depth of 20 to 30 inches, and that Bridgehampton soils within this association have a compact glacial till at a depth of about 48 inches. A much smaller portion of the Lake Montauk watershed, located on the northeastern side of the lake lies within an area characterized by Dune Land-Tidal marsh-Beaches association.

At Montauk Point, to the east of the study site, the shoreline is characterized by a series of bluffed headlands formed by erosion of the face of the Ronkonkoma Moraine, with some nearly vertical bluffs rising to a height of almost 70 feet above sea level. The shoreline from this point westward to Fort Pond Bay, the western limit of the study area, is a succession of wave-formed beaches. The beaches are backed by sand dunes with widths ranging from 20 to 50 feet and heights ranging from 10 to 25 feet above mean sea level. At most parts of the shoreline west of the inlet, a mild, narrow foreshore slope backed by a steep dune characterizes the beach profile.

Littoral Materials. Littoral material on the study shoreline is predominantly sand and gravel. On the westward 3,000 feet of shoreline next to the inlet, beach sand due to erosion has been reduced to a gravel beach. Two sediment samples were collected at the east and west sides of the inlet in October 1994, representing typical beach sand sizes in the study area. The sand samples were tested for grain size distribution. The littoral material is predominantly light to brown fine to medium sand. The median sand size at the east shoreline is approximately 0.4 mm. The median size at the west shoreline is approximately 0.24 mm. The finer sediment size at the west shoreline is believed to be material from channel dredging. Due to slow-down of bluff erosion (providing littoral material source) and man-made shore protection structures, the littoral transport rates along the project shoreline have slowed down gradually.

Sediment Budget. Based on the results of the pre-construction, post-construction, and recent sediment budgets, and the observation that the updrift fillet is fully saturated and can no longer impound additional material, the future without project sediment budget was estimated as follows (See Figure 9; Table 1):

- Updrift sediment source (Cell 6) to be bypassed: 10,000 – 12,000 cy/yr;
- Downdrift shoreline net (westward) transport at Culloden Pt: 20,000 cy/yr;
- Net downdrift shoreline sediment deficit (after bypassing): 8,000 - 10,000 cy/yr;
- Majority of littoral material passing Culloden Point ends up in sub aerial spit;

Sediment Grain Size. The predominant substrate type in areas of swift currents (i.e., at the mouth of the inlet) included coarse material such as gravels and sands. Littoral material on the study shoreline is predominantly sand with some gravel. Two sediment samples were collected at the

east and west sides of the inlet in October 1994, representing typical beach sand sizes in the study area. The sand samples, labeled as E-1 and W-1 and consisting of beach sand only, were tested for grain size distribution as shown in
Figure 11. As shown in the figures, the littoral material is predominantly light to brown fine to medium sand. The median sand size at the east shoreline is approximately 0.4 mm. The median size at the west shoreline is approximately 0.24 mm. The finer sediment size at the west shoreline is believed to be material from channel dredging. The dredged material in the channel and boat basin is predominantly comprised of fine to medium sand with traces of silt (Figure 10).

Precipitation. Precipitation trends in East Hampton are similar to that of the Long Island region. Data for East Hampton was obtained from the Northeast Regional Climate Center and analyzed for monthly and annual trends. It is noted that the dataset for East Hampton is extremely limited, as data only exists from 2003 to present. The majority of precipitation occurs between November and March, while precipitation declines during mid-spring and summer months. The highest average precipitation occurs in March, which averages 14.51 inches within that month. The smallest average quantity of precipitation occurs in June, which only averaged 5.75 inches of precipitation.

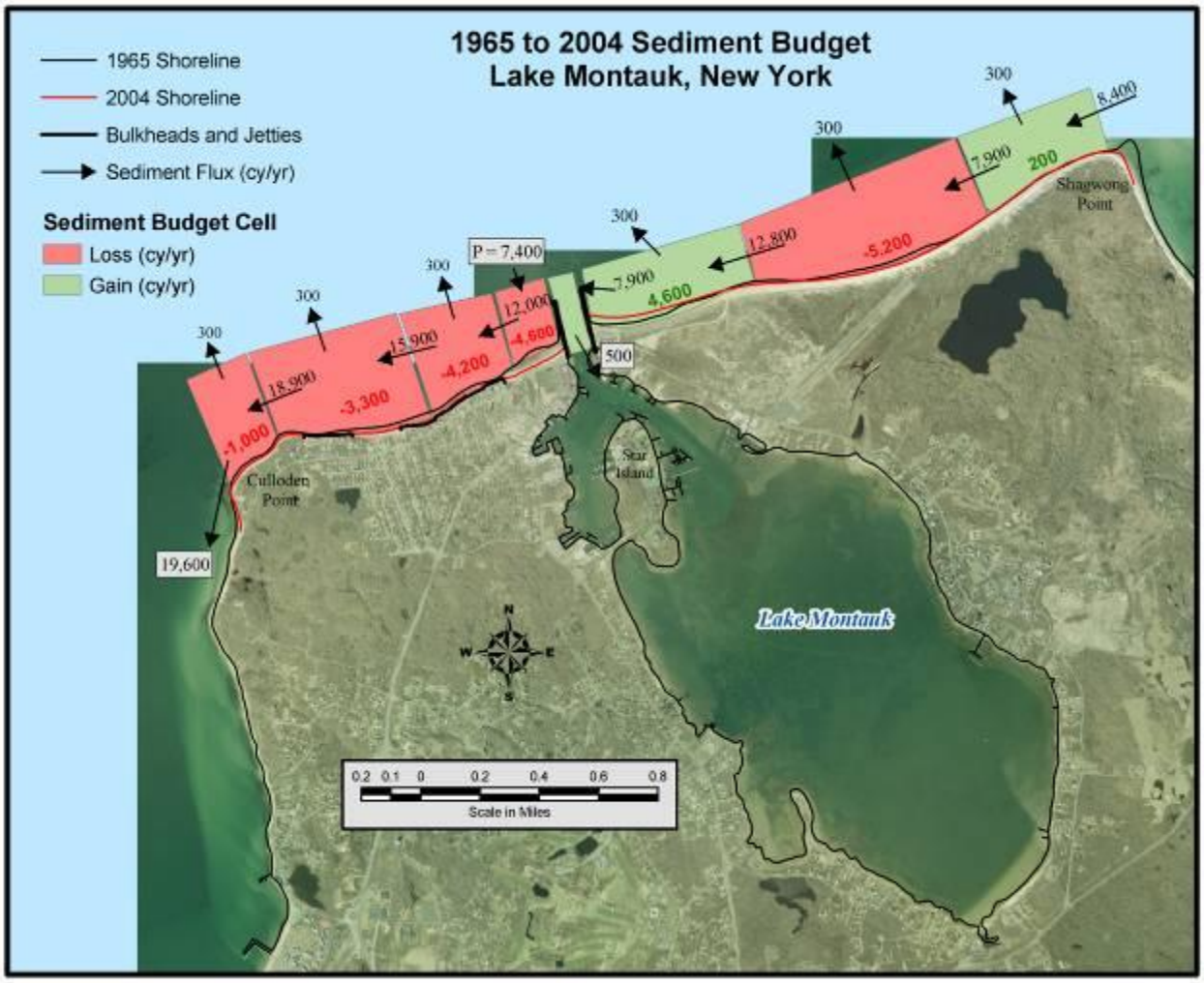
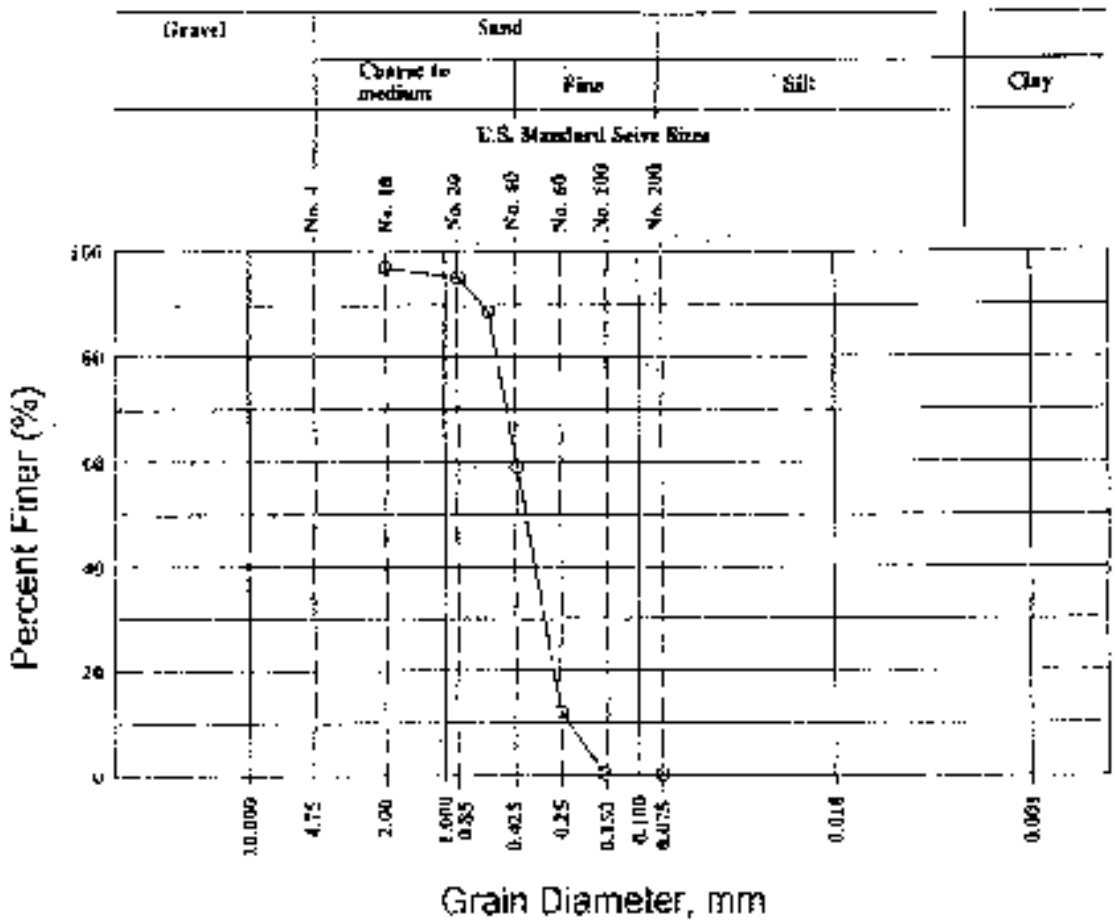


Figure 9 Lake Montauk Beach Sediment Budget, 1965 to 2004

Cell Number	1	2	3	4	5	6	7	8
Input (+)	18,900	15,900	12,000	7,400	7,900	12,800	7,900	8,400
Output (-)	19,600	18,900	15,900	12,000	7,400	7,900	12,800	7,900
Offshore	300	300	300	0	0	300	300	300
Residual	**-1,000**	**-3,300**	**-4,200**	**-4,600**	**500**	**4,600**	**-5,200**	**200**

Table 1. Lake Montauk Beach Sediment Budget- per cell

Surface Water. Two freshwater streams and one tidal stream feed directly into the lake, and several wetland systems drain either directly or indirectly to the lake. Three significant pond systems are located within the lake's watershed, including Big Reed Pond and Little Reed Pond, located in the northeastern portion of the watershed while an unnamed pond (New York State Department of Environmental Conservation Freshwater Wetland #MP-13) is located in the southwestern portion of the watershed. The most prominent system discharging to the lake is Big Reed Pond which drains to Little Reed Pond, which ultimately drains to Lake Montauk in the vicinity of East Lake Drive, south of the Montauk Airport. As previously indicated, a number of freshwater wetland systems drain directly or indirectly to the lake.



Light Brown Fine to Medium SAND

Figure 10. Grain Size Curve Lake Montauk Sample.

Water Bodies. The principal marine water bodies in the study area are the Atlantic Ocean to the south and the Long Island Sound to the north. Lake Montauk, once a spring fed fresh water lake, has since become saline due to the permanent inlet. Several fresh water bodies are present within the Montauk watershed, including Peter's Run, Stepping Stones Pond, and Little Red Pond. Fresh water bodies comprise only about 72 acres (1.8%) of the Montauk watershed. As a result, the Montauk watershed lacks potable surface water resources because the majority of the surface water in the watershed drains to, or is contained within, Lake Montauk proper. The salinity in Lake Montauk ranges from 28 to 31.7 parts per thousand (ppt) (Austin 1973, ISRA 1983). The Lake is approximately 2.3 miles long, 1 mile wide, and covers approximately 1,037 acres, with a mean depth of 7 feet.

Tides. Lake Montauk Inlet is subject to semi-diurnal tides (two highs and two lows per day). A tabulation of the astronomical tide elevations based on the Tide Tables pertain to datum referenced to Mean Lower Low Water (MLLW). The National Geodetic Vertical Datum (NGVD), established by the U.S. Geological Survey as mean sea level datum in 1929, is used in many official survey monuments. NGVD is approximately 0.8 ft above MLLW.

Water circulation. Lake Montauk is mainly tidally induced with the areas of greatest circulation at the inlet and least circulation in the central portion of the Lake. According to Flagg and Greene (1981), the average tidal range was approximately 23 inches. Generally speaking, Lake Montauk is a well-mixed estuary in the northern two-thirds of the Lake, and a partially mixed estuary in the southern third. Water circulation is impeded by Star Island and the causeway; the two one-way valves underlying the causeway to Star Island, which were installed to increase tidal flushing north of the causeway, have silted in, occasionally.

Waves. Normal waves reaching the site of the study area include both the locally generated short period wind waves and long period sea swells generated in the deep ocean. Due to the sheltering effect of the site, only waves from West South West (WSW) clockwise to East North East (ENE) will affect the site. The predominant wind waves are from Northwest (NW) with the majority of wave heights in the range from 1.0 to 1.5 feet. The long period ocean swells will have minor effect on the study area. Ocean swells and deep-water waves are sheltered by Block Island and Montauk Point due to the northeast-southwest orientation of the shoreline. Storm waves are determined based on extreme winds in the direction of NNW, which generate the most critical wave for beach erosion and shore protection structures.

Sea Level Rise. A study of tidal records at Montauk Point indicated that average rates of sea level rise range from 0.072 inches to 0.11 inches/year. Sea level rise at the north shore of Long Island was estimated at 0.096 inches/year or 0.96 feet in 100 years. This value represents a forecast based on documented historic changes in tide levels.

Groundwater. Groundwater in the Lake Montauk watershed is derived from precipitation. Rainfall and melt water entering the ground ("recharge") passes downward through the unsaturated zone to a level below which all porous layers are saturated. The upper surface of this level is referred to as the "water table". Groundwater is a mild expression of topography and consequently, the water table coincides with sea level along the shorelines of the Lake Montauk watershed, and rises in elevation towards the western and southeastern edges of the sub-watershed boundaries.

The elevation of groundwater underlying the Lake Montauk watershed ranges from 8 feet above mean sea level (MSL) in the northwest part of the watershed, to zero (0) at the above ground surface in areas of wetlands and surface water. In general, groundwater flows from the 8 foot elevation mound on the west side of Lake Montauk toward the north, south, east and west. A secondary mound of groundwater forms in the southeastern higher elevation part of the lake, such that the high points of these two groundwater mounds form a watershed divide between groundwater that flows generally toward Lake Montauk, Block Island Sound or the Atlantic Ocean. As groundwater migrates away from areas of higher elevation toward the shore, it eventually discharges to surface water as a result of surface seepage and subsea (or subsurface)

outflow. Near the shore, water entering the system tends to flow horizontally along a shallow flow system and is discharged from the subsurface into streams or marine surface waters. Water that enters the system farther inland and along the western end of the Island generally flows vertically downward deeper into the Upper Glacial aquifer before flowing toward the shores where it is discharged as subsurface outflow.

Vegetation**.** Six vegetation types associations within the Montauk watershed were identified: tidal wetlands, freshwater wetland, forest vegetation, maritime scrubland, dune vegetation, and pasture land/open field. Additional vegetated cover type designations include two invasive species identified in the study area: Japanese knotweed and common reed. Submerged aquatic vegetation is present in Lake Montauk. Specific analyses of SAV is presented in Section 4, and in the Essential Fish Habitat (EFH) Assessment in Appendix B. Specific analyses of protected species of plants are presented in Section 4, and in Appendix C.

Wetlands. The NYSDEC has identified 20 freshwater wetlands within or partially within the Lake Montauk Watershed; these areas comprise approximately 700.3 acres of wetland systems, 431.3 acres of which are located within the watershed. It is noted that the largest freshwater wetland, MP-2, is associated with Big Reed Pond located in the northeastern portion of the watershed and is approximately 197.3 acres in size of which approximately 106.22 acres are located within the watershed, and is generally of high quality. The only two freshwater wetlands of moderate quality (MP-41 and MP-42) are located in proximity to the southeastern shoreline of the lake while the only two freshwater wetlands of low quality (MP-19 and MP-36) are located in the southern and west-central portions of the watershed, respectively.

The tidal wetlands within the watershed are located where the shoreline intersects and interfaces with tidal waters. These wetlands contain saline waters, which originate from the ocean-fed surface waters associated with the lake. These features are formed by coastal processes and, with the exception of formerly connected tidal wetlands, are subject to tidal influence. These areas are not only vital to the ecological systems to which they serve, but also function to control storm surges during flood and major storm events which may impact sensitive watershed areas.

Tidal wetlands in the study area are generally located around the perimeter of the Lake, or directly adjacent and hydrologically connected to the Lake. Tidal wetlands were predominantly vegetated with salt marsh cord grass (*Spartina alterniflora*), whereas high marsh areas included vegetation such as salt hay (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardi*), marsh elder (*Iva frutescens*), and glasswort (*Salicornia* spp.). Tidal wetlands comprise about 75% of Lake Montauk's shoreline (Town of East Hampton 1989). This description is consistent with the current tidal wetland community in the study area, with the exception of a decrease in the amount of tidal wetlands along the Lake Montauk shoreline, due to development in the area since the 1981 survey was conducted.

Uplands. Forested vegetation is located mostly in upland areas. Species found within this category include white oak, scrub oak (*Quercus ilicifolia*), hickory (*Carya* spp.), flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), pitch pine (*Pinus rigida*), catbriers (*Smilax rotundifolia*), inkberry (*Ilex glabra*), and smooth sumac (*Rhus glabra*) (SCPD 1981). This description is consistent with the observations of the field team.

Dunelands. Dunelands are located in the northeast section of the Montauk watershed and include species such as beach grass (*Ammophila breviligulata*), American sea rocket (*Cakile edentula*), and seaside goldenrod (*Solidago sempervirens*) (SCPD 1981). The (Sound) beaches to the north of the lake are narrow and sparsely vegetated communities on substrates of unstable sand, gravel, or cobble. These communities occur above mean high tide and in many cases have been modified as a result of storm waves, wind erosion or erosion protection measures. The maritime dunes associated with these beaches (west of the inlet) are covered by American beachgrass (*Ammophila breviliqulata*) and wooly beachheather (*Hudsonia tomentosa*). Farther landward where there is a decrease in the amount of salt spray and sand burial, less specialized species such as seaside goldenrod (*Solidago sempervirens*) and beach pea (*Lathyrus japonicus*) accompany the American beachgrass. Narrow bands of dune grass communities are also present at several locations around the perimeter of the Lake.

Invasive Species. Invasive species communities were observed in many locations in the study area. Japanese knotweed was observed in two areas: at the north end of Star Island adjacent to the paved parking area, and along the southern shoulder of the access road to Star Island. Common reed was present in many areas in the study area, including adjacent to a boat launch west of Star Island, near Stepping Stones Pond, around the small pond that drains into the southern tip of the Lake, and in small patches at various locations around the perimeter of the Lake.

Reptiles and Amphibians. Site-specific studies and/or surveys describing the diversity and abundance of amphibians and reptiles within the study area are not available. However, the New York State Amphibian and Reptile Atlas Project sponsored by the NYSDEC has recorded several reptile and amphibian species as occurring in, or in the vicinity of, the Project area. Frog and toad species such as the green frog (*Rana clamitans melanota*), spring peeper (*Pseudacris crucifer*), and Fowler's toad (*Bufo woodhousii fowleri*) are common to the area and can be found inhabiting fresh and brackish water wetlands and ponds (NYSDEC 2001). Diamondback terrapins (*Malaclemys terrapin*) also are common to Long Island waters (Morreale 1992), especially in estuarine waters associated with bays and marshes, and may be found in the Lake waters. Common snakes such as the ribbon snake (*Thamnophis sauritus*), garter snake (*Thamnophis sirtalis*), and black racer (*Coluber constrictor*) can be found inhabiting vegetated upland and wetland areas in the study area (NYSDEC 2001). Several species of sea turtles seasonally migrate through the deeper waters off Montauk Point. However, their presence in the shallow nearshore waters associated with the study area including Lake Montauk is not likely.

Birds. The nearshore open waters, and the estuarine, fresh, and brackish waters within the Lake Montauk watershed provide feeding, nesting, roosting, and over-wintering habitat for a wide variety of bird species. In particular, the nearshore open waters surrounding nearby Montauk Point provide regionally significant and critical wintering waterfowl habitat and concentration areas, including one of the highest total Christmas' "bird counts" in the northeastern United States (USFWS 1997). The diversity and quality of marine, estuarine, and terrestrial habitat in and around Lake Montauk provides habitat for a variety of waterfowl,

wading birds, seabirds, shorebirds, passerines, non-passerines, and birds of prey. Specific analyses of protected bird species is presented in Section 4, and Appendices C&D.

Mammals. The marsh, forest, and shrubland areas in the Lake Montauk study area provide habitat for a variety of small, mid, and large sized mammal species, including insectivores, rodents, rabbits, hoofed mammals, and seals. The terrestrial species most likely to occur in the Project area are habitat generalists tolerant of development. However, the high quality and diversity of habitat in the vicinity of the Project area (i.e., Montauk peninsula) provides habitat for some less tolerant species. Two marine mammals, gray seals (*Halichoerus grypus*) and harbor seals (*Phoca vitulina*), are known to use the rocks in the revetment around nearby Montauk Point, and other shoreline areas including Culloden Point, as haul-out areas during the winter (USFWS 1997, PEP 2001). Specific analyses of protected mammal species is presented in Section 4, and in Appendix C&D.

Finfish, Shellfish and Benthos. As the species that comprise these communities will be the focus of detailed analyses due to their potential to be adversely affected from the proposed Federal action, discussion of these species and detailed analyses of potential effects to these species is deferred to Sections 3.2, 4.2, 5.0 and in Appendix B.

3.2 Potentially Affected Environment

3.2.1 Overview

This subsection will provide a review of those resources potentially affected by the construction of a navigation project. As the study authorizes only the deepening (with concurrent widening as required) of an existing channel, with placement of the dredged material at a previously utilized and approved upland location, only those resources within the footprint of the study's action area will be presented here for review.

Finfish. Lake Montauk supports few species of adult finfish. However, it is an important estuary, providing spawning grounds, nursery, and hatching areas for residential and migratory species (ISRA 1985). Additionally, the area outside the Lake (from The Great Peconic Bay to Montauk Point) appears to be much more productive than other estuaries and embayments around Long Island for finfish species such as scup (*Stenotomus chrysops*), weakfish (*Cynoscion regalis*), and winter flounder (*Pseudopleuronectes americanus*) (PEP 2001). Austin (1973) found Atlantic silverside (*Menidia menidia*) to be the most common fish species in the Lake. However, a more recent study found three-spine stickleback (*Gasterosteus aculeatus*) to be the most abundant forage minnow, and young Atlantic tomcod (*Microgadus tomcod*) and blackfish (*Tautoga onitis*) were the most widely distributed recreational fish throughout the Lake (ISRA 1985).

Anadromous species found near the study area include the alewife (*Alosa pseudoharengus*), Atlantic menhaden (*Brevoortia tyrannus*), Atlantic silverside (*Menidia menidia*), striped bass (*Morone saxatilis*), and white perch (*Morone americana*). American eel (*Anguilla rostrata*) was the only catadromous species, and crevalle jack (*Caranx hippos*) and Florida permit (*Trachinotus falcatus*) were the only tropical species observed in the study area

Fish species with commercial and recreational importance observed in the Lake Montauk watershed include alewife, American eel, American sand lance (*Ammodytes americanus*), Atlantic butterfish (*Peprilus triacanthus*), Atlantic croaker (*Micropogonias undulatus*), Atlantic mackerel (*Scomber scombrus*), black sea bass (*Centropristis striata*), bluefish (*Pomatomus saltatrix*), bluegill (*Lepomis macrochirus*), cod (*Gadus callarias*), pumpkinseed (*Lepomis gibbosus*), scup, silver hake (*Merluccius bilinearis*), smallmouth bass (*Micropterus dolomieu+*), spot (*Leiostomus xanthurus*), striped bass, summer flounder (*Paralichthys dentatus*), tautog (*Tautoga onitis*), and winter flounder(Pleuronectes americanus).

Shellfish. Similar to the finfish species, Lake Montauk supports valuable commercial and recreational shellfisheries, and is one of four prime bay scallop (*Argopecten irradians*) grounds in the Town of East Hampton. Significant populations of bay scallop and northern quahog (*Mercenaria mercenaria*) are found within most of Lake Montauk, and are harvested on a commercial basis by the baymen of the Town of East Hampton. Due to the bottom substrate and the presence of eelgrass (*Zostera marina*), the scallop population areas are commercially more significant than the harvesting of the hard clams. Additionally, traps are also deployed around the inlet of the Lake for American lobster (*Homarus americanus*) and channeled whelk (*Busycotypus canaliculatus*) (Flagg and Green 1981).

Surveys conducted in 1989 (Town of East Hampton 1989) showed an area south of Star Island contained common oyster (*Crassostrea virginica*). Other shellfish of commercial and recreational importance in the Lake include blue crab (*Callinectes sapidus*), sea urchin (*Strongylocentrotus* spp.), soft-shelled clam (*Mya arenaria*), and squid (*Loligo* spp.)

