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US Army Corps of Engineers
696 Virginia Road
Concord, MA 01742

WATER QUALITY CERTIFICATION

In Fulfillment of

**Section 401 of the United States Clean Water Act (33 U.S.C 1341)
and NH RSA 485-A:12, III**

WQC # 2019-404I-001

Activity Name	Hampton Harbor Federal Navigation Maintenance Project
Activity Location	Hampton and Seabrook, New Hampshire
Affected Surface waters	Hampton Harbor and Seabrook Harbor and the Atlantic Ocean in the Vicinity of Hampton Harbor
Owner/Applicant	U.S. Army Corps of Engineers 696 Virginia Road Concord, MA 0742-2751
Applicable Federal and State permit(s):	New Hampshire Department of Environmental Services Wetlands Permit [File No 2019-00003 – Applicant is the PDA/ Division of Ports and Harbors]
DATE OF APPROVAL (subject to Conditions below)	March 21, 2019

A. INTRODUCTION

The U.S. Army Corps of Engineers (Applicant) is proposing maintenance dredging of the Hampton Harbor Federal Navigation Project and state anchorage in Hampton Harbor and Seabrook Harbor. A more complete description of the Activity is provided in Finding D-1 of this Certification.

This 401 Water Quality Certification (WQC or Certification) documents laws, regulations, determinations and conditions related to the Activity for the attainment and maintenance of New Hampshire (NH) surface water quality standards, including the provisions of NH RSA 485-A:8 and NH Code of Administrative Rules Env-Wq 1700, for the support of designated uses identified in the standards.

B. 401 CERTIFICATION APPROVAL

Based on the facts, findings and conditions noted below, the New Hampshire Department of Environmental Services (NHDES or DES) has determined that there is reasonable assurance that construction and operation of the Activity will not violate surface water quality standards. NHDES hereby issues this Certification, subject to the conditions in Section E of this Certification, in accordance with Section 401 of the United States Clean Water Act (33 U.S.C. 1341) and RSA 485-A:12, III.

C. STATEMENT OF FACTS AND LAW

- C-1. Section 401 of the United States Clean Water Act (33 U.S.C. 1341) states, in part: "Any applicant for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate...that any such discharge will comply with the applicable provisions of sections 301, 302, 303, 306, and 307 of this title.....No license or permit shall be granted until the certification required by this section has been obtained or has been waived...No license or permit shall be granted if certification has been denied by the State..."
- C-2. §401(d) of the CWA provides that: "Any certification provided under this section [401] shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with [enumerated provisions of the CWA]...and with any other appropriate requirement of State law set forth in such certification, and shall become a condition on any Federal license or permit subject to the provisions of this section."

According to EPA 401 Guidance¹, "Under § 401(d) the water quality concerns to consider and the range of potential conditions available to address those concerns, extend to any provision of state or tribal law relating to the aquatic resource. Considerations can be quite broad so long as they relate to water quality. The U.S. Supreme Court has stated that, once the threshold of a discharge is reached (necessary for § 401 certification to be applicable), the conditions and limitations in the certification may address the permitted activity as a whole."²

- C-3. 33 CFR 323.2(d)(3)(ii) , "(3) Section 404 authorization is not required for the following: . . . (ii) Incidental movement of dredged material occurring during normal dredging operations, defined as dredging for navigation in navigable waters of the United States, as that term is defined in part 329 of this chapter

¹ *Clean Water Action Section 401 Water Quality Certification: A Water Quality Protection Tool for States and Tribes*. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds. 2010.

² *PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 511 U.S. 700, 712 (1994).

with proper authorization from the Congress and/or the Corps pursuant to 33 CFR part 322 of this Chapter; however, this exception is not applicable to dredging activities in wetlands as that term is defined in section 328.3 of this Chapter."

- C-4. Section 404(t) of the CWA regarding "Navigable waters within State jurisdiction" states the following: " Nothing in this section shall preclude or deny the right of any State or interstate agency to control the discharge of dredged or fill material in any portion of the navigable waters within the jurisdiction of such State, including any activity of any Federal agency, and each such agency shall comply with such State or interstate requirements both substantive and procedural to control the discharge of dredged or fill material to the same extent that any person is subject to such requirements. This section shall not be construed as affecting or impairing the authority of the Secretary to maintain navigation."
- C-5. 33 CFR, § 336.1 regarding discharges of dredged or fill material into waters of the U.S., states the following:
- "(a) Applicable laws. Section 404 of the CWA governs the discharge of dredged or fill material into waters of the U.S. Although the Corps does not process and issue permits for its own activities, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, opportunity for public hearing, and application of the section 404(b)(1) guidelines.
- (1) The CWA requires the Corps to seek state water quality certification for discharges of dredged or fill material into waters of the U.S."
- C-6. NH RSA 485-A:12, III, states: "No activity, including construction and operation of facilities, that requires certification under section 401 of the Clean Water Act and that may result in a discharge, as that term is applied under section 401 of the Clean Water Act, to surface waters of the state may commence unless the department certifies that any such discharge complies with the state surface water quality standards applicable to the classification for the receiving surface water body. The department shall provide its response to a request for certification to the federal agency or authority responsible for issuing the license, permit, or registration that requires the certification under section 401 of the Clean Water Act. Certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide assurance that the proposed discharge complies with applicable surface water quality standards. The department may enforce compliance with any such conditions, modifications, or monitoring requirements as provided in RSA 485-A:22."
- C-7. NH RSA 485-A:8 and Env-Wq 1700 (Surface Water Quality Standards), together fulfill the requirements of Section 303 of the Clean Water Act that the State of New Hampshire adopt water quality standards consistent with the provisions of the Act. Env-Wq 1700 is available at <https://www.des.nh.gov/organization/commissioner/legal/rules/index.htm>

C-8. Env-Wq 1701.02, entitled "Applicability", states that these rules shall apply to:

- " (a) All surface waters; and
- (b) Any person who:
 - (1) Causes any point or nonpoint source discharge of any pollutant to surface waters;
 - (2) Undertakes hydrologic modifications, such as dam construction or water withdrawals; or
 - (3) Undertakes any other activity that affects the beneficial uses or the water quality of surface waters."

C-9. Env-Wq 1703.01 entitled "Water Use Classifications; Designated Uses", states the following:

- "(a) All surface waters shall be classified as provided in RSA 485-A:8, based on the standards established therein for class A and class B waters. Each classification shall identify the most sensitive use it is intended to protect.
- (b) All surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses, and to maintain the chemical, physical, and biological integrity of surface waters.
- (c) All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.
- (d) Unless high or low flows are caused by naturally-occurring conditions, surface water quantity shall be maintained at levels that protect existing uses and designated uses."

C-10. Env-Wq 1702.44 defines surface waters as "surface waters of the state" as defined in NH RSA 485-A:2, XIV and waters of the United States as defined in 40 CFR 122.2.

NH RSA 485-A:2, XIV defines "surface waters of the state" as "perennial and seasonal streams, lakes, ponds and tidal waters within the jurisdiction of the state, including all streams, lakes, or ponds bordering on the state, marshes, water courses and other bodies of water, natural or artificial."

40 CFR 122.2 defines "waters of the United States".

C-11. NH RSA 482-A:2, X. defines "Wetlands" as "[a]n area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

C-12. Env-Wq 1702.07 states that ""Best management practices" means those practices that are determined, after problem assessment and examination of all

alternative practices and technological, economic and institutional considerations, to be the most effective practicable means of preventing or reducing the amount of pollution generated by point or nonpoint sources to a level compatible with water quality goals.”

- C-13. Env-Wq 1702.05 states that ““Benthic community” mean the community of plants and animals that live on, over, or in the substrate of the surface water.”
- C-14. Env-Wq 1702.06 states that ““Benthic deposit” means any sludge, sediment, or other organic or inorganic accumulations on the bottom of the surface water.”
- C-15. Env-Wq 1702.08 states that ““Biological integrity” means the ability of an aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.”
- C-16. Env-Wq 1702.26 states that ““Mixing zone” means a defined area or volume of the surface water surrounding or adjacent to a wastewater discharge where the surface water, as a result of the discharge, might not meet all applicable water quality standards.”
- C-17. Env-Wq 1702.15 states that ““Cultural eutrophication” means the human-induced addition of wastes that contain nutrients to surface waters, resulting in excessive plant growth or a decrease in dissolved oxygen, or both.”
- C-18. Env-Wq 1702.17 states that ““Designated uses” means those uses specified in water quality standards for each water body or segment whether or not such uses are presently occurring. The term includes the following:
- (a) Swimming and other recreation in and on the water, meaning the surface water is suitable for swimming, wading, boating of all types, fishing, surfing, and similar activities;
 - (b) Fish consumption, meaning the surface water can support a population of fish free from toxicants and pathogens that could pose a human health risk to consumers;
 - (c) Shellfish consumption, meaning the tidal surface water can support a population of shellfish free from toxicants and pathogens that could pose a human health risk to consumers;
 - (d) Aquatic life integrity, meaning the surface water can support aquatic life, including a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of the region;
 - (e) Wildlife, meaning the surface water can provide habitat capable of supporting any life stage or activity of undomesticated fauna on a regular or periodic basis; and

- (f) Potential drinking water supply, meaning the surface water could be suitable for human intake and meet state and federal drinking water requirements after adequate treatment.”

C-19. Env-Wq 1702.18 states that ““Discharge” means

- (a) The addition, introduction, leaking, spilling, or emitting of a pollutant to surface waters, either directly or indirectly through the groundwater, whether done intentionally, unintentionally, negligently or otherwise; or
- (b) The placing of a pollutant in a location where the pollutant is likely to enter surface waters.”

C-20. Env-Wq 1702.22 states that ““Existing uses” means those uses, other than assimilation waste transport, that actually occurred in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.”

C-21. Env-Wq 1702.33 states that ““Nuisance species” means any species of flora or fauna living in or near the water whose noxious characteristics or presence in sufficient number or mass prevent or interfere with a designated use of those surface waters.”

C-22. Env-Wq 1702.38 states that ““Pollutant” means “pollutant” as defined in 40 CFR 122.2.” According to 40 CFR 122.2, “pollutant” means “dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water.”

