

New Hampshire Department of Transportation  
Victoria Chase  
Project Manager  
7 Hazen Drive  
Concord, NH 03301

## **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 and NH RSA 485-A:12, IV**

**WQC # 2016-404I-002**

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<b>Activity Name</b>	Widening and Reconstruction of New Hampshire Route 101 [Bedford X-A000(143),13953]
<b>Activity Location</b>	Bedford, New Hampshire
<b>Affected Surface waters</b>	Riddle Brook NHRIV700060905-18 Unnamed Brooks to Patten Brook NHRIV700060803-11 Bowman Brook NHRIV700060803-03 Unnamed wetlands
<b>Owner/Applicant</b>	New Hampshire Department of Transportation 7 Hazen Drive Concord, NH 03301
<b>Applicable Federal permit(s):</b>	U.S. Army Corps of Engineers Individual 404 Permit (NAE-2016-02210) (PENDING) New Hampshire Department of Environmental Services Wetlands Permit [File No. 2016-02893 (PENDING)]
<b>DATE OF APPROVAL</b> (subject to Conditions below)	February 28, 2017

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### **A. INTRODUCTION**

The New Hampshire Department of Transportation (Applicant) is proposing to widen and reconstruct NH Route 101 in the Town of Bedford from its intersection with Wallace Road easterly approximately 2 miles to its intersection with NH Route 114/ Boynton Street (Activity). 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 Guidance<sup>1</sup>, "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."<sup>2</sup>

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<sup>1</sup> *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.

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

- 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: IV states: "No activity that involves surface water withdrawal or diversion of surface water that requires registration under RSA 488:3, that does not otherwise require the certification required under paragraph III, and which was not in active operation as of the effective date of this paragraph, may commence unless the department certifies that the surface water withdrawal or diversion of surface water complies with state surface water quality standards applicable to the classification for the surface water body. The certification shall include any conditions on, modifications to, or monitoring of the proposed activity necessary to provide reasonable assurance that the proposed activity complies with applicable surface water quality standards."
- C-5. 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.
- C-6. 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-7. 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-8. 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-9. 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-10. 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-11. 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-12. 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-13. 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-14. 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-15. 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-16. 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-17. 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-18. 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-19. 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-20. 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-21. 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"<sup>3</sup>.
- C-22. 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;
    - 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-23. Env-Wq 1703.06 includes water quality criteria for bacteria.
- C-24. Env-Wq 1703.07 entitled "Dissolved Oxygen" states the following:
- "(a) Class A waters shall have a dissolved oxygen content of at least 75% saturation, based on a daily average, and an instantaneous minimum of at least 6 mg/l at any place or time except as naturally occurs.
  - (b) Except as naturally occurs, and subject to (c) and (e) below, class B waters shall have a dissolved oxygen content of:
    - (1) At least 75% of saturation, as specified in RSA 485-A:8,II, based on a daily average; and
    - (2) An instantaneous minimum dissolved oxygen concentration of at least 5 mg/L.

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<sup>3</sup> 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).

- (c) In areas identified by the New Hampshire fish and game department (NHF&G) as cold water fish spawning areas of species whose early life stages are buried in the gravel on the bed of the surface water, the 7 day mean dissolved oxygen concentration shall be at least 9.5 mg/l and the instantaneous minimum dissolved oxygen concentration shall be at least 8 mg/l for the period from October 1 of one year to May 14 of the next year, provided that the time period shall be extended to June 30 for a specific discharge to a specific waterbody if modeling done in consultation with the NHF&G determines the extended period is necessary to protect spring spawners or late hatches of fall spawners, or both.
- (d) Unless naturally occurring or subject to (a), above, surface waters within the top 25 percent of depth of thermally unstratified lakes, ponds, impoundments and reservoirs or within the epilimnion shall contain a dissolved oxygen content of at least 75 percent saturation, based on a daily average and an instantaneous minimum dissolved oxygen content of at least 5 mg/l. Unless naturally occurring, the dissolved oxygen content below those depths shall be consistent with that necessary to maintain and protect existing and designated uses."
- (e) As specified in RSA 485-A:8, III, waters in a temporary partial use area established under RSA 485- A:8, II as a surface water that is receiving a combined sewer overflow discharge shall contain not less than 5 parts per million of dissolved oxygen for the duration of the discharge and up to 3 days following cessation of the discharge.