Numerous shellfish predators are also found throughout Lake Montauk. Species such as mud crab (*Dyspanopeus sayi*) and rock crab (*Cancer irroratus*) are confirmed predators of juvenile shellfish. Species such as the common starfish (*Asterias forbesi*) prey on both juvenile and adult shellfish, particularly the less motile species such as bay scallops and juvenile clams. Although the food supply for starfish is abundant, the warm temperature of the Lake seems to limit the starfish populations. Molluscan gastropods that prey on shellfish in Lake Montauk include mud dog whelk (*Ilyanassa obsoleta*), northern moon snail (*Euspira heros*), and oyster drill (*Usalpinx cinerea*) (Flagg and Green 1981).

Benthic Resources. Within the lake, the bottom sediments consists of sand with varying amounts of silt, clay(fine grain materials) and gravel. In areas that have been dredged, such as the marinas, but are not open to direct tidal action, silt and fine-grain materials have been deposited over the sand in significant amounts. Distribution and composition of benthic fauna along the north shore intertidal and near shore zone is dependent on an organism's ability to withstand wave action, exposure to the air, and in general the capacity to adapt to this harsh environment. High energy environments do not exist in the lake, thus, distribution and diversity of lake-benthos are more dependent on such factors as sediment composition, salinity gradient, and other water quality parameters such as dissolved oxygen and siltation. (ISRA 1983).

Submerged Aquatic Vegetation (SAV). Although the background data reviewed did not contain a comprehensive assessment of submerged aquatic vegetation (SAV) within the Montauk watershed, Flagg and Greene (1981) conducted an assessment of relative eelgrass (*Zostera marina*) abundance in the northern half of the Lake. They found that eelgrass was present at every sample location and it was the dominant vegetation of the Lake bottom. Eelgrass was found to be most abundant in the shallower portions (i.e., up to 1 meter) of the Lake, moderately abundant in water at a depth of 1 to 2 meters, and sparse at water depths greater than 2 meters (Flagg and Greene 1981). No other maritime vegetative species were identified.

USFWS mapped SAV based on review of fall 2000 aerial photography of the region. This survey identified green fleece and eelgrass beds in Lake Montauk (PEP 2006). Also, a 2004 survey of the northern third of the Lake identified two large areas of eelgrass located east and southeast of Star Island identified the presence (unmapped) of green fleece in the southern end of the Lake (Town of East Hampton 2005).

One legacy SAV bed was identified by NMFS as being potentially adversely affected by the proposed project. Confirmation of the continued existence of this SAV bed will occur summer 2019, at which time USACE will be notified. USACE has received a letter of concurrence from NMFS on the EFH Assessment for the proposed project and have received Conservation Recommendations (CR) that include a tentative seasonal restriction that will be incorporated in the construction schedule as a Best Management Practice (BMP) upon confirmation the SAV bed continued existence. The potential adverse effects of the proposed project on SAV is further analyzed in the EFH Assessment, Appendix B.

3.2.2 Areas of Special Concern

3.2.2.1 Essential Fish Habitat. As required by the Magnuson-Stevens Act, the National Marine Fisheries Service promulgated regulation to provide guidance to the regional fishery management councils for EFH designation. EFH designation were based on the presence or absence, and, in some cases, on the relative abundance of eggs, larvae, juvenile, and adults fish in long-term survey datasets, and on information compiled by the National Oceanic Atmosphere Administration (NOAA)/National Ocean Services (NOS) Estuarine Living Marine Resource Program, from the U.S. Atlantic coast from the Gulf of Maine to Cape Hatteras, North Carolina per the New England Fisheries Management Council (NOAA, 1999).

Pursuant to Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Federal agencies are required to consult with the NMFS regarding any action they authorize, fund, or undertake that may adversely affect EFH. The regional fisheries management councils, with assistance from NOAA-Fisheries, are required under the 1996 amendments to Magnuson-Stevens Fishery Management and Conservation Act to delineate EFH for all managed species, to minimize to the extent practicable adverse effects on EFH, and to identify other actions to encourage the conservation and enhancement of EFH. EFH is defined in the Magnuson-Stevens Act as: “waters” to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish which may include areas historically

used by fish where appropriate; "substrate" to include sediment, hard bottom and structures underlying the water, and associated biological contribution to a healthy ecosystem; and areas used for "spawning, breeding, and growth to maturity" to cover a specie's full life cycle. Prey species are defined as being a forage source for one or more designated fish species, and the presence of adequate prey can classify a habitat as essential.

For assessment purposes, an adverse effect has been defined in the Act as follows: "Any impact which reduces the quality and/or quantity of EFH. Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat wide impacts, including individual, cumulative, or synergistic consequences of actions." EFH has been designated for species for which Federal management plans have been developed. The District has prepared an EFH Assessment for the study, provided in Appendix B.

3.2.2.2 Protected Species and Communities of Special Concern

The USACE consulted with the USFWS and the NYSDEC's Natural Heritage Program (NYNHP) to determine whether any Federal or state listed species (endangered threatened or special concern), or communities of special concern occur in the study area. The following sections discuss Federal and state listed Species of Special Concern identified by these agencies, as well as Communities of Special Concern, or that require special management, are also discussed below. Copies of the consultation with the agencies are provided in Appendices C&D.

Section 7 of the ESA requires a Federal agency to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of Federally-listed endangered and threatened species, or result in the destruction or adverse modification of the designated critical habitat of Federally-listed species. The USACE is required to consult with the USFWS and/or the NMFS to determine whether any Federally-listed or proposed species, or critical proposed critical habitat may occur in the proposed Project area, and to determine the proposed action's potential effects on these species or critical habitats.

To comply with the requirements of Section 7 of the ESA, the District has conducted informal consultations with the USFWS and NMFS regarding the presence of Federally-listed or proposed listed endangered and threatened species and their critical habitat in the vicinity of the proposed Project (Appendices C&D). In addition, the USFWS has contacted the NYSDEC's Natural Heritage Program to review their database regarding Federally-listed and state-listed endangered and threatened species potentially occurring in the study area (USFWS 2019). The following sections discuss the Federal and state species of concern identified by these agencies and other sources. Areas or communities of special concern, or that require special management, are also discussed below.

Species of Special Concern

Reptiles. The Federally-listed endangered Atlantic ridley (*Lepidochelys kempii*) and leatherback (*Dermochelys coriacea*) sea turtles and threatened loggerhead (*Caretta caretta*) and green (*Chelonia mydas)* sea turtles have been identified as transient species through the study area (Beach 1992). Recent studies indicate that the nearshore waters within Peconic Bay, Gardiners

Bay, Block Island Sound, and Long Island Sound are critical developmental habitat for juveniles of the Atlantic ridley sea turtle and a major feeding area for the loggerhead sea turtle (USFWS 1997, Bortman and Niedowski 1998, PEP 2001). Juvenile Atlantic ridley sea turtles recorded in Long Island waters represent the largest concentrations ever documented outside the Gulf of Mexico (Morreale et al. 1992). In the Northeast, during the summer months, juveniles (approximately 2 to 5 years of age) of the Atlantic ridley, loggerhead, leatherback, and green sea turtles migrate from the open ocean to inshore waters including areas along the coast of Long Island (Bortman and Niedowski 1998).

Mammals. Federally-listed endangered northern right whales (*Eubalaena glacialis*), usually individuals, are regularly sighted migrating through the nearshore waters off Montauk Point, usually from March through June (USFWS 1997) and have been identified as a transient species by the NMFS (Beach 1992). Small aggregations of Federally-listed endangered finback whales (*Balaenoptera physalus*) feed close to shore from Shinnecock Inlet to Montauk Point from January to March, and Federally-listed endangered humpback whales (*Megaptera novaengliae*) feed all around Montauk Point, primarily between June and September (USFWS 1997). Northern Long-eared bats are also documented as being in the vicinity of the study area (USFWS 2019).

Birds. The least bittern (*Ixobrychus exilis*) and northern harrier (*Circus cyanus*), and three species of concern, the red-shouldered hawk (*Buteo lineatus*), whip-poor-will (*Caprimulgus vociferous*), and osprey (*Pandion haliatus*), may potentially nest in the vicinity of the study area (USFWS 2003).

Piping Plover (*Charadrius melodus*) may also occur in or utilize the study area. Piping plovers are small, sand-colored shorebirds approximately 7 inches long, with a wingspread of about 15 inches. The Atlantic Coast population breeds on coastal beaches from Newfoundland to North Carolina (NC) (and, occasionally, in South Carolina) and winters along the Atlantic Coast from NC southward, along the Gulf Coast, and in the Caribbean.

Piping plovers begin returning to their Atlantic Coast nesting beaches in mid-March. Males establish and defend territories and court females by early April (Cairns 1982). Piping plovers are monogamous, but usually shift mates between years, and, less frequently, between nesting attempts in a given year. Plovers are known to breed at one year of age, but the rate at which this occurs is unknown. Egg-laying and incubation can start as early as mid-April. +

Piping plovers nest on coastal beaches (NC to Newfoundland), sand spits at the end of barrier islands, gently sloping foredunes, blowout areas behind primary dunes, and in overwash-created bare sand areas cut into or between dunes. In the central portions of their Atlantic Coast range (including NY-NJ), they may also nest on areas where suitable dredged material has been deposited. Along the Atlantic coast, development, encroachment of beach vegetation, flooding and erosion are primary factors in the loss of suitable breeding and nesting habitat for piping plover, as well as predation, which has been identified as a major factor limiting piping plover reproductive success.

Red Knot (*Calidris Canutus*). The rufa red knot is a medium-sized shorebird about 9 to 11 inches (in) (23 to 28 centimeters (cm)) in length. The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast United States (Southeast), the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. During both the northbound (spring) and southbound (fall) migrations, red knots use key staging and stopover areas to rest and feed (ER BA).

The red knot is a large, bulky sandpiper with a short, straight, black bill. During the breeding season, the legs are dark brown to black, and the breast and belly are a characteristic russet color that ranges from salmon-red to brick-red. Males are generally brighter shades of red, with a more distinct line through the eye. When not breeding, both sexes look alike – plain gray above and dirty white below with faint, dark streaking. As with most shorebirds, the long-winged, strong-flying knots fly in groups, sometimes with other species. Red knots feed on invertebrates, especially small clams, mussels, and snails, but also crustaceans, marine worms, and horseshoe crab eggs. On the breeding grounds, knots mainly eat insects.

Red knots require open habitats that allow them to see potential predators and that are away from tall perches used by avian predators. Invasive species, particularly woody species, degrade or eliminate the suitability of red knot roosting and foraging habitats by forming dense stands of vegetation. Although not a primary cause of habitat loss, invasive species can be a regionally important contributor to the overall loss and degradation of the red knot's nonbreeding habitat.

Roseate Tern (*Sterna dougallii dougallii*): The roseate tern is about 40 centimeters in length, with light-gray wings and back. Its first three or four primaries are black and so is its cap. The rest of the body is white, with a rosy tinge on the chest and belly during the breeding season. The tail is deeply forked, and the outermost streamers extend beyond the folded wings when perched. During the breeding season the basal three-fourths of the otherwise entirely black bill and legs turn orange-red.

Roseate terns nest on small barrier islands, often at ends or breaks. They nest in hollows or under dense vegetation, debris or rocks hidden from predators. Roseate terns in northeastern North America almost always nest in colonies with common terns. Roseate terns begin arriving to breeding areas at the end of April and begin laying eggs as early as the third or fourth week of May. They lay about one to two eggs, rarely three, and rely on the more aggressive Arctic and common terns in the surrounding colony to defend them. In the winter, roseate terns migrate south in late August to early September.

Fish. Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) may also occur in the study area. Like all anadromous fish, Atlantic sturgeon are vulnerable to various impacts because of their wide-ranging use of rivers, estuaries, bays, and the ocean throughout the phases of their life. General factors that may affect Atlantic sturgeon include: dam construction and operation; dredging and disposal; and water quality modifications such as changes in levels of dissolved oxygen (DO), water temperature and contaminants. Atlantic sturgeon also exhibit life history characteristics that make them particularly vulnerable to population collapse from overfishing, including: advanced age and large size at maturity, eggs that are numerous and small in relation to body

size, and spawning that is episodic and seasonal. Other threats to the species include vessel strikes.

Dredging in riverine, nearshore and offshore areas has the potential to impact aquatic ecosystems by removal/burial of benthic organisms, increased turbidity, alterations to the hydrodynamic regime and the loss of shallow water or riparian habitat. Hydraulic dredges can directly impact sturgeon and other fish by entrainment in the dredge, and dredging may also impact important habitat features of Atlantic sturgeon if these actions disturb benthic fauna, or alter rock substrates. Indirect impacts to sturgeon from either mechanical or hydraulic dredging include the potential disturbance of benthic feeding areas, disruption of spawning migration, or detrimental physiological effects of resuspension of sediments in spawning areas.

Plants. The state-listed species sandplain gerardia was historically identified as occurring in the study area, and the rare seabeach knotweed (*Polygonum glaucum*), threatened saltmarsh spike rush (*Eleocharis halophile*), and small's knotweed (*Polygonum buxiforme*) may be present in the study area (USACE 1993, USFWS 2003). In addition, Southern arrowwood (*Viburnum dentatum* var. *venosum*), another state-listed species, is known to occur along the entrance loop road (NYSOPHP 2003).

Seabeach Amaranth (*Amaranthus pumilus*) may also occur in the study area. Seabeach amaranth germinates as small, unbranched, fleshy red colored sprigs between June and July in New York State (USFWS 2004b). These sprigs develop into a rosette of small, wrinkled leaves that branch out from the low-lying reddish stems. As the plant matures, it develops into a clump with numerous stems, which can reach a diameter of 3 ft. The small (1.3 to 2.5 centimeters in diameter) rounded leaves are clustered around the tip of the stems, exhibit a spinach-green color, and have a small notch at the rounded tip of the leaf (USFWS 1996). Inconspicuous flowers develop in clusters around the stem in mid-summer and can produce seed by July. Seed production continues until the plant dies, usually in mid to late fall, but can continue into January.

Seabeach amaranth is a native annual plant that inhabits barrier island beaches along the Atlantic Coast. Seabeach amaranth is dependent on natural coastal processes to create and maintain habitat. However, high tides and storm surges from tropical systems can overwash, bury, or inundate seabeach amaranth plants or seeds, and seed dispersal may be affected by strong storm events.

Seabeach amaranth occupies a narrow beach zone that lies above mean high tide at the lowest elevations at which vascular plants regularly occur. Seaward, the plant grows only above the high tide line, as it is intolerant of even occasional flooding during the growing season. Landward, seabeach amaranth does not occur more than a meter or so above the beach elevation on the foredune, or anywhere behind it, except in overwash areas. The species is, therefore, dependent on a terrestrial, upper beach habitat that is not flooded during the growing season. This zone is absent on beaches that are experiencing high rates of erosion. Seabeach amaranth is never found on beaches where the foredune is scarped by undermining water at high or storm tides. The most serious threats to the continued existence of seabeach amaranth are construction of beach stabilization structures, natural and man-induced beach erosion and tidal inundation,

fungi (i.e., white wilt), beach grooming, herbivory by insects and mammals, and off-road vehicles.

Communities of Special Concern. The entire Montauk Peninsula complex has been designated as a Significant Habitat Complex of the New York Bight watershed, and contains regionally significant, unique, and relatively pristine coastal complexes including maritime forest communities (USFWS 1997). Also, three areas within the Montauk Peninsula complex that are within or directly adjacent to the Project area have been designated as Significant Coastal Fish and Wildlife Habitats, as recognized by New York State Department of State, including Lake Montauk itself, Culloden Point, and Big and Little Reed ponds (USFWS 1997). Also, the USFWS has designated Culloden Point as a priority wetlands site under the Federal Emergency Wetlands Resources Act of 1986, and the National Park Service has designated Big Reed Pond as a National Natural Landmark (USFWS 1997).

The National Audubon Society of New York State recognizes Montauk Point (the area east of Montauk Lake to Montauk Point including offshore waters) as an Important Bird Area (IBA). IBAs are designated for sites that represent the most important habitats for the survival of birds and the conservation of bird species. Specifically, Montauk Point was recognized due to its importance to wintering waterfowl, and for supporting the largest winter concentration of sea ducks in the state. In addition, the site's importance to pelagic seabirds, migrant songbirds, and state threatened and special concern species is noted.

The USFWS lists the Montauk Peninsula Complex as a Significant Habitat Complex of the New York Bight Watershed (USFWS 1997). Significant Habitat Complexes are identified by the USFWS to aid in the identification, description, distribution, and population status of key marine, coastal, and terrestrial species occurring within the near-coastal waters, coastal lands, and uplands of the New York Bight watershed. The complex consists of undeveloped maritime communities that support an unusual diversity of rare plants and animals, and the nearshore waters support important concentrations of marine species.

In 1993, the Peconic Estuary, which encompasses Montauk Point, was designated as an estuary of national significance and included in the USEPA's National Estuary Program. The National Estuary Program has identified the Peconic Estuary as embracing diverse resources and habitats, which, in turn, provide values and uses important to all the citizens of New York, as well as to residents of the region.

3.2.2.3 Navigation

Lake Montauk is a marine harbor with a Federally-maintained, navigable channel that opens to the north connecting Lake Montauk to Block Island Sound. Lake Montauk, formerly a freshwater lake, was permanently opened to Block Island Sound in 1925. In 1926 Montauk Beach Development Company was issued a Federal permit to construct two stone jetties at the inlet (United States Congress, House 1939). In 1927, a Federal permit was issued to allow the Montauk Beach Development Company to dredge the inlet to a depth of 15 feet. In the late

1930's the Montauk Beach Company, formerly the Montauk Beach Development Company, was financially unable to continue to maintain the entrance to the channel. The channel was not maintained to any degree until 1939, when the Board of Engineers for Rivers and Harbors agreed with recommendations by the Chief of Engineers and justified Federal participation in maintaining the channel. The USACE has been maintaining the Lake Montauk channel since 1949. From 1949 to 1983, the channel was dredged seven times (SCPD 1981). The channel was most recently dredged 2017. The parcel containing the Gone Fishing Marina has also been dredged to accommodate their dock and recreational users (ISRA 1985).

The current maintained channel depth of the Lake Montauk channel is -12 feet MLLW, which is not adequate for many of the current commercial activities. This has resulted in limited travel windows or habitual under-loading for deeper draft vessels using the Lake Montauk Harbor, as well as scouring of the bottom by vessels transiting the shallow channel. Navigation in the channel is also impacted by sedimentation in the southeastern portion of the channel, causing channel crowding and slowing United States Coast Guard (USCG) response times from the Lake Montauk Station (USACE 2005).

3.2.2.4 Recreation

Many recreational opportunities are available in the vicinity of the Lake Montauk that offer year-round recreational activities, including sightseeing, picnicking, wildlife observation, recreational fishing, hunting, golfing, playing tennis, biking, beach-going, surfing, and the multiple uses of trails for hiking, cross-country skiing, and horseback riding. Of particular interest are those sites located closest to the Lake, including the town beaches, Indian Field Park, Montauk Downs State Park, and Shadmoor State Park. These areas combined offer a wide variety of year-round recreational opportunities. In addition to outdoor recreation activities, there are also an assortment of restaurants and shops in and around the Town of Montauk that provide dining and shopping opportunities to local residents and tourists.

Nearby Montauk Point is considered to be one of the best surfing locations along the East Coast, primarily due the physical characteristics of the shoreline at Montauk Point. Surfers are attracted from all over the country to enjoy the specific waves and scenic setting that the point offers.

Also, Montauk Point is considered to be one of the great fishing areas for migratory game fish in the Northeast. With over 900 members, the Montauk Surfcasters Association (MSA) represents the locally organized fishing group (MSA 2006). Recreational fishing is an important part of the local economy, attracting "surfcasters" from across the nation (MSA 2006). The stone jetties that flank the Lake Montauk channel provide access for surfcasters to the nearshore waters surrounding the jetties. Also, recreational fishing outfitters based in Lake Montauk offer ample opportunities for offshore fishing in the area.

3.2.2.5 Socioeconomics

Socioeconomic conditions in the Project area in the Township of East Hampton, Suffolk County, New York, are affected by the area's development and zoning regulations. Much of the eastern portion of Long Island has been preserved primarily as recreational and open space according to

land use planning and zoning ordinances. This area is moderately developed for residential, commercial or industrial purposes. (Suffolk County Planning Department [SCPD] 2001). In particular, development in the project area is dominated by the harbor marina and residential development west of the inlet. These harbor with its commercial and recreational uses strongly influences the socioeconomic conditions of the project area, especially with its associated use of the area for tourism and other recreational purposes by both seasonal and year-round residents and visitors.

Demographic information for the Project area suggests that although population in Suffolk County has increased by 7.4% between 1990 and 2000 (from 1,321,864 people to 1,419,369 people), population density remains concentrated in the western part of Suffolk County. Although the average population density of Suffolk County is 1,558 people per square mile, the five western towns in Suffolk County have a population density of 2,292 people per square mile, and contain 91% of the county's population. Conversely, the population density of eastern Suffolk County is 362 people per square mile, and contains only 9% of the county's population (SCPD 2002).

Economic information for the Project area indicates that, in general, Suffolk County's local economy is characterized by healthy employment figures and low unemployment. The unemployment rate for Suffolk County is 3.8%, which is below the definition of full employment of 4%, set by the U.S. Bureau of the Census. Employment opportunities are provided by an increasingly diverse base. The defense industry remains a strong employer in Suffolk County, with additional employment opportunities in medical care, banking, educational institutions, department stores, and manufacturers (SCPD 2002). Suffolk County's local economy is also closely associated with the hotel and motel industry (including bed-and-breakfast lodging), particularly in eastern Suffolk County, where occupancy is primarily seasonal and associated with the tourism in this area.

Tourism is a particularly important part of the Suffolk County economy, and is focused on the eastern part of Suffolk County. This half of Suffolk County contains 986 miles of shoreline, and over 70,000 acres of parkland. In addition to the hotel and motel industry (including bed-and-breakfasts), Suffolk County has more than 38,000 seasonal homes designed specifically to accommodate the influx of seasonal visitors during prime vacation times of the year (SCPD 2002).

Lake Montauk harbor with its recreational uses as well as Montauk Point State Park attracted several hundred thousand visitors annually (USACE 2005). These two attractions contribute significantly to the local economy of Suffolk County, by attracting vacationers as well as local residents to enjoy the recreational opportunities including sightseeing, surfing, and fishing (Levine 2002).

Lake Montauk Harbor can accommodate recreational craft, fishing boats, and other small commercial craft with lengths up to approximately 100 feet. There are currently 18 marinas and five temporary docking and ramp facilities within Lake Montauk Harbor. The marinas have a total of approximately 1,235 dockside slips. Currently, the largest slip is 70 feet long. A few of the marinas have slips designated for transient boats and fishing and charter boats. Lake

Montauk Harbor has two town docks, one named Star Island and the other Montauk Dock with 23 and 17 slips, respectively. Nearly all of these slips are occupied. About 400 additional moorings are used by transients during the summer. The demand for moorings is greater than the availability by 200 moorings.

The heavy volume of vessel traffic using the entrance channel consists primarily of pleasure boats and commercial fishing boats. The inlet channel is used by an average total of 500 boats per day during the warmer seasons. Although subject to turnover and change, the commercial fleet has at times comprised as many as 44 ground fish trawlers, 12 inshore and 7 offshore lobster boats, and 53 long liners (including as many as 32 transient boats from other areas of the east coast). The number of commercial vessels has increased by 578% since 1967 and currently numbers 148. A summary of the increase in commercial vessels is shown in Table xxx. Clearly, the population of commercial vessels has increased significantly since the initial channel design and the trend of vessel size is to larger, deeper draft boats. The most recent survey of the commercial fishing fleet captains indicates that at least 10 boats are negatively impacted by the current navigation channel depth; an updated channel design for this report shows that the channel should be deepened to -17 ft. MLLW to best accommodate the current vessel fleet.
The study area can be accessed by water via Block Island Sound and the Lake Montauk inlet, by highway via State Route 27, by rail by the Long Island Rail Road, and by air via Montauk Airport. Within the study area is West Lake Drive, part of which runs parallel to the 1,200 foot section of shoreline immediately west of the western jetty; this is a main local roadway, and its disruption would be a threat to public health and safety. Further west is Soundview Avenue, which provides access to the residential and commercial properties along the shore to the vicinity of Culloden Point. Access to the shoreline at the town beach within the 1,200 feet west of the inlet is public; access to the shoreline fronted by structures is currently restricted to the property owners individually or as part of an association. Access to the Town and County beaches east of the inlet (as described in the next section) is fully open to the public.

The area east of the inlet is a park owned by the Town for the first 500 ft. east of the inlet and beyond that first 500 ft are park lands owned by Suffolk County. The Suffolk County shores further to the east are used in the warmer seasons for camping and recreational vehicle use. The land east of the east jetty can be subject to erosion during storms, but more typically this shore is growing in width and elevation especially closer to the east jetty which impounds littoral material transported from the east.

As for the shoreline inside of Lake Montauk inlet, currently approximately 75% is tidal wetland, which is a decrease over the past three decades as a result of development. Moving southeast inside the Lake the shore is heavily developed with docks for commercial and recreational fishing including head boats which take customers out for fishing trips. The docks are backed by marinas, fish storage or handling facilities, and restaurants and seafood snack bars.

3.2.2.6 Environmental Justice

Environmental justice requires the fair treatment and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws,

regulations, and policies. No group of people (including racial, ethnic, or socioeconomic groups) should experience a disproportionate share of negative environmental impacts from any private, state, or federal action, program, or policy (USEPA 2004). In order to prevent such a situation, potentially affected communities should have every opportunity to participate in decisions about a proposed activity that will affect their environment and/or health. The potentially affected community should also be afforded the opportunity to influence the final decision of the regulatory agency involved through the consideration of that community's concerns (USEPA 2004). There are no EJ communities in the project area.