C-23. The term “discharge”, as applied under section 401 of the Clean Water Act means the potential for a discharge. It does not need to be a certainty, only that it may occur should the federal license or permit be granted. Further, the discharge does not need to involve the addition of pollutants (such as water released from the tailrace of a dam). As the U.S. Supreme Court has stated “[w]hen it applies to water, ‘discharge’ commonly means a ‘flowing or issuing out’” and an addition of a pollutant is not “fundamental to any discharge”³.

C-24. Env-Wq 1703.03 entitled “General Water Quality” includes the following:

- (c)(1) “All surface waters shall be free from substances in kind or quantity that:
 - a. Settle to form harmful benthic deposits;

³ Information in this paragraph is from page 4 of the following guidance document: *Clean Water Action Section 401 Water Quality Certification: A Water Quality Protection Tool for States and Tribes*. U.S. Environmental Protection Agency, Office of Wetlands, Oceans and Watersheds. 2010. The Supreme Court case that is referred to is *S.D. Warren Co. v. Maine Board of Environmental Protection et al*, 547 U.S. 370, 126 S. Ct. 1853 (2006).

- b. Float as foam, debris, scum or other visible substances;
- c. Produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses;
- d. Result in the dominance of nuisance species; or
- e. Interfere with recreational activities."

C-25. Env-Wq 1703.06 includes water quality criteria for bacteria.

C-26. Env-Wq 1703.07 includes water quality criteria for dissolved oxygen.

C-27. Env-Wq 1703.08 entitled "Benthic Deposits" states the following:

- "(a) Class A waters shall contain no benthic deposits, unless naturally occurring.
- (b) Class B waters shall contain no benthic deposits that have a detrimental impact on the benthic community, unless naturally occurring."

C-28. Env-Wq, 1703.09, 1703.10 and 1703.12 include water quality criteria for oil and grease, color and slicks, odors, and surface floating solids respectively.

C-29. Env-Wq 1703.11 entitled "Turbidity" states the following:

- "(a) Class A waters shall contain no turbidity, unless naturally occurring.
- (b) Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs.
- (c) Turbidity in waters identified in RSA 485-A:8, III shall comply with the applicable long-term combined sewer overflow plan prepared in accordance with Env-Wq 1703.05(c).
- (d) For purposes of state enforcement actions, if a discharge causes or contributes to an increase in turbidity of 10 NTUs or more above the turbidity of the receiving water upstream of the discharge or otherwise outside of the visible discharge, a violation of the turbidity standard shall be deemed to have occurred."

C-30. Env-Wq 1703.13 entitled "Temperature", states the following:

- "(a) There shall be no change in temperature in class A waters, unless naturally occurring.
- (b) Temperature in class B waters shall be in accordance with RSA 485-A:8, II, and VIII."

NH RSA-A:8,II states the following for Class B waters "[A]ny stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class."

NH RSA-A:8,VIII states the following: "In prescribing minimum treatment provisions for thermal wastes discharged to interstate waters, the department shall adhere to the water quality requirements and recommendations of the

New Hampshire fish and game department, the New England Interstate Water Pollution Control Commission, or the United States Environmental Protection Agency, whichever requirements and recommendations provide the most effective level of thermal pollution control.”

C-31. Env-Wq 1703.14, entitled “Nutrients”, states the following:

- “(a) Class A waters shall contain no phosphorous or nitrogen unless naturally occurring.
- (b) Class B waters shall contain no phosphorous or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.
- (c) Existing discharges containing either phosphorous or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.
- (d) There shall be no new or increased discharge of phosphorous into lakes or ponds.
- (e) There shall be no new or increased discharge(s) containing phosphorous or nitrogen to tributaries of lakes or ponds that would contribute to cultural eutrophication or growth of weeds or algae in such lakes and ponds.”

C-32. Env-Wq 1703.18, entitled “pH”, states the following:

- “(a) The pH of Class A waters shall be as naturally occurs.
- (b) As specified in RSA 485-A:8, II, the pH of Class B waters shall be 6.5 to 8.0, unless due to natural causes.
- (c) As specified in RSA 485-A:8,III, the pH of waters in temporary partial use areas shall be 6.0 to 9.0 unless due to natural causes.

C-33. Env-Wq 1703.19, entitled “Biological and Aquatic Community Integrity”, states the following:

- “(a) All surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.
- (b) Differences from naturally-occurring conditions shall be limited to non-detrimental differences in community structure and function.”

C-34. Env-Wq 1703.21 entitled “Water Quality Criteria for Toxic Substances” states the following:

- “(a) Unless naturally occurring or allowed under part Env-Wq 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that:
 - (1) Injure or are inimical to plants, animals, humans or aquatic life; or
 - (2) Persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in:

- a. Edible portions of fish, shellfish, or other aquatic life; or
- b. Wildlife that might consume aquatic life."

C-35. Env-Wq 1707.01 entitled "Designation of Mixing Zones" states the following:

"(a) Because RSA 485-A:8, I prohibits the discharge of any sewage or other wastes into class A waters, mixing zones shall be prohibited in such waters.

(b) For class B waters, the department shall designate a limited area or volume of the surface water as a mixing zone if the applicant provides sufficient scientifically valid documentation to allow the department to independently determine that all criteria in Env-Wq 1707.02 have been met."

C-36. Env-Wq 1707.02 entitled "Criteria for Approval of Mixing Zones" states that "the department shall not approve a mixing zone unless the proposed mixing zone:

- (a) Meets the criteria in Env-Wq 1703.03(c)(1);
- (b) Does not interfere with biological communities or populations of indigenous species;
- (c) Does not result in the accumulation of pollutants in the sediments or biota;
- (d) Allows a zone of passage for swimming and drifting organisms;
- (e) Does not interfere with existing and designated uses of the surface water;
- (f) Does not impinge upon spawning grounds or nursery areas, or both, of any indigenous aquatic species;
- (g) Does not result in the mortality of any plants, animals, humans, or aquatic life within the mixing zone;
- (h) Does not exceed the chronic toxicity value of 1.0 TUC at the mixing zone boundary; and
- (i) Does not result in an overlap with another mixing zone."

C-37. Env-Wq 1707.03 entitled "Conditions for Mixing Zones" states that "if the department approves a mixing zone, the department shall include such conditions as are needed to ensure that the criteria on which the approval is based are met."

C-38. Env-Wq 1707.04 entitled "Technical Standards" states that mixing zones " shall be established in accordance with "Technical Support Document for Water

Quality-based Toxics Control", EPA/505/2-90-001, dated March 1991, available as noted in Appendix B."

C-39. Antidegradation provisions are included in Env-Wq 1702 and Env-Wq 1708.

- a. Env-Wq 1702.03 states that "Antidegradation" means a provision of the water quality standards that maintains and protects existing water quality and uses.
- b. Env-Wq 1708.02 states that "Antidegradation shall apply to: (a) Any proposed new or increased activity, including point source and nonpoint source discharges of pollutants, that would lower water quality or adversely affect the existing or designated uses; (b) Any proposed increase in loadings to a waterbody when the proposal is associated with existing activities; (c) Any increase in flow alteration over an existing alteration; and (d) Any hydrologic modifications, such as dam construction and water withdrawals."
- c. Antidegradation applies to all parameters as evidenced by Env-Wq 1708.08 (a) (Assessing Waterbodies) which states "The applicant shall characterize the existing water quality and determine if there is remaining assimilative capacity for each parameter in question."
- d. According to Env-Wq 1708.03 (b), "A proposed discharge or activity shall not eliminate any existing uses or the water quality needed to maintain and protect those uses".
- e. Env-Wq 1702.04 states that "Assimilative capacity" means the amount of a pollutant or combination of pollutants that can safely be released to a waterbody without causing violations of applicable water quality criteria or negatively impacting uses."
- f. Env-Wq 1708.08 describes the process for assessing waterbodies to determine if there is remaining assimilative capacity for each parameter in question.
- g. Env-Wq 1708.09 entitled "Significant or Insignificant Determination" states the following: (a) Any discharge or activity that is projected to use 20% or more of the remaining assimilative capacity for a water quality parameter, in terms of either concentration or mass of pollutants, or volume or flow rate for water quantity, shall be considered a significant lowering of water quality. (b) The department shall not approve a discharge or activity that will cause a significant lowering of water quality unless the applicant demonstrates, in accordance with Env-Wq 1708.10, that the proposed lowering of water quality is necessary to achieve important economic or social development in the area where the waterbody is located.
- h. Env-Wq 1708.01(b)(1), in general, states that: For significant changes in water quality, where the quality of the surface waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions and the analysis required by Env-Wq 1708.10, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the surface waters are located. In allowing such degradation or lower water quality, the department shall assure water quality adequate to

fully protect existing uses. Further, the department shall assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and that all cost effective and reasonable best management practices for nonpoint source control shall be implemented.

- i. Env-Wq 1708.01(b)(2), in general, states that: The department shall not approve any proposed discharge or activity that might cause degradation or lower water quality, without such conditions as are necessary to ensure that:
 - a) Water quality will be adequate to protect existing uses;
 - b) The highest statutory and regulatory requirements will be achieved for all new and existing point sources; and
 - c) All cost effective and reasonable best management practices for nonpoint source control will be implemented.

C-40. Env-Wq 1708.04 entitled "Protection of Water Quality in ORW" states that the following:

"(a) Surface waters of national forests and surface waters designated as natural under NH RSA 483:7-a, I, shall be considered outstanding resource waters (ORW).

(b) Subject to (c), below, water quality shall be maintained and protected in surface waters that constitute ORW.

(c) The department shall allow a limited point or nonpoint source discharge to an ORW only if:

(1) The discharge will result in no more than temporary and short-term changes in water quality, wherein "temporary and short term" means that degradation is limited to the shortest possible time;

(2) The discharge will not permanently degrade water quality or result at any time in water quality lower than that necessary to protect the existing and designated uses in the ORW; and

(3) All practical means of minimizing water quality degradation are implemented."

C-41. Env-Wq 1708.06 entitled "Protection of Water Quality in High Quality Waters" states the following:

"(a) Subject to (b) through (d) below, high quality waters shall be maintained and protected.

