NH Department of Transportation
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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 # 2014-404I-001

Activity Name	Sarah Mildred Long Bridge Replacement Project
Activity Location	Portsmouth NH
Affected Surface waters	Piscataqua River (AU # NHEST600031001-02-02) North Mill Pond (AU # NHEST600031001-10)
Owner/Applicant	State of New Hampshire Department of Transportation 7 Hazen Drive P.O. Box 483 Concord, NH 03302-0483
Appurtenant State permit(s) (and any amendments):	DES Wetlands Permit (File# 2014- 01053)
Applicable Federal permit(s):	Section 404 Individual Permit to be issued by the issued by the U.S. Army Corps of Engineers New England District (File # NAE 2013-1623) U.S. Coast Guard Bridge Permit # xxxx

A. INTRODUCTION

The State of New Hampshire, acting by the Department of Transportation (DOT) (Applicant), in cooperation with the State of Maine Department of Transportation (MEDOT) and the Federal Highway Administration (FHWA), proposes to replace the Sarah Mildred Long Bridge which carries U.S. Route 1 Bypass over North Mill Pond and

the Piscataqua River between Portsmouth, New Hampshire and Kittery, Maine. A more complete description of the Activity is provided in item D-1 of this Certification.

This 401 Water Quality Certification (401 WQC or Certification) documents laws, regulations, determinations and conditions related to the Activity for the attainment and maintenance of 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 (DES) has determined that there is reasonable assurance that construction and operation of the Activity will not violate surface water quality standards. DES hereby issues this Certification, subject to the conditions in Section E, in accordance with Section 401 of the United States Clean Water Act (33 U.S.C. 1341), 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. Section 401 further states, in part "Any certification provided under this section 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 any applicable effluent limitations and other limitations...and shall become a condition on any Federal license or permit subject to the provisions of this section."

C-3. 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-4. NH RSA 485-A:8 and Env-Wq 1700 (Surface Water Quality Regulations), 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.

C-5. Env-Wq 1701.02, entitled "Applicability", states that:

"(a) These rules shall apply to all surface waters.

(b) These rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters."

C-6. Env-Wq 1702.18 defines a discharge as:

"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-7. Env-Wq 1702.39 defines a pollutant as: "pollutant" as defined in 40 CFR 122.2. This 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-8. Env-Wq 1702.46 defines surface waters 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," and waters of the United States as defined in 40 CFR 122.2."

C-9. 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.

C-10. Env-Wq 1703.01 (c) states that "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."

C-11. Env-Wq 1703.14, entitled "Nutrients", states that

"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-12. Env-Wq 1703.19, entitled "Biological and Aquatic Community Integrity", states that

"a. The 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; and

b. Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function."

C-13. Env-Wq 1703.21 (a)(1) states that "Unless naturally occurring or allowed under part Env-Ws 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that injure or are inimical to plants, animals, humans or aquatic life."

C-14. Env-Wq 1703.07 through 1703.11 contain standards relative to dissolved oxygen, bacteria, benthic deposits, oil and grease, and turbidity.

C-15. Env-Wq 1702.06 states ""Best management practices" means those practices which 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-16. 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 TMDL. For these water quality-impaired waters, states must establish Total Maximum Daily Loads (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 2012 Section 303(d) List. A list of all impaired waters is available at http://www.des.state.nh.us/organization/divisions/water/wmb/swqa/2010/index.htm

C-17. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL[1] which addressed mercury impairments in all New Hampshire fresh surface waters.

C-18. 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 is prohibited in accordance with the following:

a. 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".
b. 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

1. 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 Stated 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.

water, or section of such water below the minimum requirements of the adopted classification".

C-19. Antidegradation provisions in the NH surface water quality regulations are included in Env-Wq 1702 and Env-Wq 1708.

C-20. 33 CFR 115, includes requirements for applying for a U.S. Coast Guard permit to construct or modify bridges crossing the navigable waters of the United States.

C-21. Section 404 of the Clean Water Act requires a U.S. Army Corps of Engineers (USACOE) permit for the discharge of dredged or fill material into navigable waters.

