



**US Army Corps
of Engineers®**
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

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FINAL PUBLIC NOTICE

REVOCATION OF THE 2015 GENERAL PERMITS FOR MASSACHUSETTS AND ISSUANCE OF NEW DEPARTMENT OF THE ARMY MASSACHUSETTS GENERAL PERMITS

The New England District, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, Massachusetts 01742-2751, has revoked the state-wide General Permits (GPs) for Massachusetts issued on February 4, 2015 and replaced them with new Massachusetts GPs. The February 2015 GPs were revoked on April 16, 2018 pursuant to the Corps regulations at 33 CFR 325.7(e). The new GPs were issued on April 16, 2018 pursuant to 33 CFR 320 - 332 (see 33 CFR 325.5(c)(1)). The new GPs will continue to authorize activities in waters of the U.S. within the boundaries of, and off the coast of the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands, that are subject to Corps jurisdiction pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research and Sanctuaries Act. You can view the new GPs at: www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts. They are also attached to this notice.

Background

The Corps published two public notices to announce the proposed actions and request comments on June 7, 2016 and September 15, 2017. The Corps is issuing new GPs and revoking the 2015 GPs in advance of their February 4, 2020 expiration date in order to improve the GPs by making them more user-friendly and result in less Regulatory burden for the regulated public and the Corps while maintaining the same level of protection for the aquatic environment and the public interest. The new GPs retain the function and utility of the existing GPs, continue the expedited review process for our Regulatory Program in Massachusetts, and will not result in significant substantive changes to how activities in waters of the U.S. are regulated in Massachusetts. The new GPs have an expiration date of April 5, 2023, which coincides with the expiration date of the 401 Water Quality Certification.

Activities authorized under the February 2015 GPs

The February 2015 GPs were revoked on April 16, 2018. As a result:

- For activities self-verified under the 2015 GPs, the Corps must have received the Self-Verification Notification Form no later than April 16, 2018, and these activities must commence (i.e., be under construction) or be under contract to commence before February 4, 2020. Permittees have until February 4, 2021 to complete the activity under the terms and conditions of the 2015 GPs. The permittee must be able to document to the Corps satisfaction that the project was under construction or under contract by the appropriate date.
- Activities that required a preconstruction notification (PCN) and were verified by the Corps in writing under the 2015 GPs must commence (i.e., be under construction) or be under contract to commence before February 4, 2020. Permittees have until February 4, 2021 to complete the activity under the terms and conditions of the 2015 GPs. The permittee must be able to document to the Corps satisfaction that the project was under construction or under contract by the appropriate date.

Noteworthy changes and clarifications

General:

1. The 2015 GPs were derived from the formerly proposed New England GPs. The New England GPs placed the GPs and general conditions at the front of the document, and state-specific terms and conditions in an appendix. The new GPs place terms and conditions unique to Massachusetts with the GPs and general conditions where appropriate.
2. Non-tidal SAS. Thresholds now exist in several GPs that require a PCN or individual permit (IP) for impacts to non-tidal SAS (consisting of riffle and pool complexes or vegetated shallows).
3. Temporary fill. Several GPs now authorize temporary fill, including unlimited fill for construction mats (see the references to Footnote 1), provided that impacts are avoided and minimized. Time limits for temporary fill were moved from GP 14 to General Condition 14(a).
4. Endangered species. Several GPs now provide limitations including time of year (TOY) restrictions for work in critical habitat for endangered species. See GPs 1, 5, 7, 11, 14, 19, 23, and GCs 10(b)(ii) and 11(d).
5. Time of year restrictions. See #4 above for TOY restrictions related to endangered species. Time of year restrictions not related to endangered species, but provided for other aquatic species, that are associated with: dredging are in GP 5; sedimentation and turbidity are in GCs 9 and 16(a); pile removal are in GC 11(c); and upstream fish passage are in GC 16(b).

Specific:

6. General Permit 1, Maintenance. All stream crossing work authorized under GP 1, except for minor repairs, requires a PCN or IP.
7. General Permit 2, Moorings. New or relocated moorings now require a PCN if they are placed within or impact tidal vegetated shallows (e.g., eelgrass). We clarified that a PCN is required if they are located within a Corps Federal navigation project (FNP) or the FNP buffer zone.

8. General Permit 3, Structures in Navigable Waters of the U.S. Shore outhauls now require a PCN.
9. General Permit 5, Dredging. The 2015 GPs required an IP for “Maintenance dredging with $>1/2$ acre of impacts to tidal SAS or intertidal areas”, but we increased this limit to “Maintenance or improvement dredging and/or disposal with >1 acre of impacts to SAS”. Improvement dredging of any area is now eligible under this GP with a PCN provided there are ≤ 1 acre of SAS impacts. Previously we treated improvement dredging the same as new dredging and it was subject to the new dredging limits.
10. General Permit 7, Bank and Shoreline Stabilization. These activities now require a PCN if they are located in tidal waters.
11. General Permits 8 – 10. Stream and wetland crossings are now eligible for authorization under GPs 8 - 10. The notes that that stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings. The 2015 GPs limited the authorization for stream crossings to GP 10 (and a narrow scope for maintenance under GP 1, which was narrowed further). Conditions for stream crossings are located throughout the General Conditions section including a new GC titled, “19. Stream and Wetland Crossings”.
12. General Permit 14, Temporary Construction, Access, and Dewatering. As mentioned above, several GPs now authorize temporary fill, including unlimited fill for construction mats provided that impacts are avoided and minimized. This GP authorizes this and other temporary activities. Time limits for temporary fill were moved from GP 14 to GC 14(a).
13. General Permit 22, Aquaculture. Several activities now require a PCN due to endangered species. Private sites >10 acres or municipal areas >25 acres now require an IP.
14. General Permit 23, Aquatic Habitat Restoration, Enhancement, and Establishment Activities. Cultch placement in SAS previously required a PCN. All cultch placement now requires a PCN.
15. Former General Permit 23, Previously Authorized Activities. We deleted this GP.
16. General Condition 10, Federal Threatened and Endangered Species. Per GC 10(b), non-Federal permittees must check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or designated critical habitat might be affected or if the activity is located in designated critical habitat. However, General Condition 10(b) now provides SV eligibility for certain activities that will not affect certain bird species. General Condition 10(c) now states, “Unless it is required elsewhere in this document, a PCN is not required if: (i) another (lead) Federal agency has completed all required §7 consultation; or (ii) a non-Federal representative designated by the Corps in writing has completed all required §7 informal consultation”.
17. General Condition 11, Pile Driving and Removal. A PCN is now required for the installation or removal of structures with jetting techniques, or the removal of >100 piles from January 15 to November 15. The PNC requirements for installing piles in GC 11(d) were changed.
18. General Condition 16, Soil Erosion and Sediment Controls. We added time of year restrictions and conditions that will help to reduce turbidity and sedimentation, protect upstream fish passage, and

protect winter flounder spawning and rearing habitat. We defined “greater than minimal turbidity and sedimentation”.

19. General Condition 23, Vernal Pools. We modified this condition.
20. General Condition 24, Coral Reefs. We added this condition to protect coral reefs.
21. General Condition 28, Stormwater Treatment or Detention Systems. Stormwater treatment or detention systems in waters of the U.S are currently not authorized under GP 8. This condition requires an IP for all GPs when these systems are located in waters of the U.S.
22. General Condition 29, Tide Gates. General Permit 10 in the 2015 GPs required an IP for new tide gates. This new GC ensures that an IP is required for all new tide gates conveying water between waters of the U.S. Tide gates on discharge pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S. may be authorized under GPs 1 and 9.
23. Section V, Self-Verification Notification Form. This form contains changes, including a requirement for project plans drawn to scale and not larger than 11” x 17”.
24. Section VI, Content of Pre-Construction Notification. We updated this form.
25. Section VII, Definitions and Acronyms. We updated definitions and added new definitions.
26. Section VIII, Contacts and Tribal Areas of Concern. We updated contacts and the area of concern for the Stockbridge-Munsee Mohican Tribe.
27. Section IX, Historic Property Notification Form. We updated this form.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The Corps has and continues to consult with NMFS on activities permitted under the GPs. For SV eligible activities, the Corps has been working with NMFS and expects to receive a statement of General Concurrence from NMFS in accordance with the requirements of 50 CFR 600.920(f) upon issuance of these GPs as the Corps has determined that activities authorized under the GPs in tidal waters and non-tidal diadromous streams will likely result in no more than minimal adverse effects to EFH individually and cumulatively. For activities requiring a PCN, the Corps will consult with NMFS in accordance with the requirements at 50 CFR 600 Subpart K.

National Historic Preservation Act

The Corps has determined that General Condition 7, Historic Properties, ensures that all activities authorized by the GPs comply with Section 106 of the NHPA. General Condition 7 states, “In cases where the Corps determines that the activity may have the potential to cause effects to properties listed,

or eligible for listing, in the National Register of Historic Places (NRHP), the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Non-federal permittees must submit a PCN to the Corps if the activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the NRHP, including previously unidentified properties. All PCNs shall include information on historic properties. Based on the information submitted in the PCN and the Corps identification efforts, the Corps shall determine whether the proposed GP activity has the potential to cause effects on the historic properties. Section 106 consultation is required when the Corps determines that the activity has the potential to cause effects on historic properties.

Endangered Species

The Corps has determined that General Condition 10, Federal Threatened and Endangered Species, ensures that all activities authorized by the GPs comply with Section 7 of the ESA. GC 10 states, “No activity is authorized under any GP which: (i) Is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species (i.e., listed species) or a species proposed for such designation, as identified under the Federal Endangered Species Act of 1973, as amended (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; or (ii) “May affect” a listed species or critical habitat unless consultation under §7 of the ESA addressing the effects of the proposed activity, has been completed. Non-Federal permittees must check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or designated critical habitat might be affected or if the activity is located in designated critical habitat. However, there are exceptions for the northern long-eared bat, roseate tern, piping plover and red knot. Federal agencies should follow their own procedures for complying with the requirements of the ESA, but Federal permittees and non-Federal representatives must provide the Corps with the appropriate documentation to demonstrate compliance with those requirements. The Corps will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary.

Section 401 Water Quality Certification (WQC)

State certification pursuant to Section 401 of the Clean Water Act, or waiver thereof, is required from the state prior to the issuance of GPs authorizing activities that may result in a discharge into waters of the U.S. On April 5, 2018, the Massachusetts Department of Environmental Protection issued a conditional WQC, which is located at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts.

Coastal Zone Management (CZM) Consistency

The Commonwealth of Massachusetts has a Federally-approved Coastal Zone Management (CZM) Program. Section 307(c)(1) of the Federal CZM Act of 1972, as amended, requires the Corps to provide a consistency determination and receive state concurrence prior to the issuance, reissuance, or expansion of activities authorized by a GP that authorizes activities within a state with a Federally-approved Coastal Management Program when activities that would occur within, or outside, that state’s coastal zone will affect land or water uses or natural resources of the state’s coastal zone. In a letter dated April 5, 2018, the Massachusetts Office of CZM wrote, “we concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.”

Outreach

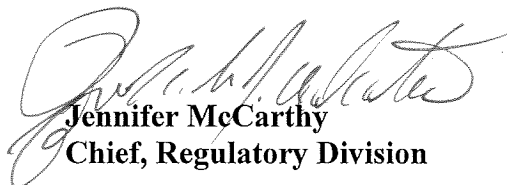
The Corps will conduct outreach webinars for stakeholders. All webinars are open to those who wish to attend, though during each webinar we will focus on aspects of the MA GPs that may be of interest to particular stakeholders.

<u>Focus</u>	<u>Date and Time</u>	
inland and coastal activities	Tue. 5/01/18	1:00 p.m. – 3:00 p.m.
coastal activities	Wed. 5/02/18	1:00 p.m. – 3:00 p.m.
inland activities	Thr. 5/03/18	1:00 p.m. – 3:00 p.m.
inland and coastal activities	Wed. 5/09/18	1:00 p.m. – 3:00 p.m.
utility and transportation activities	Thr. 5/10/18	1:00 p.m. – 3:00 p.m.

Webinar Info

1. To access the visual portion of the webinar:
 - a. Go to <https://usace.webex.com>
 - b. Enter meeting number: 961 550 519
 - c. Enter security code/password: 0416
 - d. Enter name
 - e. Enter email
2. To access the audio portion of the webinar: In the “Audio Connection” box, select the “Call Me” feature and you will get a phone call connecting you (preferred), or select “I Will Call In” and follow the directions. (Note, if the Audio Connection box is not open after you log in, select “Connect to Audio”.)

Please contact Mr. Greg Penta at (978) 318-8862 or gregory.r.penta@usace.army.mil for more information or a copy of the MA GPs.


Jennifer McCarthy
Chief, Regulatory Division

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____
ADDRESS: _____
PHONE: _____

Department of the Army General Permits for the Commonwealth of Massachusetts

The New England District of the U.S. Army Corps of Engineers (Corps) hereby issues General Permits (GPs) for activities subject to Corps jurisdiction in waters of the U.S., including navigable waters, within the boundaries of, and off the coast of, the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands. These GPs are issued in accordance with Corps regulations at 33 CFR Parts 320-332 (see 33 CFR 325.2(e)(2)). The GPs will protect the aquatic environment and the public interest while effectively authorizing activities that have no more than minimal individual and cumulative adverse environmental effects. This document supersedes the February 4, 2015 GPs.

This GP document contains the following sections:	<u>Page</u>
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I. GENERAL CRITERIA

1. See Section II to determine if the activity requires Corps authorization, and [Sections III](#) and [IV](#) to determine if the activity may be eligible for authorization under the GPs, specifically whether it is eligible for self-verification (SV) or a preconstruction notification (PCN) or an individual permit (IP) is required.
2. In order for activities to qualify for these GPs, they must comply with all applicable GP eligibility criteria and general conditions in [Section IV](#).
3. Project proponents are encouraged to contact the Corps with questions at any time. Pre-application meetings (see 33 CFR 325.1(b)) are encouraged to facilitate early review and help streamline the permit process by alerting the applicant to potential obstacles that may arise during the evaluation (e.g., historic properties general condition (GC) 7 and endangered species (GC 10)).
4. Regulated activities that are not authorized by these GPs require IPs (see 33 CFR 325.5(b)) and proponents must submit an application directly to the Corps. (Projects that require an IP will also require an individual 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP) and Coastal Zone Management (CZM) individual consistency concurrence from the Massachusetts Office of CZM.) These GPs do not affect the Corps IP review process or activities exempt from Corps permit requirements. The Corps retains discretionary authority on a case-by-case basis to elevate a SV to PCN or IP, or a PCN to IP based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). Whenever the Corps notifies an applicant that a PCN or IP is required, no work in Corps jurisdiction may be conducted until the Corps issues the required authorization in writing indicating that work may proceed.

5. How to Obtain/Apply for Authorization

a. Self-verification (Self-Verification Notification Form (SVNF) required):

The project proponent may proceed with activities authorized under these GPs that are eligible for SV without submitting a PCN to the Corps provided the prospective permittee has:

i. Verified that the activity will comply with all applicable terms and conditions of the GPs and ensured that a PCN is not required. Consultation with the Corps and/or other relevant Federal and State agencies may be necessary to ensure compliance with the applicable GCs in [Section IV](#) and related Federal laws such as 33 U.S.C. 408 (GC 5), the National Historic Preservation Act (GC 7), the Endangered Species Act (GC 10) and the Wild and Scenic Rivers Act (GC 8). The Corps can confirm that SV eligible activities are authorized under the GPs upon request.

ii. Submitted the SVNF ([Section V](#)) to the Corps unless otherwise specified. By submitting the SVNF, you are self-verifying that your project meets the terms and conditions of the applicable GPs.

b. Preconstruction Notification (application required):

i. For activities that do not qualify for SV or when it is stated that a PCN is required, the permittee must submit a PCN to obtain written verification from the Corps before starting work in Corps jurisdiction. Applicants must include the information in [Section VI](#) to ensure the application is complete and to expedite project review. Applications should be emailed to cenae-r@usace.army.mil or to the Corps project manager if one has been assigned. If the Corps determines that the PCN activity qualifies for authorization under these GPs, the Corps will send a verification letter to the applicant. If the Corps determines that the activity does not qualify for authorization under these GPs, or that additional information is required, the Corps will notify the applicant in writing.

ii. Emergency Situations: Contact the Corps in the event of an emergency situation for information on the application and approval process. Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under the GPs; otherwise an IP is required. The Corps will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

II. JURISDICTION/AUTHORITIES TO ISSUE PERMITS

1. The following regulated activities require authorization under the [Corps Regulatory Program](#):

a. The construction of any structure in, over or under any navigable water of the United States (U.S.), the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The Corps regulates these activities under Section (§) 10 of the Rivers and Harbors Act of 1899. See 33 CFR 322;

b. The discharge of dredged or fill material into waters of the U.S. The Corps regulates these activities under §404 of the Clean Water Act (CWA). See 33 CFR 323; and

c. The transportation of dredged material for the purpose of disposal in the ocean. The Corps regulates these activities under §103 of the Marine Protection, Research and Sanctuaries Act. See 33 CFR 324.

2. Related laws: 33 CFR 320.3 includes a list of related laws, including but not limited to: §401 and §402 of the CWA, §307(c) of the CZM Act of 1972, the National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, the Magnuson-Stevens Fishery Conservation and Management Act, and §7(a) of the Wild and Scenic Rivers Act.

III. ELIGIBLE ACTIVITIES

The terms “navigable waters of the U.S.” and “waters of the U.S.” are used frequently throughout this document and it is important that the reader understand these terms, which are defined in [Section VII](#).

The area thresholds stated in GPs 1, 8-14, 16-20 and 23 apply when there is a discharge of dredged or fill material or a discharge associated with excavation in waters of the U.S. Unless otherwise stated, the total temporary and permanent impact area is used to determine if a single and complete project is eligible for SV or requires a PCN. An IP is required if the total permanent impact area exceeds the PCN/GP threshold.

Permanent impacts mean waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. Temporary impacts include, but are not limited to, waters of the U.S. that are temporarily filled, flooded, excavated, or drained because of the regulated activity. Temporary impacts are usually associated with construction activities and often involve the placement of cofferdams and construction mats. These fills are removed when construction is completed. Pilings and associated structures do not ordinarily constitute a discharge of fill material. Impacts resulting from activities eligible for exemptions under §404(f) of the CWA are not considered when calculating the impact area.

General Permits

1. Maintenance
2. Moorings
3. Structures in Navigable Waters of the U.S.
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. U.S. Coast Guard Approved Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects and Stream Crossings
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Temporary Construction, Access, and Dewatering
15. Reshaping Existing Drainage Ditches, New Ditches, and Mosquito Management
16. Response Operations for Oil and Hazardous Substances
17. Cleanup of Hazardous and Toxic Waste
18. Scientific Measurement Devices
19. Survey Activities
20. Agricultural Activities
21. Fish and Wildlife Harvesting and Attraction Devices and Activities
22. Aquaculture Activities
23. Aquatic Habitat Restoration, Establishment and Enhancement Activities

GP 1. Maintenance (Authorities: §§10 and 404) Authorized are: (a) The repair, rehabilitation, or replacement of any previously authorized, [currently serviceable](#) structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified in the original permit or the most recently authorized modification (see Note 1). Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are also eligible. This GP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill. This also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided it is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, the Corps may waive the two-year limit in writing provided the permittee can demonstrate funding, contract, or other similar delays; (b) The removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.). All dredged or excavated materials must be deposited and retained in an area that has no waters of the U.S. unless otherwise specifically approved by the Corps under separate authorization; and (c) Temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity.

Not authorized under GP 1 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S.; >1/2 acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; (c) Stream crossing modifications (including sliplining), replacements or extensions (see GPs 8 - 10); (d) New stream channelization or stream relocation projects (e.g., those in response to storm or flood events); or (e) Maintenance dredging, beach nourishment or beach restoration (see GP 5).

Self-Verification Eligible ¹	PCN Required ¹
Activities that do not require a PCN or an IP.	<ol style="list-style-type: none"> 1. Minor deviations result in expansions (e.g., structures) or new permanent or temporary impacts (i.e., outside of the previously authorized footprint) in waters of the U.S. This includes bank or shoreline stabilization in front of existing structures; or 2. For authorized activity (b) above, the removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend >200 feet in any direction from the structure; or 3. Impacts occur in special aquatic sites (SAS) other than non-tidal wetlands; or 4. Stream crossing work that does not require an IP. Minor repairs are SV eligible. 5. Dam and flood control or levee repair, rehabilitation, or replacement involves: <ol style="list-style-type: none"> (a) a change in the flood elevation or permanent water surface elevation of the impoundment; or (b) drawdown of impoundment for construction exceeding one growing season; or (c) any modification that changes the character, scope, or size of the original fill design; or 6. The discharge of more than de minimis (i.e., inconsequential) quantities of accumulated bottom sediment occur from or through a dam into downstream waters (see Note 2); or 7. Work on tide gates without a Corps-approved operation and maintenance plan or changes affecting the hydraulic regime; or 8. Repair or replacement of currently-serviceable tide gates through the use of duckbill, flap gate or manual check valves unless installed on existing outfall discharge pipes conveying

¹ Temporary construction mats placed in an area of any size in non-tidal waters necessary to conduct activities do not count towards the SV or PCN/GP thresholds. Temporary construction mats in tidal SAS or >5000 SF in tidal waters require a PCN, but mats placed in an area of any size do not count towards the PCN/GP area thresholds. This only applies to temporary construction mats, not other temporary fill. See GCs 3(a), 13 and 14.

	<p>stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S.; or</p> <p>9. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed: (a) ≤5 feet waterward from the ordinary high water mark (OHW) or high tide line (HTL) and in the dry; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or</p> <p>10. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.</p>
<p>Notes:</p> <p>1. This authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2). Prior Corps permits may have included authorization to maintain the activity, in which case authorization under this GP is not necessary.</p> <p>2. See Corps Regulatory Guidance Letter No. 05-04 for more info.</p>	

GP 2. Moorings (Authority: §10)

New moorings and mooring fields; the relocation of previously authorized² moorings; expansions, boundary reconfigurations or modifications of previously authorized mooring fields; and maintenance and replacement of moorings.

Not authorized under GP 2 (IP required): (a) Moorings or mooring fields converted to or associated with a new boating facility³; (b) Moorings in a Corps [Federal anchorage](#) that are classified as a boating facility³ except municipal-operated mooring fields; or (c) Moorings in a Corps [Federal channel](#).

Self-Verification Eligible	PCN Required
<p>1. New or relocated moorings that meet all of the following terms:</p> <ul style="list-style-type: none"> a. Authorized by a local harbormaster/municipality under MGL Chapter 91 §10A; and b. Single boat, single-point and non-commercial; and c. Not associated with a boating facility³; and d. Neither placed within nor impact tidal vegetated shallows (e.g., eelgrass); and e. Attached to boats that do not contact the substrate during any tidal cycle; and f. Not located within a Corps Federal navigation project (FNP) or the FNP buffer zone. <p>2. Existing, authorized moorings are converted from traditional moorings to low impact mooring technology (see note below) and/or helical anchors.</p> <p>3. Maintenance and replacement of authorized² moorings.</p>	<p>1. New mooring fields; or expansions, boundary reconfigurations or modifications of existing, authorized mooring fields; or</p> <p>2. Moorings that are not SV eligible and do not require an IP. See Note 2.</p>
<p>Notes:</p> <p>1. Low impact mooring technology prevents any part of the tackle from dragging on the bottom during the tidal cycle.</p> <p>2. Locating new individual moorings in tidal vegetated shallows shall be avoided to the maximum extent practicable. If tidal vegetated shallows cannot be avoided, plans should show low impact mooring technology that prevent moorings chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems, where practicable. For moorings that appear to impact tidal vegetated shallows, the Corps may require an eelgrass survey.</p>	

² For all GPs, “authorized” means authorized by the Corps in writing or by 33 CFR 330.3, not a state or municipality, unless otherwise stated. An SVNF was not required before January 21, 2010.

³ Boating facilities provide for a fee, rent or sell mooring or docking space, such as marinas, yacht clubs, boat clubs, boat yards, dockominiums, town facilities, land/home owners associations, etc. Not classified as boating facilities are municipal moorings or municipal mooring fields that charge an equitable user fee based only on the actual costs incurred.

GP 3. Structures in Navigable Waters of the U.S. (Authority: §10)

New, expansions, reconfigurations or modifications of structures in navigable waters of the U.S. including pile and pole-supported piers, floats, stairs, shore outhauls, and boat and float lifts.

Not authorized under GP 3 (IP required): (a) Structures associated with a new boating facility; (b) Structures in a Corps Federal anchorage or channel; or (c) Artificial reefs

Self-Verification Eligible	PCN Required
<p>1. Private, non-commercial piers, floats and lifts that meet all of the following terms:</p> <ul style="list-style-type: none"> a. Piers span ≤ 75 feet over salt marsh and are ≤ 4 feet wide and ≥ 4 feet above the marsh substrate (the height is measured from the marsh substrate to the bottom of the lowest longitudinal support); and b. Floats and lifts in tidal waters and non-tidal navigable waters of the U.S. are ≥ 18 inches above the substrate during all tidal cycles. Skids can only be used in areas where piles are not feasible and on sandy or hard bottom substrates; and c. Piers and floats in: (i) Tidal waters total ≤ 600 SF combined; and (ii) Non-tidal navigable waters of the U.S. total ≤ 300 SF combined; and d. Piers, floats and lifts: (i) Are ≥ 25 feet from previously mapped or existing vegetated shallows, or riparian property line extensions; and (ii) Extend $\leq 25\%$ of the waterway width or ≤ 75 feet waterward from OHW in non-tidal navigable waters of the U.S. or mean high water (MHW). See Note 1. <p>2. Fenders and similar structures.</p>	<p>1. Shore outhauls; or</p> <p>2. Expansions, modifications, or new reconfiguration zones at any authorized boating facility; or</p> <p>3. New, expansions, reconfigurations, reconfiguration zones, or modifications of structures that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc.; or</p> <p>4. Miscellaneous structures; or</p> <p>5. Structures that are not SV eligible and do not require an IP.</p>
<p>Notes:</p> <p>1. See www.nae.usace.army.mil/missions/regulatory/useful-documents-forms-and-publications >> Structure Placement in Navigable Waterways for guidance.</p> <p>2. GC 11, Pile Driving and Removal, is particularly relevant.</p>	

GP 4. Aids to Navigation and Temporary Recreational Structures (Authority: §10)

(a) The placement of aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR, chapter I, subchapter C, part 66; and

(b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use. See GC 6.

