NH Department of Transportation
Charles Hood, Administrator
Bureau of Environment
7 Hazen Drive
P.O. Box 483
Concord, NH 03302-0483

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 # 2012-USCG-001

Activity Name	Portsmouth Kittery Memorial Bridge Replacement Project
Activity Location	Portsmouth NH
Affected Surface waters	Piscataqua River
Owner/Applicant	State of New Hampshire Department of Transportation 7 Hazen Drive P.O. Box 483 Concord, NH 03302-0483
Appurtenant permit(s):	U.S. Coast Guard Bridge Permit Wetlands Bureau Permit No. 2011-01646
DATE OF APPROVAL (subject to Conditions below)	April 16, 2012

A. INTRODUCTION

The State of New Hampshire, acting by the Department of Transportation (DOT) (Applicant), proposes to replace the Memorial Bridge which carries U.S. Route 1 over the Piscataqua River between Portsmouth, New Hampshire and Kittery, Maine (Activity). A more complete description of the Activity is provided in item D-1 of this Certification.

This 401 Water Quality Certification (401 WQC) 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 findings and conditions noted below, the New Hampshire Department of Environmental Services (DES) has determined that any discharge associated with the Activity will not violate surface water quality standards, or

cause additional degradation in surface waters not presently meeting water quality standards. DES hereby issues this 401 WQC subject to the conditions defined in Section E of this 401 Certification, in accordance with Section 401 of the United States Clean Water Act (33 U.S.C. 1341) and NH 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 2010 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 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. The Activity reviewed for this 401 Certification requires a federal U.S. Coast Guard permit in accordance with 33 CFR 115.50. The U.S. Coast Guard provided public notice for the Activity from December 21, 2011 through January 23, 2012.

C-21. Per correspondence from the U.S. Army Corps of Engineers dated December 15, 2011, a federal Section 404 permit is not applicable for Activity in New Hampshire since there will be no discharge of dredged or fill material l (other than that which is incidental to the dredging operation) in New Hampshire surface waters.

C-22. The Applicant is responsible for the Activity, including construction and operation

C-23. According to the public notice issued by the U.S. Coast Guard (C-20) a 401 Water Quality Certification for the work associated with the Activity in Maine waters, has been issued by the State of Maine Department of Environmental Protection (MDEP).

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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.

C-24. The Applicant submitted an application for 401 Certification to DES on March 12, 2012.

C-25. In accordance with the National Environmental Policy Act of 1969 (42 USC 4332(2)(c)) as implemented at 23 CFR 771.117(d)(3), DOT completed a Categorical Exclusion[2] for the Activity in March 2011 which assesses the engineering considerations and environmental effect of the Activity.

C-26. On September 23, 2011 the DES Wetlands Bureau issued Wetlands Permit #2011-01646 for alterations or impacts to jurisdictional wetlands associated with the Activity. On January 13, 2012, DOT sent an inter-department memorandum to the DES Wetlands Bureau advising them that the Activity is expected to impact less wetlands than approved in wetlands permit #2011-01646.

C-27. On November 14, 2011, the DES Federal Consistency Coordinator issued a letter to DOT stating that the activity complies with the enforceable policies of New Hampshire's federally approved coastal management program.

C-28. DES issued a draft certification for public comment from March 23, 2012 to April 14, 2012. No comments were received.

D. FINDINGS

D-1. The Activity reviewed for this 401 Certification is the replacement of the Scott Avenue Bridge (Bridge No. 246/083, the Portsmouth, NH approach), the Memorial Bridge (Bridge No. 247/084) over the Piscataqua River, and the Kittery, ME Approach Spans (Bridge No. 5276). All three structures are on US Route 1, a principal urban arterial connecting Portsmouth's business district in New Hampshire with Badger's Island in the Town of Kittery, Maine. The NH/ME state border runs along the approximate middle of the Piscataqua River. The Activity is being undertaken by the New Hampshire Department of Transportation (DOT), in cooperation with the Federal Highway Administration (FHWA) and the Maine Department of Transportation (MaineDOT). The three separate structures carry US Route 1 a distance of approximately 0.25 miles. The Memorial Bridge is jointly owned by the NHDOT and MaineDOT, and the Scott Avenue Bridge is owned and maintained by the City of Portsmouth. MaineDOT owns and maintains the Kittery Approach Spans.

The application for Certification includes further details regarding the method and timing of each phase of construction. The Activity has been contracted out as a "design-build" project. Deconstruction of the bridge began in July 2011. The project is scheduled to be open to traffic in July, 2013 and completed by October, 2013.

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2 STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION. Memorial Bridge (US Route 1) Replacement Project, Portsmouth, NH-Kittery, ME, A000(911), 13678F, CATEGORICAL EXCLUSION. March 2011.

The Activity is essentially being built along the same alignment as the existing bridge and will include the same number of travel lanes. The existing travel lanes and shoulder on the Memorial Bridge will be slightly increased from the existing 28 feet to 32 feet to accommodate one 11 foot travel lane and a 5 foot shoulder bike lane in each direction.