C-22. In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 USC 4332(2)(c)) as implemented at 23 CFR 771.117(d)(3), activities involving bridge replacement may be eligible for Categorical Exclusion (CE) provided documentation is submitted and approved by the Federal Highway Administration (FHWA) which demonstrates that the specific conditions or criteria for the CE is satisfied and that significant environmental effects will not result. 42 USC 4331 of the NEPA requires the responsible federal official for an Activity to consult with and obtain the comments of any federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved.

C-23. The FHWA must consult with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) in accordance with section 7 of the Endangered Species Act (ESA) of 1973.

C-24. The FHWA must consult with the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife Coordination Act (FWCA). Where Essential Fish Habitat (EFH) is involved, the process is guided by EFH regulation 50 CFR 600.920 which mandates preparation of EFH assessments and generally outlines each agency's obligation to consult.

C-25. RSA 482-A (Fill and Dredge in Wetlands) requires any person who excavates, removes, fills, dredges or constructs any structures in or on any bank, flat, marsh, or swamp in and adjacent to any waters of the state to obtain a wetlands permit from DES [RSA 482-A:3 I (a)].

C-26. Section 307 of the Coastal Zone Management Act (CZMA) requires an applicant for a federal license or permit to conduct an activity, in or outside of the coastal zone, affecting any land or water use or natural resource of the coastal zone for that state to obtain concurrence from the state that the proposed activity complies with the enforceable policies of the state's

approved management program and that such activity will be conducted in a manner consistent with the program. No license or permit shall be granted by the Federal Agency until the state has concurred or until, by the state's failure to act within the specified timeframe, concurrence is presumed.

C-27. The Applicant submitted an application for 401 Water Quality Certification to DES on May 20, 2014 which included project information, a copy of the Section 404 USACOE Individual Dredge or Fill Permit application as well as wetland impact and erosion control plans. On July 18, 2014, the Applicant supplemented the application with a revised plan that included the addition of a grassed swale on the bridge approach in New Hampshire to treat stormwater from the closed drainage system on the bridge prior to being discharged into North Mill Pond.

C-28. DES issued a draft certification for public comment from August 11, 2014 to September 11, 2014. No comments were received.

D. FINDINGS

D-1. The Applicant, in cooperation with the State of Maine Department of Transportation (MEDOT) and the Federal Highway Administration (FHWA), proposes to replace the Sarah Mildred Long Bridge which carries U.S. Route 1 Bypass over North Mill Pond and the Piscataqua River between Portsmouth, New Hampshire and Kittery, Maine. A more complete description of the proposed Activity including construction details is provided in Appendix A of this Certification.

D-2. The Applicant is responsible for the Activity, including construction and operation.

D-3. The named and unnamed fresh water and tidal rivers and streams, lakes and ponds, and wetlands in NH affected by the Activity, are surface waters under Env-Wq 1702.46. DES has assigned Assessment Unit (AU) identification numbers to many, but not all surface waters. Surface waters that do not have an AU number are still considered surface waters of the State in accordance with Env-Wq 1702.46 (see C-8). Surface waters that could be potentially affected by the Activity and their associated AU numbers (where available) include NHEST600031001-02-02 (Lower Piscataqua River South), NHEST6300031001-10 (North Mill Pond) and several unnamed wetlands.

D-4. 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 [2].

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2. 2012 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. July, 2013. NH Department of Environmental Services. NHDES-R-WD-12-2.

D-5. According to the 2012 list of impaired waters (see C-16), 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)
NHEST600031001-02-02	Estuary – Piscataqua River South	Estuarine Bioassesment, (AL) Mercury, PCB (FC) Enterococcus (PCR and SCR) Dioxin, Mercury, PCB (SFC)
NHEST600031001-10	North Mill Pond	Estuarine Bioassesment, (AL) Mercury, PCB (FC) Enterococcus (PCR and SCR) Dioxin, Mercury, PCB (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.		

As stated in section C-18 of this Certification, 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 is prohibited. That is, existing loadings must be held.

As indicated in D-16 below, the Activity is not expected to result in an increase in pollutants; consequently it is expected that the Activity will comply with statute and regulation cited in C-18 regarding no addition of pollutants causing or contributing to impairment.

D-6. Storm water runoff, including snowmelt, and groundwater flow to surface waters from within the area affected by the Activity during warm and cold-weather conditions are discharges under the definitions of Env-Wq 1702.18.

D-7. The Activity will result in a discharge and may cause the permanent alteration of, or temporary impacts to surface waters.