Self-Verification Eligible	PCN Required
<p>1. Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG.</p> <p>2. Temporary buoys, markers and similar structures that are: (a) placed for recreational use during specific events and removed within 30 days after event; (b) placed during winter events on ice and removed before spring thaw; (c) authorized by the local harbormaster; (d) Not located within an FNP; and (e) Not located in SAS.</p>	<p>Activities that are not SV eligible.</p>
<p>Note: An SVNf is not required for work authorized under SV #1 above.</p>	

<p>GP 5. Dredging (Authority: §10; navigable waters of the U.S.), Disposal of Dredged Material (Authorities: §§10, 404 & 103; tidal waters of the U.S.), Beach Nourishment (Authorities: §§10 & 404; tidal and non-tidal waters of the U.S.), Rock Removal (Authority: §10, navigable waters of the U.S.) and Rock Relocation (Authorities: §§10 & 404; tidal and non-tidal waters of the U.S.)</p> <p>(a) New, maintenance and improvement dredging, including: (i) Return water from an upland contained dredged material disposal area; and (ii) Disposal of dredged material at an upland, confined aquatic disposal cell, beach nourishment, nearshore, designated open water or ocean water disposal site, provided the Corps finds the dredged material to be suitable for such disposal; and (b) Beach nourishment from upland sources.</p> <p><u>Not authorized under GP 5 (IP required):</u> (a) New dredging >½ acre; ≥10,000 CY; >1000 SF of impacts to intertidal areas, saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF of impacts to tidal vegetated shallows; (b) Maintenance or improvement dredging and/or disposal with >1 acre of impacts to SAS; (c) New dredging where the primary purpose is sand mining for beach nourishment; (d) Beach scraping; (e) Boulder removal and relocation for navigation >½ acre; or (f) Blasting.</p>	
Self-Verification Eligible ¹	PCN Required ¹
<p>1. Maintenance dredging of previously dredged areas, with upland disposal, that meet all of the following terms:</p> <ul style="list-style-type: none"> a. Dredged area ≤½ acre; and b. Not located in right whale critical habitat (see Note 1), tidal waters from Mar 16 to Oct 31, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; and c. Not located in: (i) Tidal waters from Jan 15 to Oct 31; (ii) The Connecticut River from the MA/NH border to the Turners Falls Dam from Mar 15 to Nov 15; (iii) The Merrimack River from the MA/NH border to the Essex Dam from Mar 1 to Nov 15; or (iv) The Charles River from the Watertown Dam to the Amelia Earhart Dam from Feb 15 to Nov 15. However, the time-of-year restriction(s) stated in Appendix B of the MA DMF Technical Report TR-47 (see Note 2) can apply instead if they are provided for a specific waterbody and less restrictive. This is to protect EFH and other species; and d. No impacts to tidal SAS, intertidal areas, areas located within 25' of salt marsh or 100' of vegetated shallows, or areas containing shellfish (an area contains shellfish unless: (i) it is verified that minimal shellfish are present per the local shellfish constable or an actual survey; or (ii) it is not a shellfish suitability area per the MassGIS shellfish suitability maps (see Note 3)); and e. No return water from upland disposal areas. <p>2. Boulder relocation with ≤100 SF of impacts, no impacts to SAS and relocated to a similar depth and substrate.</p>	<p>1. Maintenance dredging where the primary purpose is sand mining for beach nourishment; or</p> <p>2. New dredging and associated disposal <1/2 acre or <10,000 cubic yards; or</p> <p>3. Improvement dredging; or</p> <p>4. Beach nourishment in waters of the U.S. not associated with dredging; or</p> <p>5. Activities that are not eligible for SV and do not require an IP.</p>
<p>Notes:</p> <p>1. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> right whale critical habitat. The approximate boundaries are from the MA/NH border to Chatham.</p> <p>2. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> MA DMF Technical Report TR-47.</p> <p>3. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> MassGIS shellfish suitability maps.</p> <p>4. Compensatory mitigation is generally required for impacts to tidal SAS and intertidal areas resulting from new dredging.</p> <p>5. Contact the Corps if a ten-year authorization to maintain an area is desired.</p>	

GP 6. U.S. Coast Guard Approved Bridges (Authorities: §404)

Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under §9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a Surface Transportation and Uniform Relocation Assistance Act (STURRA) (144h) exemption do not constitute USCG authorization.

Not authorized under GP 6: Causeways and approach fills (see GP 10).

Self-Verification Eligible	PCN Required
Discharges of dredged or fill material incidental to the construction of bridges.	
Note: As with all other GPs, a PCN may be required if stated in the General Conditions section.	

GP 7. Bank and Shoreline Stabilization (Authorities: §§10 & 404)

Bank and shoreline stabilization activities in waters of the U.S. necessary for erosion control or prevention, such as vegetative stabilization, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of techniques (e.g., living shorelines), provided the activity meets all of the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.; and (c) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas).

Not authorized under GP 7 (IP required): (a) Bank stabilization >500 feet in total length including both stream banks unless the Corps waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse effects; (b) Stream channelization or relocation activities; or (c) Breakwaters, groins or jetties.

Self-Verification Eligible ¹	PCN Required ¹
<p>Activities in non-tidal waters that meet all of the following terms:</p> <ul style="list-style-type: none"> a. ≤100 feet in length including both stream banks; or ≤100 feet in length on each side of the stream bank when necessary to protect transportation infrastructure; and b. ≤1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW; and c. The slope of the structure is more gradual than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams; and d. No impacts to SAS. 	<ul style="list-style-type: none"> 1. Activities in non-tidal waters that are: <ul style="list-style-type: none"> a. >100 feet to ≤500 feet in length including both stream banks; or >100 feet in total length on each side of the stream bank and ≤500 feet including both stream banks when necessary to protect transportation infrastructure; or b. >1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW; or c. The slope of the structure is steeper than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams; or d. Impacts to SAS; or 2. The activity is located in tidal waters; or 3. Bulkheads, seawalls or similar structures for maritime activities; or 4. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 5. Activities that are not eligible for SV and do not require an IP.

Note: See GP 1 for information on the replacement or maintenance of existing, currently serviceable structures.

GP 8. Residential, Commercial and Institutional Developments and Recreational Facilities (Authorities: §404)

Discharges of dredged or fill material into non-tidal waters of the U.S for the construction or expansion of:

(a) Residences and residential subdivisions; (b) Residential, commercial and institutional building foundations and building pads and attendant features such as roads, parking lots, garages, yards, and utility lines; and (c) Recreational facilities.

Not authorized under GP 8 (IP required): (a) Permanent impacts in non-tidal waters of the U.S. that are >1 acre, or >1000 SF in riffle and pool complexes or vegetated shallows; or (b) Subsurface sewerage disposal systems in waters of the U.S. (see Note 1 below).

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. Stream and wetland crossings (see Note 2) that require a PCN per GC 19(b)-(e); or 3. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. Activities that are not SV eligible and do not require an IP.
<p>Notes:</p> <ol style="list-style-type: none">1. Stormwater conveyance components and non-porous, septic effluent pipes that transmit effluent to or between components may be eligible for authorization under GP 9.2. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.	

GP 9. Utility Line Activities (Authorities: §§10 & 404)

Activities required for: (a) The construction, maintenance, repair or removal of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines in tidal and non-tidal waters of the U.S.; (b) The construction, maintenance, or expansion of utility line substation facilities associated with a power line or utility line in non-tidal waters of the U.S.; and (c) The construction or maintenance of foundations for overhead utility line towers, poles, and anchors in tidal and non-tidal waters of the U.S. provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the U.S., provided the activity, in combination with all other activities included in one single and complete project, does not cause the permanent loss of greater than 1 acre of non-tidal waters of the U.S. Access roads used solely for construction of the utility line must be removed upon completion of the work (see GC 15).

Not authorized under GP 9 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; or (c) New tide gates that do not meet SV 3 below.

Self-Verification Eligible ¹	PCN Required ¹
<p>Activities that meet all of the following terms:</p> <ol style="list-style-type: none"> 1. Cumulative permanent and temporary impacts for all single and complete projects associated with the overall project (see Note 2) in non-tidal waters of the U.S. that: (a) total ≤5000 SF; and (b) are not located in vegetated shallows or riffle and pool complexes; and 2. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments; and 3. New tide gates on outfall structures for pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S. 	<ol style="list-style-type: none"> 1. Cumulative permanent and temporary impacts for all single and complete projects associated with the overall project (see Note 2) in non-tidal waters of the U.S. that: (a) total >5000 SF; or (b) are located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal waters or in, over or under navigable waters of the U.S.; or 3. Access roads involving stream and wetland crossings (see Note 3) that require a PCN per GC 19(b)-(e); or 4. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 5. The utility line is placed within and runs parallel to or along a streambed; or 6. There is a permanent change in preconstruction contours in waters of the U.S.; or 7. Material resulting from trench excavation is temporarily sidecast into waters of the U.S. for >3 months (material must be placed such that it is not dispersed by currents or other forces); or 8. Activities that are not SV eligible and do not require an IP.

Notes:

1. A utility line is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, data, and telegraph messages, and radio and television communication. The term utility line does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
2. The PCN must describe the locations of the starting point, end point, and all proposed impacts to aquatic resources in between in order to assess the cumulative effects for the overall project.
3. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
4. Impacts resulting from mechanized pushing, dragging, or other similar activities that redeposit excavated soil material shall be figured into the area limit determination.

GP 10. Linear Transportation Projects and Stream Crossings (Authorities: §§10 & 404)

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways) and attendant features. Any stream channel modification is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. Access roads constructed above preconstruction contours and elevations in waters of the U.S. must be properly bridged or culverted to maintain surface flows.

Not authorized under GP 10 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; (c) Non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars (see GP 8); or (d) Tide gates.

Self-Verification Eligible¹

Cumulative permanent and temporary impacts for all [single and complete projects](#) associated with the overall project (see Note 2) in non-tidal waters of the U.S. that: (a) total ≤5000 SF; and (b) are not located in vegetated shallows or riffle and pool complexes.

PCN Required¹

1. Cumulative permanent and temporary impacts in non-tidal waters of the U.S. for all [single and complete projects](#) associated with the overall project (see Note 2) that: (a) total >5000 SF; or (b) are located in vegetated shallows or riffle and pool complexes; or
2. The activity occurs in tidal waters or in, over or under [navigable waters](#) of the U.S.; or
3. Stream and wetland crossings (see Note 3) that require a PCN per GC 19(b)-(e); or
4. Stream channelization, relocation, or loss of streambed (see Note 4) including impoundments, occur; or
5. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S. may be authorized under GP 6.
2. The PCN must describe the locations of the starting point, end point, and all proposed impacts to aquatic resources in between in order to assess the cumulative effects of the overall project.
3. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
4. Loss of streambed does not require a PCN when: a) stream crossings are constructed in accordance with GC 19; or b) bridge piers or similar supports are used.

GP 11. Mining Activities (Authorities: §§10 and 404)

Discharges of dredged or fill material into non-tidal waters of the U.S. for mining activities, except for coal mining and metallic mineral mining activities.

Not authorized under GP 11 (IP required): (a) Permanent impacts >1 acre in non-tidal waters of the U.S.; or (b) Activities in tidal waters.

Self-Verification Eligible¹

Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes.

PCN Required¹

1. Permanent and temporary impacts in non-tidal waters and wetlands that are: (a) >5000 SF; or (b) located in vegetated shallows or streams; or
2. The activity occurs in non-tidal [navigable waters](#) of the U.S.; or
3. Stream channelization, relocation, impoundment, loss of streambed, or discharge of tailings into streams occurs; or
4. Activities that are not eligible for SV and do not require an IP.

GP 12. Boat Ramps and Marine Railways (Authorities: §§10 and 404)

Activities required for the construction of boat ramps and marine railways.

Not authorized under GP 12 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; or (c) dredging in navigable waters of the U.S. (see GP 5).

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes ¹ .	<ol style="list-style-type: none"> 1. Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal or navigable waters of the U.S.; or 3. Boat ramps are located within 25 feet of property line extensions unless the properties are owned by the same owner. The Corps may require a letter of no objection from the abutter(s); or 4. Activities that are not eligible for SV and do not require an IP.

GP 13. Land and Water-Based Renewable Energy Generation Facilities (Authorities: §§10 and 404), and Hydropower Projects (Authority: §404)

Structures and work in navigable waters of the U.S. and discharges of dredged or fill material into tidal and non-tidal waters of the U.S. for the construction, expansion, modification or removal of: (a) Land-based renewable energy production facilities, including attendant features; (b) Water-based wind or hydrokinetic renewable energy generation projects and their attendant features; and (c) Discharges of dredged or fill material associated with hydropower projects.

For (a) and (b) above, such facilities include water-based wind or hydrokinetic renewable energy generation projects and infrastructure to collect solar (concentrating solar power and photovoltaic), wind, biomass, or geothermal energy. Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable waters of the U.S.

Not authorized under GP 13 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹.

Self-Verification Eligible ¹	PCN Required ¹
For land-based facilities, permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes.	<ol style="list-style-type: none"> 1. For land-based facilities, permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes¹; or 2. Water-based wind or hydrokinetic renewable energy generation projects, and hydropower projects; or 3. For all activities eligible for authorization under GP 13: a) The activity occurs in tidal waters or in, over or under navigable waters of the U.S.; or b) Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. Activities that are not eligible for SV and do not require an IP.

Note: Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 9.

GP 14. Temporary Construction, Access, and Dewatering (Authorities: §§10 and 404) Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites that are not authorized under another GP activity. <u>Not authorized under GP 14 (IP required):</u> (a) Permanent structures or impacts; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows (see exception in Note 3 below); (c) Use of cofferdams to dewater wetlands or other aquatic areas to change their use; (d) Temporary stream crossings (see GPs 8 - 10); (e) Structures or fill left in place after construction is completed.	
Self-Verification Eligible	PCN Required
Activities that meet all of the following terms: 1. Impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes (see exception in Note 2); and 2. Impacts in tidal waters that are: (a) ≤5000 SF; and (b) not located in SAS; and 3. Structures in navigable waters of the U.S. provided no impacts occur in tidal SAS and they are left in place ≤30 days.	1. Impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes (see exception in Note 2); or 2. Impacts in tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in SAS (see Note 3); or 3. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry ; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 4. Activities not eligible for SV and do not require an IP.
Notes: 1. Turbidity or sediment resuspension is generally not considered to occur when properly using management techniques to work in dry conditions. PCNs must include plans to demonstrate this. 2. Temporary construction mats placed in an area of any size in non-tidal waters of the U.S. do not count towards the SV or PCN/GP area thresholds (see GCs 3(a), 13 and 14). This only applies to temporary construction mats, not other temporary fill. 3. Temporary construction mats in tidal SAS or >5000 SF in tidal waters require a PCN, but mats placed in an area of any size do not count towards the PCN/GP area thresholds (see GCs 3(a), 13 and 14). This only applies to temporary construction mats, not other temporary fill.	

GP 15. Reshaping Existing Drainage Ditches, Construction of New Ditches, and Mosquito Management (Authorities: §§10 and 404) Discharges to modify the cross-sectional configuration of currently serviceable drainage ditches constructed in waters of the U.S., for the purpose of improving water quality by regrading the drainage ditch with gentler slopes, which can reduce erosion, increase growth of vegetation, and increase uptake of nutrients and other substances by vegetation. Also authorized are mosquito reduction activities. <u>Not authorized under GP 15 (IP required):</u> Temporary impacts ¹ ; stream channelization, relocation, impoundments, or loss of streambed.	
Self-Verification Eligible ¹	PCN Required ¹
≤500 linear feet of drainage ditch will be reshaped provided excavated material is deposited in an upland area.	1. >500 linear feet of drainage ditch will be reshaped, excavated material is deposited in a water of the U.S., or the reshaping of the ditch increases the drainage capacity beyond the original as-built capacity or expands the area drained by the ditch as originally constructed (i.e., the capacity of the ditch is not the same as originally constructed or drains additional wetlands or other waters of the U.S.); or 2. New ditches or relocation of drainage ditches constructed in waters of the U.S. (i.e., the location of the centerline of the reshaped drainage ditch is not approximately the same as the location of the centerline of the original drainage ditch); or 3. Mosquito reduction activities in tidal waters, or those in non-tidal waters that are not SV eligible; or 4. Activities that are not eligible for SV and do not require an IP.
Note: Some ditch activities are exempt under Section 404(f) of the CWA (see 33 CFR 323.4).	

GP 16. Response Operations for Oil and Hazardous Substances (Authorities: §§10 and 404)

Eligible for authorization are the following activities in waters of the U.S.: (a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided that the activities are done under either: (i) The Spill Prevention, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-scene coordinator designated by 40 CFR 300; or (iii) Any approved existing State, regional or local contingency plan provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in waters of the U.S. from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and (d) The use of structures and fills for spill response training exercises. SAS should be restored in place at the same elevation.

Self-Verification Eligible ¹	PCN Required ¹
1. Activities are conducted in accordance with (a) or (b) above that are not planned or scheduled, but an emergency response (see Note 1); and 2. Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and 3. Temporary impacts for spill response training exercises <5000 SF in non-tidal waters of the U.S. and <1000 SF in tidal waters with no impacts to SAS; and 4. Temporary structures in tidal waters with no impacts to SAS and in place ≤30 days.	1. Activities (a) or (b) above are planned or scheduled, not an emergency response; or 2. Activities that are not eligible for SV and do not require an IP.

Notes:

- For activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, Merrimack River from the Essex Dam to the mouth, and remaining tidal waters that are not rivers, the permittee must contact the Corps at (978) 318-8338 before or as soon as possible after the work authorized under GP 16(a) - (c) commences for the Corps to address the effects under the Federal Endangered Species Act.
- Permittees have until two weeks following commencement of the activities in GP 16 to submit the SVNf. However, an SVNf need not be submitted for booms used for spill prevention, or properly contained and cleaned de minimus oil or hazardous substance discharges into navigable waters of the U.S.

GP 17. Cleanup of Hazardous and Toxic Waste (Authorities: §§10 and 404)

Specific activities in waters of the U.S. to effect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority. The SAS should be restored in place at the same elevation to the maximum extent practicable.

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal or navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. The activity involves establishing new disposal sites or expanding existing sites used for the disposal of hazardous or toxic waste in waters of the U.S.; or 5. Activities that are not eligible for SV and do not require an IP.

Notes:

- Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under §404 of the CWA or §10 of the Rivers and Harbors Act.
- Permittees have until two weeks following commencement of the activities in GP 17 to submit the SVNf.

GP 18. Scientific Measurement Devices (Authorities: §§10 and 404) Scientific measurement devices in waters of the U.S. for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small weirs and flumes constructed primarily to record water elevation, flow and/or velocity. Upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to preconstruction elevations.	
<u>Not authorized under GP 18 (IP required):</u> (a) Permanent impacts that are >5000 SF in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows ¹ .	
Self-Verification Eligible ¹	PCN Required ¹
Temporary measuring devices and associated structures (e.g., anchors, buoys, etc.) in tidal and non-tidal waters of the U.S. provided: (a) in non-tidal waters of the U.S. permanent impacts are ≤1000 SF, temporary impacts are ≤5000 SF, and no impacts occur in riffle and pool complexes or vegetated shallows; and (b) no impacts in tidal waters.	1. In non-tidal waters of the U.S., permanent impacts are >1000 SF, temporary impacts are >5000 SF, or impacts occur in riffle and pool complexes or vegetated shallows; or 2. Impacts occur in tidal waters; or 3. Biological sampling devices, weirs or flumes, or the activity restricts or concentrates movement of aquatic organisms; or 4. Devices that are not eligible for SV and do not require an IP.
Note: An SVNf need not be submitted for temporary measuring devices with a footprint of <10 square feet, with a profile of <3 feet high measured from the substrate, and located in water deeper than -10 feet MLW.	

GP 19. Survey Activities (Authorities: §§10 and 404) Survey activities in waters of the U.S. such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, sample plots or transects for wetland delineations, and historic resources surveys.	
<u>Not authorized under GP 19 (IP required):</u> (a) Permanent impacts that are >1 acre in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, or riffle and pool complexes; or >100 SF in tidal vegetated shallows ¹ ; or (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows ¹ .	
Self-Verification Eligible ¹	PCN Required ¹
1. Permanent impacts that are ≤1000 SF and temporary impacts that are ≤5000 SF ¹ in non-tidal waters of the U.S. provided no impacts occur in riffle and pool complexes or vegetated shallows; and 2. Survey activities including temporary structures in tidal waters provided no impacts occur; and 3. Temporary structures in navigable waters of the U.S.	1. In non-tidal waters of the U.S., permanent impacts are >1000 SF, temporary impacts are >5000 SF, or impacts occur in riffle and pool complexes or vegetated shallows; or 2. Impacts occur in tidal waters; or 3. Exploratory trenching (see Note 2) occurs in waterways (e.g., streams, tidal waters); or 4. Activities associated with the recovery of historic resources, and the drilling and discharge of excavated material from test wells for oil and gas exploration; or 5. Seismic exploratory operations occur in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; or 6. Activities that are not eligible for SV and do not require an IP.
Notes: 1. An SVNf need not be submitted for wetland delineations, and core sampling conducted for preliminary evaluation of dredge project analysis. 2. For the purposes of GP 19, the term “exploratory trenching” means mechanical land or underwater clearing of the upper soil profile to expose bedrock or substrate for the purpose of mapping or sampling the exposed material. 3. The discharge of drilling mud and cuttings may require a permit under §402 of the CWA.	

GP 20. Agricultural Activities (Authority: §404)

Discharges of dredged or fill material in non-tidal waters of the U.S. for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) construction of farm ponds, excluding perennial streams, provided the farm pond is used solely for agricultural purposes; and (c) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in non-tidal streams.

Not authorized under GP 20 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S.; or >1000 SF in riffle and pool complexes, or non-tidal vegetated shallows; (b) Work in tidal waters; or (c) Construction of farm ponds in perennial streams.

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) ≤5000 SF; and (b) not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. that are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. Activities occur in non-tidal navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundment, loss of streambed, or farm ponds in non-perennial streams occurs; or 4. Activities that are not eligible for SV and do not require an IP.
Note: Some discharges for agricultural activities may qualify for an exemption under Section 404(f) of the CWA (see 33 CFR 323.4). This GP authorizes the construction of farm ponds that do not qualify for the CWA §404(f)(1)(C) exemption because of the recapture provision at §404(f)(2).	

GP 21. Fish and Wildlife Harvesting and Attraction Devices and Activities (Authorities: §§10 and 404)

Fish and wildlife harvesting and attraction devices and activities in waters of the U.S. such as lobster pound nets, crab traps, shellfish dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, fish aggregating devices, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.).

Not authorized under GP 21 (IP required): Artificial reefs; or new, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area >½ acre.

Self-Verification Eligible ¹	PCN Required ¹
Fish and wildlife harvesting and attraction devices and activities that do not require a PCN or IP.	1. Pound nets, impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre, fish aggregating devices, or small fish attraction devices; or 2. Devices and activities that are located in tidal SAS; or 3. Devices and activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.
Note: An SVNf need not be submitted for work authorized under GP 21.	

GP 22. Aquaculture (Authorities: §§10 and 404)

(a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into waters of the U.S. necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects. The area and any elevated structures within it must be marked in conformance with 33 CFR 64, and the permittee must contact the USCG, First District, Aids to Navigation Branch (617) 223-8347 to coordinate the proper buoy markings for the activity. Buoys shall be deployed and maintained as appropriate. Any fill material imported to the project from offsite (this is limited to mineral growth medium used in culture trays) shall be clean and of comparable grain size to the native substrate.

Not authorized under GP 22 (IP required): (a) New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area $> \frac{1}{2}$ acre; (b) Cultivation of a nonindigenous species (see Note 1) unless that species has been previously cultivated in the waterbody; (c) Cultivation of an aquatic nuisance species (see Note 1); (d) Attendant features such as docks, piers, boat ramps, stockpiles, or staging areas, or the deposition of shell material back into waters of the U.S. as waste; (e) Private sites > 10 acres or municipal areas > 25 acres; (f) Rafts and other floating equipment that cover $> 10\%$ of the project area or 20,000 SF, whichever is greater. An area is considered covered with floating equipment if normal navigation through the area is precluded; or (g) Activities, including any vehicular access, that negatively impact coastal or freshwater wetlands, or with more than minimal negative impacts on: (1) Avian resources such as, but not limited to, shore birds, wading birds, or members of the waterfowl group. This is meant to include migratory bird nesting, feeding or resting activities (see 50 CFR 10.13); or (2) Existing or naturally occurring beds or population of shellfish, marine worms or other invertebrates that could be used by humans, other mammals, birds, reptiles, or predatory fish.

Self-Verification Eligible¹: Devices and activities that do not require a PCN or an IP.

PCN Required¹

1. Permanent & temporary impacts in tidal or non-tidal waters of the U.S. including cultch or spat shell; or
2. Structures such as cages, trays, racks, bags, rafts or other floating equipment. However, structures are SV eligible provided a PCN is not required elsewhere in this document and they are: (a) located within the footprint of an existing authorized fixed or floating structure in which case in-water lines, ropes or chains may be used; (b) comprised of floating upweller docks totaling ≤ 640 SF in area; (c) structures (e.g., cages, racks) elevated ≥ 2 feet above the ocean floor with legs within a lease site with ≤ 4 buoys marking the corners and no other lines; or (d) floating cage strings with a single connecting line, ≤ 2 anchors and ≤ 2 end marker buoys per string within a lease site with ≤ 4 buoys marking the corners; and
3. Research, educational, commercial-viability or experimental aquaculture gear activities for indigenous species; or
4. Activities include a species not previously cultivated in the waterbody; or
5. Kelp or finfish aquaculture; or
6. Land-based hatchery intakes > 3 inches in diameter; or
7. Activities in water depths > 10 feet mean low lower water (MLLW); or
8. Activities with in-water lines, ropes or chains (see exceptions in 2(a), (c) and (d) above); or
9. Activities occur in SAS or involve mechanical or hydraulic dredging;
10. Activities occur in the Connecticut River from the Turners Falls Dam to the MA/CT border or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; or
11. New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area $\leq \frac{1}{2}$ acre; or
12. Aquaculture facilities < 25 acres applied for by municipalities; or
13. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.

Notes: (1) The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 defines: (a) nonindigenous species as “any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another”; and (b) aquatic nuisance species as “a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.” (2) Aquaculture applicants do not need to notify the SHPO since these projects are unlikely to affect historic or archaeological resources, but must notify the BUAR and applicable tribes per GC 7(c). (3) The MA Shellfish Planting Guidelines are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

GP 23. Aquatic Habitat Restoration, Enhancement, and Establishment Activities (Authorities: §§10 and 404)

Activities in waters of the U.S. associated with the restoration, enhancement and establishment of non-tidal and tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters; the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site; the restoration and enhancement of shellfish, finfish and wildlife habitat; and the rehabilitation or enhancement of tidal streams, tidal wetlands and tidal open waters; provided those activities result in net increases in aquatic resource functions and services. To be authorized by this GP, the activity must be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference. An ecological reference may be based on the characteristics of an intact aquatic habitat or riparian area of the same type that exists in the region, or based on a conceptual model developed from regional ecological knowledge of the target aquatic habitat type or riparian area.

Activities authorized by this GP include, but are not limited to: the removal of accumulated sediments; the removal, installation, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or disking for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species may be planted at the site.

Not authorized under GP 23 (IP required): Stream channelization activities or artificial reefs.