C-25. 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-26. 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-27. 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-28. 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-29. 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-30. 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-31. 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-32. 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-33. 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-34. 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-35. 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-36. 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-37. 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-38. 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-39. 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-40. 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-41. 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-42. 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-43. 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-44. 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-45. 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-46. 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-47. 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-48. 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 2014 Section 303(d) List. A list of all impaired waters is available at

[http://www2.des.state.nh.us/WaterShed\\_SWQA/WaterShed\\_SWQA.aspx](http://www2.des.state.nh.us/WaterShed_SWQA/WaterShed_SWQA.aspx)

C-49. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL<sup>4</sup> which addressed mercury impairments in all New Hampshire fresh surface waters.

C-50. 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 waters<sup>5</sup>.

C-51. 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:

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-52. NHDES Alteration of Terrain regulations (Env-Wq 1500), effective January 1, 2009) include design criteria for stormwater best management practices (BMPs) as well as criteria for minimizing the hydrologic impacts of stormwater runoff both during and after construction. Further, BMP design details as well as guidance for preparing pollutant loading analyses using the "Simple Method" are provided in *The New Hampshire Stormwater Manual* (<http://des.nh.gov/organization/divisions/water/stormwater/manual.htm>).

C-53. On October 4, 2016, the Applicant submitted an application for a NHDES Wetlands Permit which was assigned the file number 2016-02893.

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<sup>4</sup> 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.

<sup>5</sup> 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.

- C-54. In April, 2015 the New Hampshire Department of Transportation completed an "Environmental Study/Final Section 4(f) Evaluation" for the proposed Activity.
- C-55. On August 19, 2016 the DES received an application for Section 401 Water Quality Certification for the Activity dated June 23, 2016.
- C-56. On November 1, 2016 the U.S. Army Corps of Engineers issued the draft individual section 404 permit (NAE-2016-02210) for public comment. The public comment period ended on December 1, 2016.
- C-57. DES issued a draft section 401 Water Quality Certification for public comment from January 18, 2017 to February 21, 2017. No comments were received.

#### 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 Activity includes: 1) the widening (i.e., an additional travel lane in each direction) and reconstruction of New Hampshire (NH) Route 101 in the Town of Bedford from its intersection with Wallace Road easterly approximately 2 miles to the intersection with NH Route 114/Boynnton Street; 2) construction of turn lanes, medians, and sidewalks, stormwater runoff treatment facilities and other associated infrastructure; and 3) operation of the proposed improvements. The Activity will increase the travel lane-miles from approximately 4.8 lane-miles to 8.0 lane-miles and increase the impervious area within the project area by approximately 33%. The Activity will impact a total of approximately 5.4 acres of wetlands of which approximately 4.1 acres will be permanent impacts. Construction is anticipated to begin in June, 2017 and be completed in November, 2019.
- 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-8) and are therefore subject to New Hampshire Surface Water Quality Standards (Env-Wq 1700 – see C-5). 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 still considered surface waters of the State in accordance with Env-Wq 1702.44 (see C-8). 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
NHRIV700060905-18	Riddle Brook
NHRIV700060803-11	Unnamed Brooks to Patten Brook
NHRIV700060803-03	Bowman Brook

- 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-16).
- D-6. Stormwater runoff during construction and/or operation of the Activity, including snowmelt runoff, and groundwater flow from within the area affected by the Activity, are discharges as defined in Env-Wq 1702.18 (see C-17). They are also discharges as applied under Section 401 of the Clean Water Act (see C-21). If not properly controlled, such discharges may cause the permanent alteration of, or temporary impacts to surface water quality, quantity, or both.
- D-7. The Activity requires an individual section 404 permit from the U.S. Army Corps of Engineers (see C-56). It is expected that the USACOE will issue a permit following issuance of the 401 Certification.
- D-8. Because the Activity may result in a discharge (see D-6) to navigable surface waters (see D-3) and requires a federal permit (see D-7), a section 401 Water Quality Certification is required in accordance with section 401 of the Clean Water Act (see C-1) and RSA 485-A:12, III (see C-3). 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. The Applicant submitted an application for a NHDES Wetlands Permit (see C-53). A NHDES Wetlands Permit is expected to be issued in the 2017.
- D-10. The Activity is not within the jurisdiction of the Designated Rivers Program created under RSA 483 (see C-41).
- D-11. The surface waters in the vicinity of the Activity are not Outstanding Resource Waters (see C-38).
- D-12. The Activity does not involve an interbasin transfer as defined in RSA 483:4 (see C-45)
- D-13. The Activity does not involve a "transfer" of water as defined in Env-Wq 1708.12 (a) (see C-40).
- D-14. On December 30, 2016, 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-42) or submittal of a Water Conservation Plan (see C-43 and C-44).