D-8. The Activity includes dredge and fill of jurisdictional wetlands in New Hampshire and therefore requires a DES Wetlands Permit under RSA 482-A. The Applicant has submitted a DES Wetlands Permit application and on August 13, 2014, the DES Wetlands Bureau held a public hearing. It is expected that a DES Wetlands Permit will be issued in the near future. This 401 Certification decision relies, in part, on an approved permit from the DES Wetlands Bureau for the potential construction-related impacts to jurisdictional wetlands. Through its processing and issuance, the DES wetlands permit will address the dredge and fill impacts to jurisdictional wetlands.

D-9. The Activity requires a federal U.S. Coast Guard (USCG) permit in accordance with 33 CFR 115. The USCG permit will address navigational issues associated with the Activity. The USCG provided public notice for the Activity from February 10, 2014 through March 12, 2014. It is expected that the USCG will issue a permit in the near future.

D-10. The Activity requires a federal U.S. Army Corps of Engineers (USACOE) individual permit under Section 404 of the Clean Water Act to dredge and fill wetlands. The USACOE issued a public notice for the Activity on May 13, 2014 and held a public hearing in Portsmouth, NH on June 30, 2014. The public comment period ended on July 14,2014. It is expected that the USACOE will issue a permit in the near future.

D-11. The Activity requires federal consistency review under Section 307 of the Coastal Zone Management Act (CZMA). In New Hampshire, the New Hampshire Coastal Program is responsible for finalizing all federal CZMA Section 307 decisions. In the near future it is expected that DES will conclude that the activity complies with the enforceable policies of New Hampshire's federally approved coastal management program.

D-12. The Activity requires Section 401 Water Quality Certifications from New Hampshire and Maine before the federal USCG and USACOE permits mentioned above can be issued (see D-9 and D-10).

D-13. On May 7, 2014, the Maine Department of Transportation (MEDOT) received a Permit-by-Rule (PBR) from the Maine Department of Environmental Protection (MEDEP) for the portion of the Activity in Maine. According to Chapter 305 of MEDEP regulations, a PBR satisfies Maine's 401 Water Quality Certification requirement.

D-14. The Applicant has submitted an application for 401 Water Quality Certification for work in New Hampshire (see C-27).

D-15. In accordance with the NEPA requirements (see C-22) the Applicant expects to complete a Categorical Exclusion document in the near future which will summarize the potential environmental effects of the Activity.

D-16. Increases in impervious area and use of the roadway and associated facilities can result in increased deposition of pollutants such as chlorides, sediments, nutrients (phosphorus and nitrogen), various metals (i.e, lead, zinc, etc), bacteria and petroleum aromatic hydrocarbons (PAHs). These pollutants can then be mobilized and transported from impervious surfaces to surface waters and can potentially cause or contribute to violations of surface water quality standards. According to the Applicant, the overall impervious area of the proposed bridge is less than the existing bridge, however, the approach on the New Hampshire side will involve a net increase of approximately 6,255 square feet of impervious area. To compensate for this, a grass treatment swale is proposed on the northeast side of the intersection of the US Route 1 Bypass

bypass and Albacore Connector Road to treat stormwater from the closed drainage system added at the approach prior to discharge to North Mill Pond. The contributing drainage area to the system is relatively small (approximately 0.2 acres). Based on the above, operation of the Activity is not expected to result in an increase in pollutant loadings. To help ensure that best management practices (BMPs) will always function as intended, development and implementation of a BMP inspection and maintenance plan for permanent stormwater BMPS (such as the grass swale), in accordance with current Alteration of Terrain regulations (Env-Wq 1500), should be required.

D-17. During construction, the disturbance of earth (including sediment), may temporarily increase turbidity levels in surface waters adjacent to and downstream from the area affected by the Activity. During construction, implementation, inspection and maintenance of erosion/sediment control measures can be imposed to manage turbidity. As described below, other permits include requirements to address erosion / sediment control to various degrees.

According to staff in the DES Wetlands Bureau, the DES Wetlands Permit will include conditions that require the Applicant to follow appropriate erosion control procedures. The wetlands permit will also require discharges from dewatering of work areas to be directed to sediment basins and to install and maintain appropriate turbidity controls.