Self-Verification Eligible ¹	PCN Required ¹
<p>1. Permanent or temporary impacts in non-tidal waters of the U.S. that are ≤5000 SF; and</p> <p>2. Eelgrass or salt marsh planting and transplanting ≤100 SF in tidal waters; and</p> <p>3. Shellfish seeding without cultch or spatbed-shell.</p> <p>Activities 1 and 2 above must be authorized by a Final Order of Conditions, or 401 WQC if required, in order to be SV eligible.</p>	<p>1. Permanent or temporary impacts in non-tidal waters of the U.S. that are >5000 SF; or</p> <p>2. Permanent or temporary impacts or structures are located in tidal waters of the U.S. including cultch or spatbed-shell placement; or</p> <p>3. Eelgrass or salt marsh planting and transplanting >100 SF in tidal waters; or</p> <p>4. Permanent water impoundments, dam removal or fish ladders; or</p> <p>5. Stream relocation, impoundment, or loss of streambed occurs; or</p> <p>6. The conversion of: (a) a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa, wetland to pond, etc.) or uplands, (b) one wetland type to another (e.g., forested wetland to an emergent wetland). See Note 2; or</p> <p>7. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or</p> <p>8. Activities that are not eligible for SV and do not require an IP.</p>
<p>Notes: 1. GC 10 states a PCN is required for any activity that may affect listed species or habitat. This includes beneficial effects. 2. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type.</p>	

IV. GENERAL CONDITIONS:

To qualify for GP authorization, the prospective permittee must comply with the following general conditions, as applicable.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)
4. Single and Complete Projects
5. Activities Affecting Structures or Works Built by the United States
6. Navigation
7. Historic Properties
8. Wild and Scenic Rivers
9. Essential Fish Habitat and Fish and Wildlife Resources
10. Federal Threatened and Endangered Species
11. Pile Driving and Removal
12. Utility Line Installation and Removal
13. Heavy Equipment in Waters and Wetlands
14. Temporary Fill
15. Removal of Temporary Fills and Restoration
16. Soil Erosion and Sediment Controls
17. Aquatic Life Movements
18. Management of Water Flows
19. Stream Work and Crossings and Wetland Crossings
20. Floodplains and Floodways
21. Storage of Seasonal Structures
22. Spawning, Breeding, and Migratory Areas
23. Vernal Pools
24. Coral reefs
25. Invasive and Other Unacceptable Species
26. Blasting
27. Suitable Material
28. Stormwater Treatment or Detention Systems
29. Tide gates
30. Water Quality Certification
31. Coastal Zone Management
32. Permit On Site
33. Self-Verification Notification Form
34. Inspections
35. Maintenance
36. Property Rights
37. Transfer of GP Verifications
38. Modification, Suspension, and Revocation
39. Special Conditions
40. False or Incomplete Information
41. Abandonment
42. Enforcement Cases
43. Previously Authorized Activities
44. Duration of Authorization

1. Other Permits. The permittee must obtain the following State approvals, when applicable, prior to the commencement of work in Corps jurisdiction in order for authorizations under these GPs to be valid: WQC (see GC 30) and CZM Consistency Concurrence (see GC 31).

2. Federal Jurisdictional Boundaries

- a. Applicability of these GPs shall be evaluated with reference to Federal jurisdictional boundaries. Activities shall be evaluated with reference to “waters of the U.S.” under the CWA (33 CFR 328) and “navigable waters of the U.S.” under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Applicants are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of the Corps jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as that term is defined in 33 CFR 328.3(c).
- b. Applicants shall identify all aquatic resources on the project site. They are all presumed to be waters of the U.S. unless an approved jurisdictional determination has been obtained from the Corps that determines otherwise. Wetlands shall be delineated in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent Northcentral/Northeast Regional Supplement. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands and maps are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

- a. Activities must be designed and constructed to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site (i.e., on site). Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal.
- b. After avoidance and minimization, compensatory mitigation⁴ will generally be required for permanent impacts that require PCNs, and may be required for temporary impacts that require PCNs. Proactive restoration projects, or temporary impact work with no secondary effects, may generally be excluded from this requirement.
- c. Applicants shall consider riparian/forested buffer best management practices (BMPs) for stormwater management, and low impact development (LID) BMPs to reduce impervious cover and manage stormwater, to minimize impacts to the maximum extent practicable.⁵

4. Single and Complete Project

- a. The term “single and complete project” is defined as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. The GPs shall not be used for piecemeal work and shall be applied to single and complete projects.
- b. Proponents must quantify all permanent impacts associated with the single and complete project that have occurred since October 5, 1984 (the date of the original MA GP) and add that to any proposed permanent and temporary impacts to determine if the work is SV eligible or if a PCN is required. Provide that information in the PCN. For real estate subdivisions created or subdivided after October 5, 1984, a

⁴ Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at www.nae.usace.army.mil/missions/regulatory >> Mitigation.

⁵ See the three documents at www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit >> Mitigation. LID BMPs include, but are not limited to: replacing curbs and gutters with swales; using an open space design for subdivisions; using permeable, pervious or porous pavements; constructing bio-retention systems; and/or adding a green roof or rain garden.

PCN is required for any discharge which would cause the aggregate total loss of waters of the U.S. for the entire subdivision to exceed 5,000 square feet.

c. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed, even if the other phases were not built, can be considered as separate single and complete projects with independent utility.

d. Unless the Corps determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project.

e. For linear projects such as power lines or pipelines with multiple crossings, a “single and complete project” is all crossings of a single water of the U.S. (i.e. single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a separate single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an individual permit review, then the entire/total linear project shall be reviewed as one project under PCN or the IP procedures.

5. Activities Affecting Structures or Works Built by the United States

a. If a GP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project, the prospective permittee must submit a PCN. The Regulatory Division will assist the proponent with contacting the appropriate Corps district office for work in the vicinity of FNP, Corps properties and/or Corps-controlled easements, flood control projects, etc. An activity that requires §408 permission is not authorized by these GPs until the appropriate Corps district office issues the §408 permission to alter, occupy, or use the Corps project, and the Corps issues a written GP verification.

b. A PCN is required for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service (USFS).

6. Navigation

a. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters of the U.S. at or adjacent to the activity authorized herein.

b. Any safety lights and signals prescribed by the USCG, through regulations or otherwise, must be installed and maintained at the permittee’s expense on authorized facilities in navigable waters of the U.S.

c. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

d. A PCN and §408 permission (see GC 5) is required for all work in, over or under a Corps FNP or its buffer zone.

7. Historic Properties

a. In cases where the Corps determines that the activity may have the potential to cause effects to

properties listed, or eligible for listing, in the National Register of Historic Places (NRHP)⁶, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

b. Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the NHPA. If a PCN is required for the proposed activity, the Federal permittee must provide the Corps with the appropriate documentation to demonstrate compliance with those requirements and the Corps will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under Section 106 may be necessary. The respective Federal agency is responsible for fulfilling its obligation to comply with Section 106.

c. Non-federal permittees must submit a PCN to the Corps if the activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the NRHP, including previously unidentified properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer (SHPO), Board of Underwater Archaeological Resources (BUAR), applicable Tribal Historic Preservation Officers (THPOs)⁷, and the NRHP⁶. Use of the [Historic Property Notification Form](#) (Section IX) to notify the SHPO, BUAR and applicable THPOs⁷ is recommended. The SHPO, BUAR and THPOs are expected to provide comments to the Corps within 30 days of receipt if there are historic properties that need to be addressed.

d. All PCNs shall:

i. Include a copy of the [Historic Property Notification Form](#) and the email or certified mail receipt that was used to send the form to the SHPO (does not accept email), BUAR and applicable THPOs⁷ for their identification of historic properties in their area of concern;

ii. State which historic properties might have the potential to be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties; and

iii. Include any available documentation from the SHPO, BUAR and THPO(s) indicating that there are or are not historic properties affected. The SHPO, BUAR and THPO(s) will contact the Corps within 30 days of receiving the notification if they believe that the activity has the potential to cause effects on historic properties.

e. Based on the information submitted in the PCN and the Corps identification efforts, the Corps shall determine whether the proposed GP activity has the potential to cause effects on the historic properties. Section 106 consultation is required when the Corps determines that the activity has the potential to cause effects on historic properties. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the Corps either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

f. Federal and non-Federal applicants shall coordinate with the Corps before conducting any onsite archaeological work (reconnaissance, surveys, recovery, etc.) requested by the SHPO, BUAR and THPOs, as the Corps will determine the permit area for the consideration of historic properties based on 33 CFR 325 Appendix C. This is to ensure that work is done in accordance with Corps requirements.

g. If Federal or non-Federal applicants discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the Corps of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been

⁶ See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permits >> Historic Properties. The majority of historic properties are not listed on the NRHP and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO, BUAR and/or THPO(s).

⁷ [Section VIII](#) provides contact information and each tribe's "area of concern."

completed. The Corps will initiate the Federal, State and tribal coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

h. (c) - (e) above are not applicable when the Corps has approved alternate procedures or another Federal agency is the lead.

8. Wild and Scenic Rivers

a. The following activities in designated river or study river segments in the National Wild and Scenic River (WSR) System require a PCN unless the National Park Service has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:

- i. Activities that occur in WSR segments, in and 0.25 miles up or downstream of WSR segments, or in tributaries within 0.25 miles of WSR segments;
 - ii. Activities that occur in wetlands within 0.25 miles of WSR segments;
 - iii. Activities that have the potential to alter free-flowing characteristics in WSR segments.
- b. As of April 16, 2018, the Taunton River, Sudbury/Assabet/Concord Rivers, and Westfield River are designated rivers; and the Nashua River is a study river. The most up to date list and descriptions of the WSR segments are provided at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> Wild and Scenic Rivers.

9. Essential Fish Habitat and Fish and Wildlife Resources. A PCN is required for GPs 1, 6-20 and 23 when an activity may cause greater than minimal [sedimentation or turbidity](#) in streams or tidal waters. The Corps may include specific time-of-year restrictions and/or specific construction techniques or activities. This is to protect Essential Fish Habitat and/or fish and wildlife resources.

10. Federal Threatened and Endangered Species

a. No activity is authorized under any GP which:

i. Is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species (i.e., listed species) or a species proposed for such designation, as identified under the Federal Endangered Species Act of 1973, as amended (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; or

ii. “May affect” a listed species or critical habitat unless consultation under §7 of the ESA addressing the effects of the proposed activity, has been completed.

b. Non-Federal permittees must check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or designated critical habitat might be affected or if the activity is located in designated critical habitat. However, an activity is SV eligible (i.e., a PCN is only required if indicated elsewhere in this document) if the IPaC website indicates that only:

- i. Northern long-eared bats (NLEB, *Myotis septentrionalis*) are present, but the activity:
 1. Will not remove trees ≥ 3 inches dbh;
 2. Is not within the “buffer” of a NLEB hibernacula or maternity roost tree shown on the map at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit/ >> NLEB Locations; and
 3. Does not involve work on existing dam riprap or bridges.
- ii. The roseate tern (*Sterna dougallii*), piping plover (*Charadrius melodus*) or red knot (*Calidris canutus*) are present, but the activity and all disturbance will occur: (1) >300 feet from the HTL; (2) entirely in a previously developed or urbanized area such as a paved parking lot or road, a harbor or marina with stabilized shoreline (docks, seawalls, etc.), a residential area (contains lawn, ornamental plants, etc.); or (3) between October 1 and April 15 and any alteration or disturbance to beaches, sand dunes, mud flats, sloughs, estuaries, or other tidally influenced areas is temporary and restored to its previous condition before April 15. Contact the Corps with any questions.

- c. Federal agencies should follow their own procedures for complying with the requirements of the ESA. Non-Federal representatives designated by the Corps to conduct informal consultation or prepare a biological assessment should follow the requirements in the designation document(s) and the ESA. Federal permittees and non-Federal representatives must provide the Corps with the appropriate documentation to demonstrate compliance with those requirements. The Corps will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary. Unless it is required elsewhere in this document, a PCN is not required if: (i) another (lead) Federal agency has completed all required §7 consultation; or (ii) a non-Federal representative designated by the Corps in writing has completed all required §7 informal consultation.
- d. Verification under these GPs does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the USFWS or the NMFS, the ESA prohibits any person to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

11. Pile Driving and Removal

- a. Derelict, degraded or abandoned piles and sheet piles in [navigable waters](#) of the U.S., except for those inside existing work footprints for piers, must be completely removed, cut and/or driven to 3 feet below the substrate to prevent interference with navigation, and existing creosote piles that are affected by project activities shall be completely removed if practicable. In areas of fine-grained substrates, piles must be removed by the direct, vibratory or clamshell pull method⁸ to minimize sedimentation and turbidity impacts and prevent interference with navigation from cut piles. Removed piles shall be disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats. Pile removal work is SV eligible under GP 1. See GC 16(d) for sheet pile removal.
- b. A PCN is required for the installation or removal of structures with jetting techniques.
- c. A PCN is required for the removal of >100 piles from January 15 to November 15.
- d. A PCN is required for the installation of >12 inch-diameter piles or any size steel piles in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth, unless they are installed [in the dry](#). Installation of ≥12-inch-diameter piles or any size steel piles in tidal waters, or all piles in the aforementioned river segments, must use a soft start each day of pile driving, building up power slowly from a low energy start-up over a period of 20-40 minutes to provide adequate time for fish and marine mammals to leave the vicinity. The buildup of power should occur in uniform stages to provide a constant increase in output. Bubble curtains can be used to reduce sound pressure levels during vibratory or impact hammer pile driving. This is to protect endangered species.

12. Utility Line Installation and Removal

- a. Subsurface utility lines shall remain subsurface.
- b. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment. The bottom cover associated with the initial installation of utility lines under [navigable waters](#) of the U.S. and FNP's shall be a

⁸ **Direct Pull:** Each piling is wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the piling directly upward, removing the piling from the sediment. **Vibratory Pull:** The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The vibrating hammer loosens the piling while the crane pulls up. **Clamshell Pull:** This can remove intact, broken or damaged pilings. The clamshell bucket is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. The size of the clamshell bucket is minimized to reduce turbidity during piling removal.

minimum of 48 inches in soil or a minimum of 24 inches in competent rock unless otherwise specified in a written determination. The maximum depth of dredging in waterways having existing FNPs is generally considered to be the authorized FNP depth plus any allowance for advanced maintenance and the allowable overdepth for dredging tolerances. In waterways that do not have existing FNPs, this depth should be taken as two feet below the existing bottom or maximum depth of proposed dredging, as applicable.

c. The permittee and their contractor shall have onsite and implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

d. Abandoned or inactive utility lines must be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) must be removed or repaired. A written verification from the Corps is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.

e. Utility lines shall not adversely alter existing hydrology, and trenches cannot be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). In wetland areas, structures such as ditch plugs, cut-off walls, clay blocks, bentonite, or other suitable material shall be used within utility trenches to ensure that the trench through which the utility line is installed does not drain waters of the U.S. including wetlands.

13. Heavy Equipment in Waters and Wetlands

a. To the maximum extent practicable, operating heavy equipment within wetlands or mudflats shall be avoided or minimized, measures must be taken to minimize soil or substrate disturbance, and equipment other than fixed equipment (drill rigs, fixed cranes, etc.) shall not be stored, maintained or repaired in wetlands. Where construction requires heavy equipment operation, the equipment shall: (i) Have low ground pressure (typically <3 psi); (ii) Be placed on swamp/construction/timber mats (herein referred to as “[construction mats](#)”) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or (iii) Be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written Corps authorization. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the Construction Mat BMPs at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

b. Construction equipment such as barges in tidal waters shall provide clearance above the substrate to avoid impacts to SAS.

14. Temporary Fill

a. Temporary fill, which includes construction mats and corduroy roads, shall be entirely removed as soon as it is no longer needed to construct the authorized work. Temporary fill shall be placed in its original location, or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S. A PCN is required for: (i) all temporary fill that is in place for >2 years; or (ii) construction mats and corduroy roads filling >5000 SF that are in place for: (1) >1 year when installed during the growing period; or (2) any portion of more than one growing period when installed outside the growing period. The growing period is from May 1 to October 1 for the purposes of these GPs.

b. A PCN is required for construction mats and corduroy roads that involve underlying fill.

c. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable. Materials must be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of wetlands. Temporary fill shall be placed on geotextile fabric or other appropriate material laid on the preconstruction wetland grade where

practicable to minimize impacts and to facilitate restoration to the original grade (construction mats are excluded from this requirement).

15. Removal of Temporary Fills and Restoration

- a. Temporary fills/excess materials must be removed in their entirety as soon as they are no longer needed to construct the authorized work. The affected areas must be restored to their preconstruction conditions, functions and elevations, and revegetated as appropriate. Restoration shall typically commence no later than the completion of construction.
- b. For excavated areas, “restored to preconstruction conditions, functions and elevations” means careful removal of existing soil and vegetation, separate topsoil and subsoil stockpiling, soil protection, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized. Plan for natural settling that will occur and ensure that topsoil is void of gravel and subsoil. A minimum of 4 inches of topsoil should be at the surface after the soil has settled. Wetland areas temporarily disturbed shall be stabilized (e.g., seeded or planted). See GC 25 for seed mix and vegetation requirements.
- c. Limit compaction to the minimum needed to promote a successful seedbed. Test soils for compaction. Equipment refusal shall be considered a failure of restoration, in which case the soil should be restored and wetland hydrology must be maintained.
- d. For (a) - (c) above, see the BMPs at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> Restoration of Special Aquatic Sites.
- e. In areas of authorized temporary disturbance, if trees are cut they shall be cut at or above ground level, and not uprooted, in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
- f. Trenches shall be constructed or backfilled so that the trench does not drain waters of the U.S. (e.g., materials or methods that create a French drain effect).

16. Soil Erosion and Sediment Controls

- a. Appropriate soil erosion, sediment and turbidity controls⁹ (hereinafter referred to as “controls”) must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work waterward of OHW or HTL, must be permanently stabilized at the earliest practicable date. Controls shall be capable of preventing erosion; collecting sediment, suspended and floating materials; and filtering fine sediment. Permittees are encouraged to perform work during periods of low-flow or no-flow, or when the stream or tide is waterward of the work, and must plan for unexpected high flows.
- b. A PCN is required for GPs 1, 6-20 and 23 when an activity causes greater than minimal [sedimentation or turbidity](#) in streams (rivers, streams, brooks, etc.) or tidal waters, which may be avoided with the appropriate measures specified in (a) above. For activities that require controls, e.g., cofferdams, in non-tidal streams and tidal waters:
 - i. In non-tidal streams, it is recommended that controls be installed and removed between July 1 and Feb. 28, and not be in place between March 1 and June 30. A PCN is required when controls encroach >25% of the stream width measured from OHW from March 1 to June 30. This is to protect upstream fish passage. Proponents must also maintain safe, timely and effective downstream fish passage throughout the project.

⁹ Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (e.g., vegetated filter strips, geotextile silt fences and turbidity curtains, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

- ii. In tidal waters, controls placed waterward of MHW shall be installed and removed between July 1 and Jan. 14, shall not be in place between Jan. 15 and June 30, and shall not encroach >50% of a tidal stream's width measured from MHW. Otherwise a PCN is required. This is to protect upstream fish passage and winter flounder spawning and rearing habitat.
- c. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands where suspended solids shall be removed prior to discharge back into waters or wetlands. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.
- d. Controls shall be removed upon completion of work, but not until all exposed soil and other fills, as well as any work waterward of OHW or the HTL, are permanently stabilized at the earliest practicable date. Sediment and debris collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable, and flows and aquatic life movements are not disrupted.
- e. The material within sandbags shall not be released during their removal and trenches must be backfilled as soon as practicable to reduce turbidity impact duration.

17. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity's primary purpose is to impound water. Permanent water impoundments require a PCN. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be suitably culverted, spanned¹⁰, or otherwise designed and constructed to: (a) maintain low flows to sustain the movement of those aquatic species, which includes maintaining a continuous low flow channel/thalweg through non-tidal structures; (b) preserve hydraulic and ecological connectivity; and (c) prevent bank erosion or streambed scour, both adjacent to and inside, the culvert or span by proper alignment and construction.

18. Management of Water Flows

- a. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows, in which case a PCN is required. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- b. Activities that temporarily or permanently impact upstream or downstream flood conditions, or permanently impact wetlands in excess of SV eligible thresholds, require a PCN. See the "Dam Removal and the Wetland Regulations" document at www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity for guidance to evaluate the impacts of culvert replacement, including the loss of upstream wetlands, which may be offset by the overall benefits of the river restoration.

19. Stream and Wetland Crossings

The following conditions apply to temporary and permanent stream and wetland crossings, including new crossings, and replacement, modifications and expansions/extensions of existing crossings, which are only authorized under GPs 8 - 10. Minor repairs may be SV eligible under GP 1.

¹⁰ For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of bankfull width. The use of bridge piers or similar supports does not prevent a structure from being considered as a span.

a. Stream crossings in tidal streams. A PCN is required for temporary or permanent crossings in tidal streams that are not SV eligible under GP 1 or do not involve construction mat stream crossings built in accordance with the Construction Mat BMPs¹¹, particularly the Wetland/Stream Channel Crossing section. The Corps may use the following criteria to evaluate permanent crossings:

i. Match the velocity, depth, cross-sectional area, and substrate of the existing stream outside the crossing, if it exists, and size crossings such that they do not restrict tidal flow over the full natural tide range seaward of the crossing. The Corps will typically require an engineering study to ensure flooding is not a concern.

ii. Construct crossings in dry conditions.

b. Modifications to existing, authorized permanent stream crossings in non-tidal streams. A PCN is not required for modifications to these crossings for the purpose of improving passage and flow if they are authorized in writing by a Final Order of Conditions, or 401 WQC if required, or they comply with 19(c) below. However, a PCN is required if stated elsewhere in this document or any activity:

i. Involves sliplining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining;

ii. Decreases the diameter of the crossing;

iii. Decreases the friction coefficient; or

iv. Increases velocity.

c. New, replacement, modifications and expansions/extensions of existing, permanent stream crossings in non-tidal streams. A PCN is not required for these crossings provided the following conditions are met and a PCN is not required elsewhere in this document:

i. Design and construct the crossing in accordance with the USFS stream simulation manual¹².

ii. Span¹⁰ streams or size culverts or pipe arches such that they are at least 1.2 times bankfull width of the reference reach¹³. Spans are strongly preferred as they avoid or minimize disruption to the streambed, and avoid entire streambed reconstruction and maintenance inside culverts or pipe arches (see v, vi & viii below), which may be difficult in smaller structures. In many cases bankfull width is not necessarily interchangeable with the elevation of OHW.

iii. Embed culverts or pipe arches below the grade of the streambed. This is not required when ledge/bedrock prevents embedment, in which case spans¹⁰ are required. The following depths are required to prevent streambed washout, and ensure compliance and long-term success:

1. ≥ 2 feet for box culverts and pipe arches¹⁴, or

2. ≥ 2 feet and at least 25% for round pipe culverts¹⁴.

¹¹ See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

¹² See www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity for the USFS stream simulation manual titled "Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings. Section 5.3.3 Headcutting Potential and 6.2 Design of the Stream-Simulation Channel Bed are particularly relevant. Chapter 6.1 is relevant for proper alignment and construction to prevent bank erosion or streambed scour. Sections 7.5.2.3 Construction Methods and 8.2.11 Stream-Simulation Bed Material Placement both show important construction steps.

¹³ The following guides located at www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity may assist in identifying bankfull width and the reference reach: (a) the USFS stream simulation manual (pages 5-20 and 5-76 are particularly relevant); (b) "Stream Channel Reference Sites: An Illustrated Guide to Field Technique" (Harrelson, et al. 1994); (c) "A Guide to Identification of Bankfull Stage in the Northeastern United States"; and (d) General Standard 3, page 10, of the Massachusetts River and Stream Crossing Standards, revised March 1, 2011.

¹⁴ These minimum embedment depths should be sufficient for many culverts. However, circumstances may dictate a need for deeper substrates that are based on site specific analysis. These include high gradient streams and streams experiencing instability or with potential instability that could result in future adjustments to channel elevation. In these cases long profiles and calculations of potential channel adjustments should be used to determine embedment depth. Deeper embedment depths may be also needed if there are elements of the constructed stream bed that are >15 inches in diameter.

iv. Match the culvert gradient (slope) with the anticipated stream channel profile that will form after the channel readjusts to post-crossing-replacement conditions.

v. Construct crossings with a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass substantial high flow events.

vi. Construct crossings with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows at the time of construction and over time. In order to provide appropriate water depths and velocities at a variety of flows and especially low flows, it is usually necessary to reconstruct the streambed (sometimes including a low flow channel), or replicate or preserve the natural channel within the structure. Otherwise, the width of the structure needed to accommodate higher flows will create conditions that are too shallow at low flows. The grain and rock size, and arrangement of streambed materials within the structure should be in accordance with (v) above. Flows could go subsurface within the structure if only large material is used without smaller material filling the voids.

vii. Openness >0.82 feet (0.25 meters). Openness is the cross-sectional area of a structure opening divided by its crossing length when measured in consistent units (e.g. feet). For a box culvert, openness = (height x width)/length. For crossing structures with multiple cells or barrels, openness is calculated separately for each cell or barrel. At least one cell or barrel must meet the appropriate openness standard. The embedded portion of a culvert is not included in the calculation of cross-sectional area for determining openness.¹⁵ Openness >0.82 feet is recommended to make the structure more likely to pass small, riverine wildlife such as turtles, mink, muskrat and otter that may tend to avoid structures that appear too constricted. This openness standard is too small to accommodate large wildlife such as deer, bear, and moose. Structures that meet this openness standard are much more likely than traditional culverts to pass flood flows and woody debris that would otherwise obstruct water passage. It is likely that most structures that meet all the other general standards will also meet this openness standard. However, for some very long structures it may be impractical or impossible to meet this standard.

viii. Construct banks on each side of the stream inside the crossing that match the horizontal profile of the existing stream and banks outside the crossing. To prevent failure, all constructed banks should have a height to width ratio of no greater than 1:1.5 (vertical:horizontal) unless the stream is naturally incised. Tie the banks into the up and downstream banks and configure them to be stable during expected high flows. Use materials that match the up and downstream banks (avoid the use of angular riprap and armored slopes).

d. Temporary crossings in non-tidal streams. The following conditions must be met for temporary crossings (e.g., spans, culverts, construction mats or fords) in non-tidal streams to be SV eligible:

i. All temporary crossings:

1. Avoid excavating the stream or embedding crossings.

2. Impacts to the streambed or banks require restoration to their original condition. See the USFS stream simulation manual for restoration methods¹². Use geotextile fabric and bedding as appropriate to ensure restoration to the original grade.

ii. Culverts:

1. The water height should be no higher than the top of the culvert's inlet and the culvert shall be large enough to pass debris.

2. Install energy dissipating devices downstream if necessary to prevent scour.

iii. Stream fords: Equipment may ford streams when it is not feasible to construct a span or culvert (e.g., streams having no or low banks, emergency situations); the natural stream bed and banks consist of ledge, rock or sand that prevents disturbance and turbidity; and there is a stable, gradual approach.

¹⁵ The [Openness Ratio Spreadsheet](#) shows how to calculate the open area for embedded pipe culverts to meet the 0.82 standard for openness. See www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity.

iv. Spans: Anchor spans where practicable so they do not wash out during high water. A typical span method is provided at www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity >> Skidder Bridge Fact Sheet.

v. Construction mats: Build construction mat stream crossings in accordance with the Construction Mat BMPs, particularly the Wetland/Stream Channel Crossing section.

e. **Wetland Crossings.** To assist in meeting the requirements in GCs 17 and 18, culverts or spans¹⁰ shall be placed at least every 50 feet with an opening at least 2-feet high and 3-feet wide at ground level where practicable. Closed bottom culverts shall be embedded at least 6 inches with a natural bottom. In the case of non-compliance, the permittee shall take necessary measures to correct wetland damage due to lack of hydraulic and ecological connectivity.