(b) The department shall evaluate and authorize insignificant changes in water quality as specified in Env-Wq 1708.09.

(c) The department shall allow degradation of significant increments of water quality, as determined in accordance with Env-Wq 1708.09, in high quality waters only if the applicant can demonstrate to the department, in accordance with Env-Wq 1708.10, that allowing the water quality

degradation is necessary to accommodate important economic or social development in the area in which the receiving water is located.

(d) If the waterbody is Class A Water, the requirements of Env-Wq 1708.05 shall also apply."

C-42. Env-Wq 1708.12 states the "" transfer" means the intentional conveyance of water from one surface water to another surface water for the purpose of increasing volume of water available for withdrawal from the receiving surface water. The term does not include the transfer of stormwater, for the purpose of managing stormwater during construction, between basins created or otherwise lawfully used for stormwater detention or treatment, or both, and does not include the discharge of stormwater from a detention or treatment basin to a surface water."

C-43. RSA 483 regarding Designated Rivers, states the following:

RSA 483:4, XVIII. "River corridor" means the river and the land area located within a distance of 1,320 feet of the normal high water mark or to the landward extent of the 100 year floodplain as designated by the Federal Emergency Management Agency, whichever distance is larger.

RSA 483:8-a, III. The duties of such committees shall be:

(a) To advise the commissioner, the advisory committee, the municipalities through which the designated river or segment flows, and municipalities within tributary drainage areas on matters pertaining to the management of the river or segment and tributary drainage areas. Municipal officials, boards, and agencies shall inform such committees of actions which they are considering in managing and regulating activities within designated river corridors.

(b) To consider and comment on any federal, state, or local governmental plans to approve, license, fund or construct facilities that would alter the resource values and characteristics for which the river or segment is designated.

RSA 483:10-b. Withholding of Section 401 Certification. – The general court finds that the development of any dam or channel alteration activities within a natural river or segment or the development of any new dam within a rural or community river or segment, except as provided in RSA 483:9-a, II and RSA 483:9-b, II, will alter the physical and chemical characteristics of that river and will constitute violation of the water quality standards established under RSA 485-A:8. The commissioner shall deny certification of any federally licensed or permitted activity on such designated rivers or segments under section 401 of the Federal Water Pollution Control Act, P.L. 92-500, as amended.

RSA 483:12-a State Action; Notification of Rivers Coordinator; Petition for Review

I. Any state agency considering any action affecting any river or segment designated under this chapter shall notify the rivers coordinator prior to taking any such action. Such agency shall forward to the rivers coordinator for review

and comment copies of all notices of public hearings, or, where a public hearing is not required, a copy of the application for issuance of a permit, certificate, or license within the designated river or corridor under RSA 485-C, RSA 485-A, RSA 483-B, RSA 12-E, RSA 270:12, RSA 482, RSA 482-A, RSA 149-M, RSA 430, or RSA 147-A. If an agency is notified by the rivers coordinator that a proposed activity would violate a protection measure under RSA 483:9, 483:9-a, 483:9-aa, or 483:9-b, such agency shall deny the application.

C-44. NH RSA 488:3 regarding registration of withdrawals and discharges states the following:

- I. No person shall withdraw or discharge a cumulative amount of more than 20,000 gallons of water per day, averaged over any 7-day period, or more than 600,000 gallons of water over any 30-day period, at a single real property or place of business without registering the withdrawal or discharge with the department. Transfers of such volume of water shall also be registered. Registration shall be in addition to any required permits.
- II. No registration shall be transferred to another person without written notification to the commissioner.

C-45. NH RSA 485:61 regarding Rules for Water Conservation, states the following:

- I. The department shall adopt rules, pursuant to RSA 541-A, for water conservation practices for water users. These rules shall strike a reasonable balance between environmental, energy, and economic impacts and be consistent with current industry standards and practices for different types of water users.
- II. The water conservation rules in paragraph I of this section shall apply to all new permit applicants and applications for water withdrawals subject to the provisions of RSA 485:3, RSA 485:48, RSA 485-C:21 and section 401 of the Clean Water Act.
- III. Water conservation rules shall be consistent with applicable state or federal rules and regulations. Water Conservation Rules were adopted May 14, 2005 codified as Env-Wq 2101."

C-46. Env-Wq 2101.24 entitled "Water Conservation Plan Required", states that

"(a) The applicants for approval of a source that would be a conservation source shall submit a water conservation plan that demonstrates compliance with the applicable provisions of Env-Wq 2101.05 through Env-Wq 2101.22 in accordance with the following:"

"(5) For a new withdrawal from a surface water associated with a project requiring a 401 Water Quality Certification, the water conservation plan shall be submitted prior to or in conjunction with the application for a 401 Water Quality Certification pursuant to Section 401 of the federal Clean Water Act;

(6) For a new withdrawal from a surface water that requires water quality certification pursuant to RSA 485-A:12, IV, the water conservation plan shall be submitted prior to or in conjunction with the certification request”.

Env-Wq 2101.23, entitled Waivers, allows DES to grant waivers of certain provisions in Env-Wq 2101 provided the person requesting the waiver submits a written request to DES that includes the information specified in Env-Wq 2101.23(d).

C-47. NH RSA 483:4 defines “interbasin transfer” and “river drainage basin” as follows:

XII. “Interbasin transfer” means any transfer of water for use from one river drainage basin to another.

XIX. “River drainage basin” means the Androscoggin, Coastal, Connecticut, Merrimack, Piscataqua, and Saco river basins as delineated on a map compiled by the department.

C-48. NH RSA 483:9 Natural Rivers Protection (at 9-a, 9-aa, and 9-b) states that no interbasin transfers from designated rural, rural-community, or community rivers or their segments shall be permitted.

C-49. In 2010, DES published guidance (hereinafter called the 2010 instream flow guidance or 2010 ISF guidance) for estimating instream flow requirements for the protection of aquatic life for situations. The guidance is available at: <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-11-3.pdf>.

C-50. Section 303(d) of the Clean Water Act (33 U.S.C. 1313(d)) and the regulations promulgated thereunder (40 C.F.R. 130.0 – 40 C.F.R. 130.11) require states to identify and list surface waters that are violating state water quality standards (i.e., Section 303(d) List) that do not have an approved Total Maximum Daily Load (TMDL) for the pollutants causing impairment. For these water quality-impaired waters, states must establish TMDLs for the pollutants causing the impairments and submit the list of impaired surface waters and TMDLs to EPA for approval. TMDLs include source identification, determination of the allowable load and pollutant reductions (by source) necessary to meet the allowable load. Once a TMDL is conducted, the pollutant/surface water is transferred to the list of impaired waters with approved TMDLs (known as Category 4A waters). The Section 303(d) List is, therefore, a subset of all impaired waters. The most recent Section 303(d) list of impaired waters is the 2016 Section 303(d) List. A list of all impaired waters is available at http://www2.des.state.nh.us/WaterShed_SWQA/WaterShed_SWQA.aspx

- C-51. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL⁴ which addressed mercury impairments in all New Hampshire fresh surface waters.
- C-52. On September 21, 2010, EPA approved the Statewide Bacteria TMDL for 394 surface waters listed as impaired on the 2008 303(d) List of impaired waters⁵.
- C-53. When a surface water does not meet water quality standards (i.e., when it is impaired), the addition of pollutants causing or contributing to impairment should be avoided as indicated in the following regulation and statute:

Env-Wq 1703.03 (a) states that "The presence of pollutants in the surface waters shall not justify further introduction of pollutants from point or nonpoint sources, alone or in any combination".

NH RSA 485-A:12 (I) (Enforcement of Classification) states that "After adoption of a given classification for a stream, lake, pond, tidal water, or section of such water, the department shall enforce such classification by appropriate action in the courts of the state, and it shall be unlawful for any person or persons to dispose of any sewage, industrial, or other wastes, either alone or in conjunction with any other person or persons, in such a manner as will lower the quality of the waters of the stream, lake, pond, tidal water, or section of such water below the minimum requirements of the adopted classification".

- C-54. On January 2, 2019 NHDES received a wetlands permit application from the Pease Development Authority (PDA)-Division of Ports and Harbors for the Activity (file number 2019-00003).
- C-55. On November 27, 2018 NHDES received an application from the Applicant for Section 401 Water Quality Certification for the Activity. Supplemental information was received from the Applicant through January 29, 2019.
- C-56. NHDES issued a draft Section 401 Water Quality Certification for public comment from February 11, 2019 to March 14, 2019. One comment was received in support of the Activity.

⁴ Northeast Regional Mercury Total Maximum Daily Load. Connecticut Department of Environmental Protection, Maine Department of Environmental Protection, Massachusetts Department of Environmental Protection, New Hampshire Department of Environmental Services, New York State Department of Environmental Conservation, Rhode Island Department of Environmental Management, Vermont Department of Environmental Conservation, New England Interstate Water Pollution Control Commission. October 24, 2007.

⁵ Final Report, New Hampshire Statewide Total Maximum Daily Load (TMDL) for Bacteria Impaired Waters. Prepared by FB Environmental Associates, Inc. for the New Hampshire Department of Environmental Services. September, 2010.

D. FINDINGS

D-1. *Activity Description:* The proposed Activity is described in the text and plans provided in the application for Section 401 Water Quality Certification filed by the Applicant (see C-55). In general, the Applicant is proposing maintenance dredging to remove shoals in both the Federal channel and anchorage areas in Hampton and Seabrook, New Hampshire as well as in the state owned Hampton anchorage (Figure 2). Currently shoaling in the three rivers (Hampton, Brown, and Blackwater Rivers) that form the Hampton and Seabrook anchorage areas are causing deposition of sandy material in the Federal entrance channel and anchorage areas of Hampton Harbor. In order to alleviate these shoaling conditions, dredging the channel and anchorage areas is being proposed. The dredging will involve:

- Maintaining the entrance channel to a depth of -8 feet Mean Lower Low Water (MLLW);
- Maintaining the -8 foot dredged channel in the inner harbor with branches to the north (Hampton), cross channel, and south (Seabrook);
- Maintaining the Hampton portion of the anchorage to depths of -8 feet (lower) and -6 feet (upper) MLLW;
- Maintaining the Seabrook anchorage to a depth of -8 feet MLLW;
- Maintaining the 6-foot State of New Hampshire anchorage.