- D-15. If not properly controlled, the disturbance of earth during construction may temporarily increase turbidity levels in surface waters adjacent to and downstream from the area affected by the Activity, particularly during wet weather events, and may contribute to long-term sediment retention in and/or transport through the surface water adjacent to and downstream from the Activity site. According to the Applicant, appropriate erosion and sediment control measures will be employed during construction with details provided in the SWPPP (see D-16). The SWPPP will be prepared by the contractor and approved by the Applicant prior to construction. To ensure that erosion and sediment control measures are properly functioning the SWPPP will also include procedures for inspection and maintenance of the control measures. If necessary, NHDES can also require turbidity monitoring and sedimentation inspections to confirm that turbidity water quality criteria are met (see C-27) and that benthic sediment deposits (see C-11, C-12, C-22, and C-25) are in compliance with State surface water quality standards.
- D-16. The Applicant must comply with conditions in the federal National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)<sup>6</sup>. CGPs are typically reissued by the U.S. Environmental Protection Agency (EPA) every 5 years. The most recent CGP was issued in 2017 and became effective on February 16, 2017. Activities must comply with the CGP if they "[d]isturb 1 or more acres of land, or will disturb less than 1 acre of land but is part of a common plan of development or sale that will ultimately disturb 1 or more acres of land". The CGP covers construction related stormwater discharges (including stormwater runoff, snowmelt runoff and surface runoff and drainage) as well other discharges, including but not limited to, construction dewatering that has been treated by an appropriate control. The CGP requires development of a Stormwater Pollution Prevention Plan (SWPPP) that describes how the Activity will meet the requirements of the CGP. This includes identification of the stormwater team, a description of the nature of construction activities, emergency-related projects, identification of other site operators, the sequence and estimated dates of construction activities, a site map, identification of construction site pollutants and non-stormwater discharges, buffer documentation, a description of stormwater control measures, pollution prevention procedures, procedures for inspection, maintenance and corrective action, staff training, documentation of compliance with other federal requirements, SWPPP Certification and Post-Authorization Additions to the SWPPP. According to the CGP the SWPPP must be made available to NHDES upon request.

With regards to inspection of construction BMPs, the Applicant has advised that the Contractor and Contract Administer will be on-site every day and that the Contractor's Environmental Consultant and the Applicant's Environmental Coordinator will be on site to complete the weekly and storm inspections.

- D-17. According to the 2014 305(b)/303(d) lists of impaired waters (see C-48), the following surface waters in the vicinity of the proposed Activity are listed as

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<sup>6</sup>The 2017 Construction General Permit is available at <https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents>.

the allowable load and reductions (by source) necessary to meet the allowable load. For waters with an approved TMDL, pollutant reductions per the TMDL are required. For pollutants causing an impairment without a TMDL, loadings of the pollutant causing impairment must be held such that there are no increased loadings until such time as a TMDL is prepared.

For all other pollutants (i.e., those not known to be causing impairment) which are likely to be discharged from the Activity, Applicants can either hold existing loadings (i.e., no degradation), or request to degrade the water in accordance with the antidegradation provisions of Env-Wq 1700. To demonstrate no additional loading for pollutants which can be removed by structural BMPs, NHDES allows Applicant's to submit loading analyses in accordance with guidance included in the NHDES Stormwater Manual (see section C-52 of this Certification). The guidance allows use of the "Simple Method" for calculating loads before and after construction. At this time, DES uses total suspended solids (TSS), total nitrogen (TN) and total phosphorus (TP) as surrogates for all other parameters. That is, if the loadings for TSS, TN and TP are held to pre-construction levels, it is assumed that loadings of all other parameters which can be removed by structural BMPs, are held as well. The pollutant loading guidance also assumes that all permanent stormwater practices (i.e., best management practices or BMPs) referenced in the loading analysis are designed and maintained in accordance with current Alteration of Terrain regulations (Env-Wq 1500). The 401 WQC application submitted by the Applicant included a pollutant loading analysis. The analysis concluded that the Activity, which includes four proposed permanent stormwater BMPs (two wet extended detention ponds and two micropool extended detention basins) to treat the stormwater, is expected to result in an overall reduction in pollutant loading to each of the three brooks as compared to existing conditions. On January 5, 2017, the Applicant confirmed that the four proposed permanent stormwater BMPs have been designed in accordance with Env-Wq 1500 and guidelines provided in the NHDES Stormwater Manual (see section C-52 of this Certification).