20. Floodplains and Floodways

- a. Appropriate measures must be taken to minimize flooding to the maximum extent practicable.
- b. Activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency (FEMA)-approved State and/or local floodplain management permitting requirements.

21. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, etc. that are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands or mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is waterward of MHW or OHW.

22. Spawning, Breeding, and Migratory Areas

- a. Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- b. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for obtaining any “take” permits required under the USFWS’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such “take” permits are required for a particular activity.

23. Vernal Pools

- a. For projects requiring a PCN, vernal pools must be identified on the plan showing aquatic resource delineations.
- b. A PCN is required if a discharge of dredged or fill material is proposed in a vernal pool located within Federal jurisdictional boundaries.
- c. Adverse impacts to vernal pools should be avoided and minimized to the maximum extent practicable.

24. Coral Reefs. Impacts to coral reefs are not authorized under these GPs. Coral reefs consist of the skeletal deposit, usually of calcareous or siliceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

25. Invasive and Other Unacceptable Species¹⁶

- a. The introduction or spread of invasive or other unacceptable plant or animal species on the project

¹⁶ See www.nae.usace.army.mil/missions/regulatory/mitigation. The June 2009 “Corps of Engineers Invasive Species Policy” provides policy, goals and objectives and is located at www.nae.usace.army.mil/missions/regulatory/invasive-species. Additional information can be found at: www.eddmaps.org/ipane.

site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive species or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by these GPs. Seed mixes and vegetation shall include only plant species native to New England and shall not include any species listed in Appendix D, “Invasive and Other Unacceptable Plant Species,” of the “New England District Compensatory Mitigation Guidance”¹⁶. This list may be updated periodically.

26. Blasting. Blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc. is not authorized under these GPs.

27. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see §307 of the CWA).

28. Stormwater Treatment or Detention Systems. Stormwater treatment or detention systems in waters of the U.S. are not authorized under these GPs and require an IP. Stormwater conveyance components and non-porous, septic effluent pipes that transmit effluent to or between components may be SV eligible under GP 9.

29. Tide Gates. New tide gates conveying water between waters of the U.S. are not authorized under these GPs and require an IP. Tide gates on discharge pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S. may be authorized under GPs 1 and 9.

30. Water Quality Certification

a. Any activity under these GPs that requires authorization under §404 of the CWA for the discharge of dredged or fill material into waters of the U.S. also requires applicants to obtain a §401 water quality certification (WQC) from the State (hereinafter referred to as “§401 WQC”) or a Final Order of Conditions from the town or city which serves as the WQC. In Massachusetts, the MassDEP has authority to issue or deny §401 WQC. Activities authorized under these GPs must comply with all conditions set forth in the April 5, 2018 conditional WQC for these GPs (located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit/) or in an Individual §401 WQC. Authorization under the GPs is not valid and no work may commence in Corps jurisdiction until the MassDEP has issued or waived §401 WQC.

b. If a §401 WQC is issued for work that is different from that in the Corps authorization, the Corps authorization is not valid and the permittee must contact the Corps to allow the Corps to resolve the discrepancy.

31. Coastal Zone Management

a. Each activity under these GPs within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs. The Massachusetts Office of Coastal Zone Management (MA CZM) administers the [Massachusetts CZM program](#).

b. For SV eligible activities, MA CZM has agreed with the Corps consistency determination and therefore these activities do not require any additional MA CZM Federal consistency review.

c. For PCN activities in the coastal zone, authorization under these GPs becomes valid only after MA CZM determines that the activity is consistent with the MA CZM program. The Corps will typically coordinate review with MA CZM and then notify applicants if MA CZM determines that the activity is

consistent with the MA CZM program or if an individual consistency concurrence is required. If the MA CZM consistency concurrence is for work different from that in the Corps authorization, the Corps authorization is not valid and the permittee must contact the Corps to allow the Corps to resolve the discrepancy.

32. Permit On Site. The permittee shall ensure that any contractor(s) and or workers executing the activities authorized by this GP(s) have knowledge of the terms and conditions of this authorization and any modification(s), and that a copy of this GP document and any accompanying verification letter and attached plans are at the site of the authorized work throughout the period(s) of time the work is underway.

33. Self-Verification Notification Form. For those activities that do not require PCNs and are eligible for self-verification, permittees must complete and submit the [SVNF](#) to the Corps for work authorized by these GPs unless otherwise stated. See the SVNF for submittal requirements and timing.

34. Inspections. The permittee shall allow the Corps to inspect the authorized activities and mitigation parcels at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of the applicable GP(s) and any written verification from the Corps. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms:

- For Self-Verification: The SVNF. See GC 33.
- For PCN: The Work-Start Notification Form, Compliance Certification Form, and/or Mitigation Work-Start Notification Form whenever these forms are provided with a verification letter.

35. Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions and activity-specific special conditions provided in a written verification from the Corps. This does not include maintenance of dredging, related disposal, or beach nourishment projects unless specified in a written authorization from the Corps.

36. Property Rights. These GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor do they authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

37. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps to validate the transfer. A copy of the GP verification must be attached to the letter, the letter must contain the name, address and phone number of the transferee (new owner), include the following statement and signature, and be mailed to: Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751:

“When the structures or work authorized by these GPs are still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the new owner(s) of the property.

Transferee Printed Name

Transferee Signature

Date

38. Modification, Suspension, and Revocation. These GPs or any work authorized under these GPs may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

39. Special Conditions. The permittee must comply with any special conditions added by the Corps to this GP. Failure to comply with all applicable terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or an ordered restoration, and/or the permit may be modified, suspended or revoked by the Corps.

40. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under these GPs and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid and modify, suspend or revoke the authorization. In such cases, the U.S. Government may institute legal proceedings.

41. Abandonment. If the permittee abandons or decides to abandon the activity authorized under these GPs, the work must be removed and the area restored to the maximum extent practicable unless a GP or IP specifically authorizes the abandonment.

42. Enforcement cases. These GPs do not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

43. Previously Authorized Activities

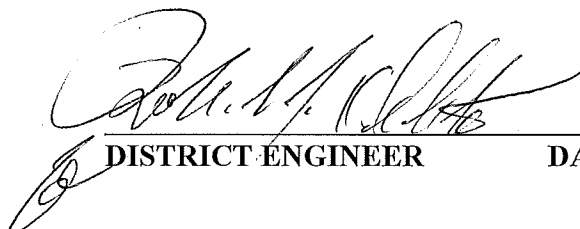
a. Activities that were authorized and completed in accordance with previous GPs or nationwide permits are not affected by these GPs and continue to be authorized in accordance with the original terms and conditions of those authorizations, including their terms, general conditions, expiration date, and any special conditions provided in a written verification.

b. Activities authorized pursuant to 33 CFR 330.3 ("Activities occurring before certain dates") are not affected by this GP.

44. Duration of Authorization

a. These GPs expire on April 5, 2023. Activities authorized under GPs 1 - 23 that have either commenced (i.e., are under construction) or are under contract to commence before these GPs expire will have until April 5, 2024 to complete the activity under the terms and conditions of the current GPs. The permittee must be able to document to the Corps' satisfaction that the project was under construction or under contract by the appropriate date. If work is not completed within the one year extended timeframe nor SV eligible under any subsequently issued GPs, the permittee must contact the Corps to discuss obtaining a separate Corps authorization to complete the work.

b. Activities completed under these GPs will continue to be authorized unless special conditions require removal of the authorized work and restoration of the affected area after a specified time period.


DISTRICT ENGINEER 4/10/18
DATE



**US Army Corps
of Engineers®**
New England District

V: Self-Verification Notification Form

(for all tidal and non-tidal projects subject to Corps jurisdiction)

Complete **all** fields (write “none” if applicable) below or use the fillable form at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit. Before work within Corps jurisdiction commences, and unless otherwise specified, email this form, a location map, and project plans drawn to scale and not larger than 11” x 17”, to cenae-r@usace.army.mil, (978) 318-8303 (fax), or “Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751”. The Corps will acknowledge receipt of this form in writing. Please call (978) 318-8338 with questions.

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor (write none if same as permittee): _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Prior Corps File or Permit Numbers(s): _____
Project Location (provide detailed description if necessary): _____

Address, City, State & Zip: _____
Latitude/Longitude Coordinates (if address doesn’t exist): _____
Waterway Name: _____

Work will be done under the following activity(s) in Section III, Eligible Activities (check all that apply):

1_____	5_____	9_____	13_____	17_____	21_____
2_____	6_____	10_____	14_____	18_____	22_____
3_____	7_____	11_____	15_____	19_____	23_____
4_____	8_____	12_____	16_____	20_____	

Project Purpose: _____

Work Description: _____

(continued on next page)

Aggregate total wetland impact area: temporary_____SF permanent_____SF
Aggregate total waterway impact area: temporary_____SF permanent_____SF
Aggregate total area of structures temporary_____SF permanent_____SF
(e.g., floats, pile-supported structures)

Does your project include any indirect or secondary impacts? (See General Condition 3.)

Yes_____ No_____

If yes, describe here: _____

Proposed Work Dates: Start: _____ Finish: _____

Your name/signature below, as permittee, confirms that: a) your project meets the self-verification criteria; and b) you accept and agree to comply with the applicable terms and conditions in the General Permits for Massachusetts.

Permittee Printed Name: _____

Permittee Signature: _____ Date: _____

VI: Content of Preconstruction Notification

Applications should be emailed to cenae-r@usace.army.mil or to the Corps project manager if one has been assigned. In addition to the following required information, the applicant must provide additional information as the Corps deems essential to make a public interest determination including, where applicable, a determination of compliance with the §404(b)(1) guidelines or ocean dumping criteria.

1. Written information required for all projects:

- Corps application form ([ENG Form 4345](#)). The MassDEP WQC, Chapter 91 application form and Notice of Intent cannot be substituted for the form, but can be used supplementally.
- All anticipated direct, indirect and secondary impacts, both permanent and temporary, to waters of the U.S. (in wetlands, and waterward of OHW in inland waters and the HTL in coastal waters) in square feet, acres, or linear feet (for stream and bank impacts), and cubic yards or other appropriate units of measure. The New England District Compensatory Mitigation Guidance is a resource for assessing secondary impacts (see www.nae.usace.army.mil/missions/regulatory/mitigation.aspx).
- For the discharge of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized. For the remaining impacts, include a statement describing how impacts to waters of the U.S. are to be compensated for or explain why compensatory mitigation should not be required for the proposed impacts.
- For any activity that will alter or temporarily or permanently occupy or use a Corps Federally authorized civil works project, the PCN must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps. See GC 5(a).
- Information on historic properties (see GC 7), including a copy of the [Historic Property Notification Form](#) (Section IX) and the email or certified mail receipt that was used to send the form to the SHPO, BUAR and applicable THPOs.
- Information on Federal threatened or endangered species (see GC 10).
- A restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions (see GC 15).
- Photographs of wetland/waterway to be impacted. Photos at low tide are preferred for work in tidal waters.
- Invasive Species Control Plan (see GC 25). For sample control plans, see www.nae.usace.army.mil/missions/regulatory/invasive-species.
- Provide discussion of habitat, including type of sediment/soil effected (sand, mudflat, etc), along with presence or absence of wildlife, plants, fisheries, and shellfish. Explain how the applicant has determined the presence or absence of the required wildlife, fisheries, shellfish, information, e.g., divers, surveys, personal observation, online maps, etc.
- Provide a description of the federal wetlands and provide a map of their locations within the project area. Provide an assessment of the impacts expected from the project on the wetlands and wildlife functions.
- Provide historic information of project area, e.g., existing Corps permit numbers, the names under which the permits were obtained if the permit numbers are unknown, construction dates and proof of prior existence (aerials, photos, town hall records, affidavits, state or local permits, etc.) to verify “grandfathering.”
- If the project is located in the floodway, state whether the project will increase the 100-year frequency flood level? How much floodplain storage will be removed from the 100-year floodplain by fill.

For dredging projects, include:

- Date the area was last dredged.
- Whether it is new, improvement or maintenance dredging and the method of handling/transporting.
- Type of dredging equipment to be used and dredging method (e.g. mechanical or hydraulic).
- Grain-size of material to be dredged (e.g., silty sand). Provide any existing sediment grain size and bulk sediment chemistry data from the proposed or nearby projects.
- Information on any recent spills of oil and/or other hazardous materials and on nearby outfalls. Document the information source, e.g., the harbormaster or fire chief.
- Total footprint of the dredged area when characterizing impact to resources.
- Discuss alternatives to open-water disposal.

2. Plans for all projects shall include:

- Drawings, sketches, or plans that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), drawn to scale, and no larger than 11"x17". Numeric and graphic/bar scales must agree and plan details must be measurable using a standard engineer's scale on printed plans. Reduced plans are not acceptable. Show the north arrow and wetland and waterway area impacts. Provide a color locus map and, if necessary, a plan overview of the entire property with a key index to the individual impact sheets.
- Datum in plan and elevation views.
- The horizontal datum shall be in the NAD 83 Massachusetts State Plane Coordinate System (zone is either Mass Mainland or Mass Island) in U.S. survey feet.
- The vertical data in coastal projects shall be referenced to either MLLW or the North American Vertical Datum of 1988 (NAVD 88). Both the distance and depth units shall be U.S. survey feet.
- Existing and proposed conditions, and plan views and cross sections for all work.
- Limits and area (SF) of temporary and permanent fill to be placed in any wetlands or waterway, including construction access and work areas, cofferdams, bedding, and backfill. Show delineation of all wetlands including salt marsh; other special aquatic sites (vegetated shallows, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges); other waters, such as lakes, ponds, vernal pools, and perennial, intermittent, and ephemeral streams; on the project site. Use Federal delineation methods and include Corps wetland delineation data sheets (see GC 2) for all wetlands. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
- Copies of sections of National Wetland Inventory Maps, marked to show locations and site boundaries. Identify the quad name and year.
- Ebb and flood in tidal waters and direction of flow in non-tidal waters.
- Indicate the relationship of the proposed work site to waters of the U.S., i.e. adjacent wetlands, tidal influence through culverts, etc.
- Total plan of development, including the proposed use of upland and wetland areas.
- Names or numbers of all roads in the site's vicinity.
- Names of adjoining property owners in plan view.
- For typical pipeline cross-sections, the details of the bedding and backfill to be used in wetlands and waterways. Show proposed trench dams and detail for inland projects.
- Adjacent Federal navigation project (FNP) (anchorage or channel) and/or state/local navigation projects, distance to them, the authorized depths of the FNP, and state plane coordinates of seaward end(s) of structures near an FNP.
- The 100, 500-year and regulatory floodway boundaries as shown on the community's current National Flood Insurance Program maps, if applicable.
- A statement regarding how the project proponent has determined the absence or presence of vegetated

shallows, mudflats, or riffles and pools, e.g., personal visual observation, divers, online maps, conversations with local officials, etc.

- Shellfish information. A survey may be required.

2a. Plans for structures shall also include:

- The MLLW, MHW and HTL elevations in tidal waters, and OHW in non-tidal navigable waters.
- Water depths around the project in all views.
- Dimensions of the existing and proposed structures. Show the location and dimensions of existing bulkheads and/or shoreline stabilization on adjacent properties and, if applicable, how the proposed work will tie into existing structures.
- For piers and other structures, the minimal height of structure above the marsh.
- For floats, the methods of securing (piles, bottom anchors) and keeping off substrate (skids, stops).
- Any existing structures and moorings in waters adjacent to the proposed activity, their dimensions, and the distance to the limits and coordinates of any proposed mooring field, reconfiguration zone or aquaculture activity. Provide the coordinates for all corners based on the Massachusetts State Plane Coordinate System. Specify the maximum number of slips and/or moorings within proposed reconfiguration zones. If no structures exist or are proposed, state this on the project plans.
- The dimensions of the structure or work and extent of encroachment waterward of MHW and from a fixed point on the shoreline or upland.
- Shoreline of adjacent properties.
- In narrow waterbodies, the distance to opposite shoreline, waterway width, and structures across from proposed work.
- For reconfiguration zones, the coordinates of the corners and specify the maximum number of slips and/or moorings within the zone.
- A description of the type of vessels that would use the facility, and any plans for sewage pump-out facilities, fueling facilities and contingency plans for oil spills.

2b. Plans for projects involving fill shall also include:

- All locations of discharges of dredged or fill material waterward of the HTL or OHW.
- Any historic permanent fill previously authorized by the Corps and the date of authorization.
- The MLLW, MHW and HTL elevations in tidal waters, and OHW elevation in lakes and non-tidal streams.
- Structures, if any, proposed to be erected on the fill.
- Limits of wetlands (label: wetland boundary) and waterways (labels: OHW or HTL) on all views.
- Limits of temporary and permanent fill to be used in any wetlands or waterway, including construction access and work areas, cofferdams, bedding, and backfill.
- Area (SF) of each fill that is waterward of the OHW in non-tidal waters, waterward of the HTL in tidal waters, and in wetlands. State if the fill is permanent or temporary.
- Disposal site of the excess excavated material. If necessary, submit an additional sheet showing the location of the proposed disposal site. Provide quantity of excess excavated material.
- Existing and proposed ground or waterway contours or spot elevations on all views.
- Mitigation areas clearly identifying each area and showing the boundaries and SF of each area.
- Total plan of development, including the proposed use of upland and wetland areas.

2c. Plans for projects involving dredging shall also include:

- The area (SF) and volume (CY) of material to be dredged waterward of MHW for each dredge location.
- Dredge boundaries.
- Bathymetry: existing, proposed and historical (include dates and Corps permits) dredge depths
- The likely final angle of repose of the side cuts based on the physical characterization of the material to be dredged and based upon the high/ medium/low, wave or current energy of the location.
- Whether the dredging is new, maintenance, improvement, or a combination.
- A description of the area to be dredged, i.e. open water, existing channel, wetlands, uplands, etc.
- Location of the disposal site (include locus sheet).
- The methods and areas used to retain or prevent dredged material from running back into the wetland or waterway. Provide the capacity and points of runback, including the overflow route, into the aquatic system.
- For beach nourishment, the disposal footprint, existing and proposed nourishment profiles (multiple profiles are appropriate if the site is more than 150 feet long or non-contiguous), total fill area (SF) and volume (CY), fill area and volume waterward of the HTL, and delineation of dunes, banks, existing beach vegetation, and contours.
- Show the finished top elevation of the disposal site.
- For open-water disposal, explain why inland or beneficial reuse sites are not practicable.
- Identification and description of any potential impacts to Essential Fish Habitat and threatened or endangered species.
- Note: For projects proposing open water, nearshore disposal, or beach nourishment, contact the Corps as early as possible regarding sampling and testing protocols. Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing may be required. Sampling and testing of sediments without such contact should not occur and if done, would be at the applicant's risk.

VII. Definitions and Acronyms

Definitions

Artificial or Living Reef: A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.

Attendant Features: Occurring with or as a result of; accompanying.

Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo-(bio)degradable plastics are not considered biodegradable under this GP.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, municipal facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or municipal mooring fields that charge an equitable user fee based on the actual costs incurred.

Brushing the Flats: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mud-flats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Construction mats: Constructions, swamp and timber mats (herein referred to as “construction mats”) are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.

Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230.11(g).

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.

Dredging:

Improvement Dredging: For the purposes of these GPs, this is dredging deeper than previously authorized by the Corps and dredged.

Maintenance Dredging: For the purposes of these GPs, this is dredging from an area previously authorized by the Corps and dredged. The Corps may require proof of authorization and dredging.

Maintenance dredging typically refers to the routine removal of accumulated sediment to maintain the design depths of serviceable navigation channels, harbors, marinas, boat launches and port facilities.

Maintenance dredging is conducted for navigational purposes and does not include any expansion of the

previously dredged area. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.

New Dredging: For the purposes of these GPs, this is dredging of an area that has never been authorized by the Corps and dredged.

Dredged material & discharge of dredged material: These are defined at 33 CFR 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

Expansions: Work that increases the footprint of fill, structures or floats, or slip capacity.

Essential Fish Habitat (EFH): The Federal Magnuson-Stevens Fishery Management and Conservation Act broadly defines EFH to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. See www.greateratlantic.fisheries.noaa.gov/habitat for more information.

Fill material & discharge of fill material: These are defined at 33 CFR 323.2(e) and (f). The term fill material is defined as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.

Federal anchorages: See the definition of “Federal navigation projects.”

Federal channels: See the definition of “Federal navigation projects.”

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and comprised of Corps Federal anchorages, Federal channels and Federal turning basins. The buffer zone is equal to three times the authorized depth of a FNP. The following are FNPs in MA and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation >>

Navigation Projects:

Andrews River, Harwich, MA	Green Harbor	Pollock Rip Shoals, Nantucket
Aunt Lydia’s Cove	Hingham Harbor	Sound
Beverly Harbor	Hyannis Harbor	Provincetown Harbor
Boston Harbor	Ipswich River	Red Brook Harbor
Buttermilk Bay Channel	Island End River (Chelsea, MA)	Rockport Harbor
Canapitsit Channel	Kingston Harbor	Salem Harbor
Cape Cod Canal	Lagoon Pond	Sandy Bay Harbor of Refuge
Chatham Harbor	Little Harbor Woods Hole	Saugus River
Cohasset Harbor	Lynn Harbor	Scituate Harbor
Cross Rip Shoals, Nantucket	Malden River	Sesuit Harbor
Sound	Menemsha Creek	Taunton River
Cuttyhunk Harbor	Merrimack River	Vineyard Haven Harbor
Dorchester Bay and Neponset	Mystic River	Wareham Harbor
River	Nantucket Harbor of Refuge	Wellfleet Harbor
Duxbury Harbor	New Bedford and Fairhaven	Westport River and Harbor
Edgartown Harbor	Harbor	Weymouth Back River
Essex River	Newburyport Harbor	Weymouth Fore and Town
Fall River Harbor	Oak Bluffs Harbor	Rivers
Falmouth Harbor	Pigeon Cove Harbor	Winthrop Harbor
Gloucester Harbor and	Plymouth Harbor	Woods Hole Channel
Annisquam River		

Federal turning basin: See the definition of “Federal navigation projects.”

Flume: An open artificial water channel, in the form of a gravity chute, which leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

FNP buffer zone: The buffer zone of a Corps FNP is equal to three times the authorized depth of the FNP.

Frac out: During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface.

In the dry: Work that is done under dry conditions, e.g., work behind cofferdams or when the stream or tide is waterward of the work.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Individual permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Intertidal: The area in between mean low water and the high tide line.

Living Reef: See the definition of “artificial or living reef.”

Living Shoreline: Living shorelines stabilize banks and shores in coastal waters along shores with small fetch and gentle slopes that are subject to low-to mid-energy waves. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface, and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster or mussel reef structures.

Maintenance: Maintenance does not include any modification that changes the character, scope, or size of the original fill design.

Mechanized land clearing: As a general rule, mechanized land clearing is a regulated activity (see [Regulatory Guidance Letter 90-05](#)).

Metallic mineral: Any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. “Metallic mineral” does not include thorium or uranium.

Minor deviations: Deviations in the structure’s configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards.

Mouth: The river mouths referenced in this document can be determined using the maps located at: <http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-maps-mouth-of-coastal-river.html>.

Navigable waters or Navigable waters of the U.S.: See the definition of “waters of the U.S.” below.

Nearshore disposal: This is defined in the USACE Coastal Engineering Manual as “(1) In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone. (2) The zone which extends from the swash zone to the position marking the start of the offshore zone, typically at water depths of the order of 20m.” A nearshore berm is an artificial berm built in shallow

water using dredged material. Often, the berm is intended to renourish the adjacent and downdrift shore over time under the influence of waves and currents.

Non-tidal wetlands: See the definition of “Waters of the U.S.” below.

Ordinary High Water Mark (OHW): A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).

Overall project: See the definition of “single and complete linear project.”

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.

Preconstruction notification (PCN): A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by these GPs. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Preconstruction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized under these GPs.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Real estate subdivision: Includes circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or developing said parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof

Reconfiguration zone: A Corps-authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in again in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Secondary effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final

§404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are: aquatic areas drained, flooded, fragmented; fluctuating water levels in an impoundment and downstream associated with the operation of a dam; septic tank leaching and surface runoff from residential or commercial developments on fill; and leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Sedimentation and turbidity: For the purposes of this document, “greater than minimal sedimentation or turbidity” is generally not considered to occur from the installation of sheet piles, removal of sheet piles when done in accordance with GC 16, the installation or removal of piles, dredging or excavating in predominantly sand and courser material, and dredged material disposal in the upland (e.g., beach or parking lot) into properly constructed upland contained dredged material disposal area.

Shellfish dredging: Shellfish dredging typically consists of a net on a frame towed behind a boat to capture shellfish and leave the sediment behind. Dredges may skim the surface, utilize hydraulic jets, toothed rakes or suction apparatus.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of these GPs. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Overall project: The overall project, for purposes of these GPs, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see the definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in a GP authorization.

Special aquatic sites: These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.

Stream: The term “stream” in the document means rivers, streams, brooks, etc.

Streambed: The substrate of the stream channel between the OHW marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

Temporary impacts: Temporary impacts include, but are not limited to, waters of the U.S. that are temporarily filled, flooded, excavated, or drained because of the regulated activity.

Tidal wetlands: See the definition of “Waters of the U.S.” below.

Tide gates: Structures such as duckbills, flap gates, manual and self-regulating tide gates, etc. that regulate or prevent upstream tidal flows.

Turbidity: See the definition of “Sedimentation and turbidity” above.

Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term ‘utility line’ does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.

Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*) in marine systems (does not include salt marsh) as well as a number of freshwater species in rivers and lakes. These are a type of SAS defined at 40 CFR 230.43. Vegetated shallows are commonly referred to as submerged aquatic vegetation or SAV. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

Vernal pools: For the purposes of these GPs, vernal pools are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, vernal pools support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson’s salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

Water diversions: Water diversions are activities such as bypass pumping (e.g., “dam and pump”) or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary’s confines aren’t water diversions. “Normal flows” are defined as no change in flow from pre-project conditions.

Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.

Waters of the United States (U.S.)

- **Navigable waters of the United States** are waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR 329 and identify waters where permits are required for work or structures pursuant to §§9 and 10 of the Rivers and Harbors Act of 1899. They are generally defined in 33 CFR 329.4 as “those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.”

Note: Currently the following non-tidal waters have been determined to be navigable waters of the U.S. subject to permit jurisdiction in Massachusetts: Merrimack River, Connecticut River, and Charles River to the Watertown Dam.

- **Waters of the United States** are defined in 33 CFR 328. These waters include more than navigable waters of the U.S. and are the waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the CWA. Waters of the U.S. include jurisdictional wetlands.
- **Non-tidal wetland:** A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the HTL (*i.e.*, spring HTL).