The State maintenance project involves dredging of approximately 2,500 cy of sand from the upper six-foot anchorage area in Hampton and the Federal project involves the dredging of approximately 150,000 cubic yards (CY) of sandy material from the entrance channel and the inner harbor. It is proposed to perform this work with a hydraulic pipeline however, it is likely that a relatively small amount of sediment (approximately 700 cy) in the entrance channel east of the Rt. 1A Bridge (i.e., entrance channel east – see Figure 2a) will be dredged using a hopper dredge. When the Hampton/Seabrook harbor was last dredged in 2012-2013, a hydraulic pipeline dredge was used, however the Contractor experienced significant difficulties in the entrance channel east due to waves in the winter which are consistently high; consequently a hopper dredge may be used to dredge the entrance channel east.

A hydraulic pipeline dredge consists of a cutterhead on the end of an arm connected to a pump, which loosens the bottom sediments, entrains them in a water slurry, and pumps it up from the bottom. It is then pumped via a pipeline to a disposal site.

Working in a back and forth motion over the dredge area, a hopper dredge uses a suction pump (similar to a hydraulic pipeline dredge) and drag-arms that hang down from the side of the vessel to loosen and remove the material from the bottom. The drag-arms draw up the dredged material in a slurry of water and sediment and deposit it into hopper or holds aboard the dredge vessel. As pumping continues, the sand settles to the bottom of the hopper and excess water flows overboard through troughs. When the hoppers are full, the drag-arms are raised and the dredge proceeds to the placement site and either

release the material through bottom-opening doors or pumps the material off the dredge from the hoppers into the placement site. If a hopper dredge is used, it will most likely be the *Currituck* which is a government-owned special purpose hopper dredge.

Where hydraulic pipeline dredging occurs, the dredge material will be placed along areas of Hampton Beach, Seabrook Beach, and an area beneath the southern end of the Rt. 1A bridge, which are all located adjacent to the project area (Figure 3). In addition, up to 10,000 cy of sand will be placed behind and within an existing composite sheet pile wall built in 2005 to protect the Middle Ground sand flat (i.e., the Corps Section 227 project). The area within the red line on Figure 3a is where sediment will be disposed on the Middle Ground and Figure 3b shows a view of the sheet pile walls (looking south) on the Middle Ground where sediment will be placed between and on the left (east) side of the sheet pile walls.

If a hopper dredge is utilized, the material will be placed at one of the nearshore sites in the vicinity of the project, to include the Boar's Head nearshore disposal site (previously used) or at the Hampton Beach nearshore disposal site (Figure 3).

Figure 2. Hampton Harbor Federal Navigation Project Features.

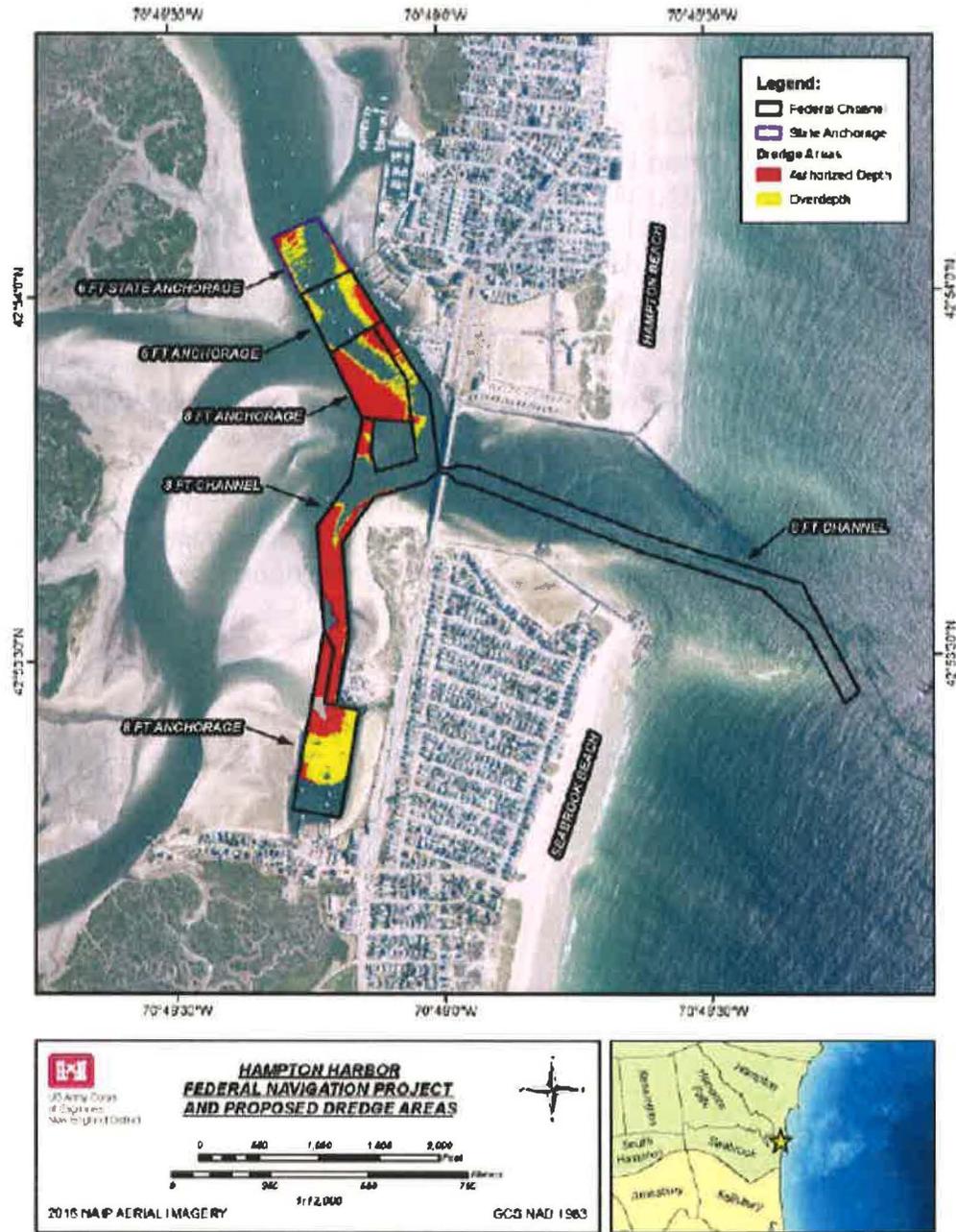


Figure 2a. Hampton Harbor Entrance Channel East of Rte 1A Bridge

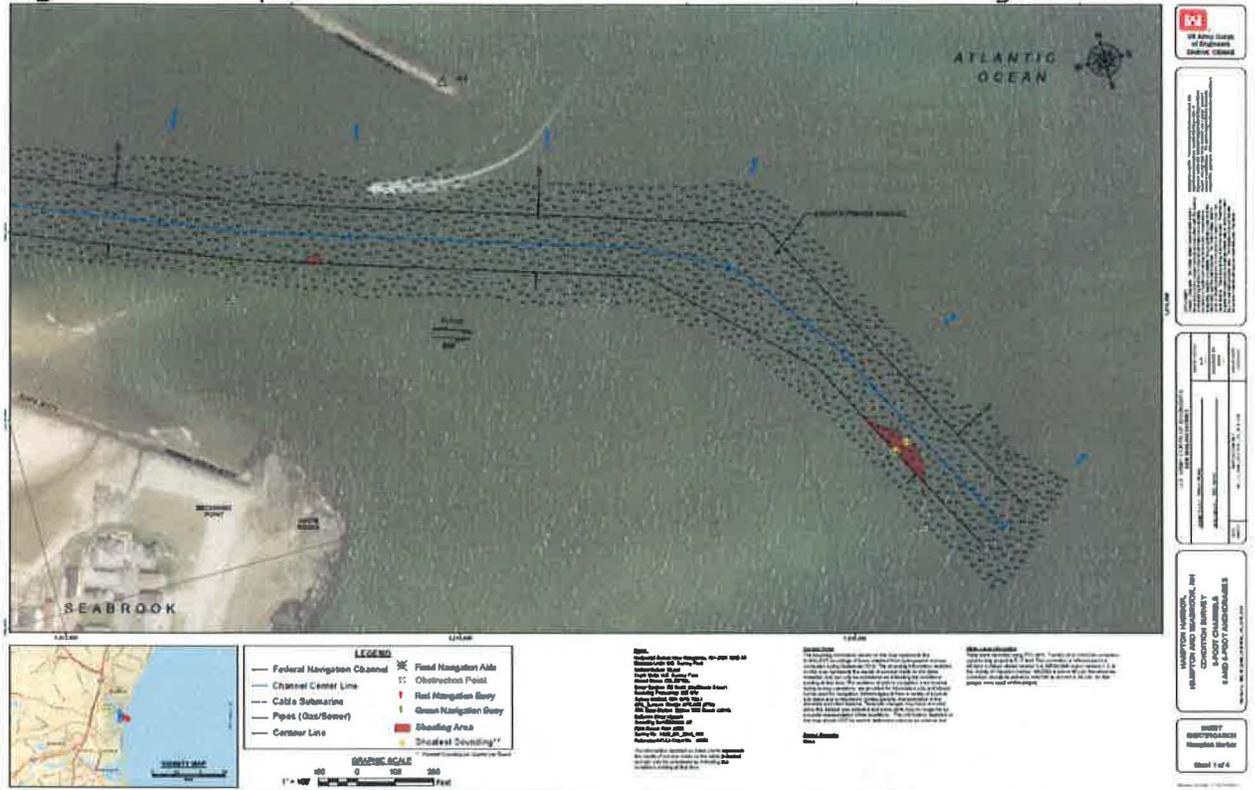
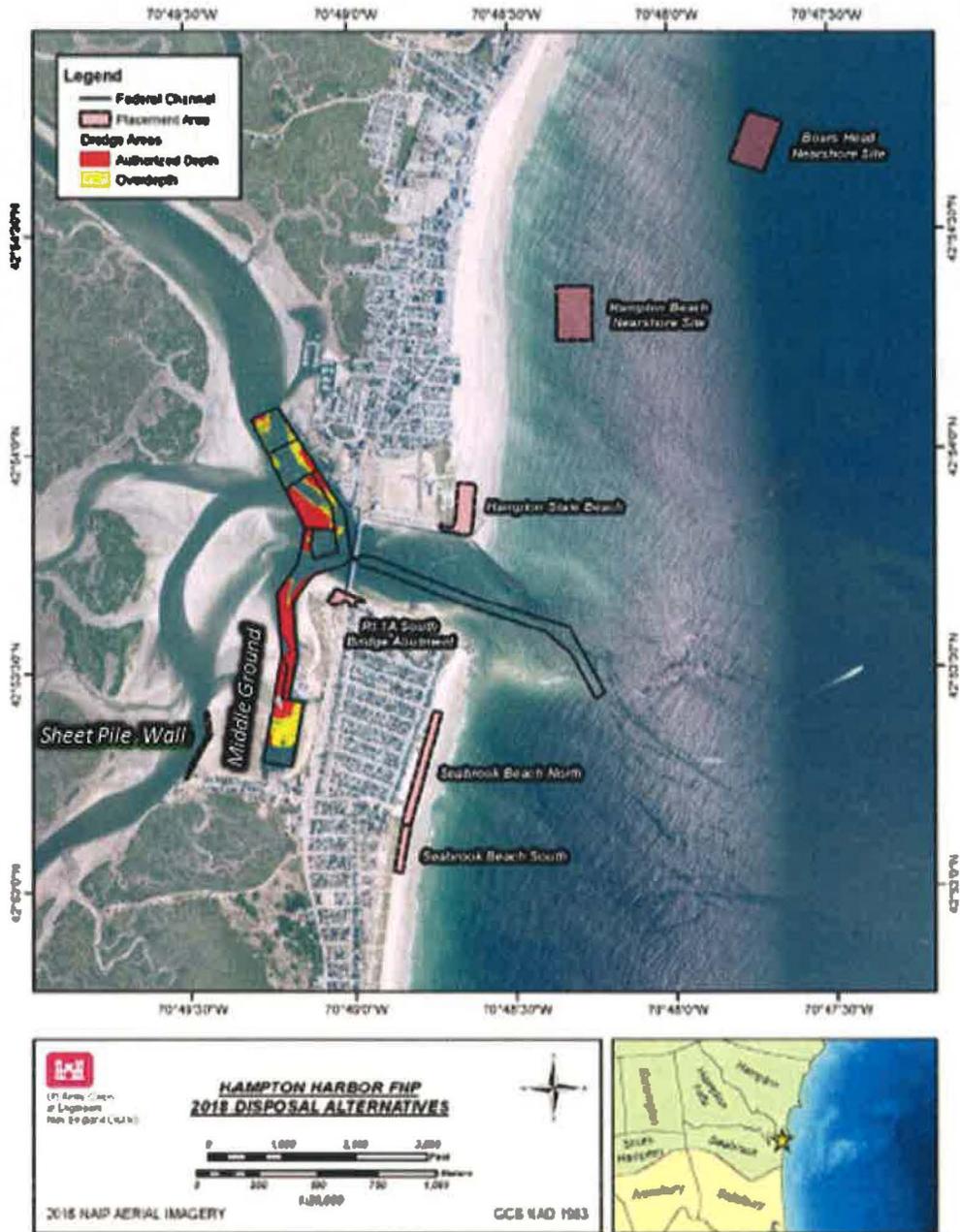