Chlorides cannot be treated by structural BMPs because they are conservative and relatively untreatable substances that persist in the environment. De-icing chemicals containing chloride (i.e., road salt) are typically the primary source of chlorides in fresh surface waters. Because they cannot be treated by structural BMPs, chlorides cannot be addressed by typical loading analyses. In the 401 WQC application, it is stated that NHDOT "has and will continue to implement operational BMPs to reduce the amount of salt needed to maintain an acceptable level of service during the winter months." Submittal and implementation of a road salt minimization plan to reduce chloride to the maximum extent practicable can be required to address concerns associated with chloride.

- D-19. To help ensure that permanent stormwater best management practices (BMPs) will always function as intended, development and implementation of a permanent stormwater BMP inspection and maintenance plan can be required.
- D-20. Section C-37h and C-37i of this Certification includes excerpts from Env-Wq 1708.01 regarding antidegradation which state that "the department shall

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)
NHRIV700060905-18	Riddle Brook	<b>Mercury (FC)</b> pH (AL) <b>E.coli (PCR)</b>
NHRIV700060803-11	Unnamed Brooks to Patten Brook	<b>Mercury (FC)</b>
NHRIV700060803-03	Bowman Brook	<b>Mercury (FC)</b>
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. All fresh surface waters are impaired mercury due to elevated levels of mercury in fish tissue which has resulted in statewide fish consumption advisory.		

As stated in C-51 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. As noted above, all fresh surface water in New Hampshire are impaired for mercury due to concentrations found in fish tissue which have resulted in a statewide fish consumption advisory. On December 20, 2007, EPA approved the Northeast Regional Mercury TMDL which addressed mercury impairments in all New Hampshire fresh surface waters (see C-49). The primary source of mercury is atmospheric deposition from in-state and out-of-state emissions. The proposed Activity is not expected to have a significant impact on mercury levels in fish tissue. 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 waters (see C-50), which included the Riddle Brook assessment unit in the vicinity of the proposed Activity (NHRIV700060905-18). The proposed Activity is not expected to have a significant impact on bacteria levels in Riddle Brook.

D-18. The Activity includes the addition of approximately 2.5 acres of impervious area due to roadway widening. If not properly controlled, the increase in impervious area can cause violations of the antidegradation provisions of the surface water quality standards (see C-37) due to hydrologic alterations (i.e., increased flow) and/or increased deposition and eventual transport to surface waters of pollutants such as chlorides (from road salt), total suspended solids, various metals (i.e., lead, zinc, etc.), and petroleum aromatic hydrocarbons (PAHs). With regards to hydrologic alterations, the 401 WQC application provided by the Applicant includes a hydrologic analysis which concluded that the impact of the proposed Activity "...will have a negligible impact on the watersheds and tributaries identified throughout the corridor."

With regards to pollutants, as stated in C-51 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. Further, as stated in C-48 of this Certification, TMDLs must be conducted for any surface water listed on the Section 303(d) List. The TMDL includes source identification, determination of

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". In addition to being cost effective and reasonable, best management practices must be selected to ensure attainment of water quality standards in receiving waters as evidenced by the following:

- a. As stated in section C-10 of this Certification, "Best Management Practices" (BMPs) are defined in Env-Wq 1702.06 as "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*" (italics added).
- b. Env-Wq 1708 (b)(1) and (b)(2) (see section C-37h and C-37i of this Certification) which states "In allowing such degradation or lower water quality, the department shall assure water quality adequate to fully protect existing uses".

NHDES has determined that, if properly constructed and maintained, the temporary and permanent BMPs proposed for this Activity satisfy the above regulations.

#### **E. WATER QUALITY CERTIFICATION CONDITIONS**

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

- E-1. **Compliance with Certification Conditions:** The Applicant shall construct and operate the Activity to 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 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 including any changes to project operation or approved plans required by 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 associated with the Activity, and any amendments or reissuances including but not limited to the following:

- NHDES Wetlands Permit,
- U.S. Army Corps of Engineers Section 404 Permit,
- NPDES Construction General Permit (CGP).

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 as it relates to compliance with New Hampshire surface water quality standards shall apply.