- **Tidal wetland:** A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the HTL.
- **Waterbody:** For purposes of these GPs, a waterbody is a jurisdictional water of the U.S. If a wetland is adjacent to a waterbody determined to be a water of the U.S., that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Acronyms

BMPs	Best Management Practices
BUAR	Board of Underwater Archaeological Resources
CWA	Clean Water Act
CZM	Coastal Zone Management
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EFH	Essential Fish Habitat
FNP	Federal Navigation Project
GC	General Condition
GP	General Permit
HTL	High Tide Line
IP	Individual Permit
LID	Low impact development
MassDEP	Massachusetts Department of Environmental Protection
MA DMF	Massachusetts Division of Marine Fisheries
MHC	Massachusetts Historical Commission
MHW	Mean High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
OHW	Ordinary High Water Mark
PCN	Preconstruction Notification
SAS	Special Aquatic Sites
SF	Square Feet
SV	Self-Verification
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
USFWS	U.S. Fish and Wildlife Service
USCG	U.S. Coast Guard
USFS	U.S. Forest Service
USGS	U.S. Geological Service
WQC	Water Quality Certification

VIII: Contacts and Tribal Areas of Concern

1. Federal

U.S. Army Corps of Engineers
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
(978) 318-8338 (phone); (978) 318-8303 (fax)
www.nae.usace.army.mil/missions/regulatory

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP05-2)
Boston, Massachusetts 02109-3912
(617) 918-1692 (phone)

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930
(978) 281-9300 (phone)
(*Federal endangered species & EFH*)

U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
(603) 223-2541 (phone)
(*Federal endangered species*)

National Park Service
15 State Street
Boston, MA 02109
(617) 223-5191 (phone)
(*Wild and Scenic Rivers*)

Commander (dpb)
First Coast Guard District
Battery Building
One South Street
New York, NY 10004-1466
(212) 514-4331 (phone); (212) 514-4337 (fax)
(*bridge permits*)

Chief, Risk Analysis Branch
FEMA Region 1
U.S. Department of Homeland Security
99 High Street, 6th Floor
Boston, MA 02110
(617) 956-7576

2. State of Massachusetts

Department of Environmental Protection (MassDEP)

DEP Division of Wetlands and Waterways
One Winter Street
Boston, MA 02108
(617) 292-5695

DEP Northeast Region
Wetlands Protection Program
205B Lowell Street
Wilmington, MA 01887
(978) 694-3200

DEP Western Region
Wetlands Protection Program
436 Dwight Street
Springfield, MA 01103
(413) 784-1100

DEP Central Region
Wetlands Protection Program
8 New Bond Street
Worcester, MA 01606
(508) 792-7650

DEP Southeast Region
Wetlands Protection Program
20 Riverside Drive, Route 105
Lakeville, MA 02347
(508) 946-2800

Massachusetts Office of Coastal Zone Management (CZM)

MA Office of Coastal Zone Management
251 Causeway Street, Suite 800
Boston, MA 02114
(617) 626-1200 (phone)

3. Historic Resources:

a. Massachusetts Historical Commission (MHC)

The Massachusetts Archives Bldg.

220 Morrissey Boulevard

Boston, MA 02125

(617) 727-8470 (phone); (617) 727-5128 (fax)

Area of concern: The entire Commonwealth of Massachusetts

b. Massachusetts Board of Underwater Archaeological Resources (BUAR)

251 Causeway Street, Suite 800

Boston, MA 02114

(617) 626-1141 (phone); (617) 626-1240 (fax); victor.mastone@state.ma.us

Area of concern: All Massachusetts lakes, ponds, rivers and navigable waters.

c. Tribal Historic Preservation Officers (THPOs)

Tribal Historic Preservation Officer

Wampanoag Tribe of Gay Head (Aquinnah)

20 Black Brook Road

Aquinnah, MA 02535

(508) 645-9265, x175 (phone); (508) 645-3790 (fax); bettina@wampanoagtribe.net

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Mashpee Wampanoag Tribe

483 Great Neck Road South

Mashpee, MA 02649

(508) 477-0208, x101 (phone); (508) 477-1218 (fax); rpeters@mwtribe.com

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Stockbridge-Munsee Mohican Tribal Historic Preservation, New York Office

65 1st Street

Troy, NY 12180

(518) 244-3164 (phone); bonney.hartley@mohican-nsn.gov

Area of concern: West of the Connecticut River and Northfield, Montague, Miller's Falls, Turner's Falls, Sunderland, Amherst, Hadley, South Hadley, Chicopee, Springfield and Longmeadow.

Tribal Historic Preservation Officer

Narragansett Indian Longhouse

4425 South County Trail

Charlestown, RI 02813

(401) 585-0142 (phone); (413) 325-7691 (cell); tashtesook@aol.com, dhnthpo@gmail.com

Area of concern: Boston and its surrounding cities and towns; Lynn; Newton; these cities and towns in Plymouth County (Carver, Duxbury, Hingham, Kingston, Marshfield, Middleborough, Plymouth, Plympton, Scituate); these cities and towns in Norfolk County (Milton, Quincy, Braintree, Randolph, Canton, Sharon and Foxborough); the Blackstone River valley; and the cities and towns west of Worcester (which are those including and west of Ashburnham, Westminster, Princeton, Holden, Paxton, Leicester, Oxford and Webster).



**US Army Corps
of Engineers®**
New England District

IX: HISTORIC PROPERTY NOTIFICATION FORM

In accordance with General Condition 7, proponents must ensure and document that all potential historic properties within the permit area have been identified. To assist with this effort, proponents may send this form for self-verification activities, but must send this form for PCN activities, to the SHPO, BUAR and applicable THPO(s). You must include any Corps or state waterway agency application forms, plans and a copy of the USGS quadrangle map section that clearly marks the project location. It is recommended that you complete **all** fields (write “none” or “see attached application form” if applicable). The PCN sent to the Corps must include proof of having sent this form, e.g. the email or certified mail receipt that was used to send it, to the SHPO (does not accept email), BUAR and applicable THPOs. Please include any comments or requests received from these agencies with your PCN.

Project Name: _____

Address, City, State & Zip: _____

Project Proponent Name: _____

Address: _____

Phone(s) and Email: _____

Project Location (provide detailed description if necessary) Address, City, State & Zip: _____

Latitude/Longitude Coordinates (if address doesn't exist): _____

Waterway Name: _____

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or Funding (specify)

_____	_____
_____	_____
_____	_____
_____	_____

Project Description: _____

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition: _____

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation: _____

Does the project include new construction? If so, describe (attach plans and elevations if necessary): _____

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify: _____

What is the total acreage of the project area?

Woodland _____ acres

Wetland _____ acres

Floodplain _____ acres

Underwater and/or bottomlands _____ acres

Open space _____ acres

Developed _____ acres

Productive Resources:

Agriculture _____ acres

Forestry _____ acres

Mining/Extraction _____ acres

Total Project Acreage _____ acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area? _____

Signature of person submitting this form: _____ Date: _____

Name: _____

Address: _____

City/Town/Zip: _____

Telephone: _____

**DECISION DOCUMENT FOR THE
MASSACHUSETTS GENERAL PERMITS 1 – 23
APRIL 2018**

This document discusses the factors considered by the Corps of Engineers (Corps) during the issuance process for these general permits (GPs). This document contains: (1) the public interest review required by Corps regulations at 33 CFR 320.4(a)(1) and (2); (2) a discussion of the environmental considerations necessary to comply with the National Environmental Policy Act; and (3) the impact analysis specified in Subparts C through F of the 404(b)(1) Guidelines (40 CFR 230). This evaluation of the GPs includes a discussion of compliance with applicable laws, consideration of public comments, an alternatives analysis, and a general assessment of individual and cumulative impacts, including the general potential effects on each of the public interest factors specified at 33 CFR 320.4(a).

1.0 General Permits

1. Maintenance
2. Moorings
3. Structures in Navigable Waters of the U.S.
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. U.S. Coast Guard Approved Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects and Stream Crossings
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Temporary Construction, Access, and Dewatering
15. Reshaping Existing Drainage Ditches, New Ditches, and Mosquito Management
16. Response Operations for Oil and Hazardous Substances
17. Cleanup of Hazardous and Toxic Waste
18. Scientific Measurement Devices
19. Survey Activities
20. Agricultural Activities
21. Fish and Wildlife Harvesting and Attraction Devices and Activities
22. Aquaculture Activities
23. Aquatic Habitat Restoration, Establishment and Enhancement Activities

1.1 Requirements

General conditions of the GPs, preconstruction notification (PCN) requirements, additional conditions, limitations, and restrictions are in the document titled “General Permits for the Commonwealth of Massachusetts.”

1.2 Statutory Authority

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)
- Section 404 of the Clean Water Act (33 U.S.C. 1344)
- Section 103 of the Marine Protection, Research and Sanctuaries Act

1.3 Compliance with Related Laws (33 CFR 320.3)

1.3.1 General

General permits authorize certain activities that have minimal individual and cumulative adverse effects on the aquatic environment and generally comply with the related laws cited in 33 CFR 320.3. Activities that result in more than minimal individual and cumulative adverse effects on the aquatic environment cannot be authorized by GPs. Individual review of each activity authorized by a GP will not normally be performed, except when PCN to the Corps is required or when an applicant requests verification that an activity complies with a GP. Potential adverse impacts and compliance with the laws cited in 33 CFR 320.3 are controlled by the terms and conditions of each GP, case-specific conditions, and the review process that is undertaken prior to the issuance of GPs.

The evaluation of this GP, and related documentation, considers compliance with each of the following laws, where applicable: Sections 401, 402, and 404 of the Clean Water Act; Section 10 of the Rivers and Harbors Act of 1899; Section 307(c) of the Coastal Zone Management Act of 1972, as amended; Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended; the National Environmental Policy Act of 1969; the Fish and Wildlife Act of 1956; the Migratory Marine Game-Fish Act; the Fish and Wildlife Coordination Act, the Federal Power Act of 1920, as amended; the National Historic Preservation Act of 1966; the Interstate Land Sales Full Disclosure Act; the Endangered Species Act; the Deepwater Port Act of 1974; the Marine Mammal Protection Act of 1972; Section 7(a) of the Wild and Scenic Rivers Act; the Ocean Thermal Energy Act of 1980; the National Fishing Enhancement Act of 1984; the Magnuson-Stevens Fishery and Conservation and Management Act, the Bald and Golden Eagle Protection Act; and the Migratory Bird Treaty Act. In addition, compliance of the GP with other Federal requirements, such as Executive Orders and Federal regulations addressing issues such as floodplains, essential fish habitat, and critical resource waters is considered.

1.3.2 Terms and Conditions

Many GPs have PCN requirements that trigger case-by-case review of certain activities. Two GP general conditions (GCs) require case-by-case review of all activities that may adversely affect historic properties (GC 7) or Federally-threatened and endangered species (GC 10). General Condition 8 restricts the use of GPs for activities that are located in Federally-designated wild and scenic rivers. General Condition 4 prohibits the use of more than one GP for a single and complete project except when the impact area of waters of the United States (U.S.) authorized by the GPs does not exceed the area limit of the GP with the highest specified area limit.

In some cases, activities authorized by a GP may require other Federal, State, or local

authorizations. Examples of such cases include, but are not limited to: activities in a National Wildlife Refuge, National Forest, National Marine Sanctuary, National Park or any other area administered by the National Park Service, U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service; activities that result in discharges of dredged or fill material into waters of the U.S. and require Clean Water Act Section 401 Water Quality Certification (WQC); or activities that require CZM consistency concurrence. In such cases, GC 1, Other Permits, states, “The permittee must obtain the following State approvals, when applicable, prior to the commencement of work in Corps jurisdiction in order for authorizations under these GPs to be valid: Water Quality Certification (see GC 30) and Coastal Zone Management Consistency Concurrence (see GC 31).” Additional safeguards include provisions that allow the District Engineer (DE) to: assert discretionary authority on a case-by-case basis to elevate a self-verification (SV) to PCN or Individual Permit (IP), or a PCN to IP; modify GPs for specific activities by adding special conditions on a case-by-case basis; or take action to modify, suspend or revoke a GP or any work authorized under a GP.

1.3.3 Review Process

The analyses in this document and the coordination that was undertaken prior to the issuance of these GPs fulfill the requirements of the National Environmental Policy Act (NEPA), the Fish and Wildlife Coordination Act, and other acts promulgated to protect the quality of the environment.

All GPs that authorize activities that may result in discharges into waters of the U.S. require WQC. General permits that authorize activities within, or affecting land or water uses within the coastal regions of the Commonwealth of Massachusetts must also be certified as consistent with the state’s Federally-approved coastal zone management program. The procedures to ensure that the GPs comply with these laws are described in 33 CFR 330.4(c) and (d), respectively.

1.4 Public Comment and Response

For a summary of the public comments received in response to the June 7, 2016 and September 15, 2017 public notices, and the changes, refer to Appendix A: Public Comments and Changes. The public notices solicited comments and information necessary to evaluate the probable impacts on the public interest. The substantive comments received in response to the public notices were used to improve the GPs by changing GPs’ terms and limits, PCN requirements, and/or general conditions, as necessary. We believe that the two public notices sufficiently advised all interested parties of the proposed GPs.

2.0 Alternatives

This evaluation includes an analysis of alternatives based on the requirements of NEPA, which requires a more expansive review than the Clean Water Act Section 404(b)(1) Guidelines. The alternatives discussed below are based on an analysis of the potential environmental impacts and impacts to the Corps, Federal and state resource agencies, general public, and prospective permittees. Since the consideration of off-site alternatives under the 404(b)(1) Guidelines does not apply to specific projects authorized by GPs, the alternatives analysis discussed below consists of a general NEPA alternatives analysis for the GP.

2.1 No Action Alternative (No General Permit)

The no action alternative would not achieve one of the goals of the Corps Regulatory Program, which is to reduce the regulatory burden on applicants for activities that result in minimal individual and cumulative adverse effects on the aquatic environment. The no action alternative would also reduce the Corps ability to pursue the current level of review for other activities that have greater adverse effects on the aquatic environment, including activities that require IPs as a result of the Corps exercising its discretionary authority under the GP program. The no action alternative would also reduce the Corps ability to conduct compliance actions.

If the GPs are not available, substantial additional resources would be required for the Corps to evaluate these minor activities through the IP process, and for the public and Federal, tribal, and State resource agencies to review and comment on the large number of public notices for these activities. Another important benefit of the GP program that would not be achieved through the no action alternative is the incentive for project proponents to design their projects so that those activities meet the terms and conditions of a GP(s). The Corps believes the GPs have reduced adverse effects to the aquatic environment because most applicants modify their projects to comply with the GPs and avoid the delays and costs typically associated with the IP process.

2.2 Reinstitute the Nationwide Permits

Reinstitute the Nationwide Permits (NWP) in Massachusetts as a means to manage minimal impact projects would not be responsive to regional needs and would not result in a higher level of environmental protection. In comparison to the NWPs, the GP must: be both more efficient and provide more environmental protection than NWPs; have thresholds that encompass the majority of NWP activities that would be suspended or revoked; and incorporate procedures that substantially reduce permit review and processing times. The MA GPs meet all of these.

2.3 Reissue the existing MA GP with modifications

The goal of the New England District with respect to GPs is to be more efficient and provide more environmental protection than NWPs, have thresholds that encompass the majority of NWP activities that were revoked, and incorporate procedures that substantially reduce permit review and processing times. The GPs meet all of these and provides maximum utility to the regulated public in Massachusetts. Modifications allow the Corps to adjust the program to balance the needs between development and environmental protection. Scope expansion would be supported by the regulated public, while reduction would be supported by the Federal resource agencies. The proposed GPs strike a balance between utility and environmental protection and incorporates updates and revisions based on over 20 years of successful implementation in Massachusetts in coordination with Federal and state resource agencies and input from the public.

2.4 Least Environmentally Damaging Practicable Alternative (LEDPA)

Reissuing the existing MA GP with modifications is the LEDPA. Since the Corps GP program began in New England, the Corps has continuously strived to develop GPs that authorize activities that result only in minimal individual and cumulative adverse effects on the aquatic environment. Every five years the Corps reevaluates the state GPs during the reissuance process, and may modify a GP to address concerns for the aquatic environment. Utilizing collected data and institutional knowledge concerning activities authorized by the Corps Regulatory program, the Corps reevaluates the potential impacts of activities authorized by GPs. The Corps also uses substantive public comments on proposed GPs to assess the expected impacts.

These GPs will continue with the activity-based MA GPs that are similar to the NWP, providing more consistency throughout the nation. The two public notices solicited comments and information necessary to evaluate the probable impacts on the public interest. The Corps has considered suggested changes to the terms and conditions of these GPs as discussed in the document titled “GPs for MA: Summary, Comments & Changes.” See the public notices and final MA GPs for the proposed and final changes.

The DE has the authority to impose case-specific special conditions on GP authorizations to ensure that the authorized activities will result in minimal adverse effects. General Condition 3 states, “Activities must be designed and constructed to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site.” During the evaluation of a PCN, the DE may determine that additional avoidance and minimization is practicable. The DE may also condition the GP authorization to require compensatory mitigation to offset losses of waters of the United States (U.S.) and ensure that the net adverse effects on the aquatic environment are minimal. As another example, the GP authorization can be conditioned to prohibit the permittee from conducting the activity during specific times of the year to protect spawning fish and shellfish. If the proposed activity will result in more than minimal adverse effects on the aquatic environment, then the DE will exercise discretionary authority and require an IP. Discretionary authority can be asserted where there are concerns for the aquatic environment, including high value aquatic habitats. The IP review process requires a project-specific alternatives analysis, including the consideration of off-site alternatives, and a public interest review.

3.0 Affected Environment

The Commonwealth of Massachusetts ranks 45th out of the 50 states in surface area (10,565 square miles), yet its estimated 6,859,819 inhabitants place it 15th in population. More than 75 percent of the population resides in the eastern one-third of the state. Land use in Massachusetts as of 1999 is provided in Table 3.1 (Mass. DCR 2007).

Table 3.1. Land uses in Massachusetts (Mass. DCR 2007)

Land Use	Acres	Percent of Total
Agriculture	356,801.2	6.9
Forest land	2,965,860.5	57.2
Water	340,588.5	6.6
Recreation and wildlife areas	78,444	1.5
Urban land	1,269,494.2	24.5
Miscellaneous use	170,898.9	3.3
Total land area	1,610,082.7	100.0

Massachusetts encompasses two geological provinces: the Coastal Plain and the New England Upland. Cape Cod and the Islands form the coastal plain and consist of low hills and plains covering unconsolidated sediments that form the most productive aquifers in the state. The New England Upland province consists of till and stratified drift above metamorphic and igneous rocks, and provides small productive aquifers. Groundwater is used for water supply in small communities and almost exclusively on Cape Cod and the Islands. Surface water is the major source of water supply for all the major urban areas in the state, since no other source is capable of meeting these demands. Surface water in the state is relatively plentiful and of high quality, but it is not distributed in proportion to the distribution of the population. Two-thirds of Massachusetts' residents depend upon surface water for their needs. The Massachusetts Water Resources Authority supplies communities in the Greater Boston area (about half the state usage of surface water) from Quabbin and Wachusett reservoirs in the central uplands.

Annual precipitation averages about 45 inches and is fairly evenly distributed throughout the state. Average annual evaporation of free water surfaces ranges from about 26 inches in Western Massachusetts to about 28 inches in the eastern half of the State. Yearly runoff ranges from about 20 inches in Cape Cod to about 32 inches in the northwestern corner of the State. The lowest runoff generally occurs during July, August and September. Runoff is highest in March in the eastern sections of the state and April in the western sections and at higher elevations.

Massachusetts incorporates all or a portion of nine major drainage systems – Hudson, Housatonic, Connecticut, Thames, Narragansett Bay, Mount Hope Bay, Boston Harbor, Merrimack and Coastal. They, in turn, are made up of a total of 32 smaller watersheds or drainage areas (see Table 3.2). These have been regrouped slightly to create the 27 watersheds, or drainage areas, that serve as the fundamental planning units of the Massachusetts' monitoring, assessment and management programs.

Table 3.2. Surface Water Atlas for Massachusetts (Mass. DEP 2013)

Surface Water Atlas for Massachusetts	
<u>Rivers¹</u>	
Number of Major Drainage Systems	9
Number of Watersheds or Drainage Areas	32
Number of Interstate Watersheds	12
Perennial River Miles ²	9,962

<u>Lakes</u>	
Number of Lakes and Ponds ⁶	3,191
Area of Lakes and Ponds (acres) ³	151,173
<u>Coastal Waters⁴</u>	
Area of Harbors and Estuaries (square miles)	223
Total Coastal Miles	1,519
<u>Wetlands⁵</u>	
Marine and Estuarine Wetlands (acres)	125,710
Freshwater Wetlands (acres)	472,368
Total Area of Wetlands (acres)	598,078
<u>Information Sources (as cited in MADEP 2013):</u>	
¹ Halliwell, et al., 1982	
² National Hydrography Dataset (NHD) 1:24,000	
³ Ackerman, 1989	
⁴ Gil, 1985 and Maietta, 1984	
⁵ Costello, 2010	
⁶ Mass GIS 1:100,000 (DLG) by USGS	

Of wetlands and aquatic habitats in Massachusetts, approximately 55.84% are palustrine wetlands, 4.25% are estuarine wetlands, 15.10% are lacustrine habitats, and the remaining 24.82% comprises other aquatic habitats. See Table 3.3 for actual amounts.

Table 3.3. Estimated Massachusetts Wetlands and Deepwater Habitats in 2010

Category	Estimated Area in 2010 (acres)
Palustrine Wetlands	500,800
Estuarine Wetlands	38,100
Lacustrine Aquatic Habitat	135,400
Other Aquatic Habitat	222,600
Total Wetlands and Aquatic Habitat	896,900

The National Resources Inventory is a statistical survey conducted by the Natural Resources Conservation Service (NRCS) (USDA 2009) of natural resources on non-federal land in the United States. The NRCS defines non-federal land as privately owned lands, tribal and trust lands, and lands under the control of local and state governments. The 538,900 acres of palustrine and estuarine wetlands on non-Federal land and water areas of Massachusetts are further broken down by land cover/use and summarized in Table 3.4. (USDA 2014).

Table 3.4. The 2010 National Resources Inventory acreages for palustrine and estuarine wetlands on non-federal land, by land cover/use category (USDA 2014).

National Resources Inventory Land Cover/Use Category	Area of Palustrine and Estuarine Wetlands (acres)
cropland, pastureland, and Conservation Reserve Program land	42,900
forest land	345,700
Rangeland	0
other rural land	131,000
developed land	7,100
water area	12,200
Total	538,900

Table 3.5 provides U.S. EPA's most recent summary of water quality in Massachusetts' waters and wetlands. Table 3.6 provides water quality information related to impairment designations.

Table 3.5. The 2012 Massachusetts summary of water quality data (U.S. EPA 2012).

Category of water	Total waters	Total waters assessed	Percent of waters assessed	Impaired waters
Rivers and streams	9,962 miles	2,816.4 miles	28.3	1,798.2miles
Lakes, reservoirs and ponds	151,173 acres	86,228.5 acres	57	84,060.6 acres
Bays and estuaries	248.5 square miles	243 square miles	97.8	212.7 square miles

Table 3.6. Massachusetts Year 2012 Integrated List of Waters (MDEP, Massachusetts Division of Watershed Management 2013).

Category of water	Total waters	1	2	3	4	5
Rivers (miles)	3154.35	0	1018.17	337.95	227.99	1570.25
Lakes (acres)	118,397.00	0	2167.85	32,168.54	63135.86	20,924.77
Coastal Waters (square miles)	243.31	0	30.35	0.30	33.17	179.48
Wetlands (acres)	598,078					

- 1) Unimpaired and not threatened for all designated uses;
- 2) Unimpaired for some uses and not assessed for others;
- 3) Insufficient information to make assessments for any uses;
- 4) Impaired or threatened for one or more uses, but not requiring the calculation of a Total Maximum Daily Load (TMDL); or
- 5) Impaired or threatened for one or more uses and requiring a TMDL.

4.0 Environmental Consequences

4.1 General Evaluation Criteria

This document contains a general assessment of the foreseeable effects of the individual activities authorized by these GPs and the anticipated cumulative effects of those activities. In the assessment of these individual and cumulative effects, the terms and limits of the GPs, PCN requirements, and the standard GP general conditions are considered.

The following evaluation comprises the NEPA analysis, the public interest review specified in 33 CFR 320.4(a)(1) and (2), and the impact analysis specified in Subparts C through F of the 404(b)(1) Guidelines (40 CFR 230).

The issuance of a GP is based on a general assessment of the effects on public interest and environmental factors that are likely to occur as a result of using that GP to authorize activities in waters of the United States. As such, this assessment must be speculative or predictive in general terms. Since GPs authorize activities across the state, projects eligible for GP authorization may be constructed in a wide variety of environmental settings. Therefore, it is

difficult to predict all of the indirect impacts that may be associated with each activity authorized by a GP. Indication that a factor is not relevant to a particular GP does not necessarily mean that the GP would never have an effect on that factor, but that it is a factor not readily identified with the authorized activity. Factors may be relevant, but the adverse effects on the aquatic environment are negligible, such as the impacts of a boat ramp on water level fluctuations or flood hazards. Only the reasonably foreseeable direct or indirect effects are included in the environmental assessment for a GP. Adverse effects will be controlled by the terms, conditions, and additional provisions of the GP. For example, Section 7 Endangered Species Act consultation will be required for activities that may affect endangered or threatened species or critical habitat.

4.2 Impact Analysis

See the text of GPs 1 - 23 for a complete description of authorized activities and the PCN requirements. The PCN requirement allows the DE to review proposed activities on a case-by-case basis to ensure that the direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, of those activities on the aquatic environment are minimal. The SV eligible criteria and PCN requirements allows the Corps to prioritize its workload based on where its efforts will best serve to protect the aquatic environment. The related activity must meet the terms and conditions of the specified permit. If the DE determines that the adverse effects of a particular project are more than minimal after considering mitigation, then discretionary authority will be asserted and the applicant will be notified that an IP is required.

4.3 Cumulative Effects

The Corps expects that the convenience and time savings associated with the use of these GPs will encourage applicants to design their projects within the scope of the GP rather than request IPs for projects which could result in greater adverse impacts to the aquatic environment. The minimization encouraged by the issuance of this GP, as well as compensatory mitigation that may be required for specific activities authorized by this GP, will help reduce cumulative effects to the state's wetlands, streams, and other aquatic resources. See Appendix B: Cumulative Effects Assessment for the 2018 Massachusetts General Permits.

5.0 Public Interest Review

5.1 Public Interest Review Factors (33 CFR 320.4(a)(1))

For each of the 20 public interest review factors, the extent of the Corps consideration of expected impacts resulting from the use of this GP is discussed, as well as the reasonably foreseeable cumulative adverse effects that are expected to occur. The Corps decision-making process involves consideration of the benefits and detriments that may result from the activities authorized by this GP.