Figure 3. Hampton and Seabrook Harbor Alternative Placement Locations



(Note: Figure 3 was modified by NHDES to show the Middle Ground and the Sheet Pile Wall.)

Figure 3a: Middle Ground Sediment Disposal Area



Figure 3b: Middle Ground Sediment Disposal Site- View looking south at sheet pile walls.



Construction activities involving hydraulic dredging will be performed during a five-month period between October 1 and March 15 to avoid impacts to local resources (specifically piping plover, winter flounder, anadromous fish populations). Dredging and disposal of inner harbor sediments would be performed between October 15 through February 1, dredging and disposal activities in the entrance channel would be performed between October 15 and March 15, and work on the receiving beaches would occur between October 1 and March 15, in the year that funding becomes available. In the event that the government owned hopper dredge *Currituck* performs work in Hampton Harbor, the work would be limited to the entrance channel east, material would be placed at one of the nearshore sites, and the work would occur between May 1 and July 31, which is when the *Currituck* is typically in New England waters. Work on the entrance channel east is anticipated to only take approximately three days because of the relatively low volume (approximately 700 cy) that must be dredged. The New Hampshire Fish and Game Department (NHFGD) would prefer that if the *Currituck* (or other hopper dredge) is used to dredge the entrance channel east that it be conducted during the outgoing tide so that any suspended material is swept out to the open ocean and not into the harbor.

The Applicant conducted an Environmental Assessment (EA) that was included with the 401 certification application. The EA addressed hydraulic pipeline, hopper and mechanical dredging however, based on correspondence with the Applicant on January 10, 2019, mechanical dredging is no longer being considered.

- D-2. The Applicant is responsible for the Activity.
- D-3. Surface waters are navigable waters for the purposes of certification under Section 401 of the Clean Water Act. Surface waters are jurisdictional wetlands for the purposes of wetlands permitting under RSA 482-A.
- D-4. The named and unnamed streams and wetlands affected by the Activity, are surface waters under Env-Wq 1702.44 (see C-10) and are therefore subject to New Hampshire Surface Water Quality Standards (Env-Wq 1700 – see C-7). NHDES has assigned Assessment Unit (AU) identification numbers to many, but not all surface waters. Surface waters that do not have an AU number are considered surface waters of the State in accordance with Env-Wq 1702.44 (see C-10). Surface waters that could be potentially affected by the Activity and their associated AU numbers (where available) include, but are not limited to the following:

Assessment Unit ID	Description
NHEST600031004-04-01	Hampton River
NHEST600031004-08-04	Blackwater River
NHEST600031004-09-05	Hampton/Seabrook Harbor – Seabrook Harbor Beach
NHEST600031004-09-06	Hampton/Seabrook Harbor – Hampton Harbor Beach
NHEST600031004-09-07	Hampton/Seabrook Harbor – Fish Coop
NHEST600031004-09-08	Hampton/Seabrook Harbor – Hampton River Marina
NHEST600031004-09-09	Hampton/Seabrook Harbor

NHOCN000000000-02-10	Atlantic Ocean – Hampton Beach State Park
NHOCN000000000-02-11	Atlantic Ocean – Seabrook Town Beach
NHOCN000000000-02-18	Atlantic Ocean
NHOCN000000000-08-01	Atlantic Ocean –Seabrook WWTF Outfall
NHOCN000000000-08-01	Atlantic Ocean-Sun Valley Beach

- D-5. The potentially affected surface waters are Class B waterbodies; therefore Class B New Hampshire surface water quality standards apply to the Activity. Class B waterways are considered suitable for aquatic life, primary and secondary contact recreation, fish consumption, wildlife, and, after adequate treatment, as a water supply (see C-18).
- D-6. The Activity involves the discharge of dredged or fill material into state surface waters.
- D-7. The Activity does not require a federal permit however federal regulation requires the Applicant to obtain 401 Certification (see C-5).
- D-8. NHDES has received an application from the Applicant for 401 Water Quality Certification (see C-55).
- D-9. The Activity includes dredge and fill of jurisdictional wetlands in New Hampshire and therefore requires a NHDES Wetlands Permit (or permits) under NH RSA 482-A. This 401 Certification decision relies, in part, on an approved permit (or permits) from the NHDES Wetlands Bureau for the potential impacts to jurisdictional wetlands. Through its processing and issuance, NHDES wetlands permits issued for the Activity will address the dredge and fill impacts to jurisdictional wetlands. On January 2, 2019 NHDES received a wetlands permit application from the Pease Development Authority (PDA)-Division of Ports and Harbors for the Activity (file number 2019-00003).
- D-10. The Activity is not within ¼ mile of a Designated River under the Designated Rivers Program (see C-43). As such, the Activity is not within the jurisdiction of the Designated Rivers Program.
- D-11. The surface waters in the vicinity of the Activity are not Outstanding Resource Waters (see C-40).
- D-12. The Activity does not involve an interbasin transfer as defined in RSA 483:4 (see C-47)
- D-13. The Activity does not involve a "transfer" of water as defined in Env-Wq 1708.12 (a) (see C-42).
- D-14. The Activity does not involve any surface water withdrawals that exceed those specified in RSA 488:3 (see C-44).
- D-15. On September 11, 2019, staff from the NHDES Water Conservation Program confirmed that the Activity, as described in the 401 WQC application, does not

require Water Use Registration (see C-44) or submittal of a Water Conservation Plan (see C-45 and C-46).

D-16. According to the 2016 305(b)/303(d) lists of impaired waters (see C-50), the following surface waters in the vicinity of the proposed Activity are listed as impaired. All impairments, with the exception of those highlighted in bold (which have approved TMDLs), are on the Section 303(d) List:

Assessment Unit (AU)	Waterbody Name	Cause of Impairment (Designated Use Impaired)
NHEST600031004-04-01	Hampton River	Mercury, PCBs (FC, SFC) Dioxin (SFC)
NHEST600031004-08-04	Blackwater River	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC) Enterococcus (PCR)
NHEST600031004-09-05	Hampton/Seabrook Harbor – Seabrook Harbor Beach	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC)
NHEST600031004-09-06	Hampton/Seabrook Harbor – Hampton Harbor Beach	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC)
NHEST600031004-09-07	Hampton/Seabrook Harbor – Fish Coop	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC)
NHEST600031004-09-08	Hampton/Seabrook Harbor – Hampton River Marina	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC) Enterococcus (PCR, SCR)
NHEST600031004-09-09	Hampton/Seabrook Harbor	Mercury, PCBs (FC, SFC) Fecal Coliform , Dioxin (SFC) Aluminum, DDD, Deildrin, Lindane, trans-Nonachlor(AL)
NHOCN000000000-02-10	Atlantic Ocean – Hampton Beach State Park	Mercury, PCBs (FC, SFC) Dioxin (SFC)
NHOCN000000000-02-11	Atlantic Ocean – Seabrook Town Beach	Mercury, PCBs (FC, SFC) Dioxin (SFC)
NHOCN000000000-02-10	Atlantic Ocean – Hampton Beach State Park	Mercury, PCBs (FC, SFC) Dioxin (SFC)
NHOCN000000000-08-01	Atlantic Ocean	Mercury, PCBs (FC, SFC) Dioxin (SFC)
NHOCN000000000-08-01	Atlantic Ocean-Sun Valley Beach	Mercury, PCBs (FC, SFC) Dioxin (SFC)
Notes: AL = Aquatic Life, PCR = Primary Recreation, SCR = Secondary Recreation, FC = Fish Consumption, SFC = Shellfish Consumption Impairments highlighted in bold have approved TMDLs. All other impairments are on the Section 303(d) List.		
In 2010, NHDES completed a statewide bacteria TMDL ⁶ for the enterococcus and fecal coliform impairments shown in the table above.		