E-8. **Stormwater Pollution Prevention Plan (SWPPP) and BMP Inspection Reports:** The Applicant shall provide a copy of the SWPPP and/or BMP construction BMP inspection reports required by the NPDES Construction General Permit (CGP) within 14 days of receiving a written request from NHDES.

E-9. **Mixing Zone/ Turbidity Monitoring and Reporting Plan:** Prior to construction, the Applicant shall submit to NHDES for approval, a mixing zone/turbidity monitoring and reporting plan. The Applicant shall then implement the approved plan. Turbidity monitoring shall be implemented if deemed necessary and when directed in writing by NHDES because it is suspected that construction activities could violate state surface water quality criteria such as turbidity and/or benthic deposits (see D-15). Mixing zones shall comply with Env-Wq 1707 (see C-33 through C-36) The plan shall show the extent of proposed mixing zones with supporting calculations as well as the location of proposed turbidity monitoring stations. The plan shall also include turbidity meter specifications (including accuracy), quality assurance/quality control provisions and sampling protocols. Turbidity Monitoring Reports shall be submitted to NHDES via email within 48 hours of completion of the event and shall include all water quality sampling results compiled in a table or spreadsheet. The reports shall also include a narrative description or summary which includes the dates of monitoring; names of persons who conducted the monitoring and prepared the report; predicted and actual precipitation amounts; start and end times of sampling; summary of sampling results including duplicates and blanks; time when meter was calibrated and calibration results; summary of any exceedances of the turbidity compliance criteria and thresholds and a summary of corrective actions, if needed. NHDES shall be notified via email of any non-compliances within 24 hours.

E-10. **Sediment Deposition Monitoring and Reporting:** Prior to construction, the Applicant shall submit a sediment deposition monitoring and reporting plan to NHDES for approval. The Applicant shall then implement the approved plan. The purpose of the plan is to determine if sediment deposition associated with construction of the Activity has or is likely to cause detrimental impacts to the

benthic communities. The plan shall include visual observations (and documentation) and photos of the channel/substrate of the affected surface waters downstream of the area of disturbance prior to construction, after construction and within 24 hours of at least one storm event predicted to result in 0.75 inches or more of precipitation in 24 hours. NHDES may require monitoring after more storm events if violations are suspected. Sediment Deposition Monitoring Reports shall be submitted via email within 30 days of when sediment monitoring is conducted and shall include a descriptive narrative and summary; dates of monitoring; names of persons who conducted the monitoring and prepared the report; any turbidity water quality samples pertinent to the report; a compiled table or spreadsheet of field measurements; photos with appropriate labels and a plan showing the location of where the photos were taken; and the field data form for recording benthic deposit observations.

**E-11. Road Salt Minimization Plan:** Within 90 days of the date of approval of this Certification, the Applicant shall prepare and submit a Road Salt Minimization Plan to NHDES for approval to minimize, to the maximum extent practicable, discharges of de-icing chemicals containing chloride (road salt) within the project corridor. As a minimum, the Road Salt Minimization Plan shall include the following:

- 1) A description of current NHDOT de-icing application practices and rates in the project corridor;
- 2) an evaluation of alternative measures and technologies including use of brine for pre-wetting salt and for anti-icing, and pervious pavement;
- 3) a schedule for implementation of salt reduction measures; and
- 4) a method for tracking and reporting progress in reducing salt usage that includes, but is not limited to, a log to document road salt use and application rates and documentation showing the relationship between salt usage and the winter severity index.

The Applicant shall then implement the approved plan.

**E-12. Permanent Stormwater BMP I & M Plan:** To ensure the long-term effectiveness of approved permanent stormwater best management practices (BMPs), the Applicant shall prepare a Permanent Stormwater BMP Inspection and Maintenance (I & M) plan. The plan shall include:

- 1) The names of the responsible party or parties who will implement the required reporting, inspection and maintenance activities;
- 2) the frequency of inspections;
- 3) an inspection checklist to be used during each inspection;
- 4) an I & M log to document each I & M activity;

- 5) a plan showing the locations of stormwater practices; and
- 6) actions to be taken if any invasive species begin to grow in the permanent stormwater BMPs.

The Applicant shall obtain NHDES approval of the I & M plan prior to operation of permanent stormwater practices. The Applicant shall then implement the approved plan. All record keeping required by the approved plan shall be maintained by the Applicant and made available to NHDES within 14 days of receiving a request from 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](mailto:Gregg.Comstock@des.nh.gov).



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

cc via email:

Michael Hicks, USACOE  
Bedford Town Council  
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Carol Henderson, NHFGD