In addition the Applicant must comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) the purpose of which is to minimize the discharge of stormwater pollutants from construction activity and to comply with state surface water quality standards. Among other requirements, the CGP includes general requirements for erosion and sediment control, inspection and maintenance of erosion control measures as well as reporting of inspection results. Further, the CGP prohibits discharge of dewatering practices unless such waters are uncontaminated and non-turbid and are first effectively managed by appropriate controls, such as, sediment basins, sediment socks, dewatering tanks, tube settlers, weir tanks, or bag or sand filters. The CGP also includes a requirement to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) wherein the permittee must provide (among other things) project specific information on erosion control measures that will be implemented and maintenance of inspection records. According to the CGP the SWPPP must be made available to DES upon request.

If there are any contaminated discharges resulting from the construction activity, the applicant must comply with the NPDES Remediation General Permit.

The construction details provided in 401 Certification application and in Appendix A of this Certification lacks specifics in some areas. For example, in several locations, it is stated that clean water will be discharged into the river

but protocols for determining how it will be determined that a water is clean are lacking. A turbidity and pH monitoring plan should be provided to address this issue. An excavated material disposal plan should also be required to clarify when and where excavated material (i.e., sediment, debris, etc.) is proposed to be disposed of in surface waters. Finally, the Applicant stated that if blasting is required for deepwater piers 16, 17 and 18, a detailed blasting plan that includes measures to protect endangered species will be provided prior to construction (see Appendix A, Bridge Removal section).

D-18. The fishery agencies have reviewed the proposed Activity.

With regards to threatened and endangered species listed under the Endangered Species Act (ESA) of 1973 (as amended), the shortnose sturgeon and the Gulf of Maine Distinct Population Segment of Atlantic sturgeon occur in the area of the proposed Activity. In accordance with Section 7 of the ESA, the FHWA consulted with the NMFS (see C-23). In a letter dated July 28, 2014 from the NMFS to the FHWA, the NMFS concluded that the proposed Activity, as described in their letters of July 28, 2014 and September 5, 2013, is not likely to adversely effect these species.

The FHWA has conducted an assessment of Essential Fish Habitat (EFH) and has consulted with the NMFS in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the Fish and Wildlife Coordination Act (FWCA) and 50 CFR 600.920 (see C-24). On June 25, 2014, the NMFS submitted a letter to the FHWA that included the following seven EFH conservation recommendations (paraphrased).

1. Temporary bridge trestles should be utilized in lieu of temporary access roads (i.e.,causeways) in North Mill Pond to minimize the loss of fish habitats and access to upstream habitat during construction.

2. To protect spawning winter flounder and migrating diadromous fish, pile driving activities with impact or vibratory hammers in North Mill Pond should not take place between March 15 and July 30 of any given year.

3. The excavation of the rubble pile within the Piscataqua River northwest of the existing bridge should not take place between March 15 and July 30 of any given year.

4. Dredging associated with the Pease Development Authority Division of Ports and Harbors wharf (future project) should not be conducted during the dredge window from November 15 through March 15.

5. If removal of rock ledge by underwater blasting is required a blasting plan, including measures to minimize and avoid impacts to

living marine resources, should be developed and submitted to the NMFS for comments.

6. All existing bridge piers, abutments and other structures in subtidal and intertidal habitats of North Mill Pond should be removed upon completion of the project, and the habitats and bottom elevations should be restored to the surrounding bottom conditions.

7. Compensatory mitigation should be provided for all permanent subtidal and intertidal impacts as well as temporary impacts associated with proposed access roads. A detailed compensatory mitigation plan should be submitted to NMFS for review and comment. The plan should include a monitoring program, performance measures to evaluate success and a contingency plan should the mitigation not meet success criteria.

In a letter dated July 7, 2014, the FHWA responded and agreed to conservation recommendations (CR) # 2 through 6 above. CR #1 was determined not to be economically feasible in North Mill Pond. With regards to mitigation (CR #7), the FHWA proposed a mitigation package that included in-lieu fees to mitigate temporary impacts to wetlands, pre and post (3 year) construction monitoring by the University of New Hampshire to ensure that areas impacted by the causeway in the areas of North Mill Pond are restored back to pre-construction condition and development of a contingency plan. It is expected that agreement will be reached on the mitigation plan in the near future.

In a July 16, 2014 email to the DES, the New Hampshire Fish and Game Department (NHFG) indicated that the Activity, as proposed at that time, is acceptable.