3.2.2.7 Cultural Resources

Regulations

As a federal agency, USACE has responsibilities concerning the protection and preservation of historic properties. Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108), and its implementing regulations, the Advisory Council on Historic Preservation's "Procedures for the Protection of Historic and Cultural Properties" (36 CFR 800), and EO 11593 direct Federal agencies to take into account the effect of an undertaking on historic properties included or eligible for listing on the National Register of Historic Places (NRHP). In accordance with these guiding regulations, the District carried out a Phase 1A cultural resources inventory for the area of potential effect (APE) to identify historic properties, including archaeological sites, and initiated coordination with the New York Historic Preservation Office, Federally-recognized tribes, and local interested parties.

Area of Potential Effect

The Area of Potential Effect (APE) for the identification of historic properties and the undertaking's effects on historic properties has three parts; the federal navigation channel dredged to -17+2 ft MLLW, the 100 foot wide deposition basin, and the beach to the west of the inlet where the sand will be placed in an area extending 3,000 feet from the western jetty and 46 feet in width (Figure 11).

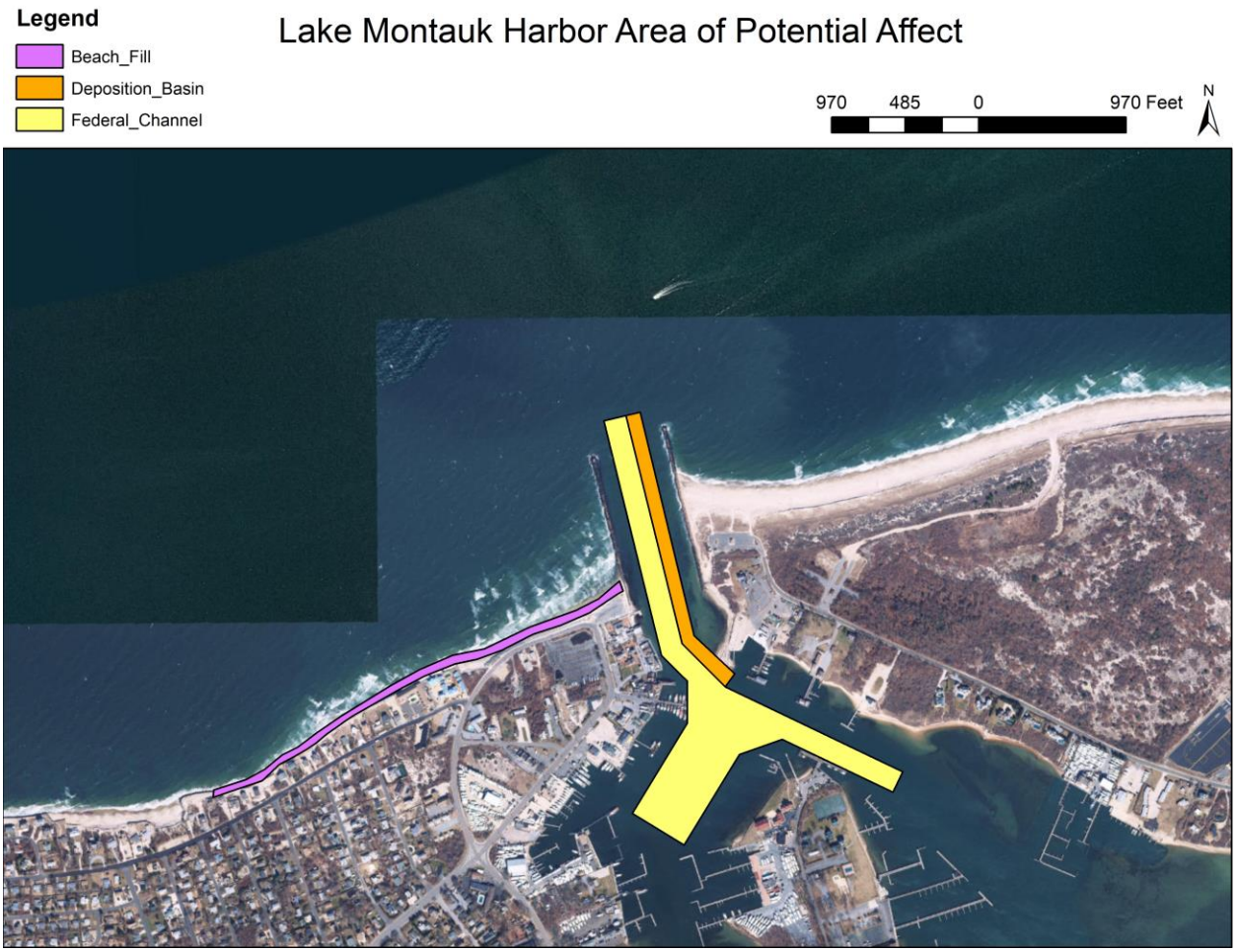


Figure 11. Lake Montauk Harbor APE.

Phase 1A Inventory

A preliminary records search of historic properties on New York's Cultural Resources Information System (CRIS) on January 16, 2019 showed that there are no known sites within the project area. Within half a mile of the project area, but outside of the APE there are nine sites (Table 2). Five of these sites are historic and four are prehistoric. The nearest resource is the Caleb Bragg Estate, which is about 150 feet from the federal channel to be dredged. Next, there are three US Coast Guard buildings about 350 feet from the federal channel. Two of these buildings are eligible for the NRHP while the third is ineligible. Then, about ¼ mile (1,500 feet) from the federal channel is the NRHP eligible Star Island Prehistoric Site. The remaining four sites are about ½ mile from the APE. These include the NRHP listed wreck of the HMS Culloden, a British Man-of War that ran aground in 1781 (~ 2,500 feet west from the sand placement area), and three prehistoric sites: Culloden Point Prehistoric Sites; Culloden Point IV Prehistoric Site; and Culloden Point Area F Extension (all ~2,800 feet from the sand placement area). The first of which is eligible for the NRHP and the other two have undetermined eligibility.

Table 2. Sites nearby the project area.

USN Number	Site Name	Description	NRHP Eligibility
10303.000077	H.M.S. Culloden Shipwreck Site	A British Man-of-War that ran aground on January 24, 1781	Listed
10303.000140	Culloden Point Prehistoric Sites	4 Woodland Period Prehistoric sites. All lithic scatters with buried components.	Eligible
10303.000192	Culloden Point IV Prehistoric Site	4 Woodland Period Prehistoric sites. All lithic scatters with buried components.	Undetermined
10303.000819	Culloden Point Area F extension (Pedersen/Dixson)	Prehistoric with human remains. Features, lithic scatter with fires cracked rock, ceramics, animal bones.	Undetermined
10303.000816	Star Island Prehistoric Site	Lithic scatter with projectile points.	Eligible
10303.000724	Montauk USCG Station Bldg., Multi-Mission Bldg.	Combined administration/barracks US Coast Guard building constructed in 1939 in Napeague, NY, and relocated to current location in 1954	Eligible
10303.000837	Engineering/Boat Maintenance Building	Axillary building to the Multi-Mission Building. Has more alterations than the Multi-Mission Building.	Eligible, USCG recommends as ineligible
10303.000838	Unaccompanied Personnel Housing (UPH)	Building constructed on USCG complex in 1989.	Not Eligible
10303.000185	Caleb Bragg Estate	Historic residential property built in 1929 containing 7 buildings, circular driveway, tennis courts, docks, parking lot and landscaping.	Listed

Remote Sensing Survey

Over the years, this project has gone through many iterations. For the period between 2005 and 2006 the recommended plan included constructing two groins along the western beach where the dredged materials were to be placed. In preparation for this part of the project, the District conducted a remote sensing survey of the area where the groins were to be placed. Since then, the groins are no longer being considered as part of the project, and will no longer be moved forward. Nonetheless, this remote sensing report is an archaeological survey near the APE that is relevant to the current project. This survey found two magnetic anomalies just offshore the western beach. These anomalies represented fairly small items that were not large enough to be individual shipwrecks. Panamerican Consultants did not recommend these anomalies for future study. These anomalies are to the east of the *Culloden* wreck site. They could be pieces of the ship that had become displaced over the years. Alternatively, they may be insignificant pieces of modern debris. Since this area is no longer part of the APE, future study will not be carried out.

Precontact and Historic Culture History

The Montaukett or Montauk Indians inhabited the area of East Hampton, Napeague, Montauk, and Montauk Point when the first Europeans settled in the area. Seventeenth century deeds between the Europeans and the Montauks describe two forts to the west of Lake Montauk. One was entrenched in the side of Fort Hill overlooking Fort Pond. The fort measured approximately 180 on each of its three sides with the hill forming the fourth side. This site was identified as an "earthwork and ditch on the northeast side of Fort Pond on Fort Hill. A second, older fort was at the west end of Montauk near Napeague Beach. This fort had been abandoned by the time of European settlement. A deed written in 1661 called the site the place "where the old Indian fort stood. A burial ground is also reported to be nearby this area. Recent archaeological investigations in this area have determined that most of the fort has been destroyed, although some graves have been found.

The Montauk peninsula contained plenty of freshwater resulting from the prevalence of kettle-hole ponds. The Montauks also created wells from springs by driving hollow tree trunks into these springs. Subsistence activities centered on the use of marine resources, primarily fish and clams, and the collection of plant foods and hunting. By the time of the arrival of the Europeans, the Montauks were cultivating corn in the fields surrounding Lake Montauk. The Montauks continued to hold these lands throughout the 18th and 19th centuries, until 1885, when their population had dwindled and the land was eventually incorporated in the Village of Montauk.

Throughout the 18th and most of the 19th centuries, the land around Montauk and Lake Montauk was used by the residents of East Hampton as grazing land for their sheep and cattle. The residents of East Hampton constructed dwellings, the First, Second and Third Houses, for the shepherds caring for the livestock at different areas around Montauk. The Montauk Point Lighthouse was first lit in 1797. It and was built on land purchased from the residents of East Hampton, on the point of land east of Lake Montauk. When it was first constructed, the light station consisted of the lighthouse, keeper's house and oil vaults for the storage of lamp oil. By the mid-19th century, the lighthouse had been increased in height to accommodate its new lens and a new keeper's dwelling. A coal shed, a smokehouse and an ice house and fog signals were

built at the station. In the 1920's businessmen and developer Carl Fisher formed the Montauk Development Company and purchased Montauk, the area around Lake Montauk and Montauk Point, except for the lighthouse. The development planned for the property included a marina, a hotel and golf course. Fisher's company built a number of roads around Montauk and cut a channel through Lake Montauk to provide the boats from Star Island and the planned yacht club with access to deep sea fishing. Carl Fisher's construction plans were stopped with the stock market crash in 1929. However, the development of Montauk continued with the Montauk Beach Company and later, the Montauk Improvement Company.

3.2.2.8 Coastal Zone Management

The Wetland Act of 1970 defines the coastal zone as all tidally influenced wetlands, which includes the wetlands of the navigable waterways in the US. Article 42 of the Executive Law defined coastal area as the State's coastal waters and the adjacent shoreland. Based on these definitions, the Long Island Sound including Block Island Sound, and their connecting water bodies, bays, harbors, shallows and marshes are included in the coastal zone. The project site is located within the New York State Coastal Zone and is also included in *Town of East Hampton Local Waterfront Revitalization Plan (EHLWRP).* The estuarine habitats of the project area serves important functions to fish, birds, and other wildlife populations. Salt marsh and other wetlands serve as important nursery grounds for larval and juvenile fish, along with reproductive areas for invertebrates such as mussels, crabs and other invertebrates. Areas of sandy beach provide critical habitat to breeding horseshoe crabs (*Limulus polyp emus*) and various shorebirds. The Lake Montauk area is within the Atlantic flyway and is essential to migrating birds. Lake Montauk and vicinity offers public access to a variety of active and passive recreational opportunities.

As a Federally funded project located within the New York State Coastal Zone, the proposed project must be reviewed by the New York State Department of State for consistency with the policies of the New York State Coastal Zone Management Plan (CZMP) and the applicable local program, *Town of East Hampton Local Waterfront Revitalization Plan.* Both these programs serve to protect, maintain, promote and enhance various characteristics and functions of the NYS coastal environment. These policies serve to safeguard urbanized and otherwise developed coastal areas as well parklands and public space. Within this purpose the Federal and local CZMs protect and maintain significant coastal resources including, water and air quality, fish and wild life and scenic beauty. The CZM policies also provide protection from the discharge of pollutants and the degradation of flood protection capacity, thus protecting and enhancing human life and property. CZM policies also function to promote and enhance water dependent activities including both active and passive recreation.

Both state and local CZM policies were determined to be applicable for the proposed project alternatives. These applicable policies, along with an impact analysis are discussed within the CZM consistency determination (Appendix F).

3.2.2.9 Air Quality and Noise

Air Quality

With respect to the National Ambient Air Quality Standards (NAAQS, 40CFR§81.333), Suffolk County is currently classified as in 'marginal' nonattainment of the 2008 and 2015 8-hour ozone standards and 'maintenance' for the 2006 particulate matter less than 2.5 microns ($PM_{2.5}$) standard. The county is part of the Ozone Transport Region. Ozone levels are controlled through the regulation of its precursor emissions, which include oxides of nitrogen (NO_x) and volatile organic compounds (VOC). Sulfur dioxide (SO_2) is a precursor of $PM_{2.5}$ (USACE 2014). The project is anticipated to produce emissions associated with diesel-powered construction equipment that will be temporary in nature, spanning only the construction period.

Noise. Noise is generally defined as unwanted sound. The day-night noise level (L_{dn}) is the most widely used descriptor of community noise levels. Humans are most sensitive to frequencies in the 1,000 to 5,000 Hz range. Since ambient sound contains many different frequencies, measures of human response to sound assign more weight to frequencies in this range. This is known as the A-weighted sound level. The unit of measurement of the L_{dn} is the A-weighted decibel (dB-A) that closely approximates the frequency responses of human hearing.

Noise criteria and the descriptors used to evaluate project noise are dependent on the type of land use in the vicinity of the proposed project. In general, land uses near the project site include residences private and commercial, and marine oriented businesses.

The primary source of noise in the Project area is vehicular traffic on local roadways, and noise associated with the marina such as that from boat engines and noise generated by the various components of marine industry that exist in proximity to the harbor. Noise level measurements have not been obtained in the Project area. In lieu of measurement, the noise levels in the Project area can be approximated based on the existing land uses. The USEPA document Protective Noise Levels (USEPA 1978) lists typical day-night sound levels at various locations. The primary land use in the Project area is residential and recreational. Typical day-night sound levels in these types of areas range from 39 to 59 dB-A (USEPA 1978). Therefore, it can be assumed that the existing sound levels in the Project area are within this range. Similarly, it can be assumed that sound levels in the Project area are at the lower end of this range due to the lack of heavy development in the area and the large amount of open space.

Although noise levels for the project area have not been measured, they can be approximated based on existing land use, which is primarily residential, recreational and open space. Typical noise levels in residential areas range from 39 to 59 dBA (decibels on the A weighted scale; USEPA 1978). It can be assumed that the existing noise levels are most likely on the low to medium range.

3.2.3.0 Water Quality. While the central portion of the Lake generally exhibits good water quality, the northwest portion of the Lake (Coonsfoot Cove) and the southern portion of the Lake are areas that do not receive significant tidal flushing and have significant pollution inputs from the watershed; these areas exhibit poor water quality. Water quality data examined was collected by the NYSDEC which demonstrated the following impairments:

> "Water quality within the Lake Montauk watershed and its nearby beach shorelines are assigned a "Class SA" water quality classification by the New York State Department of Environmental Conservation. Class SA surface waters are defined within the New York State Codes, Rules, and Regulations, Title 6, Chapter X Parts 700-705, Section 701.10, as saline surface waters best used for shell fishing for market purposes, primary and secondary contact recreation and fishing, and are considered suitable for fish propagation and survival (NYSDEC 2000)".

As previously indicated, three streams and three major ponds are located within the Lake Montauk Watershed. The lake itself is classified SA, indicating that the most appropriate use is as habitat, for recreation, and for shell fishing for human consumption. Little Reed Pond and its associated stream are classified as SC, suggesting that the most appropriate use for this area is as habitat for fish, shellfish and wildlife and may be utilized for recreational purposes; however, other factors (e.g. size, invasive species) may limit their use for recreation.

Historically, Montauk Harbor and parts of the inlet were closed for shell fishing as a result of high coliform levels. Additionally, high coliform levels were found in the southern portion of Lake Montauk (NYSDEC 1964–1981). Flagg and Greene (1981) determined that increased coliform levels were most likely results of additional recreational boat use and an increased use of shoreline facilities during the summer months. In addition, chlorophyll data from 1979 to 1980 showed that chlorophyll values were usually highest in the summer, resulting from an increase in algal growth. The chlorophyll levels recorded, and therefore algae levels, were not excessive and the data provided no evidence of severe pollution problems (Flagg and Greene 1981).

Many other potential contaminants (i.e., gasoline, oil, boating products as well as sediment input from runoff, etc) can affect water quality and shell fishing in the area. None of these pollutants were monitored in the Lake at the time of the Flagg and Greene survey in 1981. It is likely that boat usage within the Lake is a significant contributor of pollutants to the Lake, based on a 1981 estimate of 2,000 small boats using the Lake during the summer months (Flagg and Greene 1981). Non-point source pollution via surface water runoff is a likely contributor to impaired water quality in the Lake (Town of East Hampton 2005).

4.0 Environmental Effects of Alternatives

4.1 Alternative 1. No Action/ Without Project Condition Alternative

Direct. The direct environmental effects of the No Action alternative will be the continuation of the direct impacts associated with the regular cyclical maintenance of the authorized channel at its current depth of -12'MLW every 3-4 years, including placement of the dredged material (sand) at the placement site. Those potential direct impacts are associated with the removal and/or disturbance of the benthos that have may have recolonized the benthic habitat within the channel prism between maintenance cycles, disruption of finfish utilization of essential habitat within the channel and disruption of navigation due to construction equipment staging in the channel. There are no impacts identified for the placement site since the dredged material is of similar composition to the receiving beach and no natural resources of concern have been identified at the placement site. The No-Action Alternative would result in maintenance dredging of approximately 10%-20% of the volume of the TSP every three to four years. This maintenance dredging would not be subject to General Conformity review because maintenance dredging is statutorily exempt. While emissions from this maintenance dredging may be lower overall than the temporary emissions from the TSP, none of the benefits of the TSP would be realized, including more efficient (and hence likely lower-emitting) future maintenance dredging.

While the No-Action Alternative scenario may result in lower emissions in the short term, later maintenance dredging, which is not subject to General Conformity review, may produce higher emissions under this scenario. However, it is anticipated that neither the No-Action Alternative nor the TSP would result in a significant change to air quality in the area.

The no action alternative has no direct effects to cultural resources. Dredging the federal channel will not affect Precontact archaeological sites because the glacial till that forms the lake basin was deposited at the end of the last ice age. The till in the Montauk area is part of the Ronkonkoma moraine, which is one of two Late Wisconsin age glacial moraines on Long Island (Lewis and Stone 1991). The Ronkonkoma Moraine was deposited during the early part of the Wisconsin State of the Pleistocene Epoch (Stage 4 – prior to about 55,000 years ago) (USGS 2017). This means that the sediment composing the moraine and lake bottom was laid down prior to 55,000 years ago. This is significantly earlier than when the first humans occupied North America. Some of the earliest evidence of humans in North America has been found at the Upward Sun River site in Alaska. Human remains from this site date to 11,500 calibrated years ago (Potter et al. 2014). This means that the sediment that would be dredged out of the federal channel in the lake basin would be older than 55,000 years ago, and hence hold no potential to contain human cultural materials. More recent sediment will have certainly settled on top of the lake bottom, but any artifacts mixed in with this Quaternary sediment would have been transported from elsewhere, meaning that they would be out of context. Concerning historic sites, the CRIS database does not show any submerged historic era historic properties that are located within the federal channel or nearby it. Since the navigation channel is a hub of commercial activity, any historical debris or shipwrecks that blocked the channel would have been removed. Due to this, it is very unlikely to find historic resources within the navigation channel. Due to this, continuing to dredge the channel will not affect historic properties. There are no known cultural resources where the dredged sand is to be placed on the western beach, so the sand placement will also have no direct effect to cultural resources.

Indirect. The indirect environmental effects of the No Action alternative will be the continuation of the indirect impacts associated with the regular cyclical maintenance of the authorized channel at its current depth of -12'MLW every 3-4 years. Those potential indirect impacts are associated with increased intervals of the current regular and cyclical maintenance of the channel as pertains to the frequent resuspension of sediments caused by scouring, maintenance dredging, deposition basin utilization, and adverse impacts to local commercial and recreational fishery operations. There are no indirect effects to the airshed.

There are no indirect effects to cultural resources.

Cumulative. The cumulative environmental effects of the No Action alternative will be the continuation of the cumulative impacts associated with the regular cyclical maintenance of the authorized channel at its current depth of -12'MLW every 3-4 years. Those potential cumulative impacts are associated with chronic decrease in water quality due to increased turbidity resultant from more frequent scouring and cyclical maintenance of the currently authorized channel depth, more frequent release of regulated emissions to the local air shed, and delays of benthic recovery of habitat within the currently authorized channel prism. There are no cumulative impacts to the airshed.

There are no cumulative effects to cultural resources.

4.2 Other Alternatives

4.2.2 Alternative 2. Uniform dredging of the 150ft wide channel and 50ft wide deposition basin to depths ranging from -14+2 to -18+2 ft. MLLW. All dredged material would be placed on the downdrift beach. .

Direct. Deepening of the Federal channel from its currently authorized depth of -12'MLLW to the proposed maximum of -18'MLLW, and dredging of the 50' wide deposition basin to -12'MLLW would likely not lead to the incurrence of significant impacts to the aquatic environment since the benthic habitat within the confines of the existing channel and deposition basin are continuously disturbed by the utilization of the channel by vessels scouring the channel bottom, and resuspending sediments within the channel, thereby, potentially disturbing and or burying any recolonization attempts by benthic organisms, as well as is the regular maintenance of the deposition basin. The effects of recurring scouring from vessels, coupled with increased intervals/cycles of maintenance every four years required for the current depth of the channel as well as the deposition basin would likely incur more adverse effects to the aquatic environment than would the proposed deepening of the channel, which would reduce maintenance cycles to occur every eight years, thereby, reducing the disturbance and potential recovery of the benthos.

Based on discussion in alternative 1, there are no direct effects to historic properties by dredging the federal channel. There will also be no direct effect by deepening the federal channel or deepening the deposition basin, since all of these sediments would also be too old to contain cultural materials, like the rest of the lake bottom. There are no known sites in the area where the

dredged material is to be placed on the western beach, so this action also has no direct effect to cultural resources.

Indirect. Indirect adverse effects of deepening the channel and the deposition basin from their existing depths to the depths proposed under this alternative would likely be restricted to aquatic habitat far-field sediment resuspension and redeposition within and outside of the channel. Also, because the current maintenance cycles occur approximately every four years and the proposed maintenance cycles would likely occur every eight years, the indirect impacts would likely be reduced due to less disturbance of the benthos from scouring and maintenance.

There are no indirect effects to known historic properties.

Cumulative. Potential cumulative effects associated with the deepening of the channel and deposition basin are associated with the current maintenance of the currently authorized -12'MLLW channel and deposition basin as pertains to maintenance cycles, which would be reduced under the proposed project, thereby, potentially reducing adverse cumulative effects to the aquatic environment as pertains to significant impacts to benthos from repeated disturbance and delayed recovery due to both direct and indirect impacts.

Placement of the maintenance-related dredged material downdrift of the west jetty, as has been the current practice every four years to support the maintenance of the currently authorized -12'MLLW channel, would reduce the potential cumulative adverse effect of placing smaller quantities of material that protect the beach from erosion more frequently, thereby, potentially preserving upper beach habitat and properties from erosion and possibly providing flood reduction by utilizing greater quantities of dredged material, less prone to erosion.

There are no cumulative effects historic properties. Coordination with the New York Office of Parks, Recreation and Historic Preservation, State Historic Preservation Office (NYSHPO), the Shinnecock Indian Nation, and interested parties, including the Montauketts, Unkechaug, and the Montauk Historical Society, are ongoing.

4.2.3 Alternative 3: Uniform dredging of both the 150 ft wide channel and 100 ft wide deposition basin from -14+2 to 18+2 ft. MLLW. All dredged material would be placed on the downdrift beach but with no design.

Direct. Deepening of the 150' wide Federal channel from its currently authorized depth of -12'MLLW to the proposed maximum depth of -18'MLLW, and increasing the width of the 50' deposition basin to 100' with uniform dredging to maximum -18'MLLW would likely not lead to the incurrence of significant impacts to the aquatic environment since the benthic habitat within the confines of the existing channel and deposition basin are continuously disturbed by the utilization of the channel by vessels scouring the channel bottom, and resuspending sediments within the channel, thereby, potentially disturbing and or burying any recolonization attempts by benthic organisms, as well as is the regular maintenance and utilization of the existing 50' deposition basin. The widening of the 50' deposition basin to 100', which is currently at a depth of -12' MLLW to -18'MLLW, would not result in the loss of any regulated habitat utilized by any known species of concern. The effects of recurring scouring from vessels,

coupled with increased intervals/cycles of maintenance every four years required for the current depth of the channel as well as the deposition basin would likely incur more adverse effects to the aquatic environment than would the proposed deepening of the channel, which would reduce maintenance cycles to occur approximately every seven years, thereby, reducing the disturbance and potential recovery of the benthos.

Placement of the maintenance-related dredged material on the downdrift beach as has been the current practice every approximate three to four years to support the maintenance of the currently authorized -12'MLLW X 150' width channel and -12'MLLW X 50' wide deposition basin vs the placement of more dredged material from this alternative would reduce the potential cumulative adverse effect of placing smaller quantities of material that protect the beach from erosion more frequently, thereby, potentially preserving upper beach habitat and properties from erosion and possibly providing flood reduction by utilizing greater quantities of dredged material, less prone to erosion.