There are 4 existing piers supporting the Memorial Bridge. Piers 1 and 2 are in NH and Piers 3 and 4 are in Maine. Pier 1 is located on dry land in Portsmouth and Pier 2, 3 and 4 are in the Piscataqua River. Piers 1 through 4 will be left in place but enhanced to support the new structure. That is from the beginning of March, continuing through the beginning of May, concrete pier caps, on Piers 1 through 4 would be removed to a point approximately two feet above the granite facing of the piers (which is above the mean high water level). Micro-piles would be drilled into the existing piers to increase their strength, allowing them to be retained as supports for the new bridge. With a drill rig sitting on top of each pier, drilling of micro-piles would begin in April 2012, and conclude in June 2012. Micro-piles are proposed to be 12.75" in diameter, with a steel casing. Piers 1 and 4 are proposed to have 14 micropiles each, while piers 2 and 3 will have 18 each. Spoils from the drilling operation would be contained, pumped to settling tanks on barges, and then discharged per permit requirements to acceptable facilities. The existing piers would be used essentially as cofferdams, protecting the water and environment from the drilling process. The sequence of drilling micro-piles would begin on Piers 1 and 2, with only one in-water pier being drilled at any given time. Following pier enhancement, the superstructure of the bridge would be installed from December 2012 to July 2013.

The New Hampshire approach to the Memorial Bridge includes complete replacement of the existing five-span Scott Avenue Bridge in Portsmouth with a twospan structure. The existing bridge is 120 feet in length and is curved. The roadway on the bridge would vary in width from 32 feet curb to curb (two 11-foot travel lanes and 5-foot shoulder/bike lanes) at the north end to 47 feet at the south end, where the road approaches and diverges at Memorial Park. The road continues on either side of the park as Scott Avenue (US Route 1 southbound) and Dutton Avenue (US Route 1 northbound). The width of the sidewalks on either side of the overpassing Memorial Bridge approaches would remain at 6 feet, and the steel grating would be replaced with solid decking. The underpassing roadway would incorporate two 12-foot travel lanes with two 4-foot shoulders. A new stormwater treatment unit will be installed to treat stormwater from the area prior to discharge to the Piscataqua River.

The Kittery approach (in Maine) involves demolition and reconstruction of the Kittery approach span. Demolition is expected to begin in April – May 2012. As previously mentioned, Piers 3 and 4 of the Memorial Bridge and the Kittery approach are in Maine waters.

D-2. The portion of the Activity in New Hampshire requires a New Hampshire certification under Section 401 of the federal Clean Water Act and RSA 485-A:12, III. The portion of the Activity in Maine is covered by the 401 Water Quality Certification issued by the State of Maine (see C-23).

D-3. The Activity will result in a discharge and may cause the permanent alteration of, or temporary impacts to surface waters.

D-4. 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-5. The Activity includes dredge and fill of wetlands. The 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-6. 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 section C-8 of this Certification). 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) and several unnamed wetlands.

D-7. 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 [3].

D-8. 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 water quality certification application submitted by the Applicant, the Activity does not involve any significant changes in flow or impervious area and the number of travel lanes (i.e. the use) is remaining the same. Further, a new stormwater treatment unit will be installed which will provide additional treatment to stormwater from the

3. 2010 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology. February 2010. NH Department of Environmental Services. NHDES- R-WD-10-3.

Scott Avenue Bridge area. Based on the above, operation of the Activity is not expected to result in an increase in pollutant loadings.

D-9. Since the project is not expected to result in any significant change in flow or pollutant loading (see D-8), and the impacts from construction related discharges to NH surface waters are expected to be minimal (see D-1) assuming proper controls are in place and maintained, the Activity is expected to comply with the antidegradation provisions of the NH surface water quality regulations (Env-Wq 1708).

D-10. According to the 2010 list of impaired waters (see section C-16 of this Certification), 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)
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-8 and D-8 above, 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-11. According to the public notice issued by the U.S. Coast Guard on December 21, 2011, the Federal Highway Administration has initiated Essential Fish Habitat (EFH) consultation requirements of the Magnusun-Stevens Fishery Conservation and Management Act. Their initial determination is that the proposed action would have an impact on EFH or federally managed fisheries in the northeast. The final determination relative to project impacts and the need for mitigation measures is subject to final review by and coordination with the National Marine Fisheries Service (NMFS). According to the application submitted for this 401 Certification, all work will be completed in accordance with discussions with the National Marine Services.

D-12. 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.

The DES Wetlands Permit #2011-01646, includes conditions that require the applicant to submit project specific erosion control plans that shall include details regarding temporary siltation, erosion and turbidity control measures that will be implemented. The wetlands permit also requires 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 stomwater 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. It also includes a requirement to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) wherein the permittee must provide (among many other things) project specifics on erosion control measures that will be implemented and maintenance of inspection records. According to the Applicant, the plan will also include details regarding how marine sediment disturbance will be minimized, provisions for regular inspection and maintenance of protective measures and methods for disposal of dredged sediments and drain water. The CGP requires that the SWPPP 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.

D-13. 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, in accordance with current Alteration of Terrain regulations (Env-Wq 1500), can be required.

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 surface water quality standards are being violated as a result of the Activity.

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 No. 2011-01646, 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. To ensure the long-term effectiveness of the permanent stormwater treatment structure receiving drainage from the Scott Avenue Bridge area, 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-6. The Applicant shall prepare 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.

E-7. If applicable, the Applicant shall comply with the NPDES Remediation General Permit.

F. APPEAL

If you are aggrieved by this decision, you may appeal the decision to the Water Council. Any appeal must be filed within 30 days of the date of this decision, and must conform to the requirements of Env-Wq 200. Inquiries regarding appeal procedures should be directed to NHDES Council Appeals Clerk, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095; telephone (603) 271-6072.

If you have questions regarding this Certification, please contact Gregg Comstock at (603) 271-2983 or Owen David at (603) 271- 0699.

Harry T. Stewart
Director, DES Water Division

cc: Christopher Bisignano , U.S. Coast Guard
John Bohenko, City Manager, Portsmouth , NH