⁶ New Hampshire Statewide Total Maximum Daily Load (TMDL) for Bacteria Impaired Waters. New Hampshire Department of Environmental Services. September, 2010.

When a surface water does not meet surface water quality standards (i.e., when it is impaired), the addition of pollutants causing or contributing to impairment should be avoided (see C-53). The proposed Activity is not expected to worsen the impairments shown above primarily because the Activity is temporary and of relatively short duration, and because much of the dredged material is expected to be removed from the harbor and deposited upland on nearby beaches for replenishment. Further, based on the sediment composition (mostly sand with a low percentage of fines – see D-19), the dredged sediments are believed to be relatively clean. With regards to NHEST600031004-09-09, which is shown in the table as impaired for the aquatic life designated use due to aluminum, DDD, deildrin, lindane, and trans-Nonachlor, this assessment is based on concentrations found in sediments collected under the National Coastal Condition Assessment (NCCA)⁷ from 2000 through 2006. None of the NCCA stations used in the assessment are located within the area that will be dredged or within any of the proposed disposal sites.

D-17. The Hampton/Seabrook harbor was last dredged between October 2012 – February 2013 and included extension of the existing 8-foot Federal entrance channel into the inner harbor, with branch channels to anchorage areas on both the Hampton and Seabrook sides of the harbor. The project also provided 8-foot deep (MLLW) inner harbor channels and anchorages for both the Hampton and Seabrook sides of the harbor serving both communities' public landings, and provided a second shallower 6-foot MLLW anchorage at Hampton for smaller draft lobster boats. The project used a hydraulic dredge to remove about 81,600 cubic yards of clean sand. Material was placed onto public beaches in Hampton and Seabrook and a small quantity (about 2,600 CY) was placed adjacent to the Section 227 composite sheet pile bulkhead.

D-18. The Applicant conducted an Environmental Assessment⁸ (EA) that was included with the 401 certification application. The EA addressed hydraulic pipeline, hopper and mechanical dredging however, based on correspondence with the Applicant on January 10, 2019, mechanical dredging is no longer being considered. Sediment placement alternatives that were evaluated in the EA include upland placement, beach nourishment, nearshore placement, open water placement and intertidal placement. Environmental impacts that were addressed in the EA include the physical, chemical and biological impacts of dredging and placement of sediment, including the impacts on threatened and endangered (T&E) species and essential fish habitat (EFH).

D-19. Sediment Grain Size: The EA states that to determine the material type in the dredge and placement areas, 13 sediment samples were collected to project depth (8 feet + 1 foot overdepth) in the dredge areas, ten samples were

⁷ The NCCA is a national coastal monitoring program designed to produce national and regional estimates of coastal condition (see <https://www.epa.gov/national-aquatic-resource-surveys/ncca>).

⁸ Draft Environmental Assessment, Finding of No Significant Impact and Clean Water Act Section 404(b)(1) Evaluation for Maintenance Dredging, Hampton Harbor, Hampton and Seabrook New Hampshire. U.S. Army Corps of Engineers New England District. November 2018.

collected in the beach placement areas, and four samples were collected in the nearshore areas. Results are shown in the table below. Results indicated that the area of the proposed dredge (stations A-M) was predominantly sand (greater than 99 percent with the exception of sample "L" which was 94.5 percent) with the fine grain size fraction (silts and clays) comprising no more than 1 percent and that this was very similar to the sediment at the proposed disposal sites (approximately 92 percent to greater than 99 percent sand with no more than 2.3 percent silt and clay).

Table 2. Grain size data from proposed dredge areas and proposed placement sites.

Sample Location	Sample ID	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines
Seabrook Harbor	A	0.0	0.0	3.0	96.3	0.7
Seabrook Harbor	B	0.1	0.3	12.8	86.6	0.3
Seabrook Harbor	C	0.2	0.0	3.4	95.7	0.6
Seabrook Harbor	D	0.0	0.1	5.4	94.2	0.4
Seabrook Harbor	E	1.2	0.7	64.4	33.7	0.0
Hampton Harbor	F	0.0	0.8	75.1	24.1	0.0
Hampton Harbor	G	0.0	0.0	28.0	71.9	0.0
Hampton Harbor	H	0.0	0.3	67.5	32.3	0.0
Hampton Harbor	I	0.0	0.2	17.2	82.5	0.0
Hampton Harbor	J	0.0	0.0	1.2	98.5	0.3
Hampton Harbor	K	0.0	1.6	21.8	76.5	0.2
Hampton Harbor	L	4.8	2.8	48.4	43.3	0.7
Hampton Harbor	M	0.8	1.4	48.9	48.9	0.1
Hampton Beach South	HBS-1	0.0	0.1	14.3	85.6	0.0
Hampton Beach South	HBS-2	0.0	0.1	10.3	89.6	0.0
Seabrook Beach North	SBN-1	0.3	3.2	78.6	17.8	0.0
Seabrook Beach North	SBN-2	0.0	0.1	36.6	63.2	0.1
Seabrook Beach North	SBN-3	0.0	0.4	57.3	42.2	0.1
Seabrook Beach North	SBN-4	0.0	1.3	66.6	32.1	0.1
Route 1A Bridge Abutment	B-1	7.4	20.5	69.7	3.4	0.0
Route 1A Bridge Abutment	B-2	5.1	10.5	77.8	6.6	0.0
Seabrook Beach South	SBS-1	0.1	1.1	40.2	58.6	0.0
Seabrook Beach South	SBS-2	1.8	1.0	17.7	79.4	0.2
Hampton Beach Nearshore Site	HBNS-1	0.0	0.2	5.8	93.4	0.6
Hampton Beach Nearshore Site	HBNS-2	0.1	0.0	2.9	96.5	0.5
Boar's Head Nearshore Site	BH-1	0.0	0.1	0.9	96.7	2.3
Boar's Head Nearshore Site	BH-2	0.3	0.1	2.6	95.3	1.8

According to the EA, bulk chemical analysis of the material was not conducted because sandy sediments with low (<15 %) fines (silts and clays) content are unlikely to contain any significant levels of contaminants and because the material is not located near any known significant sources of contaminants.

- D-20. Water Quality Impacts and Mixing Zone: The EA states that while short-term and localized impacts to water quality will occur, no significant long-term adverse water quality impacts are anticipated from the dredging and disposal operations. This is based on the fact that the dredged material is primarily sand with less than 3% fines (and usually less than 1%). Because sandy material is generally inert it is not likely to result in a significant release of chemical

contaminants including nutrients or organics or other substances that can decrease dissolved oxygen. The Activity will, however, temporarily increase turbidity in the water column during dredging and during placement of sediment in the project area as well as during placement of sediment at the nearshore disposal sites. However, given the sandy nature of the dredged material the turbidity effects are expected to be relatively short term (several hours) and localized to the dredging and disposal areas. Based on the above, the temporary increase in turbidity during dredging and placement of sediment at nearshore disposal sites is not expected to result in any significant impacts to aquatic life.

According to the EA, sediments are suspended during lateral swinging of the cutterhead as the dredge progresses forward. Modeling results of cutterhead dredging indicated that total suspended solid (TSS) concentrations above background levels could be present throughout the bottom six feet (1.8 meters) of the water column for a distance of approximately 1,000 feet (305 meters) (USACE, 1983⁹). Based on these analyses, elevated suspended sediment levels are expected to be present only within a 1,000 foot (305 meters) radius of the cutterhead dredge. TSS concentrations associated with cutterhead dredging typically range from 11.5 to 282.0 mg/L with the highest levels detected adjacent to the cutterhead dredge and concentrations decreasing with greater distance from the dredge (Nightingale and Simenstad, 2001¹⁰).

New Hampshire does not have water quality criteria for TSS but does have criteria for turbidity, which is typically positively related to TSS. That is, elevated TSS concentrations typically result in elevated turbidity in the water column. Since there will be areas where turbidity is likely to exceed standards for relatively short periods of time during dredging and nearshore placement of dredged material, mixing zones are required in accordance with Env-Wq 1707. Water quality standards (in this case, turbidity) must be met at the mixing zone boundary. Based on the information provided in the EA, NHDES has concluded that there is sufficient information to establish the following mixing zones: For dredging operations, the mixing zone shall extend no more than 1000 feet in any direction from the location of the cutterhead, and, for the nearshore disposal sites, the mixing zone shall extend no more than 500 feet in any direction. NHDES can require monitoring and/or other conditions (such as Condition E-18 of this Certification) to help ensure that the Activity is in compliance with water quality standards.

D-21. Sediment Quality Impacts: As discussed in D-19, the grain size distribution of the dredged material, the beach nourishment sites and the nearshore disposal sites are all very similar. Therefore placement of the dredged sediment on the

⁹ USACE 1983. Raymond, G. L. (USACE) 1983. Field Study of the Sediment Resuspension Characteristics of Selected Dredges. Proceedings of the 15th Annual Texas A&M Dredging Seminar, New Orleans, La., Texas A&M University, College Station, Tex.

¹⁰ Nightingale, B., and C. A. Simenstad. 2001. Overwater structures: marine issues. White Paper, Res. Proj. T1803, Task 35, Wash. State Dept. Transportation, Washington State Trans. Center (TRAC), Seattle, WA. 133 pp + appendices.

beaches or at the nearshore disposal sites is not expected to have a significant impact on the sediment characteristics at these sites.