Based on the discussion in alternative 2, there are no direct effects to historic properties by increasing the depth the federal channel and deposition basin are dredged to. There are no sites on the western beach where the dredged sand is to be place, so this action will also have no effect to cultural resources.

Indirect. Indirect adverse effects of deepening the channel and the deposition basin from their existing depths to the depths and widths proposed under this alternative would likely be restricted to aquatic habitat far-field sediment resuspension and redeposition within and outside of the channel. Also, because the current maintenance cycles occur approximately every four years and the proposed maintenance cycles would likely occur approximately every seven years, the indirect impacts would likely be reduced due to less disturbance of the benthos from scouring and maintenance.

There are no adverse indirect effects to historic properties.

Cumulative. Potential cumulative effects associated with the deepening of the channel and the deposition basin are associated with the current maintenance of the currently authorized 150' width channel and 50' width deposition basin as pertains to maintenance cycles, which would be reduced under the proposed project that proposes to deepen the channel, and widen and deepen the deposition basin, thereby, potentially reducing adverse cumulative effects to the aquatic environment as pertains to significant impacts to benthos from repeated disturbance and delayed recovery due to both direct and indirect impacts associated with more frequent maintenance cycles.

Placement of the maintenance-related dredged material downdrift of the west jetty, as has been the current practice every four years to support the maintenance of the currently authorized -12'MLLW 150' width channel and 50' deposition basin vs placement of greater quantities of dredged material resulting from this alternative would reduce the potential cumulative adverse effect of placing smaller quantities of material that protect the beach from erosion more frequently, thereby, potentially preserving upper beach habitat and properties from erosion and

possibly providing flood reduction by utilizing greater quantities of dredged material, less prone to erosion.

There are no cumulative effects historic properties. Coordination with the New York Office of Parks, Recreation and Historic Preservation, State Historic Preservation Office (NYSHPO), the Shinnecock Indian Nation, and interested parties, including the Montauketts, Unkechaug, and the Montauk Historical Society, are ongoing.

ALTERNATIVE	No Action/1	2	3
WATER RESOURCES	Moderate	Negligible	Negligible
VEGETATION	Negligible	Negligible	Negligible
FISH AND WILDLIFE	Moderate	Negligible	Negligible
CULTURAL RESOURCES	No Effect	No Effect	No Effect
AIR QUALITY	No Effect	No Effect	No Effect
TOPOGRAPHY	Significant	Negligible	Negligible
HTRW	NA	NA	NA
RECREATION	Moderate	No Effect	No Effect
AESTHETICS	No Effect	No Effect	No Effect
ENV. JUSTICE	Moderate	No Effect	No Effect
TRANSPORTATION	Moderate	No Effect	No Effect
NOISE	No Effect	No Effect	No Effect

Table 3. Summary of Potential Effects for Array of Alternatives.

5.0 Tentatively Selected Plan (TSP)

The Tentatively Selected Plan (TSP) has been determined to be Alternative 3: Uniform dredging of both the 150ft wide channel and deposition basin to -17'MLLW, and increasing the basins width from 50' to 100ft wide: All dredged material would be placed on the downdrift beach, but with no design (see Figure 12).

Figure 12. Tentatively Selected Plan.

6.0 Mitigation

The following BMPs were incorporated into the construction schedule to minimize and avoid adverse environmental impacts: the implementation of a seasonal restriction from 15 January to 30 September, based on the Conservation Recommendations from NMFS as pertains to Essential Fish Habitat, and the seasonal monitoring of piping plover nesting habitat, as is currently performed by the town of East Hampton (TEH), which will result in ongoing coordination with USFWS and NYSDEC should nesting habitat be documented in the area from the implementation of the Federal project.

SAV beds have been known to exist periodically within the study area. NMFS has determined that there is potential for the proposed plan to impact SAV along edge of the deposition basin. The proposed dredging will comply with the BMP of no dredging within 10 feet of identified subaquatic vegetation and will not impact the shoreline marshes or other wetland habitats. If present, these sensitive areas will be located and clearly marked before work commences. Coordination with NMFS is ongoing to avoid and monitor.

7.0 Summary of Environmental Effects of TSP

7.1 Effects to Natural Resources. A summary of potential adverse effects to the environment is presented in Table 5. Water resources include those natural aquatic resources found in the project area, such as: water quality parameters (eg. dissolved oxygen, temperature, salinity, contamination, and clarity). Vegetation includes those resources found in the aquatic environment as well as the terrestrial environment. Fish and Wildlife includes those natural resources found in both the aquatic and terrestrial environments, and species that are regulated or protected, as well as species that are not regulated or protected. The TSP will have a Negligible Effect to water resources, vegetation and fish and wildlife.

Air quality is measured in terms of regulated constituents under the affected states implementation plan for non-attainment areas (NAA) emissions of oxides of nitrogen (NOx), as regulated under the Clean Air Act. The TSP will temporarily produce emissions associated with diesel fueled equipment relating to dredging, beach sand placement, and related landside construction activities. The project is anticipated to be conducted from October 2019 through January 2020. The localized emission increases from the diesel-fueled equipment will last only during the project's construction period (and only local to where work is actually taking place at any time), and then end when the project is over. Therefore, any potential impacts will be temporary in nature.

The TSP will take place in Suffolk County, New York. The General Conformity applicability trigger levels in Suffolk County for 'marginal' ozone nonattainment areas are: 100 tons of NO_x per year (any year of the project) and 50 tons of VOC per year (40 CFR§93.153(b)(1)). In areas designated as 'maintenance' for $PM_{2.5}$, such as Suffolk County, the applicability trigger levels are: 100 tons per year each of direct $PM_{2.5}$ and SO_2 per year (40 CFR§93.153(b)(2)).

The General Conformity-related emissions associated with the project have been estimated as part of the General Conformity Review and are summarized by calendar year in Table 4 below. Emission calculations are provided as Appendix G.

Table 4: General Conformity-Related Emissions per Calendar Year, tons

Pollutant	2019	2020	Total
NO_x	57.6	9.6	67.2
VOC	2.2	0.4	2.5
$PM_{2.5}$	3.0	0.5	3.5
SO_x	0.0	0.0	0.04
CO	6.4	1.1	7.5

The emission levels do not exceed the General Conformity 'de minimis' trigger levels for any pollutant in any one year, or for the total project as a whole. Therefore, the project is presumed to conform with the General Conformity requirements and is exempted from Subpart B under 40CFR§93.153(c)(1). The Record of Non-Applicability (RONA) and associated emission estimates can be found in Appendix G.

7.2 Effects on Cultural Resources

Impacts to Known Resources

The recommended plan will have no impact to the historic properties. There are no known historic properties inside the APE, and the activities taking place for the construction of the TSP will not impact the resources that are nearby the APE.

Potential to Affect Unknown Prehistoric and Historic Archaeological Sites

As discussed above, deepening the federal channel and deposition basin will have no effect on unknown Prehistoric or Historic archaeological sites, since none are expected to be located at the bottom of the lake. Placing the sand on the beach will also have no adverse effect on unknown Prehistoric or historic properties because if any cultural materials are present, placing additional sand on top of them will create a protective cap over the site, but also make the site more inaccessible for future research.

Findings

The District has determined that the TSP will have no adverse effect to historic properties. Coordination with the New York Office of Parks, Recreation and Historic Preservation, State Historic Preservation Office (NYSHPO), the Shinnecock Indian Nation, and interested parties, including the Montauketts, Unkechaug, and the Montauk Historical Society, are ongoing.

Table 5: Summary of Effects Resulting from the TSP.

	Water Resources	Vegetation	Fish and Wildlife	Cultural Resources	Air Quality
TSP	Negligible	Negligible	Negligible	No Effect	No Effect

8.0 Agency Coordination and Environmental Compliance

This DEA will be coordinated with the public and involved agencies via public posting of the reports on the Corps website at www.nan.usace.army.mil. After a minimum 15 day review The Corps will assess comments received and prepare a Final Environmental Assessment and, as appropriate a signed FONSI to address all received comments.

This DEA will serve as the basis for NEPA compliance and ongoing coordination, as applicable, with the following state and federal agencies: the U.S. Fish and Wildlife Service, the New York Historic Preservation Office (relating to the SHPO letter of concurrence; Appendix E); the NYSDEC regarding issuance of a Water Quality Certification (Appendix A), the National Oceanographic and Atmospheric Administration - Fisheries concerning the Essential Fish Habitat evaluation (Appendix B), Endangered Species Act (USFWS and NOAA; Appendices C&D), Clean Air Act (US EPA, as delegated to the potentially-affected State of New York; Appendix G), and the NYSDOS regarding the CZM consistency determination (Appendix F). Coordination with NYSDEC will continue to obtain the final permit. Applicable laws and regulations pertaining to federal actions are summarized in Table 6.

Table 6. Summary of Primary Laws and Regulations Applicable to the Proposed Project

Legislative Title	U.S. Code/Other	Compliance
Clean Air Act	42 U.S.C. §§ 7401-7671g	An air quality analysis was completed for the project. Based upon the completed analysis, the emissions from the proposed project are determined to have an insignificant impact on the affected states air quality, and according to 40 CFR 93.153 (f) and (g) the proposed project is presumed to conform to the SIP. A Record of Non-Applicability is located in Appendix G.
Clean Water Act	33 U.S.C. §§ 1251 et seq.	The Corps will be requesting a water quality certificate from NYSDEC to fulfill the requirements of Section 404 of this Act. A 404(b) Review is included in Appendix A of EA. The EA also serves to meet DEC's SEQRA requirement.
Coastal Zone Management Act of 1972	16 U.S.C. §§ 1451-1464 N.J.A.C. 7:7 and N.J.A.C. 7:7E	A Coastal Zone Management Consistency Determination is included in Appendix E. The Corps will be requesting concurrence with its determination from the NYSDOS.
Endangered Species Act of 1973	16 U.S.C. §§ 1531 et seq.	Information provided by USFWS and NOAA indicates that the proposed project will not have significant adverse impacts to any endangered or threatened species. In response to analysis and documentation prepared by the Corp, Concurrence by FWS and NOAA has been received. Appendices C&D. Consultation concluded.
Magnuson-Stevens Act Fishery Conservation and Management Act	Section 305(b)(2) 1996 Amendments	The Corps has coordinated with NOAA Fisheries and completed its EFH Consultation (Appendix B).
Fish and Wildlife Coordination Act	16 U.S.C. § 661 et seq.	The Corps has coordinated with USFWS. See Appendix C. Consultation concluded.
National Environmental Policy Act of 1969	42 U.S.C. §§ 4321-4347	The circulation of this Draft Environmental Assessment fulfills requirements of this Act.
National Historic Preservation Act of 1966	16 U.S.C. §§ 470 et seq.	The Corps coordinated with the State Historic Preservation Office to fulfill requirements of this Act. Appendix E
Executive Order 11990, Protection of Wetlands	May 24, 1977	Circulation of this report for public and agency review fulfills the requirements of this Order.

9.0 Conclusions

Alternative 3 is the Tentatively Selected Plan (TSP), which will provide safe and efficient navigation to the area, and also provide some level of un-engineered erosion control to the beach where placement of dredged material would continue.

The proposed TSP for the navigation project is not anticipated to have significant adverse impacts on the environment, and would therefore result in a Finding of No Significant Impact (FONSI).

10.0 References

Iocco, L.E., P. Wilber, R. J. Diaz, D. G. Clarke, and R. J. Will. 2000. Benthic Habitats of New York/New Jersey Harbor: 1995 survey of Jamaica, Upper, Newark, Bowery, and Flushing Bays. Available online at: http://www.csc.noaa.gov/lcr/nyharbor/JBreport.pdf.

Jamaica Bay Ecosystem Research and Restoration Team (JABERRT). 2002. Final Report. Coordinated by John T. Tanacredi, Martin P. Schreibman, and George W. Frame.

Lazell, J.D. Jr. 1980. New England waters: critical habitat for marine turtles. Copeia 1980:290-295.

Maine Department of Conservation. June 2004a (online). Chenopodium rubrum L. var. rubrum: Coast-blite Goosefoot. Website Address: http://www.state.me.us/doc/nrimc/mnap/factsheets/rareplants/chenopodiumrubrum.pdf.

Morreale, S.J. and E.A. Standora. 1994. Occurrence, movement and behavior of the Kemp's ridley and other sea turtles in New York waters. Final Report to NYS Dept. of Environmental Conservation, Return a Gift to Wildlife Program, April 1988 - March 1993.

National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA-Fisheries). March 2004 (on-line). Essential Fish Habitat. Website address: http://www.nmfs.noaa.gov/habitat/habitatprotection/essentialfishhabitat.htm

National Park Service (NPS). 2004. The Evolving Legacy of Jamaica Bay.

National Park Service (NPS). March 2004 (online). Oriental Bittersweet *Celastrus orbiculatus* Thunb. Website address: http://www.nps.gov/plants/alien/fact/ceor1.htm.

National Resource Conservation service (NRCS). April 2004 (online). Official Soil Series Descriptions. Website address: http://soils.usda.gov/technical/classification/osd/index.html.

New York City Department of City Planning (NYCDCP). March 2004a (online). Table SF3 INC P-301: Household Income in 1999 New York City Community Districts, 2000. Website address: http://www.nyc.gov/html/dcp/pdf/census/sf3incp301.pdf

New York City Department of City Planning (NYCDCP). March 2004c (online). Community District Profiles. Website address: http://www.ci.nyc.ny.us/html/dcp/html/lucds/cdstart.html

New York State Department of Environmental Conservation (NYSDEC). June 2004h (online). Short-eared Owl Fact Sheet. Website address: http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/seowfs.html.\

New York State Department of Environmental Conservation (NYSDEC). Nov 2004i (online). The Draft New York State 2004 Section 303(d) List of Impaired Water Requiring a TMDL. Website address: http://www.dec.state.ny.us/website/dow/303dcalm.html.

New York State Department of Environmental Conservation, Natural Heritage Program (NYNHP). 2003. Rare Plant Status List. Edited by Stephen M. Young and Troy W. Weldy. Available online at: http://www.dec.state.ny.us/website/dfwmr/heritage/RPSL.pdf.

Potter, Ben A., Joel D. Irish, Joshua D. Reuther, and Holly J. McKinney. 2014. New Insights into Eastern Beringian Mortuary Behavior: A Terminal Pleistocene Double Infant Burial at Upward Sun River. PNAS. December 2, 2014, Vol. 111. No. 48. Pg. 17060-17065. Electronic document. https://www.pnas.org/content/pnas/111/48/17060.full.pdf. Accessed on February 5, 2019.

Shoop, C.R. 1980. Sea turtles in the Northeast. Maritimes 24:9-11.

U.S. Army Corps of Engineers (USACE). 2003f. Draft Integrated Ecosystem Restoration Report/Environmental Assessment for the Gerritsen Creek Ecosystem Restoration Project. Compiled by the New York District.

U.S. Army Corps of Engineers (USACE). 2003g. Cultural Resources Baseline Study. Compiled by the Panamerican Consultants, Inc for the New York District.

U.S. Department of Agriculture (USDA). May 2004 (online). USDA Plants Database. Website address: http://plants.usda.gov/

US Environmental Protection Agency (USEPA). March 2004b (online). NEPAssist. Website address: https://oasint.rtpnc.epa.gov/NEPA/

US Environmental Protection Agency (USEPA). May 2005a (online). Air Quality Index – Generating Reports and Maps. Website address: http://www.epa.gov/air/data/reports.html.

US Environmental Protection Agency (USEPA). May 2005b (online). Green Book Nonattainment areas for Criteria Pollutants. Website address: http://www.epa.gov/oar/oaqps/greenbk/index.html.

U.S. Fish and Wildlife Service (USFWS). 1997. Significant Habitats and Habitat Complexes of the New York Bight Region. Available online at: http://training.fws.gov/library/pubs5/web_link/text/toc.htm

US Environmental Protection Agency (USEPA). 1978. Protective Noise Levels (a supplement to the USEPA Report: Information on Levels of Environmental Noise Requisite to Protect Public Health US Fish and Welfare with an Adequate Margin of Safety, EPA/ONAC 550/8-74-004, March, 1974). Office of Noise and Abatement Control, Washington, D.C.

Veit, Richard R., Andrew Bernick, and Jarrod Santora. 2002. "Birds of the Jamaica Bay Ecosystem," in USACE. 2002, *JABERRT Final Report*. New York: National Park Service Division of Natural Resources.

Andrle, R.F. and J.R. Carroll, eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY. 551 pp.

Austin, H.M. 1973. The ecology of Lake Montauk: Planktonic fish eggs and larvae. New York Ocean Science Laboratory Technical Report No. 0021.

Connor, P.F. 1971. The mammals of Long Island, New York. New York State Museum and Science Service Bulletin No. 406. State University of New York, Albany. 82 pp.

Flagg, Paul J. and Greene, Gregory T. 1981. Impacts of Shoreline Development on Shellfish Resources in Lake Montauk.

Gallagher, A. 2006. Guide to Benthic Invertebrates Observed from Hudson River Park Sanctuary Waters. Available online: http://hudson.cfe.cornell.edu/pages/HRPT%20Invert%20Guide.pdf.

Houle, C. 2005. Personal communication on November 9, 2005, between C. Houle, Information Services, New York Natural Heritage Program, Albany, NY, and S. Watts, Project Manager, Northern Ecological Associates, Inc., Portland, ME.

Inter-science Research Associates, Inc. (ISRA). 1983. Comprehensive Management Plan for Lake Montauk, Town of East Hampton, New York.

ISRA. 1984. RE-Colonization of an Underwater Dredge Spoil Disposal Site and Effects of its Removal, Lake Montauk, New York.

ISRA. 1985. Draft Environmental Impact Statement for Gone Fishing Marina, Montauk, Town of East Hampton, Suffolk County, New York. Prepared by Inter-science Research Associates, Inc., Bridgehampton, NY. Prepared for Sennefelder Properties, Inc., Montauk, NY.

Lewis, Ralph S. and Janet Radway Stone. 1991. Late Quaternary Stratigraphy and Depositional History of the Long Island Sound Basin: Connecticut and New York. Journal of Coastal Research, SI 11, pg. 1-23, Fall 1991.

Montauk Surfcasters Association. 2006. Montauk Surfcasters home site. Available online: http://www.surfcasters.org.

Morreale, S.J., A.B. Meylan, S.S. Sadove, and E. A. Standora. 1992. Annual occurrence and winter mortality of marine turtles in New York waters. Journal of Herpetology 26(3): 301-308.

New York State Department of Environmental Conservation (NYSDEC). [1964–1981]. Unpublished coliform data from Lake Montauk.

NYSDEC. 2000. Water Quality Regulations – Surface Water and Groundwater Classifications and Standards. New York State Codes, Rules and Regulations. Title 6, Chapter X Parts 700-706.

NYSDEC. 2001b. New York State amphibian and reptile atlas project. Available online: http://www.dec.state.ny.us/, last modified May 2001.

Olin, J.A. 2005. Personal communication on September 19, between J.A. Olin, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Islip, NY, and S. Watts, Project Manager, Northern Ecological Associates, Inc., Portland, ME.

Peconic Estuary Program (PEP). 2001. Peconic Estuary Program: Comprehensive Conservation Management Plan. Draft Submitted to the United States Environmental Protection Agency in May 2001.

Peconic Estuary Program (PEP). 2006. Peconic Estuary Program GIS Clearinghouse. Available online: http://www.peconicestuary.org/GIS.html.

Perlmutter, N. and DeLuca, F. 1963. Availability of Fresh Groundwater, Montauk Point Area, Suffolk County, Long Island, New York. Prepared for the U.S. Geological Survey.

Pleuthner, R.A. 1995. Rare plants, rare animals and significant natural communities in the Peconic Estuary. Prepared for the Suffolk County Department of Health. New York Natural Heritage Program, Latham, NY.

Reschke, C. 1990. Ecological communities of New York State. New York Natural Heritage Program, New York State Department of Environmental Conservation. 96 pp.

Suffolk County Planning Department. 1981. Future Development Alternative at Lake Montauk and Fort Pond Bay. Prepared for the Town of East Hampton.

Town of East Hampton. 1989. East Hampton Town Shellfish Management Report. Prepared by Town of East Hampton, Natural Resources Department.

Town of East Hampton. 2005. Personal Communication between Town of East Hampton Staff and Northern Ecological Associates, Inc. Staff, on August 24, 2005.

United States Army Corps of Engineers (USACE). 2005. Lake Montauk Harbor, NY, Fact Sheet. Lake Montauk Harbor Navigation and Storm Damage Reduction Project, USACE, New York District. Available online: http://www.nan.usace.army.mil/project/newyork/factsh/pdf/lake.pdf

United States Congress, House of Representatives (US Congress, House). 1939. Lake Montauk, NY, H.R. 369, 76th Congress, 1st Session. Pp 1–20.

United States Department of Agriculture (USDA). 1975. Soil Survey of Suffolk County, New York.

United States Fish and Wildlife Service (USFWS). 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. USFWS Southern New England-New York Bight Coastal Ecosystems Program, Charlestown, RI.

United States Geological Survey (USGS). 1995. Ground Water Atlas of the United States: Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont. Hydrological Investigations Atlas 730-M. USGS Reston, Virginia. 28 pp.

USGS. 2002. Water-Resources Investigations Report 01-4165. Water-Table and Potetiometric-Surface Altitudes of the Upper Glacial, Magothy, and Lloyd Aquifers on Long Island, New York, in March-April 2000, with a summary of Hydrologic Conditions.

USGS. 2017. Quaternary History of the New York Bight. Electronic document. https://3dparks.wr.usgs.gov/nyc/moraines/nycquaternary.htm. Accessed on February 4, 2019. Page last modified on 03-May-2017.

APPENDIX A

WATER QUALITY SECTION 404(b)(1) EVALUATION
LAKE MONTAUK HARBOR, NEW YORK
NAVIGATION STUDY

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CLEAN WATER ACT
SECTION 404(b)(1)GUIDELINES EVALUATION

LAKE MONTAUK NAVIGATION IMPROVEMENT PROJECT

INTRODUCTION

This document presents a Section 404(b)(1) guidelines evaluation for the navigation project at Lake Montauk, East Hampton, New York. The recommended plan includes dredging sand from the channel, deposition fillet located at the south east corner of the inlet and accreted sand from the east side of east inlet jetty. This sand will be placed at the west of the inlet. The discharge to waters of the U.S. that may occur related to the project would be the placement of the fill material into shallow waters. Best management practices will be fully utilized to ensure that turbidity and sedimentation are limited to the area immediately adjacent to the project site and minimized to the greatest extent possible. This evaluation is based on the regulations presented in 40 CFR 230, Section 404(b)(1): Guidelines for Specification of Disposal Sites for Dredged or Fill Material. The regulations implement Sections 404(b) and 401(1) of the Clean Water Act, which govern disposal of dredged and fill material inside the territorial seas baseline [§230.2(b)].

As stated in Section 230.10(a)(4): For actions subject to NEPA, where the Corps of Engineers is the permitting agency, the analysis of alternatives required for NEPA environmental documents, including supplemental Corps NEPA documents, will in most cases provide the information for the evaluation of alternatives under these Guidelines. The EA, to which this evaluation is an appendix, provides the documentation necessary to attest that the project is fully in compliance with the Section 404(b)(1) guidelines. The EA provides a full project description and location, description of existing conditions, full alternatives analysis, and description of potential impacts as a result of the project and the project's construction. The analysis provided within the EA along with the review undertaken during the application process for the NYDEC State Water Quality Certificate under Section 401(1) will document that the implementation of this erosion/shore protection plan will not cause or contribute to significant degradation of the waters of the United States, as is demonstrated in the following sections and tables.

1.0 PROJECT DESCRIPTION

Location

The Lake Montauk Harbor Navigation Project, Montauk, New York (Study), is intended to ensure safe and efficient navigation of the Federally-authorized channel. The study area, Lake Montauk Harbor, is located on the northern shore of the south fork of Long Island, within the Town of East Hampton, Suffolk County, New York. The study area is approximately 125 miles

east of New York City, 21 miles southwest of New London, Connecticut, and about 3 miles west of Montauk Point. Lake Montauk Harbor is also situated about 4 miles east of Fort Pond Bay, the nearest harbor in its vicinity. Lake Montauk Harbor is approximately 2.0 miles long in a north-south orientation and .7 miles wide, on the average, and encompasses 1,037 acres with a mean depth of seven feet. The harbor is landlocked on the east, south, and west sides. To the north, it connects with Block Island Sound through an inlet, which is fronted by two rock jetties. The study area, in its broadest sense, consists of the area bounded by Fort Pond Bay on the west and Shagwong Point on the east.

General Description of Selected Plan:

Authority and Purpose:

The Lake Montauk Harbor Federal navigation project was first authorized by the Rivers and Harbors Act of 2 March 1945, House Document No. 369, 76th Congress, 1st Session. It authorized construction of a channel 12 feet deep at MLW and 150 feet wide, extending from the 12 foot contour in Block Island Sound to the same depth in the existing yacht basin northeast of Star Island; for a boat basin 10 feet deep, 400 feet wide and 900 feet long, located northwest of Star Island. A further study for Lake Montauk Harbor was authorized by a Senate Committee resolution adopted October 17, 1991 to determine if further improvements for navigation are advisable.

GENERAL CONSTRUCTION AND MATERIAL DESCRIPTIONS:

Components of the project design include deepening the Federal channel up to -17 ft MLW within both the inner and outer channels, removal of the inner shoal, construction of the 100-ft wide deposition basin to -17 ft MLW plus 2-ft overdredge. Future channel maintenance operations are assumed to include removal of material from the channel and deposition basin. Initial volume to complete the designated beach fill plan is approximately 188,000 cubic yards (cy) of suitable material. Construction of the deposition basin and channel deepening is expected to extend the maintenance dredging cycle from between 3-4 to 7- 8 years. Dredged channel and basin material would be placed on the downdrift shoreline as part of the beachfill for un-engineered erosion protection. An over dredge depth of 2-ft was assumed for the length of the dredged channel and within the deposition basin.