5.1.1 Conservation: The activities authorized under the GPs may result in slight changes in natural resource characteristics of the project area. During the evaluation of a PCN, the DE may condition the GP authorization to require compensatory mitigation to offset impacts to waters of the U.S. and ensure that the net adverse effects on the aquatic environment are minimal. Compensatory mitigation, if required, will result in the restoration, enhancement, creation, or

preservation of aquatic habitats and associated uplands that should offset losses to conservation values. The adverse effects of the GP's authorized activities on conservation will be minor. The GP authorizes only those activities with minimal adverse effects on the aquatic environment and the Corps scope of analysis is usually limited to impacts to aquatic resources.

5.1.2 Economics: The GP will continue to streamline the federal permit process and avoid duplication with the state process, thereby providing the regulated public with a less burdensome application process and expedited permit decisions. This has been overwhelmingly achieved in New England to date via the GPs in each state. Public reaction to the MA GPs and the GPs in the other New England states has been favorable. Regulatory reform and streamlined permitting provides direct economic benefit to a number of development and construction interests and yields secondary benefit to municipal tax bases and local businesses like convenience stores, restaurants, hotels, and other suppliers.

5.1.3 Aesthetics: The activities authorized under the GPs may alter the visual character of some waters of the U.S. The extent and perception of these changes will vary, depending on the amount of fill, the size and type of the development, the nature of the surrounding area, and the public uses of the area. However, the GCs and the interagency screening process help ensure that every authorized project will have minimal individual and cumulative adverse environmental impacts.

5.1.4 General Environmental Concerns: This GP's authorized activities may affect general environmental concerns such as causing temporary increases in water, air, and noise pollution. The authorized work will also affect the physical, chemical, and biological characteristics of the environment. GC 3 requires activities authorized under these GPs to be designed and constructed to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site. Compensatory mitigation may be required to ensure that the net adverse impacts on the aquatic environment are minimal. It is important to note that the Corps scope of analysis is usually limited to impacts to aquatic resources.

5.1.5 Wetlands: Wetlands provide habitat, including foraging, nesting, spawning, rearing, and resting sites for aquatic and terrestrial species. The destruction of wetlands may alter natural drainage patterns. Wetlands reduce erosion by stabilizing the substrate. Wetlands also act as storage areas for stormwater and flood waters. Wetlands may act as groundwater discharge or recharge areas. The loss of wetland vegetation will adversely affect water quality because these plants trap sediments, pollutants, and nutrients and transform chemical compounds. Wetland vegetation also provides habitat for microorganisms that remove nutrients and pollutants from water. Wetlands, through the accumulation of organic matter, act as sinks for some nutrients and other chemical compounds, reducing the amounts of these substances in the water.

According to the https://water.usgs.gov/nwsum/WSP2425/state_highlights_summary.html, wetlands cover about 590,000 acres of Massachusetts, about 12 percent of the State's area. Massachusetts has lost about 28 percent of its original wetlands since the 1780's. Agricultural and urban expansion have caused most of the losses. Forested wetlands, primarily red maple swamps, comprise more than one-half of the State's wetlands; estuarine and marine wetlands account for about one-fifth.

The GPs only authorize projects that will have no more than minimal individual and cumulative adverse environmental effects. Some adverse impacts to wetlands and their functions and values are unavoidable and expected to occur on a project-by-project basis over the five-year life of this GP. Based upon this document's Cumulative Effects Assessment (Appendix B) and previous cumulative impact assessments, we have determined that the net environmental impacts of the 2015 and previous GPs were not more than minimal and impacts associated with the new GPs should be similar. The GP's general conditions have been designed to ensure that impacts will be minimal individually and cumulatively, e.g., GC 3 Mitigation (Avoidance, Minimization, and Compensatory Mitigation); GC 15 Removal of Temporary Fills and Restoration; and GC 25 which provides invasive species requirements. The DE will exercise discretionary authority to require an IP if the wetlands to be filled are high value and the activity will result in more than minimal adverse effects on the aquatic environment. The DE can also add case-specific special conditions to the GP authorization to reduce impacts to wetlands or require compensatory mitigation to offset losses of wetlands.

5.1.6 Historic properties: General Condition 7 states, "In cases where the Corps determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied." Procedures for compliance are provided for Federal and non-Federal permittees. Non-federal permittees must submit a PCN to the Corps if the activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the NRHP. Based on the information submitted in the PCN and the Corps identification efforts, the Corps will determine whether the proposed GP activity has the potential to cause effects on the historic properties. Section 106 consultation is required when the Corps determines that the activity has the potential to cause effects on historic properties.

5.1.7 Fish and wildlife values:

These GP authorize activities in navigable waters of the U.S., including marine, estuarine, lacustrine, and riverine waters, which provide habitat to many species of fish and wildlife. Activities authorized by these GPs may alter the habitat characteristics of open waters and wetlands, decreasing the quantity and quality of fish and wildlife habitat. Adverse impacts to fish and wildlife are unavoidable and expected to occur as the GP is implemented, however the impacts are expected to be minimal. The terms and conditions associated with the GPs help balance development with minimal project impacts.

5.1.7.1 Fish Values: Wetland and riparian vegetation provides food and habitat for many species, including foraging areas, resting areas, corridors for wildlife movement, and nesting and breeding grounds. Open waters provide habitat for fish and other aquatic organisms. Woody riparian vegetation shades streams, which reduces water temperature fluctuations and provides habitat for fish and other aquatic animals. Riparian vegetation provides organic matter that is consumed by fish and aquatic invertebrates. Woody riparian vegetation creates habitat diversity in streams when trees and large shrubs fall into the channel, forming snags that provide habitat and shade for fish.

Fish and other motile animals will avoid the project site during construction. The morphology of

a stream channel may be altered by activities authorized by this GP, which can affect fish populations, but these changes will be minor. However, PCN requirements provide the DE with an opportunity to review certain activities, assess potential impacts on fish and wildlife values, and ensure that the authorized activities result in no more than minimal adverse effects on the aquatic environment.

All activities that are ineligible for SV require Corps review under PCN including all open-water dredged material disposal and most activities in tidal water. In non-tidal waters, several of the GPs require a PCN for impacts to vegetated shallows or riffle and pool complexes. Activities authorized under GP 1, Maintenance, may improve fish passage by authorizing the removal of accumulated sediments in the vicinity of existing structures that impede the movement of fish and other aquatic organisms. General Permit 3 prohibits new or relocated moorings in vegetated shallows. Under GP 5, SV eligible activities allow limited maintenance dredging with upland disposal that must be conducted during a TOY window to minimize impacts.

In accordance with GC 3, mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal; and compensatory mitigation will generally be required for permanent impacts that require PCNs, and may be required for temporary impacts that require PCNs.

General Condition 9, Essential Fish Habitat and Fish and Wildlife Resources, requires a PCN for GPs 1, 6-20 and 23 when an activity may cause greater than minimal [sedimentation or turbidity](#) in streams or tidal waters. The Corps may include specific time-of-year restrictions and/or specific construction techniques or activities. The Corps consulted with the National Marine Fisheries Service (NMFS) on Essential Fish Habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act. Upon issuance of these GPs, the NMFS has informed us that they will issue a general concurrence for SV eligible activities that may adversely affect EFH, but will likely result in no more than minimal adverse effects individually and cumulatively on EFH and other trust resources when they comply with the terms and conditions of the GPs (50 CFR 600.920(g)). The terms and conditions of the GP are such that projects with the potential for more than minimal impacts upon EFH will require a PCN. Consultation pursuant to the EFH provisions of the Magnuson-Stevens Fishery Conservation and Management Act will occur as necessary for proposed GP activities that may adversely affect EFH.

General Condition 16 requires appropriate soil erosion, sediment and turbidity controls to prevent erosion; collect sediment, suspended and floating materials; and filter fine sediment. A PCN is required for GPs 1, 6-20 and 23 when an activity causes greater than minimal sedimentation or turbidity in streams or tidal waters. Activities that require controls in non-tidal streams and tidal waters have time of year (TOY) windows to minimize impacts to upstream fish passage. General Condition 17 protects aquatic life movements and states, “No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity’s primary purpose is to impound water”. General Condition 19 requires properly designed and constructed stream crossings to avoid adverse impacts to fish passage. All PCNs require TOY restrictions as special conditions, when appropriate.

General Condition 22, Spawning, Breeding, and Migratory Areas, states that direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized. General Condition 24, Coral Reefs, prohibits impacts to coral reefs. General Condition 26 prohibits blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc.

5.1.7.2 Wildlife Values: Activities authorized by these GPs may alter the habitat characteristics of open waters, streams, and wetlands, thereby decreasing the quantity and quality of wildlife habitat. Wetland and riparian vegetation provides food and habitat for many species, foraging areas, resting areas, corridors for wildlife movement, and nesting and breeding grounds. SV projects should have minimal impacts on wildlife. All PCNs will be reviewed and conditioned as appropriate to minimize and compensate for impacts.

Compliance with the Bald and Golden Eagle Protection Act (16 U.S.C. 668(a)-(d)) and the Migratory Bird Treaty Act (16 U.S.C. 703; 16 U.S.C. 712), including any requirements to obtain take permits, is the responsibility of the project proponent undertaking a particular GP activity. General Condition 23 states that the permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act.

General Condition 5 states that a PCN is required for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service. GC 10 protects listed species and habitat as identified under the Federal Endangered Species Act (ESA). General Condition 16 requires proper soil erosion and sediment controls.

General Condition 17 should ensure more movement of aquatic life and migrating species associated with waterway and wetland crossing projects. General Condition 19 provides design and construction standards for stream and wetland crossings. General Condition 22 requires that, “Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.” General Condition 23, Vernal Pools, should help protect vernal pools (VPs).

5.1.8 Floodplain values and flood hazards: Activities authorized by these GPs should have negligible adverse effects on floodplain values. The fish and wildlife habitat values of floodplains may be adversely affected by activities authorized by this GP, by modifying or eliminating areas used for nesting, foraging, resting, and reproduction. Unavoidable impacts to fish habitat may require mitigation. The water quality functions of floodplains may also be adversely affected by these activities. Much of the land area within 100-year floodplains is upland and outside of the Corps scope of review.

General Permit 1 authorizes the removal of accumulated sediments in the vicinity of existing structures, which will reduce flood hazards by restoring the water-holding capacity of the waterbody and reducing hazards to human health, safety, and welfare. General Condition 18, Management of Water Flows, states that the activity must be constructed to withstand expected high flows, and not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows, in which case a PCN is required. Requirements for properly designed stream crossings will reduce flood hazards. General Condition 20 states that appropriate measures must be taken to minimize flooding to the maximum extent practicable, and activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency-approved State and/or local floodplain management permitting requirements.

5.1.9 Land use: Activities authorized by these GPs may result in minor, unavoidable changes in land use. Since the primary responsibility for land use decisions is held by state, local, and tribal governments, the Corps scope of analysis is typically limited to our jurisdictional waters.

5.1.10 Navigation: Activities authorized by these GPs will have minor adverse effects on navigation. General Permit 4 authorizes aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG; and certain temporary buoys, markers and similar structures. Under GP 3, piers, floats and lifts require a PCN if they extend $\leq 25\%$ of the waterway width or ≤ 75 feet waterward from OHW in non-tidal navigable waters of the U.S. or mean high water, while shore outhauls now require a PCN. General Condition 10 states, “There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters of the U.S. at or adjacent to the activity authorized herein.”

5.1.11 Shore erosion and accretion: The activities authorized by these GPs will reduce shore erosion and will have minor adverse effects on shore accretion processes. The PCN requirements of these GPs will allow the DE to review, on a case-by-case basis, larger bank stabilization activities that may have more than minimal adverse effects on shore erosion and accretion processes. A PCN is required when the slope of the structure is steeper than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams and tidal waters and streams. A PCN is required for activities located in tidal waters. This will allow review of structures that could reflect wave energy and may result in more than minimal adverse effects to the aquatic environment. By reviewing these projects, the DE can include conditions and TOY restrictions in the permits which will minimize these impacts.

5.1.12 Recreation: Activities authorized under these GPs will have minor negative effects on the recreational uses of the area. The GPs allow for the construction and use of structures and floats and single point moorings and minor expansions of existing boating facilities. The size and impact of such structures shall be minimal so as not to prevent others from using the public waters.

5.1.13 Water supply and conservation: Activities authorized these GPs should have negligible effects, both individually and cumulatively, on surface water and groundwater supplies. Wells may be authorized under GP 8 and utility lines withdrawing water may be authorized under GP 9. When fills result in water withdrawals, such as fill placed for wells, the secondary impacts

of surface or groundwater withdrawals with the potential to drawdown less than one acre of nearby wetlands will be evaluated and the impacts will be minimized and compensated for as appropriate.

5.1.14 Water quality: Activities authorized under these GPs are not expected to have more than minimal adverse effects on water quality. Small amounts of oil and grease from construction equipment may be discharged into the waterway. A Section 401 WQC will be required if the proposed activity involves a discharge into waters of the United States. The WQC will help ensure that the authorized activity does not violate applicable water quality standards. Compensatory mitigation may be required for activities authorized by this GP, which will help improve the quality of surface waters. The cumulative and secondary impacts discussion and cumulative effects assessment for the GP (Appendix B) confirm the minimal individual and cumulative findings. Adverse water quality impacts are expected to occur on a project-by-project basis over the GPs' five-year life. These impacts are unavoidable with many developments. The GP's general conditions, including GC 16, were written to ensure that impacts will be minimal both individually and cumulatively. General Condition 30, Water Quality Certification, addresses water quality and states: "Any activity under these GPs that requires authorization under §404 of the Clean Water Act for the discharge of dredged or fill material into waters of the U.S. also requires applicants to obtain a §401 water quality certification (WQC) from the State (hereinafter referred to as "§401 WQC") or an Order of Conditions from the town or city which serves as the WQC."

5.1.15 Energy needs: A limited number of utility, and land and water-based renewable energy generation projects, will occur pursuant to these GPs. The activities authorized by these GPs will increase energy production in the area. Existing infrastructure may have to be expanded to transfer the energy to new and existing customers.

These projects are often associated with increasing the availability, reliability, and efficiency of oil, gas and electricity distribution throughout the state, including the installation and maintenance of pipelines, distribution lines, power plants, hydrokinetic devices, and wind towers. The majority of these projects require a PCN, which allow the DE to include conditions and TOY restrictions that will minimize impacts. Construction projects will often increase energy consumption in the area, but these impacts are generally outside the Corps scope of analysis. The review for new lines and power plants is typically limited to work in Corps jurisdiction as the DE is only considered to have control and responsibility for portions of the project beyond the limits of Corps jurisdiction where the federal involvement is sufficient to turn an essentially private action into a federal action.

5.1.16 Safety: The GP's authorized activities will be subject to Federal, State, and local safety laws and regulations. This GP will not adversely affect the safety of the project area. Transportation projects authorized under the GP invariably benefit public safety.

5.1.17 Food and fiber production: The GP's authorized activities will have minor effects on food and fiber production. Some of these activities may be beneficial and improve agricultural production.

5.1.18 Mineral needs: General Permit 11, Mining Activities, authorizes discharges of dredged or fill material into non-tidal waters of the U.S. for mining activities, except for coal mining and

metallic mineral mining activities. This GP does not authorize activities in tidal waters. The GP's other activities may authorize activities that indirectly increase the demand for aggregates and stone and other building materials, such as concrete, steel, aluminum, and copper that may be used in construction projects authorized under other GPs. These impacts are minimal and generally outside the Corps scope of analysis. The impacts can be either negative from an environmental perspective, or positive from a commercial perspective.

5.1.19 Considerations of property ownership: The GPs comply with 33 CFR 320.4(g), which state that an inherent aspect of property ownership is a right to reasonable private use. The GPs provide expedited review for projects having minimal impacts on waters of the U.S., provided the activity complies with the GP's terms and conditions. However, authorization of work or structures under this GP does not convey a property right or authorize any injury to property or invasion of others rights.

5.1.20 Noise: The activities authorized under these GPs may increase noise levels during construction, but these are generally temporary minimal impacts. Upon completion of authorized work, noise levels generally return to baseline condition. Issued authorizations could be conditioned to reduce noise during construction.

5.1.21 Air Quality: The activities authorized under these GPs may be associated with activities from machinery that contribute to poor air quality during construction, but the air quality impacts of construction activity directly associated with permitted activities are temporary and minimal because of the limited scope and scale of GP authorized activities.

5.1.22 Needs and welfare of the people: These GPs continue to provide a high level of environmental protection while streamlining application and review procedures for the general public. The GPs retain the function, utility, and general appearance of the 2015 Massachusetts GP and are therefore familiar to the regulated public. The GP's terms, conditions and other components have been updated to reflect current guidance and policies and to provide greater consistency and clarity.

5.1.23 Drainage: The activities authorized under these GPs will have minimal effects on drainage. General Permit 7 prohibits materials of a type, or placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S. General Condition 18, Management of Water Flows, states that the activity must be constructed to withstand expected high flows, and not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows, in which case a PCN is required. General Condition 19 and its requirements for properly designed and constructed stream and wetland crossings will help upstream areas drain during rain events. General Condition 20 states that appropriate measures must be taken to minimize flooding to the maximum extent practicable, and activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency-approved State and/or local floodplain management permitting requirements.

5.1.24 Circulation Patterns: Activities authorized under these GPs may affect the movement of water in the aquatic environment, but these effects will be minimal, both individually and cumulatively. General Permits 7 provides requirements for bank stabilization activities. General Condition 19 and its requirements for properly designed and constructed stream and wetland

crossings will should enhance stream continuity. Most tidal activities require a PCN.

5.2 Additional Public Interest Review Factors (33 CFR 320.4(a)(2))

5.2.1 Relative extent of the public and private need for the proposed structure or work

These GPs authorizes structures or work in navigable waters of the United States, as well as discharges of dredged or fill material into all waters of the U.S., provided those activities have no more than minimal individual and cumulative adverse environmental effects. These activities satisfy public and private needs for such actions such as maintenance, water access and navigation, recreation, development, the conveyance of a variety of substances as well as communications and information transfer, mining, energy generation, waste cleanup, agriculture, fish harvesting, and aquatic habitat restoration. The need for these GPs are based upon the number of these activities that occur annually with minimal individual and cumulative adverse effects on the aquatic environment.

5.2.2 Where there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work

Most situations in which there are unresolved conflicts concerning resource use arise when environmentally sensitive areas are involved (e.g., special aquatic sites, including wetlands) or where there are competing uses of a resource. The nature and scope of the activity, when planned and constructed in accordance with the terms and conditions of these GPs, reduce the likelihood of such conflict. In the event that there is a conflict, the GP contains provisions that are capable of resolving the matter.

General Condition 3 requires permittees to design and construct activities to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site. Consideration of off-site alternative locations is not required for activities that are authorized by GPs. General permits authorize activities that have minimal individual and cumulative adverse effects on the aquatic environment and overall public interest. The DE will exercise discretionary authority and require an IP if the proposed activity will result in more than minimal adverse environmental effects on the project site. The consideration of off-site alternatives can be required during the IP process.

5.2.3 The extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited

The nature and scope of the activities authorized by these GPs will most likely restrict the extent of the beneficial and detrimental effects to the area immediately surrounding the repair, replacement and maintenance of authorized structures and fill activity. Activities authorized by this GP will have minimal individual and cumulative adverse effects on the aquatic environment.

The terms, conditions, and provisions of the GP were developed to ensure that individual and cumulative adverse environmental effects are minimal. Specifically, GPs do not obviate the need for the permittee to obtain other Federal, state, or local authorizations required by law. The GPs do not grant any property rights or exclusive privileges (see 33 CFR 330.4(b) for further

information). Additional conditions, limitations, restrictions, and provisions for discretionary authority, as well as the ability to add activity-specific conditions to the GPs, will provide further safeguards to the aquatic environment and the overall public interest. There are also provisions to allow suspension, modification, or revocation of the GPs.

6.0 Endangered Species Act

The Corps current regulations and procedures for the GPs result in compliance with Section 7 of the Endangered Species Act (ESA) and ensure that activities authorized by these GPs will not jeopardize the continued existence or any listed threatened and endangered species or result in the destruction or adverse modification of critical habitat. Our local procedures in the New England District are effective in ensuring compliance with the ESA.

For species under NMFS jurisdiction, our local procedures include a regional programmatic consultation with NMFS. The GPs' terms and conditions were written to ensure that all SV eligible activities will have no effect on listed species or critical habitat. The Corps has determined that SV eligible activities will have no effect on species listed under the ESA for projects occurring in the Commonwealth of Massachusetts. A PCN is required for any activities that may affect listed species or habitat, which will allow the DE to address the effects of the proposed activity on listed species or habitat NMFS jurisdiction. The Corps will conduct a Section 7 consultation under the ESA with NMFS on a project-by-project basis when it determines that an activity may impact listed species or critical habitat. The consultation will be done under the April 12, 2017 Programmatic Consultation or via an individual consultation.

For listed species under USFWS jurisdiction, GC 10 requires non-Federal permittees to check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat. However, certain activities determined by the Corps as having no effect on listed species are SV eligible. Based on the evaluation of all available information, the DE will initiate consultation with the USFWS, as appropriate, if he determines that the proposed activity may affect any threatened and endangered species or critical habitat.

The issuance or reissuance of a GP, as governed by GC 10 and 33 CFR 330.4(f), results in “no effect” to listed species or critical habitat, because no activity that “may affect” listed species or critical habitat is authorized by GP unless ESA Section 7 consultation with the USFWS and/or NMFS has been completed. Activities that do not comply with GC 10 or other applicable GCs are not authorized by any GP, and thus fall outside of the GP Program. Unauthorized activities are subject to the prohibitions of Section 9 of the ESA.

Each activity authorized by a GP is subject to GP 10, which states, “No activity is authorized under any GP which: Is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species (i.e., listed species) or a species proposed for such designation, as identified under the Federal Endangered Species Act of 1973, as amended (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species.” In addition, GP 10 explicitly states that the GP does not authorize “take” of a threatened or endangered species, which will ensure that permittees do not mistake the GP authorization as a Federal authorization to take threatened or endangered species.

Under the current Corps regulations (33 CFR 325.2(b)(5)), the DE must review all permit applications for potential impacts on threatened and endangered species or critical habitat. For MA GPs, this review occurs when the DE evaluates the PCN. Consultation may occur during the GP authorization process or the DE may exercise discretionary authority to require an IP for the proposed activity and initiate Section 7 consultation during the IP process. When the Corps makes a “no effect” determination, that determination is documented in the record for the GP verification.

In cases where the Corps makes a “may affect” determination, formal or informal Section 7 consultation is conducted before the activity is authorized by GP. A non-Federal permit applicant cannot begin work until ESA Section 7 consultation has been completed (see also 33 CFR 330.4(f)) and obtain written verification from the Corps before starting work. Federal permittees are responsible for complying with ESA section 7(a)(2) and should follow their own procedures for complying with those requirements (see 33 CFR 330.4(f)(1)). Therefore, permittees cannot rely on complying with the terms of a GP without considering ESA-listed species and critical habitat, and they must comply with the GP conditions to ensure that they do not violate the ESA. The DE may add activity-specific conditions to address ESA issues as a result of formal or informal consultation with the USFWS or NMFS.

Based on the safeguards discussed in this section, especially GC 10 and the GP regulations at 33 CFR 330.4(f), the Corps has determined that the activities authorized by these GPs will not jeopardize the continued existence of any listed threatened or endangered species or result in the destruction or adverse modification of designated critical habitat. If informal Section 7 consultation is conducted, and the USFWS and/or NMFS issues a written concurrence that the proposed activity may affect, but is not likely to adversely affect, listed species or designated critical habitat, the DE will add conditions (e.g., minimization measures) to the GP authorization that are necessary to avoid the likelihood of adverse effects to listed species or designated critical habitat. If the USFWS and/or NMFS does not issue a written concurrence that the proposed GP activity “may affect, but is not likely to adversely affect” listed species or critical habitat, the Corps may require an IP and will initiate formal Section 7 consultation if it changes its determination to “may affect, likely to adversely affect.”

If formal Section 7 consultation is conducted and a biological opinion is issued, the DE will add a condition to the authorization to incorporate the appropriate elements of the incidental take statement of the biological opinion into the authorization, if the biological opinion concludes that the activity is not likely to jeopardize the continued existence of listed species or adversely modify or destroy critical habitat. If the biological opinion concludes that the proposed activity is likely to jeopardize the continued existence of listed species or adversely modify or destroy critical habitat, the proposed activity cannot be authorized by GP and the DE will instruct the applicant to apply for an IP. The incidental take statement includes reasonable and prudent measures such as mitigation, monitoring, and reporting requirements that minimize incidental take. The appropriate elements of the incidental take statement are dependent on those activities in the biological opinion over which the Corps has control and responsibility (i.e., the discharges of dredged or fill material into waters of the U.S. and/or structures or work in navigable waters and their direct and indirect effects on listed species or critical habitat). The appropriate elements of the incidental take statement are those reasonable and prudent measures that the Corps has the authority to enforce under its permitting authorities. Incorporation of the appropriate elements of the incidental take statement into the GP authorization by a binding,

enforceable permit condition provides an exemption from the take prohibitions in ESA Section 9 (see Section 7(o)(2) of the ESA).

The Corps can modify this GP at any time that it is deemed necessary to protect listed species or their critical habitat, either through: 1) general conditions or modifications, suspensions, or revocations of the GPs; or 2) activity-specific permit conditions (modifications) or activity-specific suspensions or revocations of GP authorizations. Therefore, although the Corps has issued the GPs, the Corps can address any ESA issue, if one should arise. The GP regulations also allow the Corps to suspend the use of some or all of the GPs immediately, if necessary, while considering the need for permit conditions, modifications, or revocations. These procedures are provided at 33 CFR 330.5.

7.0 Clean Water Act Section 404(b)(1) Guidelines Analysis

The 404(b)(1) compliance criteria for general permits are provided at 40 CFR 230.7.

7.1 Evaluation Process (40 CFR 230.7(b))

7.1.1 Alternatives (40 CFR 230.10(a))

General Condition 3 requires permittees to design and construct activities to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site. The consideration of off-site alternatives is not directly applicable to GPs (see 40 CFR 230.7(b)(1)).

7.1.2 Prohibitions (40 CFR 230.10(b))

This GP authorizes discharges of dredged or fill material into waters of the United States, which require WQC. The WQC requirements will be met in accordance with the procedures at 33 CFR 330.4(c).

No toxic discharges will be authorized by this GP. General Condition 27 states that the material must be free from toxic pollutants in toxic amounts.

This GP does not authorize activities that are likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species (i.e., listed species) or a species proposed for such designation, as identified under the Federal Endangered Species Act of 1973, as amended (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. Refer to GC 10 and to 33 CFR 330.4(f) for information and procedures.

7.1.3 Findings of Significant Degradation (40 CFR 230.10(c))

Potential impact analysis (Subparts C through F): The potential impact analysis specified in Subparts C through F is discussed in section 7.2.3 of this document. Mitigation required by the DE will ensure that the adverse effects on the aquatic environment are minimal.

Evaluation and testing (Subpart G): Because the terms and conditions of the GP specify the

types of discharges that are authorized, as well as those that are prohibited, individual evaluation and testing for the presence of contaminants will normally not be required, unless the work involves open-water disposal of dredged material, which undergoes testing and evaluation in accordance with Section 404 of the CWA and Section 103 of the Marine Protection, Research and Sanctuaries Act, as applicable. If a situation warrants, provisions of the GP allow the DE to further specify authorized or prohibited discharges and/or require testing. General Condition 27 requires that materials used for construction or discharge be free from toxic pollutants in toxic amounts.