D-22. Benthos Impacts: The EA states that dredging operations should have no more than minimal adverse impact on benthic resources of the Hampton Harbor FNP. Although most sedentary organisms associated with the bottom sediments in the direct footprint of the dredged areas would be destroyed, recolonization of dredged areas is expected over the course of a few years and the post-dredging community should closely resemble the existing community. This conclusion is based on a wide range of scientific literature¹¹ and accepted ecological principals regarding the succession of marine benthic communities. In addition, benthic samples were taken in 2018 in Hampton Harbor and Seabrook Harbor within the area that was dredged in 2012-2013. According to the EA, "the data indicate that the project supports a typically nearshore sandy habitat benthic community". This provides further evidence that recolonization will likely occur within the proposed dredge area.

With regards to the benthic organisms residing at the nearshore placement site(s), some may be buried by the dredged material during placement operations. Those organisms that burrow deeper into the sediment such as some deposit feeders, are more likely to survive than shallow infaunal forms. It is anticipated that benthic organisms will begin to recolonize the placement areas soon after dredging and placement operations cease. As mentioned in D-19, grain size at the dredge and nearshore disposal locations are similar, which will also support rapid recolonization. This assessment is supported by numerous DAMOS¹² publications which document the recovery of benthic organisms at disposal area sites throughout New England. Additionally, an experimental study by Guerra-Garcia and Garcia-Gomez (2006)¹³ reported that small sandy dredged areas were recolonized in time frames on the order of a few weeks, subsequently recovering similar biotic and abiotic characteristics to the control area.

¹¹ The following are a few of the references provided in the EA.

Pagliai, A.M.B., A.M.C. Varriale, R. Crema, M.C. Galleti, and R.V. Zunarelli. 1985. Environmental impact of extensive dredging in a coastal marine area. *Mar. Poll. Bull.* 16(12):483-488.

Van Dalssen, J.A., K. Essink, H. Madsen, J. Birklund, J. Romero, and M. Manzanera. 2000. Differential response of macrozoobenthos to marine sand extraction in the North Sea and the Western Mediterranean. *Jour. Mar. Sci.* 57:1439-1445.

¹² DAMOS (Disposal Area Monitoring System) is a program started in 1977 by the New England District of the U.S. Army Corps of Engineers to manage and monitor offshore dredged material disposal sites from Long Island Sound to Maine.

¹³ Guerra-García, J. M., Corzo, J. and Carlos García-Gómez, J. (2006), Short-Term Benthic Recolonization after Dredging in the Harbour of Ceuta, North Africa. *Marine Ecology*, 24: 217–229. doi:10.1046/j.0173-9565.2003.00810.x.

Benthic communities in and adjacent to the beach disposal areas are not expected to incur significant impacts. These areas are located in high energy surf zones that are subject to continual disturbance by wave action.

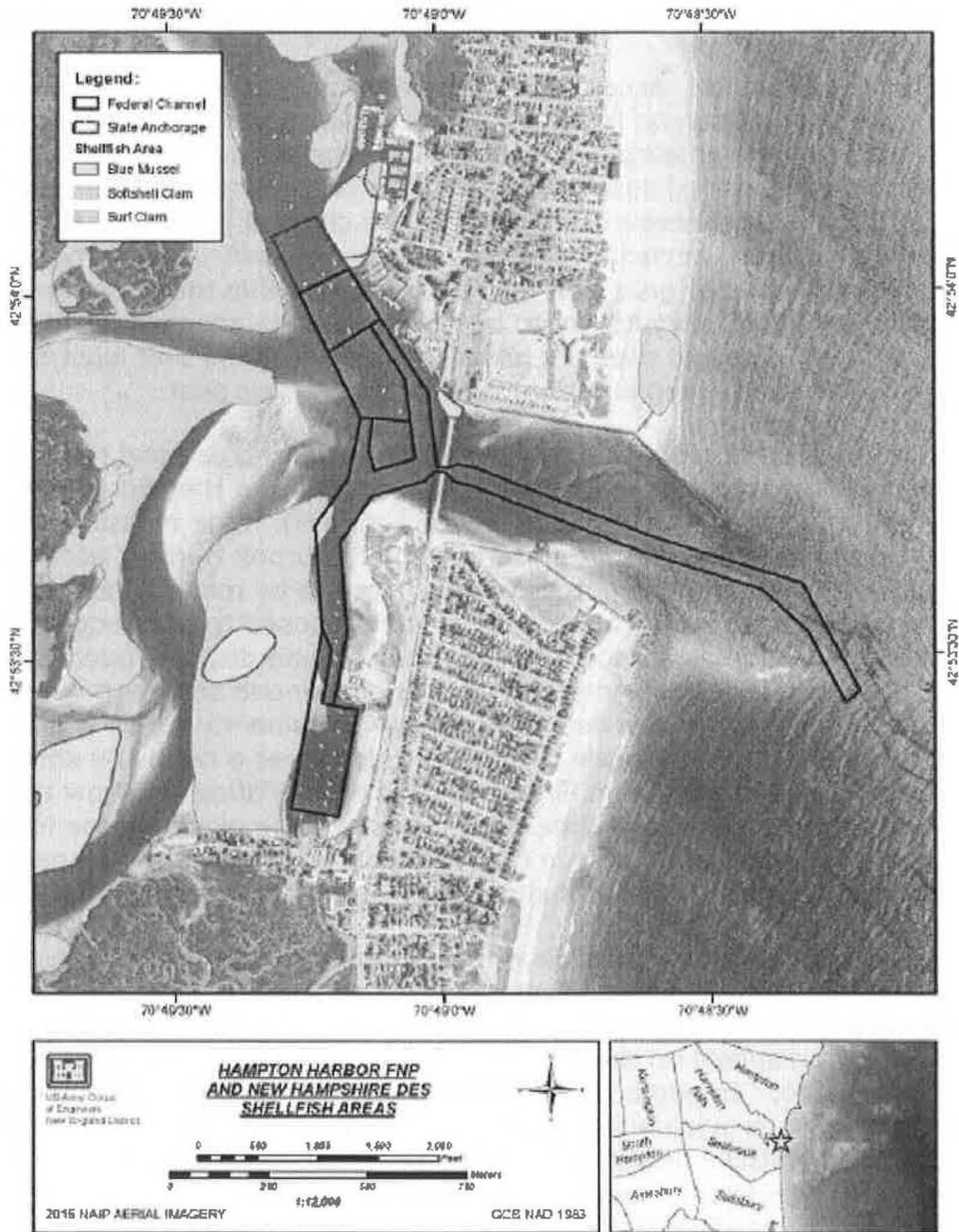
- D-23. Shellfish Impacts: According to the EA, lobster (*Homarus americanus*) and lobster habitat can be found in the outer portions of the harbor near the rocky outcroppings and jetties. Because adult lobsters are tolerant of exposure to temporary elevated suspended sediment concentrations (Stern and Stickle, 1978¹⁴), lobster resources inhabiting the channel jetties are not expected to incur significant impacts from the project. However, to minimize the potential to damage lobster gear that may be present within the nearshore disposal sites, the NHFGD would like to be notified well in advance of when any of the nearshore disposal sites are proposed to be used so that lobster fisherman can be notified and given sufficient time to move their gear.

With regards to mollusks, the EA states that a recreational fishery for soft-shell clams (*Mya arenaria*) exists in the harbor and that the Middle Ground sand flat provides habitat for beds of *Mya* (see Figure 6). Blue mussels (*Mytilus edulis*) are also present in Hampton Harbor and Seabrook Harbor. According to the EA, impacts to shellfish resources are expected to be minimal because no significant beds are located in the areas proposed to be dredged. Further, the shellfish resources adjacent to the dredging and disposal operations are not expected to be significantly affected by suspended sediment plumes as both the channel and anchorage sediments are predominantly sands which, if suspended, typically settle relatively rapidly over a relatively small localized area. Figure 3a and 3b in Finding D-1 of this certification show the sheet pile walls and area where sediment is proposed to be placed in the Middle Ground sand flat, which according to the NHDES Shellfish Program Manager, is one of the most popular recreational softshell clam flats in New Hampshire.

The area shown on Figure 3a where sediment is proposed to be placed within and close to the existing sheet pile walls on the Middle Ground sand flat, is acceptable to NHDES and the NHFGD. To ensure that this is the extent of sediment disposal on the Middle Ground, Condition E-8 of this certification has been added. In addition, Condition E-11 of this Certification requires the Applicant to provide weekly schedules to the NHDES Shellfish Program Manager and the NHFGD indicating the dates and locations where dredging and sediment disposal will occur. Having such advance notification will allow the NHDES Shellfish Program Manager to know when and where to sample for the purpose of determining if shellfish beds should be kept open or be temporarily closed for shellfish harvesting and will allow the NHFGD time to notify fishing communities in the area where work is scheduled to be conducted.

¹⁴ Stern, E.M. and W.B. Stickle. 1978. Effects of Turbidity and Suspended Material in Aquatic Environments. U.S. Army COE Waterways Exp. Stat. Tech. Rep. D-78-21.

Figure 6. Shellfish Resources in the Project Area



- D-24. Bird, Mammal, Reptile and Amphibian Impacts: According to the EA, the Activity is not likely to adversely impact waterfowl, shorebirds, mammals, or other wildlife occurring in the vicinity of the project area during the timing of the dredge project (between October 1 and March 15). Some individuals may be displaced during pipeline placement and dredging activities, but use of the area by wildlife should occur rapidly after completion of the project.
- D-25. Fish Impacts: According to the EA, only non-permanent short-term impacts to fish resources in the harbors are anticipated during the dredge window (between

October 1 and March 15). With regards to impacts on fish resources caused by suspended sediments associated with dredging or placement of sediment at nearshore disposal site, fish are quite tolerant of short-term exposures to suspended sediment levels (Stern and Stickle, 1978¹⁴; Barr, 1987¹⁵) and finfish can leave the area of disturbance. Further, since the material to be dredged is mostly sand with a small silt content (see D-19 and D-20) it is expected to settle relatively quickly and temporarily impact a relatively small volume of the water column near the dredge site and nearshore placement sites.