D-19. Since the project is not expected to result in any significant change in pollutant loading (see D-16D-16), and the impacts from construction related discharges to New Hampshire surface waters are expected to be minimal, assuming proper controls are in place and maintained (see D-17), the Activity is expected to comply with the antidegradation provisions of the NH surface water quality regulations (Env-Wq 1708).

E. WATER QUALITY CERTIFICATION CONDITIONS

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

E-1. The Activity shall not cause or contribute to a violation of surface water quality standards. DES may modify this 401 Certification to include additional conditions to ensure the Activity complies with surface water quality standards, when authorized by law, and after notice and opportunity for hearing, should DES determine that the Activity is causing or contributing to surface water quality standards being violated.

E-2. The Applicant shall allow DES to inspect the Activity and its effects on affected surface waters at any time to monitor compliance with the conditions of this 401 Certification.

E-3. The Applicant shall consult with DES regarding any proposed modifications to the Activity, including construction or operation, to determine whether this 401 Certification requires modification in the future.

E-4. The Applicant shall comply with the conditions of DES Wetlands Bureau Permit # 2014- 01053, including any amendments and shall comply with DES wetlands rules and regulations. The conditions shall become conditions of this 401 Certification upon issuance of this 401 Certification.

E-5. The Applicant shall comply with the USCG permit issued for this Activity.

E-6. The Applicant shall comply with recommendations of the NHFGD and with the results of final consultations with the NMFS with regards to Endangered Species Act (ESA) and Essential Fish Habitat (EFH).

E-7. To ensure the long-term effectiveness of the permanent stormwater treatment sytem (i.e., the grass treatment swale) treating drainage from the bridge approach in New Hampshire, a BMP inspection and maintenance (I & M) plan which is substantially equivalent to the requirements in the Alteration of Terrain regulations (Env-Wq 1507.08 with the exception of Env-Wq 1507.08(b)(5)) shall be developed and implemented. Records of inspection and maintenance shall be maintained and made available to DES upon request.

E-8. The Applicant shall prepare and implement a Storm Water Pollution Prevention Plan (SWPPP or plan) and file a Notice of Intent for coverage as required under the EPA National Pollutant Discharge Elimination System (NPDES) Construction General Permit. If requested by DES, the Applicant shall submit the SWPPP to DES for approval.

E-9. Construction shall comply with the plans and information submitted with the application for this Certification and with the construction details in Appendix A of this Certification.

E-10. The Applicant shall properly dispose of all material removed from surface waters (i.e., sediment, debris, etc.). If excavated material is proposed to be discharged into surface waters, the Applicant shall submit an Excavated Material Disposal Plan to DES for approval at least 30 days prior to disposal and then implement the DES approved plan. The plan shall identify the location, quality and quantity of the dredged material and the proposed location and method of disposal into the surface water.

E-11. The Applicant shall submit a turbidity and pH monitoring plan for determining when water associated with construction dewatering activities can be discharged to surface waters and when the turbidity curtains around the temporary

causeways can be removed without causing violations of surface water quality standards. The plan shall include, but not be limited to, the location and frequency of monitoring, how turbidity and pH will be determined, the range and accuracy of field monitoring equipment, quality assurance/quality control provisions, and example data collection sheets. The plan shall be submitted to DES for approval at least 30 days prior to construction. The Applicant shall then implement the approved plan.

E-12. If blasting is required for deepwater piers 16, 17 and 18, a detailed blasting plan that includes measures to protect endangered species will be submitted to DES, NHFG and NMFS for approval at least 30 days prior to construction (see Appendix A, Bridge Removal). The Applicant shall then implement the approved plan.

E-13. If applicable, the Applicant shall comply with the NPDES Remediation General Permit.

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 DES Public Information Center at (603) 271-2975.

If you have questions regarding this Certification, please contact Owen David at (603) 271-0699 or Owen.David@des.nh.gov

Eugene J. Forbes, P.E.
Director, DES Water Division

cc:
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Chris Williams, NHDES Coastal Program, Federal Consistency Coordinator

Appendix A
Activity Description

General Description

The State of New Hampshire, in cooperation with the State of Maine, and the Federal Highway Administration (FHWA) proposes to replace the Sarah Mildred Long Bridge (US Route 1 Bypass) connecting Portsmouth, New Hampshire to Kittery, Maine (see Figure 1 and Figure 2). Construction is scheduled to begin in November 2014 and be completed in August 2018.