Based upon Subparts B and G, after consideration of Subparts C through F, the discharges authorized by this GP will not cause or contribute to significant degradation of waters of the U.S.

7.1.4 Factual determinations (40 CFR 230.11)

The factual determinations required in 40 CFR 230.11 are discussed in section 7.2.3 of this document.

7.1.5 Appropriate and practicable steps to minimize potential adverse impacts (40 CFR 230.10(d))

As demonstrated by the information in this document, as well as the terms, conditions, and provisions of this GP, actions to minimize adverse effects (Subpart H) have been thoroughly considered and incorporated into the GP. General Condition 3 requires permittees to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site. Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal. Compensatory mitigation may be required by the DE to ensure that the net adverse effects on the aquatic environment are minimal.

7.2 Evaluation Process (40 CFR 230.7(b))

7.2.1 Description of permitted activities (40 CFR 230.7(b)(2))

As indicated by the text of the GPs and the discussion of potential impacts in Section 4.0, the activities authorized under each of these 23 GPs are sufficiently similar in nature and environmental impact to warrant authorization under a single GP. The nature and scope of the impacts are controlled by the terms and conditions of the GPs.

The activities authorized under each GP are sufficiently similar in nature and environmental impact to warrant authorization by that GP. The terms of the GP authorize a specific category of activity (e.g., moorings, bank and shoreline stabilization, recreational facilities, utility lines, linear transportation projects and stream crossings, and aquaculture activities) in a specific category of waters (e.g., waters of the U.S., including navigable waters; non-tidal waters of the U.S.). The restrictions imposed by the terms and conditions of these GPs will result in the authorization of activities that have similar impacts on the aquatic environment, e.g., the replacement of aquatic habitats, such as open waters, with structures or fills designed to reduce erosion.

If a situation arises in which the activity requires further review, or is more appropriately reviewed under the IP process, provisions of the GPs allow the DE to take such action.

7.2.2 Cumulative effects (40 CFR 230.7(b)(3))

The 404(b)(1) Guidelines at 40 CFR 230.11(a) define cumulative effects as "...the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material." For the issuance of GP, the 404(b)(1) Guidelines require the permitting authority to "set forth in writing an evaluation of the potential individual and cumulative impacts of the categories of activities to be regulated under the general permit." [40 CFR 230.7(b)] If a situation arises in which cumulative effects are likely to be more than minimal and the proposed activity requires further review, or is more appropriately reviewed under the IP process, provisions of the GPs allow the DE to take such action.

See the document titled "Cumulative Effects Assessment for Issuing General Permits in New England." The individual and cumulative adverse effects on the aquatic environment resulting from the activities authorized by these GPs will be minimal. The Corps expects that the convenience and time savings associated with the use of these GPs will encourage applicants to design their projects within the scope of the GPs, including their limits, rather than request an IP for projects that could result in greater adverse impacts to the aquatic environment.

7.2.3 Section 404(b)(1) Guidelines Impact Analysis, Subparts C through F

(a) Substrate: Discharges of dredged or fill material into waters of the U.S. will alter the substrate of those waters, usually replacing the aquatic area with dry land, and changing the physical, chemical, and biological characteristics of the substrate. The original substrate will be removed or covered by other material, such as concrete, asphalt, soil, gravel, etc. Temporary fills may be placed upon the substrate, but must be removed upon completion of the activity (see GC 15). Higher rates of erosion may result during construction, but GC 16 requires the use of appropriate measures to control soil erosion and sediment.

(b) Suspended particulates/turbidity: Depending on the method of construction, soil erosion, sediment and turbidity control measures, equipment, composition of the bottom substrate, and wind and current conditions during construction, fill material placed in open waters will temporarily increase water turbidity. General Condition 16 requires a PCN for GPs 1, 6-20 and 23 when an activity causes greater than minimal sedimentation or turbidity in streams (rivers, streams, brooks, etc.) or tidal waters.

The PCN will allow the DE to review each activity and ensure that adverse effects on the aquatic environment are minimal. Particulates will be resuspended in the water column during removal of temporary fills. The turbidity plume will normally be limited to the immediate vicinity of the disturbance and should dissipate shortly after each phase of the construction activity. General Conditions 15 and 16 require the permittee to stabilize wetland and waterway areas at the earliest practicable date, which will reduce turbidity. In many localities, developers are required to develop and implement sediment and erosion control plans to minimize the entry of soil into the aquatic environment. General permit activities cannot result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area (see GC 22).

(c) Water: The activities authorized under these GPs such as maintenance, utilities, stream crossings, and boat ramps and marine railways, can affect some characteristics of water, such as water clarity, chemical content, dissolved gas concentrations, pH, and temperature. In addition, activities may change the chemical and physical characteristics of the waterbody by introducing suspended or dissolved chemical compounds or sediments into the water. Changes in water quality can affect the species and quantities of organisms inhabiting the aquatic area. Water quality certification is required for activities authorized under these GP that result in discharges of dredged or fill material into waters of the U.S., which will ensure that the activity does not violate applicable water quality standards. Permittees may be required to implement water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. Storm water management facilities may be required to prevent or reduce the input of harmful chemical compounds into the waterbody. The DE may require the establishment and maintenance of riparian areas next to open waters, such as streams. Riparian areas help improve or maintain water quality, by removing nutrients, moderating water temperature changes, and trapping sediments.

(d) Current patterns and water circulation: Activities authorized by the GP that involve discharges of dredged or fill material into waters of the U.S. may adversely affect the movement of water in the aquatic environment. General Condition 18 requires a PCN for activities that temporarily or permanently impact upstream or downstream flood conditions. It states, “To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows.” General Condition 20 requires activities within 100-Year Floodplains to comply with applicable Federal Emergency Management Agency (FEMA)-approved State and/or local floodplain management permitting requirements.

(e) Normal water level fluctuations: The activities authorized under these GPs will not adversely affect normal patterns of water level fluctuations due to tides and flooding, since it is limited to maintenance activities. To ensure that the GPs do not authorize activities that adversely affect normal flooding patterns, GC 20 requires GP activities to comply with applicable FEMA-approved State and/or local floodplain management permitting requirements. General Condition 18 states, “To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows, in which case a PCN is required.”

(f) Salinity gradients: The activities authorized under these GPs are unlikely to adversely affect salinity gradients. The activities authorized by GP 9, Utilities, are unlikely to adversely affect salinity gradients, unless the utility line activity is associated with an outfall structure that will release freshwater into marine or estuarine waters, thereby reducing the salinity of those waters in the vicinity of the outfall structure. These adverse effects will be minimal. Bank stabilization activities typically do not change water flow patterns that could modify salinity gradients. Boat ramps are unlikely to substantially alter salinity gradients. Activities such as maintenance, surveys, and scientific measurement devices are unlikely to adversely affect salinity gradients.

(g) Threatened and endangered species: The Corps believes that the procedures currently in place and developed as a result of the GP issuance process result in proper coordination under Section 7 of the ESA and ensure that activities authorized by these GPs will not jeopardize the continued existence or any listed threatened and endangered species or result in the destruction or adverse modification of critical habitat. See Section 6.0.

(h) Fish, crustaceans, molluscs, and other aquatic organisms in the food web: Certain activities require a PCN, which will allow review of proposals to ensure that adverse effects to fish and other aquatic organisms in the food web are minimal. Fish and other motile animals will avoid the project site during construction. Sessile or slow-moving animals in the path of discharges, equipment, and building materials will be destroyed. Some aquatic animals may be smothered by the placement of fill material. Motile animals will return to those areas that are temporarily impacted by the activity and restored or allowed to revert back to preconstruction conditions. Aquatic animals will not return to sites of permanent fills. Benthic and sessile animals are expected to recolonize sites temporarily impacted by the activity, after those areas are restored. Activities that alter the riparian zone, especially floodplains, may adversely affect populations of fish and other aquatic animals, by altering stream flow, flooding patterns, and surface and groundwater hydrology.

General Condition 17 states, “No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity’s primary purpose is to impound water. Permanent water impoundments require a PCN. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be suitably culverted, spanned¹, or otherwise designed and constructed to: (a) Maintain low flows to sustain the movement of those aquatic species, which includes maintaining a continuous low flow channel/thalweg through non-tidal structures; and (b) Preserve hydraulic and ecological connectivity”. General Condition 18 requires the maintenance of pre-construction course, condition, capacity, and location of open waters to the maximum extent practicable, which will help minimize adverse impacts to fish, shellfish, and other aquatic organisms in the food web. General Condition 22 addresses protection of spawning areas and states, “Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

(i) Other wildlife: Activities authorized by this GP will result in adverse effects on other wildlife associated with aquatic ecosystems, such as resident and transient mammals, birds, reptiles, and amphibians, through the destruction of aquatic habitat, including breeding and nesting areas, escape cover, travel corridors, and preferred food sources. This GP does not authorize activities that jeopardize the continued existence of Federally-listed endangered and threatened species or result in the destruction or adverse modification of critical habitat. Compensatory mitigation, including the establishment and maintenance of riparian areas next to open waters, may be required for activities authorized by this GP, which will help offset losses of aquatic habitat for

¹ For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of bankfull width. The use of bridge piers or similar supports does not prevent a structure from being considered as a span.

wildlife. General Condition 23 states that activities in breeding areas for migratory birds must be avoided to the maximum extent practicable.

(j) Special aquatic sites: The potential impacts to specific special aquatic sites are discussed below:

(1) Sanctuaries and refuges: The activities authorized by this GP will have minimal adverse effects on waters of the U.S. within sanctuaries or refuges designated by Federal or state laws or local ordinances. General Condition 5 requires a PCN for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service. The DE will exercise discretionary authority and require IPs for specific projects in waters of the U.S. in sanctuaries and refuges if those activities will result in more than minimal adverse effects on the aquatic environment.

(2) Wetlands: The activities authorized by these GPs will have minimal adverse effects on wetlands. The DE will review PCNs as stated to ensure that the adverse effects on the aquatic environment are minimal. See paragraph (e) of Section 5.1.5 for a more detailed discussion of impacts to wetlands.

(3) Mud flats: The activities authorized by these GPs will have minimal adverse effects on mud flats. To avoid impacts, activities authorized under GPs with the potential to impact SAS, which include mudflats, require a PCN. During the evaluation of a PCN, the DE may determine that additional avoidance and minimization is practicable. The DE may also condition the GP authorization to require compensatory mitigation to offset impacts to SAS and ensure that the net adverse effects on the aquatic environment are minimal. If the proposed activity will result in more than minimal adverse effects on the aquatic environment, then the DE will exercise discretionary authority and require an IP. General permits with the potential to impact mud flats are limited to 1000 SF of permanent impacts and 5000 SF of temporary impacts.

(4) Vegetated shallows: The activities authorized by these GPs will have minimal adverse effects on vegetated shallows in tidal waters. New permanent impacts to SAS require a PCN. During the evaluation of a PCN, the DE may determine that additional avoidance and minimization is practicable. The DE will also condition the GP authorization to require compensatory mitigation to offset impacts to SAS and ensure that the net adverse effects on the aquatic environment are minimal. If the proposed activity will result in more than minimal adverse effects on the aquatic environment, then the DE will exercise discretionary authority and require an IP. New or relocated moorings require a PCN if they are placed within or impact tidal vegetated shallows (e.g., eelgrass). Piers, floats and lifts require a PCN if they are <25 feet from previously mapped or existing vegetated shallows. Other general permits with the potential to impact vegetated shallows are limited to 1000 SF of permanent impacts and 5000 SF of temporary impacts. There is no limit to vegetated shallows impacts for aquatic habitat restoration, enhancement, and establishment activities or cleanup of hazardous and toxic waste activities in order to ease permitting for beneficial projects.

(5) Coral reefs: It is unlikely that the activities authorized by these GPs, other than utility lines, would impact coral reefs. However, GC 24 states that impacts to coral reefs are not authorized under these GPs and therefore will require an IP.

(6) Riffle and pool complexes: Activities with the potential to impacts SAS such as riffle and pool complexes may be authorized by these GPs, but these activities require a PCN to allow the DE to review the proposal to determine if the activity will result in minimal adverse effects on the aquatic environment. During the evaluation of a PCN, the DE may determine that additional avoidance and minimization is practicable. The DE may also condition the GP authorization to require compensatory mitigation to offset impacts to SAS and ensure that the net adverse effects on the aquatic environment are minimal. If the proposed activity will result in more than minimal adverse effects on the aquatic environment, then the DE will exercise discretionary authority and require an IP.

(k) Municipal and private water supplies: See paragraph Section 5.1.13 for a discussion of potential impacts to water supplies.

(l) Recreational and commercial fisheries, including essential fish habitat: The activities authorized by these GPs may adversely affect waters of the U.S. that act as habitat for populations of economically important fish and shellfish species. GC 22 states, “Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.” Activities that may adversely affect these resources, which includes most activities in tidal waters, require a PCN. See Section 1.3.1 for a discussion of the EFH coordination with NMFS.

(m) Water-related recreation: See Section 5.1.12 above.

(n) Aesthetics: See Section 5.1.3 above.

(o) Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar areas: General Condition 5, Activities Affecting Structures or Works Built by the United States, requires a PCN for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service. These GPs can be used to authorize such activities if the manager or caretaker wants to conduct activities in waters of the U.S. and those activities result in minimal adverse effects on the aquatic environment.

8.0 Determinations

8.1 Finding of No Significant Impact

Based on the information in this document, the Corps has determined that the issuance of these GPs will not have a significant impact on the quality of the human environment. Therefore, the preparation of an Environmental Impact Statement is not required.

8.2 Public Interest Determination

In accordance with the requirements of 33 CFR 320.4, the Corps has determined, based on the information in this document, that the issuance of these GPs are not contrary to the public interest.

8.3 Section 404(b)(1) Guidelines Compliance

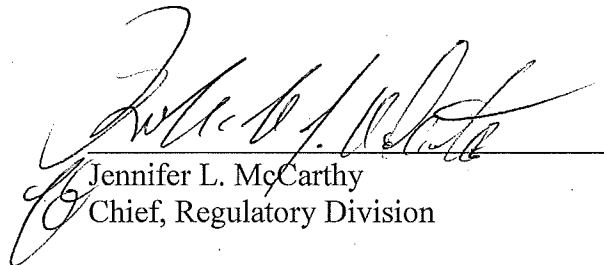
These GPs has been evaluated for compliance with the 404(b)(1) Guidelines, including Subparts C through G. Based on the information in this document, the Corps has determined that the discharges authorized by these GPs comply with the 404(b)(1) Guidelines, with the inclusion of appropriate and practicable conditions, including mitigation, necessary to minimize adverse effects on affected aquatic ecosystems. The activities authorized by these GPs will result in no more than minimal individual and cumulative adverse effects on the aquatic environment

8.4 Section 176(c) of the Clean Air Act General Conformity Rule Review

These GPs have been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities authorized by these permits will not exceed de minimis levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for these GPs.

Dated:

4/10/18



Jennifer L. McCarthy
Chief, Regulatory Division

8.0 Literature Cited

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Appendix A

Public Comments and Changes

SUMMARY: The U.S. Army Corps of Engineers, New England District, is issuing 23 general permits for the Commonwealth of Massachusetts (MA GPs, general conditions, and definitions). The GPs will protect the aquatic environment and the public interest while effectively authorizing activities that have minimal individual and cumulative adverse effects on the aquatic environment.

DATES: The GPs and general conditions will become effective on April 16, 2018. These GPs will expire on April 5, 2018.

ADDRESS: Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, Massachusetts 07142-2751.

FOR FURTHER INFORMATION CONTACT: Mr. Greg Penta, at 978-318-8862 or by e-mail at gregory.r.penta@usace.army.mil or access the U.S. Army Corps of Engineers New England District Page for these MA GPs at www.nae.usace.army.mil/missions/regulatory.aspx >> State General Permits >> Massachusetts.

SUPPLEMENTARY INFORMATION

Executive Summary

The U.S. Army Corps of Engineers (Corps), New England District, issues GPs to authorize certain activities that require Department of the Army permits under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and/or Section 103 of the Marine Protection, Research and Sanctuaries Act. The purpose of this regulatory action is to issue 23 GPs to replace the existing Massachusetts GPs (MA GPs) that will expire on February 4, 2020. Although they expire in 2020, we are proposing to reissue the MA GPs for five years with a new start date in 2017 and an expiration date five years later in 2022. The GPs may be issued for a period of no more than five years. Therefore, the Corps must reissue the GPs every five years to continue to authorize these activities.

The GPs authorize activities that have minimal individual and cumulative adverse effects on the aquatic environment. The GPs authorize a variety of activities, such as aids to navigation, utility lines, bank stabilization activities, road crossings, stream and wetland restoration activities, residential developments, mining activities, commercial shellfish aquaculture activities, and agricultural activities. Some GP activities may proceed without written notification to the Corps, as long as those activities satisfy the terms and conditions of the GPs and permittees submit the Self-Verification Notification Form (SVNF). Other GP activities cannot proceed until the project proponent has submitted a pre-construction notification (PCN) to the Corps, and obtains written verification before starting work in Corps jurisdiction.

Background

We published a public notice (PN) and draft MA GPs on June 7, 2016, but we made changes after that PN and we issued a second PN and updated MA GPs on September 15, 2017. There were no substantive changes made after the September 2017 PN. We believe that the two PNs sufficiently advised all interested parties of the proposed GPs, and solicited comments and information necessary to evaluate the probable impacts on the public interest. Therefore, we did not issue another PN soliciting comments and information. We received comments on both PNs and those comments are evaluated below.

Clean Water Act Section 401 Water Quality Certification (WQC)

State certification pursuant to Section 401 of the Clean Water Act, or waiver thereof, is required from the state and authorized tribes, or EPA where applicable, prior to the issuance of GPs authorizing activities that may result in a discharge into waters of the U.S. On April 5, 2018, the Massachusetts Department of Environmental Protection (MassDEP) issued a conditional WQC.

Coastal Zone Management Act (CZMA) Consistency Determination

The Commonwealth of Massachusetts has a Federally-approved Coastal Zone Management Program. Section 307(c)(1) of the Federal CZM Act of 1972, as amended, requires the Corps to provide a consistency determination and receive state concurrence prior to the issuance, reissuance, or expansion of activities authorized by a GP that authorizes activities within a state with a Federally-approved Coastal Management Program when activities that would occur within, or outside, that state's coastal zone will affect land or water uses or natural resources of the state's coastal zone. In a letter dated April 5, 2018, the Massachusetts Office of Coastal Zone Management (MA CZM) wrote, "Based upon our review of applicable information, we concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies."

Discussion of Public Comments

I. General Comments

1. General support for the proposal

In response to the June 2016 PN, several commenters wrote that they generally support the changes as they appear to benefit permittees with language that condenses the verbiage, improves clarity and streamlines the document.

2. Outreach

In response to the September 2017 PN, an association wrote that the GPs are improved but still so cumbersome and dense that nearly all applicants cannot be reasonably expected to understand what the Corps intends to regulate and what it does not intend to regulate without

hiring a professional consultant in this specific field of regulation. They requested that we allow them to help with education by providing a forum for direct communication with regulated marinas and boatyards.

Corps: We plan to do outreach and education in Massachusetts after we finalize the GPs and we will attempt to work with all interested parties.

3. General Criteria

a. In response to the June 2016 PN, a few commenters wrote about the PCN procedures on page 2.

Corps: Although the June 2016 public notice listed review procedures, similar to the 2015 MA GPs, we removed the procedures from the document and put them in a separate document. We no longer include details on our coordination with outside agencies. This reduces the length of the GP document, avoids formal modification and unnecessary confusion potentially resulting from a public notice, and reduces administrative burden. We continue to develop, update and coordinate review procedures with agencies as appropriate.

b. In response to the June 2016 PN, one commenter wrote that they are pleased that the Corps will coordinate review with the Massachusetts Office of Coastal Zone Management (CZM) to determine if a Federal consistency concurrence is required.

c. In response to the June 2016 PN, one commenter wrote that this statement should be revised to include the following: “See Section II to determine if the activity requires Corps authorization, and Sections III and IV to determine if the activity may be eligible for authorization under the GPs, specifically whether it is eligible for self-verification (SV), or whether a preconstruction notification (PCN) or Individual Permit (IP) is required.”

Corps: Change made.

d. In response to the June 2016 PN, one commenter wrote that the Corps should be able to confirm that SV eligible activities are authorized under the GPs with an expedited procedure to confirm that SV eligible activities are authorized rather than requiring the submittal of a PCN. This would greatly assist applicants who are unsure of which category their project may fall into and further streamline the overall process.

Corps: Change made. The GP now states: “The Corps can confirm that SV eligible activities are authorized under the GPs upon request”.

II. General Comments on Eligible Activities

1. In response to the September 2017 PN, one commenter stated that work in “mud flats” and other non-tidal Special Aquatic Systems such as vegetated shallows will not be able to “self-certify” to use the GPs. This work will have to at best file a PCN and at worst a full IP application. Given the robust nature of existing state laws, these changes add Federal processing time for no additional environmental or navigational benefit and should not be implemented as proposed.

Corps: Federal permits are separate and distinct from state and local laws and regulations. In some cases, Federal requirements may be more restrictive or different.

2. In response to the September 2017 PN, one commenter wrote in favor of the beneficial changes proposed to allow temporary fill such as for construction mat along with the time limits imposed.

3. In response to the September 2017 PN, a commenter wrote that the Corps is considering requiring all new or replacement stream crossings in non-tidal streams be spans to be eligible for SV. Respectfully, the absence of study and discussion indicates the imposition of these changes is not ready yet. Again, there is already robust individual project study and review at the state level such that further federal process is not beneficial.

Corps: We are not making this change at this time.

III. Comments on Specific Activities

1. General Permit 1, Maintenance

a. In response to the June 2016 PN, one commenter wrote that a PCN is required if the activity causes turbidity and it is in the specified rivers, or tidal waters that are not rivers, between March 16 and Oct. 31 *or* during the time of year (TOY) restriction specified in GC 18 (Nov. 16 to Feb. 15). Why are there two different date-ranges specified in this GP? They pointed out that a similar issue arises with GP 5: Dredging, which contains a different TOY date-range of Feb. 15 to Oct. 31. This TOY is protective of all but winter flounder in Cape Cod Bay and the South Coast for the same specified rivers and tidal waters. They stated that TR-47 identifies the appropriate TOY restriction for different Massachusetts water bodies and lists the species present in the water body that it is intended to protect, and recommended retaining the use of TR-47, or alternatively, setting forth a clear summary table based on TR-47 in the GP.

Corps: General Condition 18 was deleted. Instead, GP 5 references TOY restrictions for certain waterbodies or the TOY restrictions stated in Appendix B of the MassDMF Technical Report TR-47, which apply instead if they are provided for a specific waterbody and less restrictive. In addition, GC 16 states that a PCN is required for GPs 1, 6-20 and 23 when an activity may cause greater than minimal sedimentation or turbidity in streams or tidal waters. This will protect fish and wildlife species and habitat from sedimentation and turbidity caused by dredging or other activities.

b. In response to the June 2016 PN, one commenter wrote that the definition for “currently serviceable structure” should be included in this section.

Corps: We disagree as we want to reduce wording in this section. However, we did insert a hyperlink to the definitions section.

2. General Permit 2, Moorings

a. In response to the September 2017 PN, one commenter wrote that they agree with the proposed changes. However, they questioned the practicality of requiring a Self-Verification Notification Form (SVNF) for SV eligible moorings.

Corps: We believe that a SVNF should be required to allow us to monitor impacts to navigation and the environment.

b. One commenter stated that any changes to moorings regulations at the least should include some outreach to the one group of people that issue moorings permits, and requested an extension of the public comment period so that the Harbormasters Associations have time to review and comment on the proposed changes.

Corps: We spoke to the commenter, the commenter stated that he would let us know if he desired a meeting, but he never requested a meeting.

c. In response to the June 2016 PN, one commenter wrote that SV Eligible 1(e) should read “Attached to floats and/or vessels that do not contact the substrate at any time”. Another commenter wrote that this should be clarified to the provision is not intended to apply to leaky boats but to boats that do not “bottom-out” at low tide.

Corps: We made a change that satisfied these concerns. It now reads, “Attached to boats that do not contact the substrate during any tidal cycle”.

d. In response to the June 2016 PN, one commenter wrote that Footnote 3 needs more clarification. It should be stated that “previously authorized” means that any mooring in existence prior to January 21, 2010 is now considered to be authorized by the Corps under the GP that was in place at the time, without the submission of a SVNf, and does not require further authorization. Another commenter wrote “For clarity, the footnote should affirmatively state that any mooring in place prior to January 21, 2010 is grandfathered and does not require further authorization.” Another commenter wrote, “The final sentence in Note 3 of the proposed revised GP 2 should further explain that moorings installed before January 21, 2010 were authorized under the GP in place at that time because no SV was then required. Note 3 should also clarify whether this also applies to moorings installed in eelgrass prior to January 21, 2010.”

Corps: We do not believe that changes are necessary. The SVNf requirement is for authorizations under the proposed GPs. General Condition 43 states, “Activities that were authorized and completed in accordance with previous GPs or nationwide permits are not affected by these GPs and continue to be authorized in accordance with the original terms and conditions of those authorizations, including their terms, general conditions, expiration date, and any special conditions provided in a written verification.”

e. In response to the June 2016 PN, one commenter requested that we include “floats” in this section or define “moorings” to include floats.

Corps: We authorize floats in GP 3.

f. In response to the September 2017 PN, one association wrote that it’s excellent that authorized moorings can be maintained and replaced using the SV process, but not that the GP 2 change also carries forward an inaccurate assumption that “low impact mooring technology and/or helical anchors” are better for the marine environment or human navigational safety when all comments and studies from knowledgeable mooring operators indicates the opposite is true. In response to the June 2016 PN, the association wrote that SV eligible now includes “existing, authorized moorings that are converted from traditional mooring to low impact mooring technology and/or helical anchors.” They stated that these moorings are not beneficial to the environment, they break frequently causing vastly more damage to the environment than a traditional mooring rubbing vegetation on the ocean floor, and eel grass repopulates quickly

when a traditional mooring is relocated and that the traditional mooring provides habitat not provided by “environmental” moorings. Another commenter stated similar views and that “helix” moorings leave holes in the ocean floor disturbing more area than traditional moorings, and also rust or deteriorate in salt water and require more frequent maintenance.

Corps: Self-verification does not allow moorings that are placed within nor impact tidal vegetated shallows. A PCN is required so that we can evaluate moorings in SAS to ensure no greater than minimal impacts. General Permit 2 does not require any particular type of low impact mooring technology. The Corps could consider various low impact equipment alternatives and consult local harbor masters or experts on a case-by-case basis during the PCN review. Based upon a review of the available data, we do not believe that the low impact mooring costs are disproportionate to the costs of a traditional mooring when considering initial and long-term maintenance. The draft decision documents briefly discuss economics as one of the public interest review factors that are considered before the Corps issues a permit, including a GP. A helix anchor does not auger out a hole; they minimally disturb the soil when installed or removed. When maintained properly, low impact equipment should result in fewer environmental impacts than traditional moorings, and they should deteriorate and break no faster than a metal chain.

g. In response to the June 2016 PN, one commenter wrote that they concur with GP 2 and the removal of language that allowed installation of new low impact moorings in eelgrass through SV. However, they stated that new moorings in eelgrass should require a PCN since low impact moorings can reduce but not eliminate impacts to eelgrass.