Determination of maintenance dredging cycle lengths for this project assumed a minimum volume of dredging per operation of 14,000 cy. Maintenance dredging was assumed to take place only after at least 14,000 cy shoals into the channel. The maximum allowable cycle length was determined by assuming that maintenance dredging must take place when 60-70% of the initial construction volume has shoaled. Using these assumptions, maintenance dredging cycles of 7-8 years are anticipated, assuming removal of approximately 56,000 cy per cycle.

The initial construction removal of approximately 188, 000 cy from the channel/deposition basin would be done using a hydraulic cutterhead dredge. A 50 year project life is assumed.

The length of the constructed placement site is approximately 3,000, which will be placed west of the inlet, with a berm width of approximately 46’ (+8 NGVD).

General Characteristics of Fill Material: The material dredged from the inlet is approximately 90-99.0% sand, which eliminates concerns regarding the use of fine grain material from external sources, which would have to be tested for contaminants to ensure its acceptability for placement.

Quantity of Material: The estimate of the volume of material being dredged from all sources is approximately 188, 000 cubic yards.

Sources of Dredged Material:

Lake Montauk Inlet Channel
Dredged Deposition Basin

Description of Proposed Discharge Site:

All dredged material will be disposed of on the project site in pre-designated locations according to the project design.

Time and Duration of Disposal: The dredging and placement of fill material will take place between 30 September and 15 January.

General construction durations for the project is not likely to exceed 3 months/90 days.

DISPOSAL METHOD: Excavated material will be moved via pipeline and barge to the proper onsite beach disposal areas and re-distributed and regarded via the use of land based equipment.

Construction Sequence: The project construction sequence is most likely to be simultaneously constructed channel and basin.

2.0 FACTUAL DETERMINATIONS

Review of Compliance – Section 230.10(a)-(d)

	YES	NO
a. The discharge represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose.	X	
b. The activity does not appear to: 1) violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally listed threatened and endangered species or their habitat; and 3) violate requirements of any Federally designated marine sanctuary.	X	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values.	X	
d. Appropriate and practicable steps have been taken to minimize potential adverse	X	

impacts of the discharge on the aquatic ecosystem.		

Technical Evaluation Factors (Subparts C-F)

		N/A	NOT SIGNIFICANT	SIGNIFICANT
a. Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)				
	1) Substrate		X	
	2) Suspended particulates/turbidity		X	
	3) Water column impacts		X	
	4) Current patterns and water circulation		X	
	5) Normal water circulation		X	
	6) Salinity gradients		X	
b. Potential Impacts on Biological Characteristics on the Aquatic Ecosystem (Subpart D)				
	1) Threatened and endangered species		X	
	2) Fish, crustaceans, mollusks, and other organisms in the aquatic food web		X	
	3) Other wildlife (mammals, birds, reptiles and amphibians)		X	
c. Potential Impacts on Special Aquatic Sites (Subpart E)				
	1) Sanctuaries and refuges		X	
	2) Wetlands		X	
	3) Mud Flats		X	
	4) Vegetated Shallows		X	
	5) Coral reefs	X		
	6) Riffle and pool complexes	X		
d. Potential Effects on Human Use Characteristics (Subpart F)				
	1) Municipal and private water supplies	X		
	2) Recreational and commercial fisheries		X	
	3) Water-related recreation		X	
	4) Aesthetic impacts		X	
	5) Parks, national and historic monuments, national seashores, wilderness areas, research sites and similar preserves	X		

Evaluation and Testing – Subpart G

A. THE FOLLOWING INFORMATION HAS BEEN CONSIDERED IN EVALUATING THE BIOLOGICAL AVAILABILITY OF POSSIBLE CONTAMINANTS IN DREDGED OR FILL MATERIAL. (CHECK ONLY THOSE APPROPRIATE.)			
	1) Physical characteristics		X
	2) Hydrography in relation to known or anticipated sources of contaminants		X
	3) Results from previous testing of the material or similar material in the vicinity of the project		X
	4) Known, significant sources of persistent pesticides from land runoff or percolation		N/A
	5) Spill records for petroleum products or designated hazardous substances (Section 311 of CWA)		N/A
	6) Public records of significant introduction of contaminants from industries, municipalities or other sources		X
	7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities		N/A
	8) Other sources (specify)		N/A
List appropriate references – See Environmental Assessment			
		YES	**NO**
b. An evaluation of the appropriate information factors in 3a above indicates that there		**X**	

is reason to believe the proposed dredged material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to require constraints.		

4. Disposal Site Delineation - Section 230.11(f)

A. THE FOLLOWING INFORMATION HAS BEEN CONSIDERED IN EVALUATING THE BIOLOGICAL AVAILABILITY OF POSSIBLE CONTAMINANTS IN DREDGED OR FILL MATERIAL. (CHECK ONLY THOSE APPROPRIATE.)		
	1) Depth of water at disposal site	Yes
	2) Current velocity, direction, variability at disposal site	Yes
	3) Degree of turbulence	Yes
	4) Water column stratification	Yes
	5) Discharge of vessel speed and direction	Yes
	6) Rate of discharge	Yes
	7) Dredged material characteristics (constituents, amount, and type of material, settling velocities)	Yes
	8) Number of discharges per unit of time	Yes
	9) Other factors affecting rates and patterns of mixing (specify)	Yes
List appropriate references – See Environmental Assessment		
	YES	**NO**
b. An evaluation of the appropriate information factors in 4a above indicated that the disposal sites and/or size of mixing zone are acceptable.	X	

Actions to Minimize Adverse Effects (Subpart H)

	YES	**NO**
All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

Factual Determination – Section 230.11

A REVIEW OF APPROPRIATE INFORMATION, AS IDENTIFIED IN ITEMS 2-5 ABOVE, INDICATES THERE IS MINIMAL POTENTIAL FOR SHORT OR LONG-TERM ENVIRONMENTAL EFFECTS OF THE PROPOSED DISCHARGE AS RELATED TO:		
	YES	**NO**
a. Physical substrate at the disposal site (review Sections 2a, 3, 4 and 5 above)	X	
b. Water circulation, fluctuation and salinity (review Sections 2a, 3, 4 and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a, 3, 4 and 5)	X	
d. Contaminant availability (review Sections 2a, 3 and 4)	X	
e. Aquatic ecosystem structure, function and organisms (review Sections 2b, 2c, 3 and 5)	X	
f. Proposed disposal site (review Sections 2, 4 and 5)	X	
g. Cumulative effects on the aquatic ecosystem	X	
h. Secondary effects on the aquatic ecosystem	X	

Findings of Compliance or Non-Compliance

	YES	**NO**
The proposed disposal site for discharge of dredged or fill material complies with	X	

Section 404(b)(1) guidelines.		

In summary, the implementation of the recommended plan to deepen the navigation channel and widen and deepen the deposition basin, and place the dredged material on the beach:

Will have no adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites.

Will have no significant adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

Will have no significant adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability.

Will have no significant adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

APPENDIX B

ESSENTIAL FISH HABITAT ASSESSMENT
LAKE MONTAUK HARBOR, NEW YORK
NAVIGATION STUDY

Prepared By: **U.S. Army Corps of Engineers**
New York District
26 Federal Plaza
New York, NY 10278-0090

1. INTRODUCTION

In compliance with Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (1996 amendments), the New York District, U.S. Army Corps of Engineers (the Corps), is providing this assessment of the potential effects of deepening via dredging and beach placement with dredged material at Lake Montauk Harbor on Essential Fish Habitat (EFH).

The following assessment addresses the physical effects of dredging and subsequent beach placement at Lake Montauk Harbor, New York. This evaluation is provided to Supplement and Summarize the EFH Worksheet Assessment (Attachment 1), Best management practices, such as adherence to a seasonal restriction from 30 September through 15 January so as to be protective of EFH, will be used employed to minimize potential adverse effects, precluding the need for compensatory mitigation.

2. PROJECT AUTHORIZATION, DESCRIPTION, AND PROPOSED ACTION

The study is conducted under the authority of two Congressional resolutions. First, a resolution was adopted by the United States Senate Committee on Environment and Public Works on October 17, 1991:

> "Resolved by the Committee on Environment and Public Works of the United States Senate, that the Secretary of the Army is hereby requested to review the report of the Chief of Engineers on Lake Montauk Harbor, East Hampton, New York, published as House Document 369, Seventy-sixth Congress, First Session, and other pertinent reports, with a view to determining if further improvements for navigation are advisable at this time. Beneficial use of any dredged material for improvements to the environment should also be considered."

In accordance with this resolution, the reconnaissance report was completed in May 1995. It recognized that there were problems of insufficient channel and harbor depth for many vessels due to increased vessel size as well as erosion problems related to the navigation project and opportunities for multipurpose solutions. With the findings of erosion problems and opportunities for multipurpose solutions, the scope of the study was further expanded by authority of a resolution adopted by the United States Senate Committee on Transportation and Infrastructure on May 22, 2002:

> "Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That, the Secretary of the Army is requested to review the report of the Chief of Engineers, published as House Document 369, 76th Congress, 1st Session, and other pertinent reports, to determine whether modifications to the recommendations contained therein in the interest of navigation improvements, to include beneficial uses of dredged material and sand-bypassing, in accordance with Section 110 of the River and Harbor Act of 1962, to determine the need for measures to address storm damage reduction, shoreline protection, environmental restoration and protection and allied purposes in the vicinity of Lake Montauk Harbor, East Hampton, New York."

A Feasibility Cost Sharing Agreement (FCSA) under this 2002 authority was signed with the non-Federal sponsor on 24 February 2003. Following Hurricane Sandy in 2012, the Lake Montauk Harbor study was identified in the May 2013 Second Interim Report to Congress in response to the Disaster Relief Appropriation Act of 2013 (PL 113-2) as a feasibility study to be completed at 100% Federal expense. The study was re-scoped to focus on coastal storm risk management (CSRM) as an interim response to the original congressional authorities, and a FCSA amendment was signed on 31 March 2014, with a separate response to the navigation improvement purpose to be completed in the future. A Tentatively Selected Plan (TSP) for CSRM was identified and coordinated with the Non-Federal sponsor and its local partner, the Town of East Hampton, in 2016. Feedback from public meetings indicated a lack of non-Federal support for the CSRM TSP. The non-Federal sponsor, by letter dated 6 April 2017, requested that this study focus on navigation improvements instead of CSRM.

By memo dated 15 May 2017, the U.S. Army Corps of Engineers New York District fulfilled this request and is now completing the study to recommend navigation improvement only.

As PL 113-2 funding is solely for CSRM studies and projects, the Lake Montauk Harbor study is being completed with cost-shared funds on hand under the original 2003 FCSA that included navigation as a project purpose.

The non-Federal sponsor for the study is the New York State Department of Environmental Conservation (NYSDEC). The Town of East Hampton, in which Lake Montauk Harbor and the other problem areas within the study area are located, is a local sponsor to NYSDEC. On 24 February 2003 the District and NYSDEC executed the FCSA to initiate the feasibility phase with a cost-share of 50% / 50%. The passage of the Disaster Relief Appropriation Act of 2013, Public Law 113-2, resulted in a FCSA amendment signed on 31 March 2014 for the CSRM purpose of this study to be completed at 100% Federal cost; however, as described in 2.0 above, no TSP for CSRM was supported by the non-Federal sponsor. This study of navigation improvement only now is being completed under the original 2003 FCSA with cost-shared funds on hand.

a. Existing Federal Navigation Project Description

The existing navigation project provides for the following:

- a channel, 12 feet deep at Mean Low Water (MLW) and 150 feet in width extending from the 12 foot contour in Block Island Sound to the same depth in the existing yacht basin east of Star Island.
- a deposition basin 12 feet deep at MLLW and 50' wide extending along the west side the navigation channel.

b. Description of Proposed Federal Navigation Action

The channel and deposition basin were last dredged in October 2018 with the removal of approximately 37, 175 cubic yards of sand, which was used in a beneficial manner as beach nourishment, placed along eroded areas of the west jetty shoreline. The proposed dredging would involve the removal of up to approximately 200,000 cubic yards of material, which would be used in a beneficial manner as beach nourishment, placed in the same location as previous dredging cycles.

The channel and deposition basin will be dredged to -17 feet below Mean Lower Low Water plus 2 feet of allowable over depth, with the basin being widened from 50' to 100'. Dredging of the project will be accomplished by pipeline dredge, or similar plant. The pipeline is a hydraulic dredge, which utilizes a centrifugal pump to entrain the dredged solid material in high velocity water, and pump the slurry through a pipeline either directly or indirectly to the placement area. The most common and versatile pipeline dredge is the cutterhead (excavator) surrounding the intake of the suction line. As the dredge swings on an arc, the cutterhead excavates and translates the bottom material into the influence of the high velocity water at the suction intake, where the solids are entrained, passed through the dredge pump to the floating discharge line and on to the placement area through the shore pipe. The cutterhead dredge is held in position by two spuds at the stern of the dredge, only one of which can be down while swinging. Two swing anchors are secured some distance from either side of the dredge and are connected by wire rope (through swing sheaves mounted near the cutter) to the swing winches. The dredge is swung from port to starboard alternately, while passing the cutterhead through the bottom material until the proper depth is achieved. A discharge pipeline will transport the sediment to the placement site. Additional sections of pipeline will be added as the dredge moves up the channel towards the harbor.

c. Description of Study Area

Lake Montauk is a marine harbor with a navigable channel connecting the lake to Block Island Sound on the northern shore of the south fork of Long Island, East Hampton, Suffolk County (Figure 1). Besides Block Island Sound, other major water bodies near the study area include Nepeague Bay, Gardiners Bay, Fort Pond Bay, and the waters of the Atlantic Ocean. Lake Montauk was a brackish lake until the channel connecting it to Block Island Sound to the north was constructed in 1926.

The average dissolved oxygen (DO) level conditions recorded for Lake Montauk suggest healthy waters (7.69-13.74 mg/L). Recorded salinity in the harbor and at the entrance to the channel ranges from 28.03 parts per thousand (ppt) to 30.35 ppt and 28.83 to 30.79 ppt, respectively, according to a 1995 USACE reconnaissance report. This same report describes average maximum tidal currents at the harbor entrance ranging from 0.6 to 1.2 knots, on the ebb and flood respectively. Additionally, the circulation in Lake Montauk Harbor is primarily tidally induced. Surface currents in the inlet are greatest, at velocities of greater than 1.5 knots (60 centimeters per second). Currents within the central harbor are substantially lower than the inlet, typically below 0.13 knots (4 centimeters per second). Because of the north by northwest orientation of the entrance channel, heavy seas in the inlet are fairly common, especially in winter months.

The average sediment grain size analyses (to approximately -16'MLLW as of 2018) results for maintenance dredging is 98% sand, 2% silt.

Jetties on both the east and west protect the channel, which is now Federally maintained. The Block Island Sound shorelines on both sides of the channel are public beaches. Lake Montauk Harbor supports a variety of commercial, institutional, and residential activities. The harbor contains marinas for commercial fishing vessels and recreational boats, restaurants and homes.

The current 12-foot channel depth is only marginally adequate for most current commercial activity. As channel depths decrease due to sedimentation caused by littoral drift, some deeper draft vessels must transit the channel only during high tide, or must put out to sea under loaded to minimize their drafts. The shoaling in the channel along the southern portion of the eastern jetty reduces the effective channel width, resulting in the crowding of passing vessels. Maintaining sufficient navigable depths in the channel would allow the harbor to fully support its commercial marine activities and provide ready access to Block Sound for the U.S. Coast Guard.

Facilities - Lake Montauk Harbor can accommodate vessels with lengths up to approximately 100 feet. There are 15 commercial fishing vessels, 3 commercial fishing plants and two hundred recreational vessel moorings located in the Harbor, as well as a seasonal ferry service between the harbor and several destinations. The U.S. Coast Guard (USCG) conducts search and rescue missions out of their facility on Star Island, which lies within Lake Montauk Harbor.

Dune and Beach System- The dune and beach system on the east shoreline is adequate for erosion control and storm-surge protection for the 50-year project design life. The west 3,200 feet of shoreline has inadequate protection from erosion and storm surge. Should a storm occur with a greater intensity than the existing protection level can tolerate, the properties behind this stretch of shoreline would potentially be subject to wave and water damage. The damage is predominantly storm-induced shoreline erosion. Wave damage on structures due to run-up is insignificant since the existing ground level is high enough to dissipate the run-up elevation and wave force during storm surges.

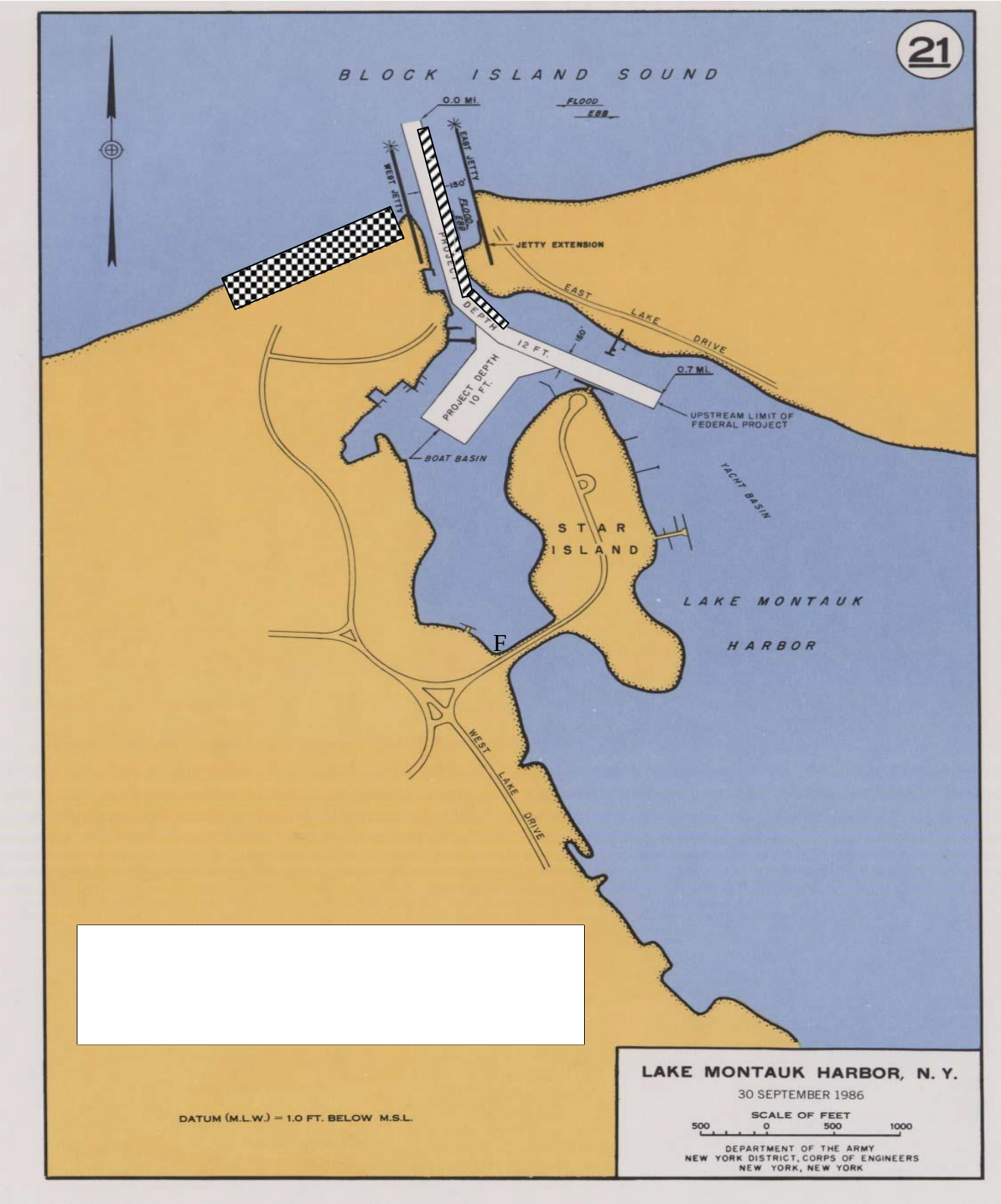

Figure 1. Lake Montauk Harbor: location of existing project.

3. ANALYSIS OF EFFECTS ON EFH

Habitat Characteristics- Dredging Site: See Attachment 1 and Draft Environmental Assessment document (EA) for full description and analyses.

Habitat Characteristics – Placement Site: The littoral material on the shoreline is predominantly sand and gravel composed mainly of light to brown fine- to medium-grained sand according to a 1995 USACE reconnaissance report. Due to erosion, the beach sand on the western 3,000 feet of shoreline next to the inlet has been reduced to a gravel beach. The median sand size along the western shoreline is approximately 0.24 millimeters. This smaller sediment size is believed to be the material placed on the beach from previous channel dredging activities. The proposed dredged material in the channel consists predominantly of fine to medium-grained sand with traces of silt.

Effects on Physical Habitat – Placement Site: The physical effects of the beach placement element of the proposed project would be the placement of estimated 200,000 cubic yards of dredged material on the shoreline west of the west jetty. The placement entails transporting the dredged material by submerged pipeline with final deposition at the designated site.

Effects on Managed Species- EFH Species Listed for the Project Area: The managed species with EFH designations in the waters within the designated 10′ latitudinal and longitudinal grid, which contains the project domain, are listed in Table 2 by life stages. Among the listed species, 21 species of fish could occur in the dredging area or renourishment site based on the broad distributional boundaries of the EFH grid (NMFS 1999). These species are listed in Table 3, which summarizes their general habitat parameters by life stage.

Potential EFH Impacts: The following provides a summary of the worksheet assessment completed for the listed species identified above (see Attachment 1). For all species, the impacts during dredging would be minimal and temporary for the following reasons:

- Although the substrate of the channel and newly deepened area would show little or no change subsequent to dredging, immediate re-deposition of sediments, as evidenced by the historical O&M cycles, further insures creation of a substrate analogous to pre-dredging conditions.
- Due to the low percentage of fine-grained sediments, turbidity will be minimal and will primarily be confined to the channel prism; this turbidity, also a natural feature of estuarine and embayments, is also comparable to the prop wash presently created in this shoaling environment by the large number of vessels using the harbor.
- Although there exists a SAV patch outside the footprint of the channel, since turbidity will be minimal due to grain size, and the patch of SAV is offset approximately 160’ from the nearest site of construction (eastern edge of the deposition basin), it is our determination that there will be no effect to the SAV bed.
- Lake Montauk Channel is a well-trafficked, relatively shallow waterway, used by both recreational and commercial vessels. The disturbance of a small-scale hydraulic dredging operation should have no greater impact.
- For all aquatic species, the impacts during beach renourishment will be negligible (see Attachment 1 and EA).
- Approximately 188,000 cubic yards of dredged material will be transported by small diameter pipeline and deposited at the designated site, on the shoreline west of the west jetty. The deepening of the channel will reduce the current maintenance cycles from

approximately every three to four years to approximately every seven years, thereby, reducing overall benthic habitat recovery impacts.

Potential Beach Habitat Impacts- The Corps has used the proposed placement site in the past for placement of dredged material from Lake Montauk Harbor Federal Channel with no apparent adverse effects to the local aquatic biota. As the placement of the sand will be well above MLW, there would be no effect to EFH.

4. EFFECTS ON ENDANGERED SPECIES

Presently, it is not anticipated that any endangered species will be encountered. Should any endangered species be sighted, the dredge operators will monitor and document location of individuals. Should the aforementioned species move into the area contiguous to the project area, the dredging will stop at once, and the NMFS office at Gloucester, MA will be notified. Coordination with NMFS Protected Resources Division is underway, and will be ongoing, and will remain in compliance with the statute, as required.

5. CONCLUSIONS

The lack of substantial concentrations of EFH species/life stages in the Lake Montauk Harbor Federal Navigation Project area, and the prompt recovery of habitat to pre-dredge conditions would ensure that there would be no more than minimal impact on EFH. Additionally, the proposed dredging would increase circulation in the harbor, ultimately improving the habitat.

Based on the foregoing, the U.S. Army Corps of Engineers, New York District, concludes that there would be no more than minimal impact to Essential Fish Habitats for the species and life stages listed in Table 2. Dredging at Lake Montauk Harbor Federal Navigation Project with the placement of sand along the shoreline west of the inlet, and the implementation of a seasonal restriction prohibiting all work from 15 January through 30 September to protect EFH habitat, can be conducted without the need for additional mitigation measures to protect habitat or individual species

TABLE 1. Summary of Essential Fish Habitat (EFH) Designation

Grid Boundary	North	East	South	West
	41° 10.0' N	71° 50.0' W	41° 00.0' N	72° 00.0' W

Grid Description (i.e. habitat, landmarks, coastline markers): Atlantic Ocean waters within the square affecting the northeast tip of Long Island from just west of Rocky Point on the north side around Fort Pond Bay, past Lake Montauk, Shagwong Pt., False Pt., Montauk Pt., and Montauk, NY, to just east of Hither Hills State Park.