The project involves construction of a new 2,631 foot two level bridge (road and rail) over the Piscataqua River with a major lift span system and 1,554 feet of approaches. To facilitate construction and demolition of the existing bridge, construction of temporary causeways, in some locations, and temporary trestles in other locations are proposed (see Figure 2). Temporary causeways will be constructed of washed riprap placed on a geotextile fabric. Temporary trestles will be constructed on driven pilings.

The new bridge will be constructed on both drilled shafts and spread footing piers (piers PV1, PV2, and PV3 in New Hampshire) and will also include a railroad connection. The fender protection system around the piers is proposed to be a cell filled cofferdam supported on pilings (see Figure 2).

The existing bridge and abutment will be removed and the existing piers are proposed to be removed to various depths depending on their location. As shown on Figure 2, the project also involves removal of approximately 12,644 square feet of the Pease Development Authority Division of Ports and Harbors' (PDADPH) barge wharf, removal and reconstruction of the PDADPH small boat launch, removal of a debris pile near the New Hampshire lift tower (P17), and installation of a pair of submarine cables between the two lift towers. Additional construction details are provided below.

Bridge Construction

In New Hampshire, the proposed bridge will be constructed on piers supported by spread footings for piers PV1,PV2, and PV3, and drilled shafts for PR4, PS5, PR6, PS7, PR8, and for the lift tower (PT9) (see Figure 2). All construction will use appropriate erosion and turbidity controls. Dredge and drilled shaft spoils will be disposed of out of wetland jurisdiction. The vehicular bridge will extend from a bridge abutment on the western end that will be constructed within the tidal buffer zone, but above the highest observable tide line.

Spread Footing and Bridge Abutment Pier Construction

Piers PV1, PV2, and PV3 will be constructed as follows:

1. Install cofferdam frame supported by approximately 4 H-piles installed by a vibratory hammer.
2. Install sheet piles with vibratory hammer around the cofferdam frame to form a closed box.
3. Once sheet pile cofferdam is closed, Maine DOT biologist will check the cofferdam for entrapped fish.
4. Contractor will excavate streambed material within the cofferdam with a clamshell bucket.
5. Spoil will be handled as dredge and disposed of as allowed by permits.
6. A second cofferdam frame will be installed inside the sheet pile cofferdam to add stability as the excavation nears the ledge surface.
7. When the clamshell bucket has reached bedrock, the rock surface will be cleaned with the use of an airlift.
8. Spoils from the airlift will be collected, and water from the airlift will be directed to a sedimentation basin as required.
9. When the bedrock surface is clean, concrete will be placed underwater by tremie (underwater pipe) to seal the bottom of the cofferdam against the bedrock surface.
10. When the concrete is cured, dewatering of the cofferdam will begin.
11. Clean water within 1 pH unit may be pumped directly back into the receiving waters.
12. Slurry laden water that has settled down to the top of the concrete seal will be pumped to a sedimentation basin.
13. Once the cofferdam is dewatered, the remaining slurry and laitance on top of the seal is removed.
14. The sheet piles are not water tight so maintenance pumping is required to keep the cofferdam dewatered. This water is typically clean and is pumped directly back to the river.
15. With a dewatered cofferdam, the contractor will form and place a reinforced concrete footing and columns directly bearing on top of the concrete seal.
16. When the pier is complete, the cofferdam is backfilled with original streambed material up to the original ground elevation.
17. Sheet piles are then extracted with a vibratory hammer.

Drilled Shaft Construction

The remaining piers and the lift tower foundation will be constructed as follows:

1. Install drill platform.
2. Install drilled shaft template, supported by the drill platform. The template is an oversized pipe approximately 12 feet long used to guide shaft casing into the correct location.
3. Perform 2-inch rock core verification within casing to verify competent rock to set drilled shaft casing.
4. Install casing with rock teeth attached through template to bottom with assist crane.