Finfish eggs and non-motile larvae have the potential to be entrained in the hydraulic dredge slurry however, overall, this is not expected to have a significant impact on the community of finfish during the dredge window.

As discussed in D-22 there will be a temporary loss of the benthic community forage base in the direct footprint of the dredge area will impact fish in the area. However, fish resources should be able to forage in other portions of the harbor following the impact to the benthic community.

The EA states that efforts will be made to avoid blocking the entire width of the entrance channel with the hydraulic pipeline during dredging operations so that any anadromous fish species that may be present can transit the area.

- D-26. Vegetation Impacts: According to the EA, the Hampton-Seabrook Harbor ecosystem contains large expanses of salt marsh that surround the harbors and the rivers with no submerged aquatic vegetation (SAV) (e.g., eelgrass, widgeon grass) present in the immediate project area. No significant impacts to vegetation resources at the dredge or disposal location are expected.
- D-27. Threatened and Endangered (TE) Species: The EA states that the proposed Activity is not likely to adversely affect any state or Federally-listed threatened or endangered species, as the environmental impacts to both the dredge and placement areas are expected to be temporary and minimal. The EA identifies five non-marine and nine marine (including anadromous) TE species and, for each species, explains why the Activity is not likely to have an adverse effect on these species.

Of special note is the piping plover (*Charadrius melodus*) which is a state and federally listed threatened bird that exists in the proposed beach disposal sites. According to the EA, it is not likely to be adversely impacted because the Activity will occur outside of the window when the piping plover is present (from approximately April 1 through August 31). According to the NHFGD, piping plover begin to arrive around March 30. According to the Applicant, all beachwork activities (including pipeline deconstruction, beach grading and removal of construction equipment, etc.) will be complete by March 15. Further, the locations of the disposal areas are being coordinated with the U.S. Fish and Wildlife Service (USFWS) and the NHFGD. That is, beach sites will be constructed to the specification stated in USFWS guidance to insure that the areas are acceptable plover habitat (i.e., with a 1:10 or shallower slope). In

¹⁵ Barr, B. 1987. Dredging Handbook. Massachusetts Coastal Zone Management.

addition, the sites will also be required to be managed for plovers according to NHFGD and USFWS guidelines.

According to the NHFGD, the Humpback Whale is present during the May 1 to July 31 window when dredging of the entrance channel may occur if done by the *Currituck* hopper dredge. However, since the volume of dredge is relatively small (approximately 700 cy) and because it is expected to take a relatively short time (approximately three days), it is not expected to have a significant impact on the Humpback Whale.

- D-28. **Essential Fish Habitat:** The EA states that dredging should have no more than minimal effects on designated Essential Fish Habitat (EFH). Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and amended by the Sustainable Fisheries Act of 1996, an Essential Fish Habitat (EFH) consultation is necessary for the Activity. EFH is broadly defined as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." The Activity occurs in designated EFH areas managed by the New England Fishery Management Council. Hampton Harbor and its adjacent and surrounding waters fall into this category and thus have the potential to provide habitat for fish species in the area. The EA identifies the 13 species and life stages that have EFH in the Hampton-Seabrook Harbor and, for each species, explains why the Activity should have no more than a minimal effect on designated EFH.
- D-29. **Proposed Actions to Minimize Impacts:** According to the EA, the following actions will be taken to minimize potential adverse effects associated with the Activity:
- The dredging contractor will be required to accommodate vessel traffic during dredging operations.
 - Contractors will be responsible for complying with any special conditions and/or stipulations incorporated into appropriate permits.
 - Construction activities will be conducted during the time periods discussed in D-1 to avoid impacts on local resources.
 - Beach disposal will follow USFWS guidelines for suitable shorebird habitat creation and will be coordinated with State and Federal agencies.

E. WATER QUALITY CERTIFICATION CONDITIONS

Unless otherwise authorized by NHDES, the following conditions shall apply:

- E-1. **Compliance with Certification Conditions:** The Applicant shall comply with this Certification.
- E-2. **Compliance with Water Quality Standards:** The Activity shall not cause or contribute to a violation of New Hampshire surface water quality standards.

- E-3. **Modification of Certification:** The conditions of this Certification may be amended and additional terms and conditions added as necessary to ensure compliance with New Hampshire surface water quality standards, when authorized by law, and, if necessary, after notice and opportunity for hearing.
- E-4. **Proposed Modifications to the Activity:** The Applicant shall consult with and receive prior written approval from NHDES regarding any proposed modifications to the Activity that could have a significant or material effect on the conditions of this Certification. If necessary, NHDES may modify the Certification in accordance with Condition E-3 of this Certification.
- E-5. **Compliance Inspections:** In accordance with applicable laws, the Applicant shall allow NHDES to inspect the Activity and affected surface waters to monitor compliance with the conditions of this Certification.
- E-6. **Transfer of Certification:** Should this Certification be transferred to a new owner, contact information for the new owner (including name, address, phone number and email) shall be provided to NHDES within 30 days of the transfer.
- E-7. **Compliance with Other Permits:** The Applicant shall comply with all applicable permits (and any amendments) associated with the Activity that may affect surface water quality. The conditions of these permits shall become conditions of this Certification upon issuance of this Certification. Should there be any discrepancies between permit requirements the more stringent requirement shall apply.
- E-8. **Sediment Placement on Middle Ground Sand Flats:** Unless otherwise approved by NHDES and the NHFGD, dredged sediment shall only be placed on the Middle Ground sand flats within the area shown on Figure 3a in Finding D-1 of this Certification.
- E-9. **Dredging by Hopper Dredge:** Should the *Currituck* hopper dredge be used to dredge the entrance channel east, the work shall, to maximum extent practicable, be conducted during the outgoing tide to minimize suspended sediment resulting from the dredging operation from entering the harbor.
- E-10. **Timing of Activity:** In the year that funding becomes available, the Activity shall be conducted using a hydraulic pipeline dredge between October 1 and March 15 with disposal of the dredged material onto the receiving beaches mentioned in Finding D-1 of this Certification. In the event that the government owned hopper dredge *Currituck* performs work, it shall be limited to work in the entrance channel east, material shall be placed at any of the nearshore sites mentioned in Finding D-1 and work shall be conducted between May 1 and July 31. Deviations from these time periods may be allowed after consultation with NHDES and the NHFGD, and with approval from NHDES.
- E-11. **Notification of Schedule:**
- a. Beginning two weeks prior to the start of the Activity and then every week thereafter until the Activity is completed, the Applicant shall notify and

provide the NHDES Shellfish Program Manager (Manager) and the NHFGD with a written schedule indicating when and where dredging and sediment disposal will occur. At least 48 hours prior to any proposed schedule changes the Applicant shall notify the Manager and the NHFGD of the proposed changes.

- b. At least one week prior to any scheduled dredging in the entrance channel east, or placement of dredged sediment at Hampton Beach, Seabrook Beach, or at any of the nearshore disposal sites, the Applicant shall notify and provide the New Hampshire Department of Natural and Cultural Resources, Division of Parks and Recreation (NHDNCR) with a written schedule indicating when and where this work will be performed. At least 48 hours prior to any proposed schedule changes the Applicant shall notify the NHDNCR of the proposed changes.

- E-12. **Piping Plover Protection:** The placement of dredged sediment on beaches shall be conducted in a manner and within a time frame that is acceptable to the USFWS and the NHFGD to ensure that the areas are configured as acceptable plover habitat. All beach work associated with the Activity, including but not limited to hydraulic pipeline deconstruction, removal of all constructions equipment and beach grading, shall be completed by March 15.
- E-13. **Turbidity:** Turbidity criteria shall be met at the edge of the mixing zones described in Finding D-20 of this certification. If directed by NHDES, the Applicant shall submit a turbidity monitoring plan to NHDES for approval and then implement the approved plan.
- E-14. **Implement Best Management Practices:** The Applicant shall implement best management practices to minimize turbidity associated with the Activity to the maximum extent practicable.
- E-15. **Prevent Eelgrass Loss:** The Activity shall not result in the loss of any eelgrass.
- E-16. **Maintain Vessel Traffic:** The Applicant shall accommodate vessel traffic throughout the period that the Activity occurs.
- E-17. **Provide Passage for Anadromous Fish:** The Applicant shall avoid blocking the entrance channel so that any anadromous fish species that may be present can transit the area.
- E-18. **Notification Procedure for Adverse Impacts:** At least 90 days prior to start of the Activity, the Applicant shall submit a notification procedure outlining the reporting process to NHDES for incidents related to the Activity that may adversely impact surrounding resource areas and habitats including, but not limited to, observed dead or distressed fish, other aquatic organisms or marine mammals, loss or damage to eelgrass, sediment spills outside of the approved disposal area, observed oily sheens on the water surface, turbidity plumes beyond deployed BMPs or approved mixing zones, and accidental spills associated with equipment failure. If at any time during implementation of the

Activity an incident creates environmental impacts such as those listed above, all site related activities impacting the water shall cease until the source of the problem is identified and adequate mitigating measures are employed to the satisfaction of NHDES.

F. APPEAL

Any person aggrieved by this decision may appeal to the N.H. Water Council ("Council") by filing an appeal that meets the requirements specified in RSA 21-O:14 and the rules adopted by the Council, Env-WC 100-200. The appeal must be filed directly with the Council within 30 days of the date of this decision and must set forth fully every ground upon which it is claimed that the decision complained of is unlawful or unreasonable. Only those grounds set forth in the notice of appeal can be considered by the Council.

Information about the Council, including a link to the Council's rules, is available at <http://nhec.nh.gov/> (or more directly at <http://nhec.nh.gov/water/index.htm>). Copies of the rules also are available from the NHDES Public Information Center at (603) 271-2975.

If you have questions regarding this Certification, please contact Gregg Comstock at (603) 271-2983 or Gregg.Comstock@des.nh.gov.



Thomas E. O'Donovan, R.E.
Director, NHDES Water Division

cc via email:

Fred Welch, Manager, Town of Hampton
William Manzi, Manager, Town of Seabrook
Carol Henderson, NHFGD
Cheri Patterson, NHFGD
Meredith Collins, NHDNCR
Seth Prescott, NHDNCR, State Parks
Mark Kern, USEPA
Michael Johnson, NOAA