SPECIES	EGGS	LARVAE	JUVENILES	ADULTS
Atlantic cod *(Gadus morhua)*				
haddock *(Melanogrammus aeglefinus)*				
pollock *(Pollachius virens)*				
whiting *(Merluccius bilinearis)*	X	X	X	
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*				
white hake *(Urophycis tenuis)*				
redfish *(Sebastes fasciatus)*	n/a (1)			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pleuronectes americanus)*	X	X	X	X
Yellowtail flounder *(Pleuronectes ferruginea)*				
Windowpane flounder *(Scopthalmus aquosus)*			X	X
American plaice *(Hippoglossoides platessoides)*				
ocean pout *(Macrozoarces americanus)*	X	X		X
Atlantic halibut *(Hippoglossus hippoglossus)*				
Atlantic sea scallop *(Placopecten magellanicus)*				
Atlantic sea herring *(Clupea harengus)*				
monkfish *(Lophius americanus)*				
bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealei)*	n/a (2)	n/a (2)	X	
short finned squid *(Illex illecebrosus)*	n/a (2)	n/a (2)		
Atlantic butterfish *(Peprilus triacanthus)*				
Atlantic mackerel *(Scomber scombrus)*				
summer flounder *(Paralicthys dentatus)*			X	X
scup *(Stenotomus chrysops)*	N/a (3)	n/a (3)	X	X
black sea bass *(Centropristus striata)*	N/a (3)		X	
surf clam *(Spisula solidissima)*	N/a (2)	n/a (2)		
ocean quahog *(Artica islandica)*	N/a (2)	n/a (2)		
spiny dogfish *(Squalus acanthias)*	N/a (4)	n/a (4)	X	X
tilefish *(Lopholatilus chamaeleonticeps)*				
king mackerel *(Scomberomorus cavalla)*	X	X	X	X
Spanish mackerel *(Scomberomorus maculatus)*	X	X	X	X
cobia *(Rachycentron canadum)*	X	X	X	X
sand tiger shark *(Odontaspis taurus)*		X		
blue shark (*Prionace glauca)*		X	X	X
dusky shark *(Charcharinus obscurus)*		X	X	
shortfin mako shark *(Isurus oxyrhyncus)*			X	
sandbar shark *(Charcharinus plumbeus)*		X	X	X

bluefin tuna *(Thunnus thynnus)*			X	X

SHADING INDICATES THAT EFH HAS BEEN DESIGNATED WITHIN THE GRID FOR A GIVEN SPECIES AND LIFE STAGE.

1. Redfish have no eggs – larvae are born live.
2. Long finned squid, short finned squid, surf clams, and ocean quahog are referred to as pre-recruits and recruits, which corresponds with juveniles and adults in the table.
3. There is insufficient data on scup and sea bass for the life stages listed, and no EFH designation has been made as yet.
4. Spiny dogfish have no eggs or larvae – juveniles are born live.

2. EFH General Habitat Parameters

	Maturity Stage	Water Temp. (° C)	Salinity ($^{0}/_{00}$)	Water Depth (m)	Seasonal Occurrence / Abundance	Comments
Whiting *(Merluccius bilinearis)*	Eggs	< 20 (surface)	S (1)	50-150	Found all year/ peak JUN-SEP	
	Larvae	< 20 (surface)	S (1)	50-130	Found all year/ peak JUL-SEP	
	Juveniles	< 21 (surface)	> 20	20-270	No seasonal occurrence noted	Bottom habitats of all substrate types
Winter Flounder *(Pleuronectes americanus)*	Eggs	< 10	10-30	< 5	FEB-JUN	Bottom habitats with a substrate of sand, muddy sand, mud, and gravel
	Larvae	< 15 (surface)	4-30	< 6	MAR-JUL	Pelagic and bottom waters
	Juveniles (2)	< 28	5-33	0.1-10		Bottom habitats with mud or fine-grained sand substrate
	Juveniles (3)	< 25	10-30	1-50		Bottom habitats with mud or fine-grained sand substrate
	Adults	< 25	15-33	1-100		Bottom habitats of mud, sand, or gravel substrate
	Spawning Adults	< 15	5.5-36	< 6	FEB-JUN (spawning)	Bottom habitats of mud, sand, or gravel substrate
Windowpane Flounder *(Scopthalmus aquosus)*	Juveniles	< 25	5.5-36	1-100		Bottom habitats with mud or fine-grained sand substrate
	Adults	< 26.8	5.5-36	1-75		Bottom habitats with mud or fine-grained sand substrate
	Spawning Adults	< 21	5.5-36	1-75	FEB-DEC / peak MAY	Bottom habitats with mud or fine-grained sand substrate
Ocean Pout *(Macrozoarces americanus)*	Eggs	< 10	32-34	< 50	FALL and WINTER	Low fecundity, gelatinous masses of eggs (<4200) laid on hard bottom-sheltered nests, holes, or crevices; development takes 2-3 months (late fall and winter)
	Larvae	< 10 (surface)	> 25	< 50	Late FALL through SPRING	Bottom habitats - remain in close proximity to hard bottom nesting areas
	Adults	< 15	32-34	< 110		Bottom habitats
	Spawning Adults	<10	32-34	< 50	Late SUMMER through early Winter / peak SEP and OCT	Bottom habitats with hard bottom substrate
Bluefish *(Pomatomus saltatrix)*	Juveniles	--	--	M, S (4)	MAY-OCT	Mostly pelagic waters over continental shelf
	Adults		> 25			Mostly pelagic waters over continental shelf, highly migratory and distribution varies
Long-finned Squid *(Loligo pealei)*	Juveniles	4-27		1-700		Pre-recruits; pelagic waters over Continental Shelf

2. EFH General Habitat Parameters

	Maturity Stage	Water Temp. (° C)	Salinity ($^{0}/_{00}$)	Water Depth (m)	Seasonal Occurrence / Abundance	Comments
Summer Flounder *(Paralicthys dentatus)*	Juveniles	> 3	10-30			Demersal waters over Continental Shelf, prefer mostly sandy bottom.
Summer Flounder *(Paralicthys dentatus)*	Adults	--	S	0 (5) - 150		Demersal waters over Continental Shelf, shallow coastal and estuarine waters in warmer months; offshore to depths of 150m in colder months
Scup *(Stenotomus chrysops)*	Juveniles	> 7	>15		SPRING / SUMMER (6)	Demersal waters over the Continental Shelf; in estuaries found in association with various sand, mud, mussel, and eelgrass bed substrates
	Adults	(7)	S (8)		NOV-APR (7)	Demersal waters over the Continental Shelf
Black Sea Bass *(Centropristus striata)*	Juveniles	> 6	> 18	--	No seasonal occurrence noted	Demersal waters over the Continental Shelf; found in association with rough bottom, shellfish and eelgrass beds, and man-made structures in sandy-shelly areas; during wintering offshore clam beds and shell patches may be used; found is S zone in estuaries during summer and spring
Spiny Dogfish (9) *(Squalus acanthias)*	Juveniles	3-20	S	10-380	No seasonal occurrence noted	All estuaries with the same habitat parameters as those north of Cape Cod Bay are designated EFH.
	Adults	3-19	S	10-450	No seasonal occurrence noted	
King Mackerel (10) *(Scomberomorus cavalla)*	Eggs	--	M, S	--	MAY-JUN	Coastal pelagic species
	Larvae	22-31	M, S	--	JUL-NOV	Found from Rio de Janeiro to the Gulf of Maine, EFH
	Juveniles	--	M, S	--	APR-OCT	includes sandy shoals offshore, high profile rocky
	Adults	--	M, S	--	APR-OCT	bottom, and barrier island ocean-side waters; from the
						surf zone to the shelf break
Spanish Mackerel (10) *(Scomberomorus maculatus)*	Eggs	--	M, S	--	MAY-JUN	Coastal pelagic species
	Larvae	--	M, S	--	JUL-NOV	Found from Yucatan to the Gulf of Maine, EFH includes
	Juveniles	--	M, S	--	APR-OCT	sandy shoals offshore, high profile rocky bottom, and
	Adults	--	M, S	--	APR-OCT	barrier island ocean-side waters; from the surf zone to
						the shelf break

2. EFH General Habitat Parameters

	Maturity Stage	Water Temp. (° C)	Salinity ($^{0}/_{00}$)	Water Depth (m)	Seasonal Occurrence / Abundance	Comments
Cobia (10)	Eggs	--	--	--		Coastal pelagic species
(Rachycentron canadum)	Larvae	--	--	--		Found along entire eastern seaboard, EFH includes
	Juveniles	--	M, S	--	MAY-OCT	sandy shoals offshore, high profile rocky bottom, and
	Adults	--	M, S	--	MAY-OCT	barrier island ocean-side waters; from the surf zone to
						the shelf break, also estuaries and sea grass habitat
Blue Shark	Larvae (11)	--	--	25-EEZ (12)		Pelagic; one of the most common and abundant sharks
(Prionace glauca)	Juveniles (13)	--	--	25 iso-EEZ (13)		
	Adults	10-20	S	25 iso-EEZ		
Sand Tiger Shark *(Odontaspis taurus)*	Larvae (11)	--	--	0-25 iso		EFH for neonates/early juveniles (≤ 125 cm total length) is shallow coastal waters from Barnegat Inlet, NJ to Cape Canaveral, FL to the 25 m isobath
Dusky Shark	Larvae (11)	--	M, S	0-25 iso	Parturition in summer	Common in warm and temperate Continental Shelf
(Charcharinus obscurus)	Juveniles (14)	--	M, S	25 iso-200 iso		waters throughout the world; commercial/game fish
Shortfin Mako Shark *(Isurus oxyrhyncus)*	Juveniles (14)	--	S	(15)		Evidence suggests that nursery areas are in deep tropical waters.
Sandbar Shark	Larvae (11)	> 21	> 22	0-25 iso		Nurseries from Cape Canaveral to Great Bay NJ
(Charcharinus plumbeus)	Juveniles (14)	--	> 22	0-25 iso		Found in coastal and pelagic waters offshore Long demarcation
	Adults			0-50 iso		
Bluefin Tuna	Juveniles	> 12 (16)		Surface (17)		Found in inshore and pelagic surface waters
(Thunnus thynnus)	Adults	(16)		Surface (18)		Found in pelagic waters

(1) The EFH designation for this species includes the seawater zone (S) where salinity > 25.0 $^{0}/_{00}$.
(2) Young-of-the-year juveniles
(3) Age +1 year juveniles
(4) Juveniles are found in Mid-Atlantic estuaries in mixing (M) and (S) seawater zones.
(5) Zero depth refers to shallow coastal waters.
(6) Typically found in estuaries and bays between VA and MA during this time.

(7) Wintering adults are usually offshore, south of NY to NC in waters above 45º F (7º C).
(8) EFH is inshore in estuaries in S zones
(9) Spiny dogfish have no eggs or larvae, juveniles are born live.
(10) Coastal migratory species
(11) Neonate / early juvenile
(12) EEZ = Exclusive Economic Zone
(13) iso refers to isobath (i.e., 25 meter isobath)
(14) Late juvenile / subadult
(15) Neonate/ early juveniles of the species are found between the 25 and 50 m isobath; late juvenile / subadults of the species are found between the 25 and 2,000 m isobath
(16) Distribution is probably constrained by the 12° C thermocline, although individuals can dive to 6° to 8° C waters.
(17) Juveniles are found between the 25 and 200 m isobath.
(18) Adults are found between the 50 m isobath and EEZ

APPENDIX C

ENDANGERED SPECIES ACT - USFWS

LAKE MONTAUK HARBOR, NEW YORK NAVIGATION STUDY

Prepared By: **U.S. Army Corps of Engineers**
New York District
26 Federal Plaza
New York, NY 10278-0090

Supplemental Information.

The U.S. Army Corps of Engineers, New York District (District) is proposing to deepen the existing Lake Montauk Harbor (LMH, see Figure 1) navigation channel from -12'MLLW and 150' wide to -17' MLLW and 150' wide, and the deposition basin from -12'MLLW to -17' MLLW and 50' wide deposition basin to 100' width (see Figure 2). We have made the determination that the proposed activity, may affect, but is not likely to adversely affect any listed species that may occur or utilize the area of effect listed as threatened or endangered by USFWS under the ESA of 1973, as amended, the rationale for which is provided below.

This Supplemental Information is provided as a companion summary document, in addition to the National Environmental Policy Act (NEPA) Environmental Assessment (EA), to the Districts SLOPES submittal to FWS, and which contains proposed project specifics designed to aid FWS determination of the Districts SLOPES Not Likely to Adversely Affect (NLAA) submittal.

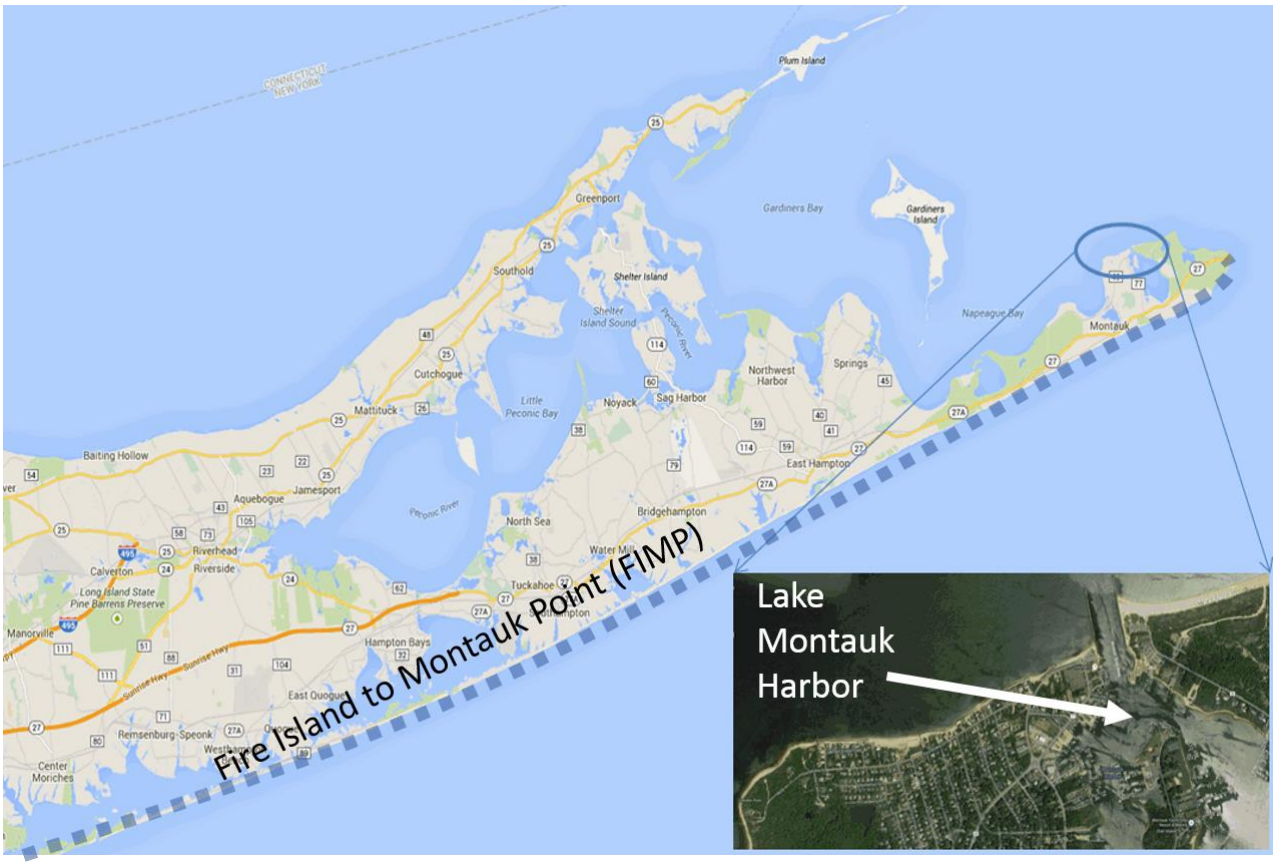

Figure 1. Lake Montauk Harbor.

Proposed Project

The Lake Montauk Harbor Navigation Study (LMH) Tentatively Selected Plan (TSP), as defined in the Draft Feasibility Report/Environmental Assessment (FR/EA), provides for safe and efficient navigation at LMH. The FR/EA will undergo Agency Technical Review (ATR), policy review, and public review in April-May 2019, at which time the USACE project delivery team (PDT), including New York State Department of Environmental Conservation (NYSDEC) and the Town of East Hampton, Suffolk County New York (TEH) team will respond to review comments, then present a recommended plan and develop a

Final FR/EA. The final FR/EA will identify the Recommended Plan (RP).

Figure 2. LMH Project Area.

The construction of the RP will begin after 30 September and end on/by 14 January of the year of construction and consist of deepening the Federal navigation channel and the deposition basin by removing up to approximately 188,000 CY of dredged material and placing it on the downdrift beach west of the jetty, in accordance with placement operations for the ongoing and most recent maintenance project. This placement, as has been the process for decades, is an un-engineered placement of (see Figure 3).

Figure 3. LMH Sand Placement Site.

Construction duration, including removal of the sand from the channels to placing the sand on the beach, is anticipated to be no longer than between 60-90 days. No construction activities will occur between 15 January and 30 September of the year of construction.

The construction of the project will involve use of a small cutterhead dredge to remove the sand from the channels, and will use a pipeline configuration to pump sand on the downdrift beach, subsequently using trucks and earth moving equipment to move the sand into place once it has been pumped.

The placement berm specification is expected to incur a slight increase (from the current O&M configuration) in width and length (to 3,000' long, and 46' wide), while maintaining the same 9' height it has been throughout the maintenance cycles. The sand to be placed at the downdrift beach will be of similar grain size and composition of the receiving beach.

As a result of the deepening project, it has been determined that the maintenance cycles will be elongated from every 3-4 years to approximately every 6-8 years, therefore, reducing potential adverse effects to the aquatic and terrestrial environment, thereby also reducing potential impacts to species of concern.

The local sponsor for the project, TEH, has committed to monitoring for piping plover nests on the downdrift beach, confirmed by the TEH as currently not being utilized as nesting habitat by piping plover, and reporting their results to the District, who will provide reports to USFWS, as required.

Conclusion

Based on the analysis above, the District has determined that all potential adverse effects to:

- Northern Long-eared bat
- Piping Plover
- Roseate tern
- Red Knot
- Sandplain gerardia
- Sea beach amaranth

will be insignificant and/or discountable; therefore, we have determined that the Lake Montauk Harbor RP is not likely to adversely affect any listed species or critical habitat under FWS jurisdiction.

We conclude that we have used the best scientific and commercial data (see DEA May 2019) available to complete this analysis. We request your concurrence with this determination.

APPENDIX D

ENDANGERED SPECIES ACT - NMFS

LAKE MONTAUK HARBOR, NEW YORK NAVIGATION STUDY

Prepared By: **U.S. Army Corps of Engineers**
New York District
26 Federal Plaza
New York, NY 10278-0090

NOAA'S National Marine Fisheries Service Protected Resources Division

55 Great Republic Drive

Gloucester, MA 01930

Attn: Mrs. Kimberly Damon-Randall

Re: Lake Montauk Harbor Navigation Project

Dear Mrs. Damon-Randall,

The U.S. Army Corps of Engineers (ACOE) is proposing to deepen and widen the existing Lake Montauk Harbor (LMH, see Figure 1) navigation channel from -12'MLLW and 150' width to -17' MLLW and 150 ' wide and the -12'MLLW deposition basin and 50' wide deposition basin to -17' MLLW and 100' wide. We have made the determination that the proposed activity, may affect, but is not likely to adversely affect any listed species that may occur or utilize the area of effect listed as threatened or endangered by NMFS under the ESA of 1973, as amended is provided below.

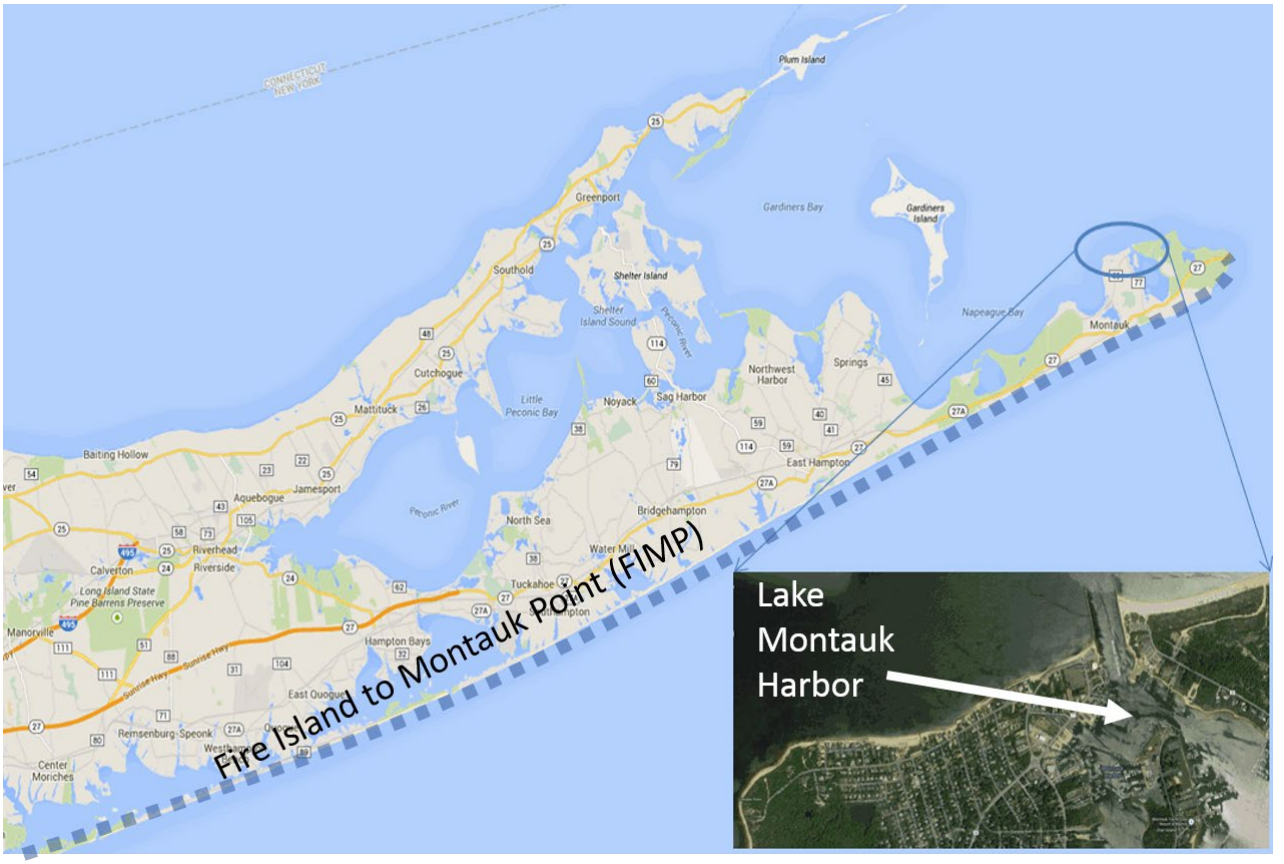

Figure 1. Lake Montauk Harbor Study Area

1. **Proposed Project**

The LMH Tentatively Selected Plan (TSP), as defined in the Draft Feasibility Report/Environmental Assessment (FR/EA, see enclosure), provides for safe and efficient navigation at LMH. The FR/EA will undergo public review, policy review, Agency Technical Review (ATR), and Independent External Peer Review (IEPR). The USACE study team will respond to review comments, then present a recommended plan and develop a Final FR/EA.

The proposed navigation will begin after 30 September and end by 14 January of any given year of construction and consist of deepening the Federal navigation channel and deepening and widening the deposition basin. The construction of the project will involve use of a cutterhead dredge. Approximately 188,000 CY dredged material will be removed from the channel and deposition basin and be deposited onto the downdrift beach west of the jetty via a pipeline connected to the dredge. See Figure 2.

Figure 2. LMH Study Area and Proposed Project Area.

In addition to any mitigation or BMPs that will be implemented specific to NOAA ESA concerns, construction activities will be seasonally restricted to occur between September 30 and 14 January to ensure protection of the designated essential fish habitat within the study area. Construction duration is anticipated to be no longer than between 60-90 days.

1. Description of the Action Area

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR§402.02). For this project, the action area includes the LMH channel and deposition basin,, the vessel transit route within the LMH action area, including the area of the pipeline from the dredge to the beach nourishment site on the beach west of the jetty, and the underwater areas where the effects of dredging and fill placement (i.e., increases in suspended sediment) will be experienced.

The sediments in the areas to be dredged consist of mostly sand and gravel (98% sand). Benthic resources within the channel and deposition basin areas is limited due to the constant scouring of the channel bottom by transiting vessels, and due to regular maintenance of both every four years, but may include a diversity of species including those types considered primary prey species for sturgeon and sea turtles (crustaceans and mollusks). There is a patch of Submerged Aquatic Vegetation (SAV) adjacent to the LMH Federal channel. See Figure 3.

Figure 3. SAV patch on east side of existing channel.

2. NMFS Listed Species in the Project Area

Whales

Federally endangered North Atlantic right, humpback, and fin whales are seasonally present in the waters of New York. These species use the near shore, coastal waters of the Atlantic Ocean as they migrate to and from calving and foraging grounds. Humpback and fin whales primarily occur in the waters of New York during the spring, summer and fall months, while the North Atlantic right whale primarily occurs in these waters from November 1 through April 30, although transient right whales can be present outside of this time frame. Although humpback, right, fin whales are not expected to occur in the portions of the action area located within the shallow near shore channelized waters of LMH, ESA listed species of whales may occur in the portion of the action area from where the dredged material will be pumped onshore. Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for whale entrainment are not present since cutterhead dredges pose no risk to whales.

Each species has a published recovery plan:

- Humpback whale (Megaptera novaeangliae)(35 FR 18319; Recovery plan: NMFS 1991)
- North Atlantic Right whale (Eubalaena glacialis)(73 FR 12024; Recovery plan: NMFS 2005)
- Fin whale (Balaenoptera physalus)(35 FR 18319; Recovery plan: NMFS 2010)

Sea Turtles

Four species of federally threatened or endangered sea turtles under our jurisdiction are found seasonally in the coastal waters of New York: federally threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead *(Caretta caretta),* and the federally endangered Kemp's ridley *(Lepidochelys kempi),* green *(Chelonia mydas)* and leatherback *(Dermochelys coriacea)* sea turtles. In general, listed sea turtles are seasonally distributed in coastal U.S. Atlantic waters, migrating to and from habitats extending from Florida to New England, with overwintering concentrations in southern waters. As water temperatures rise in the spring, these turtles begin to migrate northward. As temperatures decline rapidly in the fall, turtles in northern waters begin their southward migration. Sea turtles are expected to be in the waters of New York in warmer months, typically when water temperatures are at least 15°C. This typically coincides with the months of May through November, with the highest concentration of sea turtles present from June-October (Morreale 1999; Morreale 2003; Morreale and Standora 2005; Shoop and Kenney 1992).