5. Move drill rig over top of casing to screw the drilled shaft casing into the rock 1 foot (+/-) to create a seal.
6. Set up spoil containment on trestle and/or barge for excavation of overburden in casing. The containment will include weirs in order to allow sedimentation of solids and control of water.
7. Excavate overburden with service crane.
8. Set reverse circulation drill to drill rock socket.
9. Drill rock socket; rock drillings and water will be controlled by piping into containment on trestle and or on barge.
10. Clean water will be removed from spoils and deposited into river.
11. Set rebar cage into casing.
12. Install concrete tremie pipe to the bottom of the casing and pump concrete in the wet. The displaced water from the concrete will be pumped into containment.
13. The top of the concrete placement will be 2 feet above elevation, and then removed by a vacuum truck and disposed of out of wetland jurisdiction.

Causeway Construction

A 170-foot long causeway is proposed to be constructed from Market Street west into North Mill Pond. North Mill Pond is a tidal mudflat, and as such, is a Special Aquatic Site (SAS) under the Clean Water Act. Under the New Hampshire's Programmatic General Permit with the U.S. Army Corps of Engineers (USACOE), any impact to an SAS (temporary or permanent) requires an Individual Permit from the USACOE. In addition to the large causeway at North Mill Pond, there will be five other short causeways in other New Hampshire locations to provide access to temporary trestles and to barges for construction and demolition. These extend from Market Street (impacts UU, W) and from the Pan-Am Railroad track (ZZ, V, XX). Construction of the causeways will proceed as follows:

1. Prior to the placement of any causeway fill for the construction access, a silt boom will be installed to encompass the perimeter of the proposed fill areas. Causeway fill will consist of 10- inch minus blasted ledge, that will be run (i.e., washed) through a screener to remove any excess dirt and silt.
2. The placement of the causeway ledge fill will occur during low tide, working towards the river channel as the tide lowers. The washed fill will be placed on a geotextile fabric. As the tide rises, fill will be placed working away from the rising tide. The filling operation will be done in lifts as the tide elevations allow.
3. As the operation reaches the area at the North Mill Pond where the double 8-foot by 8-foot box culverts are to be installed, a 12-inch lift of stone will be placed at the bottom of the culvert.
4. The culvert sections will be installed using the on-site crane, and stone aprons will be constructed at the inlet and outlet openings.
5. Removal of the causeway fill will be done using a similar procedure to the installation. The stone fill will be removed in lifts working away from the tide elevations.

6. Once the stone and geotextile fabric has been removed, the silt boom will remain in place for a number of days to allow any materials to settle. The silt booms will then be removed at the direction of the resident engineer.

Bridge Removal

Following the completion of the new bridge construction, the existing Sarah Mildred Long Bridge will be removed. Removal of the existing bridge will involve the removal or partial removal of 14 bridge piers, the bridge tower, and the bridge abutment. Pier removal will be done primarily with an excavator mounted hydraulic hammer (hoe-ram) and the use of a drop ball and splitting wedge. This equipment may not be effective for deepwater work. Deepwater piers (16, 17, 18) are expected to require drilling and blasting. For both methods, the concrete elements will be broken into smaller pieces and then removed with a crane and clamshell bucket. A more detailed blasting plan including measures to protect endangered species will be provided prior to construction. A five-foot temporary wetland impact envelope for pier removal has been included around P1-P9, P-122, and P13. A 10-foot temporary wetland impact envelope is included around P16 and P17. In some locations, where piers and footings are removed entirely and the streambed will be restored to its prior condition.

Barge Wharf Removal

The proposed bridge alignment impacts the PDADPH facility by crossing a portion of the barge wharf. To accommodate the new rail alignment, approximately half (72,644 square feet) of the existing barge wharf will be removed. Concrete pilings under the wharf will also be removed.

Boat Ramp

The PDADPH has a small boat launch for use by the Portsmouth Harbor Master and the PDADPH. The boat ramp lies within the path of the proposed rail alignment and Pier PV3. The boat ramp will be removed and a new boat ramp will be constructed next to the proposed railroad abutment.

Debris Removal

An existing pile of debris in front of the New Hampshire lift tower (P17) will be removed and placed out of jurisdiction. The pile would obstruct the new navigational channel following the construction of the bridge. All material above elevation -50 will be removed with a clamshell bucket and placed out of jurisdiction.

Submarine Cables

Two sets of redundant electrical cables are proposed to run between the two towers. Installation of the cables will require excavation to bury the cables to an appropriate depth in accordance with US Coast Guard requirements. The submarine cables will be covered with an articulated concrete block mat that will remain in place permanently.