Several studies have examined the seasonal distribution of sea turtles in New York waters. In most years, sea turtles begin to arrive in New York waters in June (Morreale and Standora, 1993; Morreale and Burke, 1997). Tracking studies on juvenile Kemp's ridleys demonstrate that all tagged turtles had traveled south from New York coastal waters by the first week in November (Standora *et al.* 1992). In 2002 and 2003, Morreale conducted a study of loggerhead, Kemp's ridley and green sea turtles captured in pound nets fishing in the Peconic Bay area. Sea turtles were not encountered after the last week in October (Morreale 2003). Tracking studies summarized in Morreale and Standora (2005) indicate that loggerhead and Kemp's ridley sea turtles begin leaving New York waters in October and generally by the first week of November, turtles head southward past the Virginia border. Similar migratory patterns are expected for green and leatherback sea turtles (Shoop and Kenney 1992; Morreale 1999). Based on this information, sea turtles may occur in the action area between May through November.

Each species has a published recovery plan:

- Kemp's Ridley turtle (Lepidochelys kempii)(35 FR 18319; Recovery plan: NMFS et al. 2011)
- Leatherback turtle (Dermochelys coriacea)(35 FR 8491; Recovery plan: NMFS &USFWS 1992)
- Loggerhead turtle (Caretta caretta)(76 FR 58868; Recovery plan: NMFS & USFWS 2008)
- Green turtle (Chelonia mydas)(81 FR 20057; Recovery plan: NMFS & USFWS 1991)

Atlantic Sturgeon

There are five DPSs of Atlantic sturgeon listed as threatened or endangered. Atlantic sturgeon originating from the New York Bight, Chesapeake Bay, South Atlantic and Carolina DPSs are listed as endangered, while the Gulf of Maine DPS is listed as threatened. The marine range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida.

At around three years of age, subadults exceeding 2.3 feet in total length begin to migrate to marine waters (Bain et al. 2000). After emigration from the natal river/estuary, subadults and adult Atlantic sturgeon travel within the marine environment, typically in waters less than 164 feet in depth, using coastal bays, sounds, and ocean waters (ASSRT 2007). In rivers and estuaries, Atlantic sturgeon typically use the deepest waters available; however, Atlantic sturgeon also occur over shallow (8.2 feet), tidally influenced flats and mud, sand, and mixed cobble substrates (Savoy and Pacileo 2003). Occurrence in these shallow waters is thought to be tied to the presence of benthic resources for foraging.

Based on the above information, adult and subadult Atlantic sturgeon from any of five DPSs could occur in the project area; however, as Atlantic sturgeon spawn in freshwater portions of large rivers and early life stages are not tolerant of salinity, no eggs, larvae or juvenile Atlantic sturgeon occur in the action area.

3. Effects of the Action

The primary concerns for loggerhead, Kemp's ridley, and green sea turtles is entrainment and loss of forage, while the primary concern for leatherbacks is vessel collision as the dredge transits between the LMH and the downdrift beach. Due to their large size, whales are not vulnerable to entrainment in dredges; as such, effects of impingement or entrainment on whales will not be considered in this consultation. The primary concern for listed species of whales is the possible effects of total suspended solids (TSS), or water quality, and the potential for vessel collisions as the dredge transits between LMH and the downdrift beach. The primary concerns for Atlantic sturgeon is entrainment, loss of forage, and vessel collision as the dredge transits between LMH and the downdrift beach. The potential effects of a possible temporary increase in turbidity or TSS and sedimentation as a result of dredging and beach nourishment on listed species are also discussed below.

The pipeline connecting the dredge to the shore will float on the surface of the water or will be laid on the bottom, presenting no possibility of intake of an ESA-listed species or adverse interaction with an ESA-listed species, and will not present a barrier to ESA-listed species. These effects will not be discussed further in this consultation.

Below, we discuss the effects of cutterhead dredging on ESA-listed species and exposure to: (A) entrainment and impingement of Atlantic sturgeon and sea turtles; (B) alteration of listed species prey items and foraging behavior due to dredging; (C) suspended sediment (or TSS) associated with dredging operations, and the potential for interactions (i.e., vessel strikes) between project vessels and (D) individual Atlantic sturgeon, whales or sea turtles.

A) Effects of Impingement / Entrainment

Atlantic Sturgeon

Atlantic sturgeon are not known to be vulnerable to entrainment and/or impingement in cutterhead dredges. Cutterhead dredges operate with the dredge intake buried in the sediment; therefore, in order to contact the dredge intake, sturgeon would have to be on the bottom. Factors that are believed to contribute to the risk of Atlantic sturgeon entrainment include: 1) dredge duration (e.g., greater number of interactions associated with longer duration dredging); 2) the location, habitat, and geography of the project site (e.g., open estuarine environment versus confined channel areas); and, 4) the species' use of, and behavior within, the affected location (e.g., foraging, overwintering, spawning, resting).

Information suggests that Atlantic sturgeon in the marine environment do not move along the bottom, but instead move further up in the water column during their migratory movements along the coast line. Atlantic sturgeon do, however, occur on the benthos while foraging. Atlantic sturgeon feed on benthic invertebrates (e.g., amphipods, gastropods, annelids, decapods) and occasionally on small fish. The benthos within the channel and deposition basin footprints area are limited, and has no known documented or potential shellfish beds due to constant scouring by transiting vessels and regular four year maintenance cycles. As such, the channel and deposition areas are unsuitable for Atlantic sturgeon foraging. Based on this information, Atlantic sturgeon are not expected to be foraging in this portion of the action area and

thus, are not expected to be on the benthos where the cutterhead dredge will be operating. If, however, an Atlantic sturgeon is foraging opportunistically within this portion of the project area, there could be a risk of interacting with the dredge. However, because the dredge moves very slowly, and there is ample space for movements it is likely that subadult or adult Atlantic sturgeon can easily avoid the dredge. This assumption is supported by recent monitoring work, completed in the James River (Virginia) and the Delaware River (New Jersey) (Cameron 2010; ERC 2011), as well as work undertaken on a related species, the white sturgeon, in the Columbia River (Parsley and Popoff2004). During these studies, the movements of tagged Atlantic, white, and/or shortnose sturgeon were tracked near the dredge (mechanical and hydraulic). No interactions between sturgeon and the dredge occurred. Some tagged sturgeon moved through the area where the dredge was operating multiple times during the study, while others remained within the vicinity of the dredging operation with no incidence. The risk is further increased at overwintering areas because evidence suggests that sturgeon may be less responsive to stimuli while overwintering, which may make it less likely that sturgeon would avoid a dredge during this time period. However, overwintering grounds are not known to exist in the borrow area locations and therefore, no overwintering sturgeon were likely to occur in the portion of the project area where dredging operations will occur. As a result, these increased risk factors are not present.

Impingement or entrainment in hydraulic cutterhead dredges may kill or injure sturgeon. In order for sturgeon to be impinged or entrained in the cutterhead dredge, sturgeon would have to be on the bottom. Sturgeon do occur on the bottom, especially while foraging; however, studies indicate that small, juvenile sturgeon (less than 0.6 foot fork length) need to be within 4.9 feet to 6.6 feet of the cutterhead for there to be any potential entrainment (Boysen and Hoover 2009). Sturgeon in the action area are considerably bigger (subadults and adults), and as they are stronger swimmers, are even less vulnerable to being overcome by the suction of the dredge and to becoming entrained. Because the dredge moves slowly and sturgeon are highly mobile, strong swimmers, it is likely that sturgeon would easily be able to avoid the dredge. This assumption is supported by recent monitoring work completed in the James River (Virginia) and the Delaware River (New Jersey) (Reine et al. 2014; ERC 2012). During these two studies, while the movements of tagged sturgeon were traced near a dredge, there were no interactions between tagged sturgeon and the dredge. Furthermore, tagged sturgeon moved through the dredge area during the study multiple times while the dredge was operating.

While entrainment of smaller sturgeon in cutterhead dredges has been observed (as evidenced by the presence of a few individual shortnose sturgeon at the Money Island Disposal Site in the Delaware River in 1996 and 1998), these instances are rare and have been limited to dredging events that occur near sturgeon overwintering areas where sturgeon are known to form dense aggregations. However, although sturgeon may be present in the action area year round, the action area is not a known overwintering area for Atlantic sturgeon. The risk of entrainment is also higher for small fish, including early life stages and small juveniles. Because these life stages are not present in the action area and the smallest sturgeon present would be at least 2.3 feet (the size at which we expect them to begin migrations from their natal river), the risk of entrainment is minimal in the action area. Increased risk factors (i.e., small fish, overwintering area) are not present in the action area, overall.

Atlantic sturgeon are expected to be using the action area only nominally as they move to other more prey-abundant areas since the density of Atlantic sturgeon in any portion of the project area is expected to be low between 30 September and 15 January, for the 60-90 day total duration construction of activities. If Atlantic sturgeon occur in the area to be dredged, there is ample space and ability for the sturgeon to avoid the dredge. Based on this information, combined with the fact that Atlantic sturgeon are not expected to occur at the bottom of the action area, the potential for an interaction with a dredge is further reduced.

Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for Atlantic sturgeon entrainment are not present in the action area, cutterhead

dredges historically have not posed significant risk to sturgeon, and sturgeon are unlikely to be utilizing the channel or deposition habitat within LMH For the 60-90 day total construction duration between 30 September and 15 January. Based on this information, it is extremely unlikely that any impingement or entrainment of Atlantic sturgeon will occur. Effects of cutterhead dredging on Atlantic sturgeon are discountable. Therefore, it is extremely unlikely that any sturgeon would be impinged or entrained in a cutterhead dredge operating within the study area, or project site; effects to sturgeon from the proposed short-duration and seasonally-restricted hydraulic dredging operations are discountable.

Sea Turtles

The proposed action area is situated within the near shore and inlet waters of the Atlantic Ocean. As cutterhead dredging operations will occur between 30 September and 15 January sea turtle presence will be unlikely since they will have already migrated to southeastern warmer waters. Based on this information, the potential for an interaction with a dredge is reduced, or entirely eliminated.

Based on the information above, and the following factors, we conclude that the risk factors that increase the likelihood for sea turtle entrainment are not present since cutterhead dredges pose no risk to turtles since sea turtles are not known to be vulnerable to entrainment in cutterhead dredges, and due to the fact that turtles will likely not be in the action area during the time of year when dredging operation will commence and end (30 September through 15 January).

B. Effects of Alteration on Prey items and Foraging due to Dredging

Atlantic Sturgeon and Sea Turtles

Dredging can cause effects on Atlantic sturgeon and sea turtles by reducing prey species through the alteration of the existing biotic assemblages and habitat. As forage (e.g., polychaetes, bivalves, and gastropods) for both species are unlikely to be present in the action area due to frequent scouring of the channel by transiting vessels and regular four year maintenance of both the channel and deposition basin the assumption can be made that sturgeon and sea turtles are not likely to be more attracted to the waters of the action area than to other foraging areas in the waters of NY and were able to find sufficient prey in these alternate areas.

While dredging and beach nourishment activities may temporarily disrupt normal feeding behaviors for sturgeon and sea turtles by causing them to move to alternate areas, the proposed limited in scope and duration dredging and beach nourishment activities are not likely to remove critical amounts of prey resources. Based on this and the best available information, we believe the impacts of dredging and beach placement operations on Atlantic sturgeon and sea turtle foraging are insignificant.

During dredging operations, ESA-listed species will avoid the immediate area when dredging or fill placement takes place. The proposed action will not alter the habitat in any way that prevents sturgeon or sea turtles from transiting the action area to other near-by areas suitable for foraging.

Based upon the above assessment and the best available information, we believe the impacts of dredging and beach placement operations on Atlantic sturgeon and sea turtle migration are insignificant.

C. Effects on Water Quality: Dredging and Beach Nourishment

Dredging

Dredging operations cause sediment to be suspended in the water column. This results in a sediment plume in the water, typically radiating from the dredge site and decreasing in concentration as sediment falls out of the water column as distance increases from the dredge site. The nature, degree, and extent of sediment suspension around a dredging operation are controlled by many factors including: the particle size distribution, solids concentration, and composition of the dredged material; the dredge type and size, discharge/cutter configuration, discharge rate, and solids concentration of the slurry; operational procedures used; and the characteristics of the hydraulic regime in the vicinity of the operation, including water composition, temperature and hydrodynamic forces (i.e., waves, currents, etc.) causing vertical and horizontal mixing (ACOE 1983).

Beach Placement

Beach placement operations for LMH are limited to the un-engineered placement of approximately 188,000 CY of dredged material sourced from the LMH channel and deposition basin on the downdrift beach west of the jetty. The placement site will encompass approximately 3,000 linear feet and the width of the berm will be approximately 46'.

The placement of dredged material along the downdrift beach could potentially cause an increase in localized turbidity in the nearshore environment. Nearshore turbidity impacts from the fill placement are directly related to the quantity of fines (silt and clay) in the nourishment material. As the material from the channel and deposition basin consists of 98% sand beach, and of similar composition as the indigenous beach sands, we expect short, if any, suspension time and containment of sediment during and after placement activities. As such, turbidity impacts would be short-term *(i.e.,* turbidity impacts will dissipate completely within several hours of the cessation of operations (Greene 2002) and will be spatially limited to the vicinity of the dredge outfall pipe, the pump out buoy/mooring station, and dredge anchor points.

Cutterhead Dredging

Information on sediment plumes associated with hydraulic cutterhead dredges indicates that the concentration of suspended sediments resulting from hydraulic dredging would be highest close to the bottom and would decrease rapidly downstream and higher in the water column. Based on a conservative (i.e., low) total suspended solids (TSS) background concentration of 5.0 mg/L, the modeling results indicated that elevated TSS concentrations (i.e., above background levels) would be present at the bottom 6.6 feet of the water column for a distance of approximately 1,150 feet (ACOE 1983). Based on these analyses, elevated suspended sediment levels are expected to be present only within 1,150 feet of the location of the cutterhead. Turbidity levels associated with cutterhead dredge sediment plumes typically range from 11.5 to 282.0 mg/L with the highest levels detected adjacent to the cutterhead and concentrations decreasing with greater distance from the dredge.

Effects on Whales, Atlantic Sturgeon, and Sea Turtles

No information is available on the effects of TSS on juvenile and adult sea turtles. Studies of the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993).

TSS is most likely to affect sea turtles, subadult and adult Atlantic sturgeon, or whales if a plume causes a barrier to normal behaviors or if sediment settles on the bottom affecting sea turtle or sturgeon prey. As whales, sturgeon, and sea turtles are highly mobile, they are likely to be able to avoid any sediment plume and any effect on their movements is likely to be insignificant. Additionally, the TSS levels expected from dredging (11.5 to 475.0 mg/L) or beach nourishment (34.0 to 64.0 mg/1) are below those shown to have an adverse effect on fish (580.0 mg/L for the most sensitive species, with 1,000.0 mg/L more typical; see summary of scientific literature in Burton 1993).
While the increase in suspended sediments may cause whales, Atlantic sturgeon, and sea turtles to alter their normal movements, any change in behavior is not able to be measured or detected, as it will only involve minor movements that alter their course out of the sediment plume which will not disrupt any essential life behaviors. Based on this information, we believe the effects of suspended sediment on whales, Atlantic sturgeon, and sea turtles resulting from increased turbidity from dredging and beach nourishment operations are insignificant.

D) Effects of Vessel Interactions

Whales, sea turtles, and sturgeon may be injured or killed as a result of being struck by boat hulls or propellers. The factors relevant to determining the risk to these species from vessel strikes vary, but may be related to the size and speed of the vessels, navigational clearance (i.e., depth of water and draft of the vessel) in the area where the vessel is operating, and the behavior of individuals in the area (e.g., foraging, migrating, overwintering, etc.). We have considered the likelihood that an increase in vessel traffic associated with the project increases the risk of interactions between listed species and vessels in the project areas, compared to baseline conditions. The use of one cutterhead dredge will not cause an increase in vessel traffic, but will actually reduce it during construction operations between 30 September and 15 January, and will decrease the likelihood of vessel strikes upon completion of construction due to greater clearance between the vessel and the channel bottom post construction. . Based on this information, we believe the effects of vessel traffic on whales, sea turtles, and sturgeon from dredging operations are insignificant.

There have not been any reports of dredge vessels colliding with listed species but contact injuries resulting from dredge movements could occur at or near the water surface and could therefore involve any of the listed species present in the area. Because the dredge will not be moving at great speeds during dredging operations, blunt trauma injuries resulting from contact with the hull are extremely unlikely during dredging. It is more likely that contact injuries during actual dredging would involve the propeller of the vessel. Contact injuries with the dredge are more likely to occur when the dredge is moving from the dredging area to its port, or between dredge locations.

The dredge vessel may collide with marine mammals and sea turtles when they are at the surface or, in the case of Atlantic sturgeon, in the water column when migrating. These species have been documented with injuries consistent with vessel interactions, and it is reasonable to believe that the dredge vessels could inflict such injuries on Atlantic sturgeon, marine mammals and sea turtles, should they collide.

As mentioned, sea turtles are only found distributed throughout the action area in the warmer months, generally from May through November; Right whales primarily from November 1 through April 30; humpback and fin whales, spring, summer, and fall; and, Atlantic sturgeon throughout the year.

Whales

Large whales, particularly right whales, are vulnerable to injury and mortality from ship strikes. Ship strike injuries to whales take two forms: (1) propeller wounds characterized by external gashes or severed tail stocks; and (2) blunt trauma injuries indicated by fractured skulls, jaws, and vertebrae, and massive bruises that sometimes lack external expression (Laist *et al.* 2001). Collisions with smaller vessels may result in propeller wounds or no apparent injury, depending on the severity of the incident. Laist *et al.* (2001) reports that of 41 ship strike accounts that reported vessel speed, no lethal or severe injuries occurred at speeds below ten knots, and no collisions have been reported for vessels traveling less than six knots. Most ship strikes have occurred at vessel speeds of 13-15 knots or greater (Jensen and Silber 2003; Laist *et al.* 2001). An analysis by Vanderlaan and Taggart (2006) showed that at speeds greater than 15 knots, the probability of a ship strike resulting in death increases asymptotically to 100%. At speeds below 11.8 knots, the probability decreases to less than 50%, and at ten knots or less, the probability is further reduced to approximately 30%. As noted above, the speed of the dredge will not exceed 10-13.5 knots while transiting to and from the dredging areas. In addition, all vessels will have lookouts on board to avoid vessel strikes with all protected species. Based on this information, we believe the effects of vessel traffic on whales from dredging operations are insignificant.

Sea Turtles

Interactions between vessels and sea turtles occur and can take many forms, from the most severe (death or bisection of an animal or penetration to the viscera), to severed limbs or cracks to the carapace which can also lead to mortality directly or indirectly. Information is lacking on the type or speed of vessels involved in turtle vessel strikes. However, there does appear to be a correlation between the number of vessel struck turtles and the level of recreational boat traffic (NRC 1990). Although little is known about a sea turtle's reaction to vessel traffic, it is generally assumed that turtles are more likely to avoid injury from slower-moving vessels since the turtle has more time to maneuver and avoid the vessel. The speed of the dredge will not exceed 1 0-13.5 knots while transiting to and from the dredging areas. In addition, the risk of ship strike is influenced by the amount of time the animal remains near the surface of the water. The presence of an experienced endangered species observer who could advise the vessel operator to slow the vessel or maneuver safely if sea turtles were spotted will be on board for all the dredging operations which further reduces the potential risk for interaction with vessels. Finally, and most importantly, turtles will not be utilizing the action area during the late fall-winter since there is a seasonal restriction in the area limiting construction to between 30 September and 15 January of any given year. Based on this information, we believe the effects of vessel traffic on sea turtles from dredging operations are insignificant.

Atlantic Sturgeon

The factors relevant to determining the risk to Atlantic sturgeon from vessel strikes are currently unknown, but they may be related to size and speed of the vessels, navigational clearance (i.e., depth of water and draft of the vessel) in the area where the vessel is operating, and the behavior of Atlantic sturgeon in the area (e.g., foraging, migrating, etc.). Large vessels have been implicated because of their deep drafts (up to 40-45 feet) compared to smaller vessels (15 feet), which increases the probability of vessel collision with demersal fishes like sturgeon, even in deep water (Brown and Murphy 2010). Smaller vessels and those with relatively shallow drafts provide more clearance with the ocean bottom and reduce the probability of vessel-strikes. Because dredges have shallow drafts relative to the offshore environment, the chances of vessel- related mortalities are low.

The majority of documented vessel strikes have been observed in the Delaware and James rivers and

current thinking suggests that there may be unique geographic features in these areas (e.g., potentially narrow migration corridors combined with shallow/narrow river channels) that increase the risk of interactions between vessels and Atlantic sturgeon. These geographic features are not present in the project area, which is sufficiently wide and deep enough to allow sturgeon passage while vessels were in the project area. We have considered the likelihood that an increase in vessel traffic associated with the project increased the risk of interactions between Atlantic sturgeon and vessels in the project area, compared to baseline conditions. The use of dredges will cause a small, localized, temporary increase in vessel traffic. Given the large volume of traffic in the project area, the increase in traffic associated with the project is extremely small. Based on this information, we believe the effects of vessel traffic on Atlantic sturgeon from dredging operations are insignificant.

Conclusion

Based on the analysis that all effects of the proposed action will be insignificant and/or discountable, we have determined that the Lake Montauk Harbor TSP, which will be implemented as the Recommended Plan (RC) is not likely to adversely affect any listed species or critical habitat under NMFS' jurisdiction. We conclude that we have used the best scientific and commercial data available to complete this analysis. We request your concurrence with this determination.

References

Anchor Environmental. 2003. Literature review of effects of resuspended sediments due to dredging. June. 140pp.

U.S. Army Corps ofEngineers (USACE). 1983. "Dredging and Dredged Material Disposal," Engineer Manual1110-2-5025, Office, Chief of Engineers, Washington, D.C.

Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA). 2010. Site Management and Monitoring Plan for the Historic Area Remediation Site. April29, 2010. 77pp.

Atlantic Sturgeon Status Review (ASSRT). 2007. http://www.nero.noaa.gov/prot_res/CandidateSpeciesProgram/AtlSturgeonStatusReviewReport.pdf.

Bain, M. B. 1997. Atlantic and shortnose sturgeons of the Hudson River: Common and Divergent Life History Attributes. Environmental Biology of Fishes 48: 347-358.

Brown, J.J. and G.W. Murphy. 2010. Atlantic sturgeon vessel strike mortalities in the Delaware Estuary. Fisheries 35 (2): 72-83.

Burlas, M., G. L Ray, & D. Clarke. 2001. The New York District's Biological Monitoring Program for the Atlantic Coast ofNew Jersey, Asbury Park to Manasquan Section Beach Erosion Control Project. Final Report. U.S. Army Engineer District, New York and U.S.

Army Engineer Research and Development Center, Waterways Experiment Station.

Burton, W.H. 1993. Effects ofbucket dredging on water quality in the Delaware River and the potential for effects on fisheries resources. Versar, Inc., 9200 Rumsey Road, Columbia, Maryland 21045.

Cameron, S. 2010. "Assessing the Impacts of Channel Dredging on Atlantic Sturgeon Movement and Behavior". Presented to the Virginia Atlantic Sturgeon Partnership Meeting. Charles City, Virginia. March 19,2010.

Caron, F., D. Hatin, and R. Fortin. 2002. Biological characteristics of adult Atlantic sturgeon *(Acipenser oxyrinchus)* in the Saint Lawrence River estuary and the effectiveness of management rules. Journal of Applied Ichthyology 18: 580-585.
Dadswell, M.J. 1984. Status of the Shortnose Sturgeon, *Acipenser brevirostrum,* in Canada. The Canadian Field-Naturalist 98 (1): 75-79.

ERC (Environmental Research and Consulting, Inc.) 2011. Acoustic telemetry study of the movements of juvenile sturgeons in reach B of the Delaware River during dredging operations. Prepared for the US Army Corps of Engineers. 38 pp.

Greene, K. 2002. Beach Nourishment: A Review of the Biological and Physical Impacts. Atlantic States Marine Fisheries Commission (ASMFC) Habitat Management Series #7. 179 pp.

Guerra-Garcia, J.M. and J. C. Garcia-Gomez. 2006. Recolonization of defaunated sediments: Fine versus gross sand and dredging versus experimental trays. Estuarine Coastal and Shelf Science 68 (1-2): 328-342.

Hays, G.C., Metcalfe, J.D., Walne, A.W., 2004. The implications of lung-related buoyancy control for dive depth and duration. Ecology 85: 1137-1145.

Hazel, J., I. R. Lawler, and M. Hamann. 2009. Diving at the shallow end: Green turtle behaviour in near-shore foraging habitat. Journal of Experimental Marine Biology and Ecology 371: 84-92.

Jensen, A.S. and G.K. Silber. 2003. Large whale ship strike database. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-F/OPR 25, 37 p.

Laist, D.W., A.R. Knowlton, J.G. Mead, A.S. Collet, and M. Podesta. 2001. Collisions between ships and whales. Marine Mammal Science 17(1):35-75.

Morreale, S.J. 1999. Oceanic migrations of sea turtles. PhD Thesis. Cornell University.

Morreale, S.J. 2003. Assessing health, status, and trends in Northeasten sea turtle populations. Interim report: Sept. 2002-Nov. 2003.