The mats consist of concrete blocks measuring 8 x 20 feet each, connected by cables. Mats will be placed end to end over the cables from one tower to the other. Other options for powering the lift tower were considered, such as overhead cables or powering each side independently. However, because of logistics and the difficulty of maintaining consistent power from two sources, installation of submarine cables was found to be the only practicable alternative.

Figure 1. Project Location

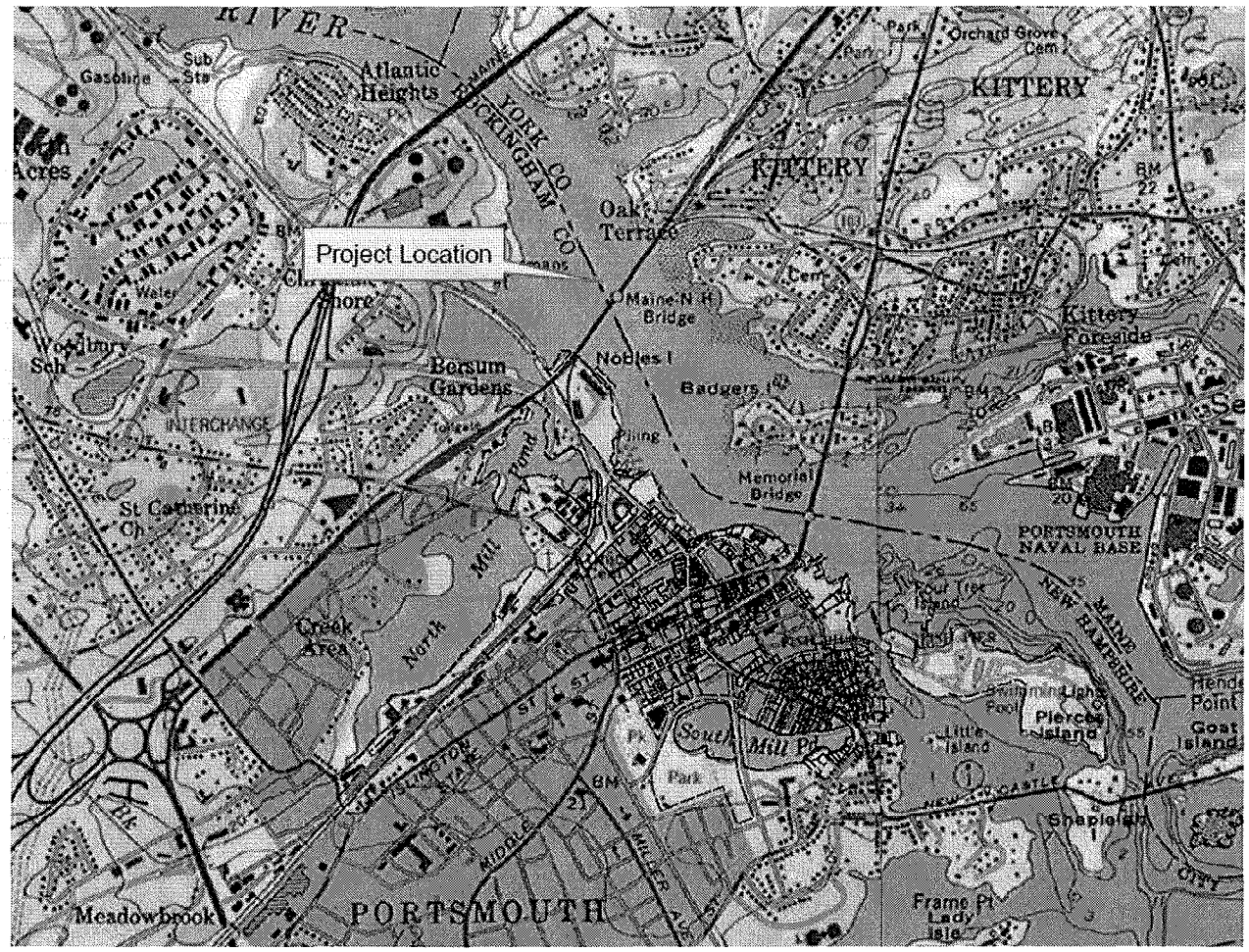

Figure 2. Wetland Impact Plan