Morreale, S. J. and V. J. Burke. 1997. Conservation and Biology of Sea Turtles in the Northeastern United States, p.41-46. In: T. Tyning (Editor), Status and Conservation of Turtles of the Northeastern United States. Serpents Tale Natural History Book Distributors, Lanesboro, Minnesota. V. Burke, School of Natural Resources, Univ. Missouri, 112 Stephens Hall, Columbia, Missouri 65211 USA.

Morreale, S.J. and E.A. Standora. 1990. Occurrence, movement, and behavior of the Kemp's ridley and other sea turtles in New York waters. Annual report for the NYSDEC, Return A Gift To Wildlife Program: April1989 -April1990.

Morreale, SJ., and E.A Standora. 1993. Occurrence, movement, and behavior ofthe Kemp's ridley and other sea turtles in New York waters. Okeanos Ocean Research Foundation Final Report April1988-March 1993. 70 pp.

Morreale, SJ. and E.A Standora. 2005. Western North Atlantic waters: Crucial developmental habitat for Kemp's ridley and loggerhead sea turtles. Chel. Conserv. Bioi. 4(4):872-882.

Murawski, S. A. and A. L. Pacheco. 1977. Biological and fisheries data on Atlantic Sturgeon, *Acipenser oxyrhynchus* (Mitchill). National Marine Fisheries Service Technical Series

Report 10: 1-69.

National Research Council (NRC). 1-990. Decline ofthe Sea Turtles: Causes and Prevention. Committee on Sea Turtle Conservation. Natl. Academy Press, Washington, D.C. 259 pp.

Parsley, M. J., and N. D. Popoff. 2004. Site fidelity, habitat associations, and behavior during dredging operations of white sturgeon at Three Tree Point in the lower Columbia River. U.S. Geological Survey's Final Report to the U.S. Army Corps of Engineers. Cook, Washington. 140p.

Savoy, T. and D. Pacileo. 2003. Movements and important habitats of subadult Atlantic sturgeon in Connecticut waters. Transactions of the American Fisheries Society 132: 1-8.

Schubel, J.R., H.H. Carter; R.E. Wilson, W.M. Wise, M.G. Heaton, and M.G; Gross. 1978. Field investigations ofthe nature, degree, and extent of turbidity generated by open-water pipeline disposal operations. Technical Report D-78-30; U.S. Army Engineer Waterways. Experiment Station, Vicksburg, Miss., 245 pp.

Shoop, C.R. and RD. Kenney. 1992. Seasonal distributions and abundances of loggerhead and leatherback sea turtles in waters of the northeastern United States. Herpetological Monographs 6: 43-67.

Smith, T. I. J. 1985. The fishery, biology, and management of Atlantic sturgeon, *Acipenser oxyrhynchus,* in North America. Environmental Biology of Fishes 14(1): 61-72.

Smith, T. I. J. and J. P. Clungston. 1997. Status and management of Atlantic sturgeon, *Acipenser oxyrinchus,* in North America. Environmental Biology of Fishes 48: 335-346.

Standora, E.A., S.J. Morreale, and V.J. Burke. 1992. Application of recent advances in satellite microtechnology: Integration with sonic and radio tracking of juvenile Kemp's ridleys from Long Island, New York.. In: Salmon, M., and Wyneken, J. (Compilers). Proceedings of the Eleventh Annual Workshop on Sea Turtle Biology and Conservation. NOAA Tech. Memo. NMFS-SEFSC-302, pp. 111-113.

Vanderlaan, A.S.M. and C.T. Taggart. 2006. Vessel collisions with whales: The probability of lethal injury based on vessel speed. Mar. Mamm. Sci. 22(3).

Wilber, D.H., D.G. Clarke & M.H. Burlas. (2006). Suspended sediment concentrations associated with a beach nourishment project on the northern coast ofNew Jersey. Journal of Coastal Research 22(5): 1035-1042.

Lake Montauk Harbor, NY

Navigation Improvements Feasibility Study

Cultural Resources

Status: The mailing list will be included as part of the final Feasibility Report package.

APPENDIX F

COASTAL ZONE MANAGEMENT CONSISTENCY DETERMNATION
LAKE MONTAUK HARBOR, NEW YORK
NAVIGATION STUDY

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FEDERAL CONSISTENCY DETERMINATION

A number of questions under Part C of the New York State Coastal Management Program (NYS CMP) Federal Consistency Assessment Form (NYSDOS 2004a) were answered in the affirmative; therefore, as stated under Part D, it is necessary to analyze the project in greater detail with respect to its consistency with the *State Coastal Policies* (NYSDOS 2004a) of the NYS CMP, as well as the Town of East Hampton's jurisdictional adaptation* of the NYS CMP. Following is a list of the State and Local policies in question and a brief statement of how the project is consistent with each of these policies. Policies that are not listed were referenced to those questions under Part C that were answered in the negative with respect to this project.

The following policies are a combination of both jurisdictions policies that are potentially affected by the Federal action.

POLICY #1 *Revitalization of Deteriorated Waterfront Areas*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #1A *Underutilized Waterfront Sites*

N/A

POLICY #2 *Water-Dependent Uses*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #2A *The siting of water-dependent uses and facilities on orAdjacent to coastal waters shall be accomplished provided the proposed use is consistent with the preservation and enhancement of other coastal resources, including cultural and natural resources.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

*The Long Island Sound Coastal Management Program policies presented in this chapter consider the economic, environmental, and cultural characteristics of the Long Island Sound coastal region. They take the place of the statewide policies of the New York State Coastal Management Program. The policies are comprehensive and reflect existing state laws and authorities. They represent a balance between economic development and preservation that will permit beneficial use of and prevent adverse effects on the Sound's coastal resources. The policies are the basis for federal and state consistency determinations for activities affecting the Long Island Sound coastal area.

POLICY #3 *Major Ports*

N/A

POLICY #4 *Small Harbors**;** strengthen the economic base of small harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #5 *Public Services- encourage the location of development in areas where public services and facilities essential to such development are adequate, except when such development has special functional requirements or other characteristics which necessitates its location in other coastal areas.*

N/A

POLICY #6 *Permit Procedures, expedite permit procedures in order to facilitate the Siting of development activities at suitable locations.*

N/A

Significant Habitats

POLICY #7 *Significant Fish and Wildlife Habitats- significant coastal fish and wildlife habitats, as identified on the coastal area map, shall be protected, preserved, and, where practicable, restored so as to maintain their viability as habitats.*

POLICY #7A *Locally Significant Fish And Wildlife Habitats-locally significant coastal fish and wildlife habitats, as identified on the coastal area map shall be protected, preserved, and where practicable restored so as to maintain their viability as habitats.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations. These navigation improvements will not significantly impact fish or wildlife habitats in the area since the seasonal restrictions implemented for the O&M projects have historically prohibited dredging from 15 January through 30 September, and the proposed deepening project will be adopting those same BMPs to mitigate for potential adverse impacts to species of concern.

POLICY #7B *Protection of Diversity- protect to the maximum extent practicable the vulnerable plant and animal species and natural communities that have been identified on the state and federal levels by the New York heritage program, the NYS DEC protected native plant list*

(NYCRR 193.3), the NYS DEC list of endangered, threatened and special concern species and the federal list of endangered and threatened wildlife and plants (50 CFR 17).

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

POLICY #8 *Pollutants- protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food.*

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

Water Resources Policies

POLICY 9 *Recreational fish and wildlife resources policy- expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks, and developing new resources.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #9A *Expanding access to fish and wildlife- Recreational use of fish and wildlife resources will be expanded by increasing public access and other measures at sites recommended under "opportunities for improvement" and "recreational uses compatible with new development" in the analysis narrative of this report and in "public access and recreation improvements" in projects, section xiv.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #10 *Commercial Fishing- further develop commercial finfish, shellfish and crustacean resources in the coastal area by: (i) encouraging the construction of new, or improvement of existing on-shore commercial fishing facilities; (ii) increasing marketing of the state's seafood products; and (iii) maintaining adequate stocks and expanding aquaculture facilities. Such efforts shall be in a manner which ensures the protection of such renewable fish resources and considers other activities dependent on the*m.

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

POLICY #10A *(Aquaculture Mariculture)- Encourage aquaculture and mariculture which benefits overall public stocks of living marine resources, but discourage aquaculture or mariculture inconsistent with maintaining healthy Stocks and habitats*.

N/A

POLICY #11 *Flooding and Erosion policies (siting of structures)-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.*

N/A

POLICY #12 *Natural Erosion Protection Features- 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. Primary Dunes will be protected from all encroachments that could impair their natural protective capacity.*

N/A

POLICY #13 *30-year erosion control structures- The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured Maintenance or replacement programs.*

N/A

POLICY #13A M*aintenance/Mitigation for Erosion Control Structures- erosion protection structures must be maintained both with regard to the structure and to adjoining natural protective features. Required maintenance.*

N/A

POLICY #14 *No Flooding or Erosion Increases- Activities and development including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations*.

N/A

POLICY #14A *Minimize Erosion Protection Structures in Certain Reaches*

N/A

POLICY #15 *Mining, Excavation, and Dredging- 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.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #16 *Use of Public Funds- public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.*

N/A

POLICY #17 *Non-structural Control Measures-whenever possible, use non-structural measures to minimize damage to natural resources and property from flooding and erosion. Such measures shall include: (i) the setback of buildings and structures; (ii) the planting of vegetation and the installation of sand fencing and draining; (iii) the reshaping of bluffs; and (iv) the flood-proofing of buildings of their elevation above the base flood level.*

N/A

POLICY #17A *Only non-structural measures permitted in certain reaches-along the south shore ocean facing reaches of the town, only non-structural measures to minimize flooding and erosion are permitted.*

N/A

POLICY #17A -*Recognizes the highly dynamic and mobile character of the ocean beach and dune system, and was inserted by the Town to reflect its concern that structural solutions in this*

high energy environment are likely to disrupt coastal processes and cause adverse impacts downdrift or to neighboring property.

N/A

GENERAL POLICY

POLICY #18 *(State Vital Interests)-to safeguard the vital economic, social and environmental interests of the state and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the state has established to protect valuable coastal resource areas.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

PUBLIC ACCESS AND RECREATION RESOURCES POLICIES

POLICY #19 *Access To Public Water-Related Recreation Resources*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

POLICY #20 *Access to Publicly-Owned Lands Adjacent to the Water's Edge*

N/A

POLICY #21 *Water-related Recreation- water-dependent and water enhanced recreation will be encouraged and facilitated, and will be given priority over non-water related uses along the coast, provided it is consistent with the preservation and Enhancement of other coastal resources*

and, takes into account demand for such facilities. In facilitating such activities, priority shall be given to areas where access to the recreation opportunities of the coast can be provided by new or existing public transportation services and to those areas where the use of the shore is severely restricted by existing development.

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #21A *Water-related Recreation Improvement Sites, Water-dependent and water-enhanced recreation will be encouraged and facilitated at sites recommended under "opportunities for improvement" and "recreational uses compatible with new development" in the analysis narrative of this report and in "public access and recreation improvements" in projects, section xiv.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #22 *(provision of water-related recreation within development adjacent to the shore) development, when located adjacent to the shore, will provide for water-related recreation, as a multiple use, whenever such recreational use is appropriate in light of reasonably anticipated demand for such activities and the primary purpose of the development.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance

with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #22A *Sites Where Water-Related Recreation May Be Incorporated Into Development As A Multiple Use- For Specific Locations Which May Appropriately Provide Water-Related Recreation As A Multiple Use With Development See Recommendations Under "Opportunities For Improvement" And "Recreational".*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

HISTORIC RESOURCES POLICY

POLICY #23 *Historic Resources- Protect, Enhance And Restore Structures, Districts, Areas Or Sites That Are Of Significance In The History, Architecture, Archeology Or Culture Of The State, Its Communities, Or The Nation.*

The proposed federal action is in compliance with this policy. The project's impact on cultural resources has been evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108), its implementing regulations, the Advisory Council on Historic Preservation's "Procedures for the Protection of Historic and Cultural Properties" (36 CFR 800), and EO 11593. Although there are a number of known historic properties located nearby the proposed action, the deepening of the federal channel and placement of dredged material would not result in physical destruction of or damage to all or part of any historic property; alteration of any historic property; removal of any property from its historic location; neglect of any historic property; transfer, lease, or sale of any historic property out of federal ownership; or the character of any historic property's use or of physical features within the historic property's setting that contribute to its historic significance. Therefore, USACE has determined a finding of "No Adverse Effect" for historic properties or archaeological sites listed in or eligible for listing in the National Register of Historic Places.

Consultation with the NYSHPO, the Shinnecock Indian Nation, and interested parties, including the Montauketts, Unkechaug, and the Montauk Historical Society was initiated via the NEPA scoping and Section 106 (NHPA) process and is currently ongoing.

VISUAL QUALITY POLICIES

POLICY #24 *Scenic Resources of State Significance - prevent impairment of scenic resources of statewide significance, as identified on the coastal area map. Impairment shall include: (i) the irreversible modification of geological forms, the destruction or removal of vegetation or structures are significant to the scenic quality of an identified resource; (ii) the Addition of structures which because of siting or scale will reduce identified views or which because of scale, form, or materials will diminish the scenic quality of an identified resource.*

N/A

POLICY #25 *Overall Visual Quality Protect, Restore Or Enhance Natural And Man-Made Resources Which Are Not Identified As Being Of Statewide Significance But Which Contribute To The Overall Scenic Quality Of The Coastal Area.*

N/A

AGRICULTURAL LANDS POLICY

POLICY #26 *Important Agricultural Lands -To conserve and protect agricultural lands in the state's coastal area, an action shall not result in a loss, nor impair the productivity, of important agricultural lands if that loss or impairment would adversely affect the viability of agriculture in an agricultural district or if there is no agricultural district, in the area surrounding such lands.*

N/A

POLICY #26A *Locally Important Agricultural Lands- To Conserve And Protect Agricultural Lands In East Hampton's Coastal Area, An Action Shall Not Result In A Loss, Nor Impair The Productivity, Of Locally Important Agricultural Lands If That Loss Or Impairment Would Adversely Affect The Viability Of Agriculture In An Agricultural District Or If There Is No Agricultural District, In The Area Surrounding Such Lands.*

N/A

ENERGY AND ICE MANAGEMENT POLICIES

POLICY #27 *Siting Of Major Energy Facilities-Decisions On The Siting And Construction Of Major Energy Facilities In The Coastal Area Will Be Based On Public Energy Needs, Compatibility Of Such Facilities With The Environment, And The Facility's Need For A Shorefront Location.*

N/A

POLICY #28 *Ice Management Practices-Ice Management Practices Shall Not Damage Significant Fish And Wildlife And Their Habitats, Increase Shoreline Erosion Or Flooding, Or Interfere With The Production Of Hydroelectric Power.*
N/A

POLICY #29 *Development Of Off-Shore Energy Resources Encourage The Development Of Energy Resources On The Outer Continental Shelf, In Lake Erie And In Other Water Bodies, And Ensure The Environmental Safety Of Such Activities.*

N/A

WATER AND AIR RESOURCES POLICIES

POLICY #30 *Discharge Of Pollutants Into Coastal Waters*
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.

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #31 *Water Quality Classifications-State Coastal Area Policies And The Purposes Of Approved Local Waterfront Revitalization Programs Will Be Considered While Modifying Water Quality Standards; However, Those Waters Already Overburdened With Contaminants Will Be Recognized As Being A Development Constraint.*

N/A

POLICY #32 *Use Of Alternative Sanitary Waste Systems Encourage The Use Of Alternative Or Innovative Sanitary Waste Systems In Small Communities Where The Costs Of Conventional Facilities Are Unreasonably High, Given The Size Of The Existing Tax Base Of These Communities.*

N/A

POLICY #33 *Storm Water Runoff Best Management Practices Will Be Used To Ensure The Control Of Stormwater Runoff And Combined Sewer Overflows Draining Into Coastal Waters.*

N/A

POLICY #34 *Discharge Of Vessel Wastes Discharge Of Waste Materials Into Coastal Waters From Vessels Will Be Limited So As To Protect Significant Fish And Wildlife Habitats, Recreation Areas And Water Supply Areas.*

N/A

POLICY #34A *No-Discharge Zones- The Following Harbors And Creeks Of The Town Shall Be Designated As State And Federal EPA No-Discharge Zones Per The Town's Application Of July, 1997: Reach 1 Northwest Creek Reach 2 Three Mile Harbor, Hog Creek Reach 3 Accabonac Harbor Reach 4 Napeague Harbor Reach 6 Lake Montauk*

N/A

POLICY #35 *Dredging And Dredge Spoil Disposal Dredging And Dredge Spoil Disposal In Coastal Waters Will Be Undertaken In A Manner That Meets Existing State Dredging Permit Requirements, And Protects Significant Fish And Wildlife Habitats, Scenic Resources, Natural Protective Features, Important Agricultural Lands, And Wetlands.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

POLICY #36 *Shipment And Storage Of Petroleum And Other Hazardous Wastes- Activities Related To Shipment And Storage Of Petroleum And Other Hazardous Materials Will Be Conducted In A Manner That Will Prevent Or At Least Minimize Spills Into Coastal Waters; All Practical Efforts Will Be Undertaken To Expedite The Cleanup Of Such Discharges; And Restitution For Damages Will Be Required When These Spills Occur.*

N/A

POLICY #37 *Non-Point Discharge Of Water Pollutants Best Management Practices Will Be Utilized To Minimize The Non-Point Discharge Of Excess Nutrients, Organics And Eroded Soils Into Coastal Waters.*

N/A

POLICY #38 *Surface And Ground Water Protection-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.*

N/A

POLICY 38A *Maintain Water Resources As Near To Their Natural Condition Of Purity As Reasonably Possible To Safeguard Public Health.*

N/A

POLICY #39 *Solid Waste Transport, Treatment, And Disposal The Transport, Storage, Treatment And Disposal Of Solid Wastes, Particularly Hazardous Wastes, Within Coastal Areas Will Be Conducted In Such A Manner So As To Protect Groundwater And Surface Water Supplies, Significant Fish And Wildlife Habitats, Recreation Areas, Important Agricultural Lands And Scenic Resources.*

N/A

POLICY #40 *Effluent Discharge By Major Energy And Industrial Facilities 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.*

N/A

POLICY #41 *Compliance with Air Quality Standards- Land Use Or Development In The Coastal Area Will Not Cause National Or State Air Quality Standards To Be Violated*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FONSI will result from these evaluations.

POLICY #41A *Inclusion In Radiological Emergency Response Plans The Town Shall Be Included In Radiological Emergency Response Planning And Notification For The Millstone Nuclear Energy Plants Operated By Northeast Utilities In Waterford, Ct And The Nuclear Reactors Operated By The U.S. Department Of Energy At Brookhaven National Laboratory.*

N/A

POLICY #42 *Reclassification Of Areas Pursuant To Clean Air Act Coastal Management Policies Will Be Considered If The State Reclassifies Land Areas Pursuant To The Prevention of Significant Deterioration Regulations Of The Federal Clean Air Act.*

The proposed Federal Action is in compliance with this policy as it is intended to undertake navigation improvements designed to support the commercial and recreational fishery in the region, as well as ensure navigational safety and efficiency for local homeland security operations.

The proposed Federal Action is being evaluated under the NEPA, including ESA, FWCA, CWA, CZMA, CAA compliance analyses and documentation, and any other relevant statutes designed to ensure environmental integrity and sustainability of Federal actions, as well as compliance with all federal and local regulations. It is anticipated that a FNSI will result from these evaluations.

POLICY #43 *Acid Rain Precursors-Land Use Or Development In The Coastal Area Must Not Cause The Generation Of Significant Amounts Of The Acid Rain Precursors: Nitrates And Sulfates.*

N/A

POLICY #44 *Tidal And Freshwater Wetlands-Preserve And Protect Tidal And Freshwater Wetlands And Preserve The Benefits Derived From These Areas.*

N/A

APPENDIX G
CLEAN AIR ACT

Environmental Analysis Branch May 2019
(CENAN-PL-E)

RECORD OF NON-APPLICABILITY (RONA)

Project Name: Lake Montauk Harbor Navigation Improvement Feasibility Study

Reference: Summary report "*Report Summary Lake Montauk Harbor Nav-ONLY Jan2019.docx*"

Project/Action Point of Contact: Jenine Gallo

Begin Date: October 2019

End Date: January 2020

1. The project described above has been evaluated for Section 176 of the Clean Air Act. Project related emissions associated with the federal action were estimated to evaluate the applicability of General Conformity regulations (40CFR§93 Subpart B).

2. The requirements of this rule do not apply because the total direct and indirect emissions from this project are less than the 100 tons trigger levels for NO_x, $PM_{2.5}$, CO, and SO_2 and less than 50 tons for VOCs for each project year (40CFR§93.153(b)(1) & (2)) and for the project as a whole. The estimated total NO_x emissions for the project are 67.2 tons. Emissions of VOC, $PM_{2.5,}$ CO, and SO_2 are also all well below the applicable trigger levels (see attached estimates).

3. The project is presumed to conform with the General Conformity requirements and is exempted from Subpart B under 40CFR§93.153(c)(1).

Encl

Lake Montauk Harbor, NY

Navigation Improvements Feasibility Study

Pertinent Correspondence

Status: Items of Pertinent Correspondence will be included as part of the final Feasibility Report package.

APPENDIX I

DRAFT FINDING NO SIGNIFICANT IMPACT
LAKE MONTAUK HARBOR, NEW YORK
NAVIGATION STUDY

Prepared By: **U.S. Army Corps of Engineers**
New York District
26 Federal Plaza
New York, NY 10278-0090

DRAFT FINDING OF NO SIGNIFICANT IMPACT

Lake Montauk Harbor Navigation Project
Montauk, New York

The U.S. Army Corps of Engineers, New York District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The final Feasibility Report and Environmental Assessment (FR/EA) dated TBD, for the Lake Montauk Harbor Navigation Project addresses navigation opportunities and feasibility in Lake Montauk, Suffolk County, New York. The final recommendation is contained in the report of the Chief of Engineers, dated TBD .

The Final FR/EA, incorporated herein by reference, evaluated various alternatives that would evaluate deepening alternatives for an existing Federal channel in the study area. The recommended plan is the deepening of the existing navigation channel from -12′ MLLW to -17′ MLLW, and deepening the existing deposition basin from -12′ MLLW to -17′ MLLW and widening it to 100′ wide, and includes:

In addition to a "no action" plan, two alternatives were evaluated. The alternatives include:

- Uniform dredging of the 150ft wide channel and 50ft wide deposition basin to depths ranging from -14+2 to -18+2 ft. MLLW. All dredged material would be placed on the downdrift beach, with no design
- Uniform dredging of both the 150 ft wide channel and 100 ft wide deposition basin from -14+2 to 18+2 ft. MLLW. All dredged material would be placed on the downdrift beach but with no design.

For all alternatives, the potential effects were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Aesthetics	X	☐	☐
Air quality	X	☐	☐
Aquatic resources/wetlands	X	☐	☐
Invasive species	X	☐	☐
Fish and wildlife habitat	X	☐	☐
Threatened/Endangered species/critical habitat	X	☐	☐
Historic properties	X	☐	☐

	Insignificant effects	Insignificant effects as a result of mitigation*	Resource unaffected by action
Other cultural resources	X	☐	☐
Floodplains	☐	☐	X
Hazardous, toxic & radioactive waste	☐	☐	X
Hydrology	X	☐	☐
Land use	☐	☐	X
Navigation	X	☐	☐
Noise levels	X	☐	☐
Public infrastructure	☐	☐	X
Socio-economics	X	☐	☐
Environmental justice	☐	☐	X
Soils	☐	☐	X
Tribal trust resources	X	☐	☐
Water quality	X	☐	☐
Climate change	X	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the FR/EA will be implemented, if appropriate, to minimize impacts. Seasonal restrictions to avoid adverse effects to essential Fish Habitat, as regulated under the Magnuson-Stevens Fishery Conservation and Management Act-Essential Fish Habitat Amendment, will be implemented between 15 January and 30 September of any calendar year of construction to ensure protection of regulated habitat, as well implementation of a buffer near an SAV, if warranted.

No compensatory mitigation is required as part of the recommended plan.

Public, including Federal, State and local stakeholders, review of the draft FR/EA and FONSI was completed on TBD. All comments submitted during the public review period were responded to in the Final FR/EA and FONSI.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat:

- Northern Long-eared bat
- Piping Plover
- Roseate tern
- Red Knot
- Sandplain gerardia
- Sea beach amaranth
- Kemp's Ridley turtle

- Leatherback turtle
- Loggerhead turtle
- Green turtle
- Atlantic Sturgeon

The Corps initiated informal consultation with the U.S Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) on the above listed species.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Army Corps of Engineers determined that the recommended plan will have no significant effect on federally-listed species or their designated critical habitat.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties would not be adversely affected by the recommended plan. Consultation is ongoing with the New York State Historic Preservation Office**.** USACE expects to receive a letter of concurrence before the release of the Final Report.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in APPENDIX A.

A water quality certification pursuant to section 401 of the Clean Water Act will be obtained from the New York State Department of Environmental Conservation prior to construction. In a letter dated TDB New York State stated that the recommended plan appears to meet the requirements of the water quality certification, pending confirmation based on information to be developed during the pre-construction engineering and design phase. All conditions of the water quality certification will be implemented in order to minimize adverse impacts to water quality.

A concurrence with the Corps determination of consistency with the State of New York Coastal Zone Management program pursuant to the Coastal Zone Management Act of 1972 will be obtained from the New York State Department of State (NYSDOS) prior to construction. In a letter dated TBD the NYSDOS stated that the recommended plan appears to be consistent with state Coastal Zone Management plans, pending confirmation based on information to be developed during the pre-construction engineering and design phase. All conditions of the consistency determination shall be implemented in order to minimize adverse impacts to the coastal zone.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

Technical, environmental, and navigation criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the

reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

Date:

Thomas D. Asbery
COLONEL, Corps of Engineers
District Commander

Lake Montauk Harbor, NY

Navigation Improvements Feasibility Study

Mailing List

Status: The mailing list will be included as part of the final Feasibility Report package.