Corps: A PCN is now required for new or relocated moorings in eelgrass.

h. One commenter agreed with the inclusion of following for SV eligibility: “not placed in or impacting tidal vegetated shallows”, but stated that more guidance is needed on determining what constitutes an impact to vegetated shallows. They suggested a distance from vegetated shallows such as: “not placed in vegetated shallows, *or in or within 20 feet of vegetated shallows*, or the length of the mooring chain scope.” Another commenter also suggested the 20-foot distance.

Corps: We believe that a change isn’t needed since, “Neither placed within *nor impacting* tidal vegetated shallows (e.g., eelgrass)” is clear.

i. In response to the June 2016 PN, one commenter (EPA) requested the following wording for PCN taken from the proposed CT GP: “Locating new individual moorings in SAS, including eelgrass, shall be avoided to the maximum extent practicable. If SAS cannot be avoided, plans should (EPA recommends shall) show elastic mooring systems that prevent moorings chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems, where practicable. For moorings that appear to impact SAS, the Corps may require an eelgrass survey.”

Corps: Change made.

3. General Permit 3, Structures in Navigable Waters of the U.S.

a. In response to the September 2017 PN, one commenter wrote that they agree with the proposed change to increase the 1:1 ratio of height to width of a proposed pier to 1.5:1 for SV

eligibility, and stated that they are not concerned with SV for reconfigurations of docks that meet the identified criteria. Another commenter stated that the proposed ratio seems the wrong measure of the environmental impacts of shading, especially based on a single experimental evaluation study in one estuary. The study and resulting proposal do not take into account that some species actually need and prefer shade and hiding places and nesting spots below decking. Higher exposure heights means higher species fatality risk from predators and exposure. Massachusetts already has strong wetlands (and salt marsh) protection laws to address possible impacts from any piers. The Corps proposal by its own terms does not yet have well-supported science or facts behind it and is not ready for finalization, where it is not even discussed yet in the draft permit changes. Another commenter recommended maintaining the SV eligibility in the current and draft GP 3 for piers to be ≤ 4 feet wide and ≥ 4 feet above the substrate to reduce salt marsh impacts, and implementing the 1.5:1 height to width ratio for piers greater than 4 feet wide.

Corps: This proposed change appears to have merit, but the Corps and the Commonwealth of Massachusetts, specifically the MassDEP and MA CZM, want to look at this proposal in more depth and coordinate with local towns, including zoning boards that could be affected by this change. We will review this change if it is relevant when we propose to reissue the GPs in five years or during any proposed modification to the GPs.

b. In response to the September 2017 PN, a commenter wrote that the proposed changes would allow SV eligibility for reconfiguration of existing structures at existing authorized boating facilities or public recreational uses, so long as the structures do not extend beyond the existing perimeter of the facility or encroach into special aquatic sites (SAS). Where Massachusetts already has a robust navigation protection system (Chapter 91 licensing) and well established environmental protections (the Wetlands Protection Act, among other laws), this proposal is efficient, protective of the environment and navigation and smartly allocates limited federal resources.

Corps: Self-verification 1 applies to “Private, non-commercial piers, floats and lifts” and doesn’t apply to boating facilities as PCN 2 requires a PCN for: “Expansions, modifications, or new reconfiguration zones at any authorized boating facility”.

c. In response to the June 2016 PN, a commenter wrote that construction activities can be done under SV if they occur during the GC 18 TOY restriction and requested that GC 18 be clarified as to whether it is intended as a work "restriction" or work "window." Another commenter agreed with this commenter.

Corps: We deleted this term from GP 3 that required a PCN for construction activities extending >25% of the waterway width during the TOY restriction specified in GC 18. This addressed fish passage, but GC 16 now addresses fish passage. General Condition 18 was deleted and there is no longer confusion as to whether a work restriction or work window is intended.

d. In response to the June 2016 PN, one commenter recommended that specific information regarding the method of removal or the distance below mudline for cutting of pilings be included, and that the removal of less than 100 piles be included as the SVFN threshold, as recommended by MassDMF. The MassDMF recommended that this GP and/or GC 12 Pile Driving and Removal provide more detail about the conditions applicable to pile removal (e.g.,

whether all removal methods are allowed under SV, or if there is a threshold of the number of piles allowed under SV?). As to the latter question, DMF proposes a threshold of less than 100 piles removed under SV. Consistent with this comment, DMF recommends that GC 12 expressly state that the removal of >100 piles proposed during the TOY restriction will require a PCN. GC 12 should also be revised to state that when excavation is required around the piles as they are removed, PCN review is required.

Corps: We believe that GC 11 (formerly GC 12), Pile Driving and Removal, properly addresses pile removal methods and it's clear when a PCN is required. GC 11 clearly specifies the removal methods. We had added "A PCN is required for the installation of structures with jetting techniques", but based upon these comments, we added, "A PCN is required for the installation *or removal* of structures with jetting techniques." In response to these comments, GC 11(c) now requires a PCN for the removal of >100 piles from January 15 to November 15.

e. In response to the June 2016 and September 2017 PNs, one commenter recommended making shore outhauls SV Eligible as these structures have minimal impact on aquatic environments and are typically used for non-motorized watercraft.

Corps: These require a PCN due to navigation and safety concerns.

f. In response to the June 2016 and September 2017 PNs, one commenter questioned why "steel piles of any diameter" will require a PCN since these typically have minimal environmental impacts.

Corps: A PCN is required so that we can evaluate the effects on endangered species due to sound impacts.

4. General Permit 4, Aids to Navigation, and Temporary Recreational Structures

Corps: No comments were received.

5. General Permit 5, Dredging, Disposal of Dredged Material, Beach Nourishment, Rock Removal, and Rock Relocation

a. In response to the September 2017 PN, one commenter wrote that they agree with the proposed change to require a PCN for any dredging in right whale critical habitat and the new TOY restrictions, but did not agree with the increase in impact allowed in SAS for maintenance dredging. This loss of protection means that <1 acre of dredging in eelgrass or mudflat will be reviewed only by resource agencies through the GP process. Elevation to an IP allows others to comment and may also create an obstacle that will urge applicants to be more creative in developing alternatives that avoid and minimize impacts. We recommend returning to IP review of dredging greater than ½ acre in SAS. Another commenter supported this increase in impact.

Corps: The impacts can be evaluated with a PCN under the GP, which is coordinated with the resource agencies. It is rare for the Corps to receive comments on dredging projects from other sources than the resource agencies. In addition, under the GP process the Corps will evaluate the necessity of this amount and location of dredging with expectations that the application shall avoid and minimize impacts to the extent practicable. In response to a PCN or a request to verify that an activity is authorized under GP, the District Engineer may add activity-specific conditions to the GP authorization in order for the activity to be considered to have

minimal adverse effects, or suspend or revoke the GP authorization and require an IP if he determines that the proposed activity would result in more than minimal adverse effects. This flexibility is an important component of the GP program in New England as it helps ensure an appropriate level of review commensurate with the level of impact.

b. In response to the September 2017 PN, one commenter wrote that SV 1(d) states that a “PCN is required unless it is verified that minimal shellfish are present per the local shellfish constable or MassGIS shellfish suitability maps.” We worked with the Corps on this section but did not come to a resolution. We do not have a good number for what would constitute “minimal” shellfish resource and the shellfish suitability maps do not indicate any densities or health of the shellfish and cannot be used to determine what is “minimal” resource. Therefore, we recommended requiring a PCN for dredging in all areas of mapped shellfish mapped in the MassGIS shellfish suitability maps. Another commenter wrote that SV 1(c) should be clarified to read “or *not* located within 100 feet of vegetated shallows or shellfish areas.”

Corps: We worked with the National Marine Fisheries Service (NMFS) and developed this wording to address this issue, “No impacts to tidal SAS, intertidal areas, areas located within 25 feet of salt marsh or 100 feet of vegetated shallows, or areas containing shellfish (A PCN is required unless it is verified that minimal shellfish are present per the local shellfish constable or the MassGIS shellfish suitability maps (see Note 3) or an actual survey)”.

c. In response to the September 2017 PN, one commenter wrote that the proposed changes requiring a PCN for dredging in right whale habitat is appropriate since this is a federally endangered species, and that the Corps proposes new outright limits for improvement dredging and new TOY restrictions. No scientific data is provided to support the new TOY restrictions which are absolutely project critical given the many years it takes to obtain dredging approvals and secure funding. The windows are always short and the available equipment extremely scarce. It would be very helpful to know if there is solid science behind the TOY restrictions or if they are based on extrapolation or assumptions not truly localized for the project areas in question. If the latter is the case, then a prohibition is in appropriate and a PCN would be more applicable.

Corps: The TOY restrictions are based upon MassDMF Technical Report TR-47 Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts, which presents information and data pertinent to the management, biology and commercial and recreational fisheries of anadromous, estuarine, and marine organisms of the Commonwealth of Massachusetts and adjacent waters. The report is based on the best available life history information on marine fisheries resources in Massachusetts and provides a clear record of how the TOYs are determined. The location of marine fisheries resources, organized by town, watershed, and waterbody, is presented in the Appendix of the TR-47 report with the associated TOY date ranges.

d. In response to the June 2016 PN, one commenter recommended that “new” dredging should read “new or improvement” dredging to be consistent with the State’s terminology. Another commenter wrote, “PCN requirement #1 should be amended to read “New (including “improvement”) dredging and associated disposal; or”.

Corps: We made changes and coordinated the current wording with the commenters.

e. One commenter wrote that the SV Eligible column has been amended to apply to any "dredged area $\leq \frac{1}{2}$ acre". The former limits for the combined SV and PCN were " ≤ 500 SF" and ">500 SF to $\leq 5,000$ SF", respectively. These former figures corresponded to existing provisions of MA WQC regulations. The current MA regulations provide that cumulative impacts to resource areas from dredging that involve a loss of less than 5,000 SF do not require a WQC provided the activities are subject to review under the Wetlands Protection Act and have received a Final Order of Conditions. Since the MA threshold under 314 CMR 9.00 requires individual 401 for project impacts >5,000 SF, MADEP will be unable to certify this GP under 401 since the GP will apply to projects with impacts greater than 5,000 SF. In order to certify this GP and maintain the existing regulatory efficiencies, the commenter requested that the Corps maintain the dredging SV and PCN standards in the current GPs.

Corps: Federal permits are separate and distinct from state and local laws and regulations. To increase consistency between GPs and state programs, states may issue WQC with special conditions or indicate additional conditions in their concurrence with the Corps CZM consistency determination. States can be more restrictive and condition their WQCs and CZM consistency determinations to ensure compliance with state standards. States can issue WQCs for GPs based on the specified acreage, linear foot, or cubic yard limits, and require individual WQCs for losses of waters of the U.S. that exceed the specified limits. This may result in either outright denial of certification or certification with new and different conditions than those previously required by State certifications. The potential for a state to deny WQC for a GP is not a sufficient basis for not issuing a GP. The WQC process is independent of the decision on whether to issue or reissue a GP.

f. In response to the June 2016 PN, one commenter wrote that SV eligible 1(c) can be read to mean that maintenance dredging is allowed SV, provided the following apply: "c. no impact to tidal SAS or intertidal areas, *or located* within 100' of vegetated shallows or shellfish areas." This should be corrected to state "*not*" located within 100'.

Corps: We changed this wording to make it clearer.

g. In response to the June 2016 PN, one commenter wrote that as proposed, the maintenance dredging of $< \frac{1}{2}$ acre can occur through SV, provided it is not conducted between **February 15 and October 31** in specific listed rivers and other tidal waters. As discussed above, this TOY date-range is different from the range specified in GP 1 and different from the GC 18 TOY date-range.

Corps: We changed this wording in GP 5 to make it clearer. General Permit 1 no longer has TOY restriction. The TOY restrictions that were in GC 18 and applicable to GC 5 were eliminated. Therefore there are no inconsistencies.

h. In response to the June 2016 PN, one commenter wrote that new dredging of $< \frac{1}{2}$ acre under PCN does not explicitly require a TOY restriction. For dredging of any amount, DMF recommends that the project be subject to a TOY restriction in order to minimize impacts to marine fisheries resources and habitats. The requirement for a TOY for dredging should be listed in the PCN column of this GP. Projects that cannot meet this should be required to file an IP.

Corps: A TOY restriction will be applied on a case-by-case basis in response to a PCN as we may add activity-specific conditions to the GP authorization.

i. In response to the June 2016 and September 2017 PNs, one commenter recommended changing all references from “beach nourishment” to “sand nourishment” to avoid confusion when nourishment is proposed on areas such as coastal dunes, banks or other coastal wetlands. They also recommended adding a provision for “Beach or sand nourishment in waters of the U.S. associated with non-structural shoreline stabilization” as SV eligible with a volumetric or square footage threshold. This would allow for relatively small stabilization projects that require sacrificial sand or other nourishment conditions to be permitted and completed more efficiently, and in coordination with GP 7 that provides SV eligibility for “Non-structural shoreline stabilization activities ≤ 100 feet in length”.

Corps: The Corps does not regulate nourishment in upland areas such as coastal dunes or coastal banks landward of OHW and HTL. We believe that beach nourishment is a standard term and clear. Nourishment could be authorized under GP 7 along with the bank stabilization structure.

6. General Permit 6, U.S. Coast Guard Approved Bridges

In response to the June 2016 PN, two commenters wrote, Not Authorized under GP 6 should include (b) Stormwater control structures in waters of the U.S.

Corps: We discussed this with the commenter and created GC 28, Stormwater Treatment or Detention Systems, which states, “Stormwater treatment or detention systems in waters of the U.S are not authorized under these GPs and require an IP.”

7. General Permit 7, Bank and Shoreline Stabilization

a. In response to the June 2016 PN, two commenters wrote that “Not Authorized under GP 7” should be amended at (c) to replace the current text with: “no new bulkhead, revetment, seawall, groin, or other engineering structure (including, but not limited to, material comprised of rock and wire) on coastal banks to prevent storm damage to structures built after August 10, 1978.”

Corps: We discussed this with the commenters. Their desire to include the recommended wording is based upon a state requirement. We do not believe it is necessary to include this exclusion. Federal permits are separate and distinct from state and local laws and regulations. A PCN is required when these activities that are located in tidal waters and the State is involved in the review process.

b. In response to the June 2016 PN, one commenter recommended that SV 1(a) be changed to read “non-structural shoreline stabilization activities ≤ 100 feet in length including both stream banks; or non-structural shoreline stabilization activities ≤ 100 feet in length on each side of the stream bank when necessary to protect transportation infrastructure”.

Corps: We discussed this with the commenter. Their desire to include the recommended wording is based upon their desire to review work in tidal waters. We agree with that it would be best to have this work reviewed by this agency and therefore changed this GP so that a PCN is required when these activities are located in tidal waters.

c. In response to the June 2016 PN, one commenter recommended that the following statement be substituted for the present wording in PCN Required 1(a), “Hard coastal engineering structures up to 500 linear feet may be allowed, provided that 1) the applicant demonstrates that non-structural methods of protection are not feasible, and 2) the structure is designed to minimize adverse effects on fronting and adjacent beaches and banks.”

Corps: We modified this GP after the June 2016 PN to require a PCN for all activities in tidal waters. We will review the application and coordinate it with the commenter. We can then request the appropriate information from the applicant on a project-by-project basis.

d. In response to the June 2016 PN, one commenter wrote that the trigger of “No permanent impacts to SAS occur” for SV eligibility and “Permanent impacts to SAS occur” for PCN requirements has been deleted. While the text has been replaced under PCN as “Impacts to tidal SAS occur” the proposed amendment drops protection for inland SAS resource areas. Item #5 under PCN Required column should be revised to “Impacts to inland or tidal SAS occur.”

Corps: We clarified this wording so that the SV Eligible column states, “No impacts to SAS” and the PCN Required column requires a PCN for impacts to SAS.

d. In response to the June 2016 and September 2017 PNs, one commenter recommended that we clarify “maritime activities” under PCN Required (4): “Bulkheads, seawalls or similar structures for *maritime activities*”.

Corps: We believe that the term “maritime activities” does not have to be clarified in the GP. Maritime relates to or involves ships, shipping or navigation. Project proponents can contact the Corps on a project-by-project bases for more information.

e. In response to the June 2016 PN, one commenter recommended that Note 2, which states “Non-structural shoreline stabilization does not use hard components such as stone”, include a threshold where a limited amount of stone or hard components could be SV eligible or permitted under a PCN as part of a non-structural shoreline stabilization since it is often essential to utilize small amounts of stone or other hard material in association with a non-structural installation in order to dissipate wave energy and protect the project area while plants establish and the site stabilizes. Without this provision, applicants may choose to build larger coastal engineering structures above the high tide line (HTL) and outside of Corps jurisdiction. Another commenter wrote, that while non-structural shoreline stabilization is allowed, which is a type of living shoreline, stone is not allowed as a component of the non-structural shoreline treatment and this creates a disincentive for living shoreline solutions due to the need for an IP when stone is incorporated. The commenter recommended incorporating the living shoreline approach of the Corps NWP.

Corps: The purpose of this terms stated in the June 2016 public notice was to provide SV eligibility only for “non-structural shoreline stabilization” since this was a relatively new concept in tidal waters. However, we now require a PCN for all activity that is located in tidal waters to provide us with the opportunity to review shoreline stabilization. Therefore, we will now review these activities and we deleted the note.

8. Residential, Commercial and Institutional Developments, and Recreational Facilities

Corps: No comments were received.

9. Utility Line Activities

a. In response to the June 2016 PN, one commenter wrote that they appreciate the Corps' effort to streamline this general permit for utility activities by including the construction of access roads (previously in GP 10) under GP 9.

b. In response to the June 2016 and September 2017 PNs, one commenter requested clarification whether the use of temporary construction mats may be authorized under GP 9 or whether they will continue to be authorized under GP 14. They were concerned that this does not expressly state that construction mats do not count towards area thresholds.

Corps: We have changed the GPs. GP 9 references Footnote 1, which states, "Temporary construction mats of any area in non-tidal waters necessary to conduct activities do not count towards the SV or PCN/GP thresholds. Temporary construction mats in tidal SAS or >5000 SF in tidal waters require a PCN, but mats of any area do not count towards the PCN/GP area thresholds. See GCs 3(a), 13 and 14."

c. In response to the June 2016 and September 2017 PN, one commenter wrote that we should remove duplicate language and clarify that this applies generally to the facilities that support utility lines, including both electric and gas facilities, that the Corps revise subparagraph (b) by deleting "utility line station" and replace with "appurtenant" and insert "gas line" so that it reads "(b) the construction, maintenance, or expansion of appurtenant facilities associated with an electric line, gas line or other utility line in non-tidal waters."

Corps: This wording is consistent with the Corps NWP and we believe that it is clear that it applies to appurtenant facilities associated with an electric line, gas line or other utility line.

d. In response to the June 2016 and September 2017 PN one commenter requested that the Corps revise subparagraph (c) by replacing the last word "feasible" with "practicable, considering system reliability and other factors." In many situations, a single structure with a concrete caisson provides the most reliable solution and National Grid requests that this and other considerations be taken into account.

Corps: This wording is consistent with the Corps NWP. The Corps proposed wording would allow for a single structure with a concrete caisson if separate footings for each tower leg are not feasible due to logistics, soil conditions, reliability, etc.

10. Linear Transportation Projects and Stream Crossings

a. In response to the June 2016 PN, one commenter wrote that several MA statutes and regulations prohibit stormwater control structures within wetlands and requested that we amend this GP to include "Stormwater control structures in waters of the U.S."

Corps: We discussed this with the commenter and created GC 28, Stormwater Treatment or Detention Systems, which states, "Stormwater treatment or detention systems in waters of the U.S are not authorized under these GPs and require an IP."

b. In response to the September 2017 PN, one commenter recommended allowing SV eligibility for new or replacement culverts and spans at stream crossings in both tidal and non-tidal streams, so long as the standards at GC 19 are met.

Corps: We disagree since we would like to review these crossings for environmental and navigational impacts.

11. Mining Activities

Corps: No comments were received.

12. Boat Ramps and Marine Railways

Corps: No comments were received.

13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects

Corps: No comments were received.

14. Temporary Construction, Access, and Dewatering

a. In response to the June 2016 PN, one commenter wrote that in order to ensure consistency with several MA statutes and regulations which prohibit stormwater control structures within wetlands, the activities listed under "Not Authorized Under GP 10" should be amended to include "Stormwater control structures in waters of the U.S."

Corps: We discussed this with the commenter and created GC 28, Stormwater Treatment or Detention Systems, which states, "Stormwater treatment or detention systems in waters of the U.S are not authorized under these GPs and require an IP."

b. In response to the June 2016 PN, one commenter wrote that they were surprised and disappointed to see the proposed changes to GP 14 with respect to temporary construction mats. The change will have severe, and we assume unintended, consequences for the permitting of utility maintenance projects. The proposed change should not be made and the current version of GP 14 should be retained. At a minimum, the threshold for SV should be increased to 1/2 of an acre.

Corps: We have changed the GPs. It is now clear that construction mats do not count towards area thresholds. GP 14 states, "Temporary construction mats of any area in tidal waters of the U.S. or SAS do not count towards the PCN/GP area thresholds and therefore do not require an IP (see GCs 3(a), 13 and 14). This only applies to temporary construction mats, not other temporary fill."

15. Reshaping Existing Drainage Ditches, New Ditches, and Mosquito Management

In response to the June 2016 PN, one agency recommended that at the end of the introductory paragraph to GP 15, add the following sentence: "Discharges to modify the cross-sectional configuration of the currently serviceable drainage ditch constructed in water of the U.S., for the purpose of reducing mosquito breeding habitat due to accumulation of debris and vegetation." In order to be most protective of water resources, they recommended that this GP clarify what is necessary to qualify as an existing mosquito control ditch. They also

recommended that the proposed GP include a definition of "mosquito reduction activities." They noted that under the former Category 1/Category 2 system, the ditch maintenance must be maintained July 1 - October 1, with a limit of 5,000 square feet (SF) of total impact between temporary and permanent impacts to qualify for Category 1. However, the current and proposed GP 15 uses *linear* feet not SF. This is not consistent as between permitting under Sections 401 and 404 in Massachusetts. They recommended that GP 15 SV limits be revised to state " ≤ 500 linear-feet and $\leq 5,000$ square-feet". The PCN can then parallel these cut-offs.

Corps: We can decide what is considered to be a "mosquito ditch" and "mosquito reduction activities" on a case-by-case basis through the PCN process. Corps: Federal permits are separate and distinct from state and local laws and regulations. In most cases, the Clean Water Act has established minimum national standards. This wording is consistent with the Corps NWP. In some cases, Federal requirements may be more restrictive or different, but states are not required to modify their own state programs to conform to the Federal requirements. Each state is likely to have different water quality standards, and the terms and conditions for GPs cannot always address those variations while trying to ensure consistency with a Federal program.

16. Response Operations for Oil and Hazardous Substances

In response to the June 2016 PN, one commenter wrote that there is no upper limit for permanent structures or impacts for spill training exercises. Spill training exercises should not result in more than minimal impacts to wetlands. An upper limit should be set to assure that any exercises do not result in more than minimal impacts, for instance by closing off tide gates or culverts affecting tidal flow and fish passage to upstream wetlands for any more than one tidal cycle, or using inappropriate equipment in wetlands to lay containment booms without consideration of impacts to the wetlands.

Corps: Self-verification eligibility is limited to, "Temporary impacts for spill response training exercises <5000 SF in non-tidal waters and <1000 SF in tidal waters of the U.S. with no impacts to SAS". A PCN is required for activities that exceed these thresholds and the impacts will be evaluated to ensure that they do not result in more than minimal impacts to waters of the U.S.

17. Cleanup of Hazardous and Toxic Waste

In response to the June 2016 PN, one agency wrote that they understand that there is no upper limit in the PCN, which means that impacts may occur to more than one acre of wetlands in this GP, and that the existing provision to require restoration of the wetlands in place and at similar elevation is essential. If a cleanup involves permanent fill in wetlands or waters of the U.S., an IP should be required under this GP. The cleanup must be ordered or otherwise undertaken in accordance with the Massachusetts Chapter 21 E hazardous waste program and overseen by a Licensed Site Professional.

Corps: We disagree that cleanups involving permanent fill in waters of the U.S. should require an IP. There may be instances when it is not practicable to avoid filling wetlands or restore them in place. We want to provide incentive to clean up hazardous and toxic waste and provide an efficient means to permit these activities when they have no more than minimal

individual and cumulative adverse environmental effects. The DE can decide to require an IP on a case-by-case basis if he determines that the impacts are greater than minimal.

18. Scientific Measurement Devices

In response to the September 2017 PN, one agency wrote that it appears that an anchor or other temporary device is authorized under SV in tidal waters, provided it has no permanent or temporary impacts. How is an impact determined? Would an anchor pulled through a mudflat cause a temporary impact or no impact? To clarify, we suggest specifying that SV is for de minimis impacts to tidal waters such as that caused by an anchor or temporary structure.

Corps: Permanent and temporary impacts are defined on page 3 and in the Definitions section. An anchor pulled through a mudflat may or may not cause a temporary impact. General Condition 3(a) states, “Activities must be designed and constructed to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site (i.e., on site).” The requirements in GP 3 are similar to those in NWP 5, Scientific Measurement Devices.

In response to the June 2016 PN, one agency wrote that PCN Required 1 states that permanent and temporary impacts allowed under a PCN if they are: a. >1,000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or b. located in tidal waters or SAS. This section needs clarification as GP 18 does not authorize permanent impacts >5,000 SF in tidal and non-tidal waters and wetlands. CZM recommends that the section be changed to read “1. Permanent and temporary impacts are: a. >1,000 SF and ≤5,000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or b. <1,000 SF located in tidal SAS.”

Corps: Change made. We clarified this and believe that it reads accurately and clearly.

19. Survey Activities

a. In response to the September 2017 PN, one agency wrote that there is a contradiction since PCN is required for any impacts in tidal waters, but soil borings, core sampling and temporary structures in tidal waters are SV eligible. A core or a temporary structure may cause impacts, and it should be noted that any impacts more than de minimis would require a PCN.

Corps: We clarified this and SV 2 now states, “Survey activities including temporary structures in tidal waters of the U.S. provided no impacts occur”. Survey activities like soil borings, core sampling or temporary structures may cause impacts in tidal waters and if so it states clearly that a PCN is required.

b. In response to the September 2017 PN, one agency wrote that an SVNf would be required for the installation of a screw anchor with a temperature monitor on it, or for a small <1/16 m² core of eelgrass for scientific monitoring, and they don’t think it is practical to ask for a SVNf for these de minimis actions.

Corps: An SVNf is required for core sampling in eelgrass under GP 19, as we want to be aware of these activities that occur in tidal waters. A SVNf is no longer required for a screw

anchor with a temperature monitor under GP 18 as we made this change after the September 2017 PN.

c. In response to the June 2016 PN, one commenter wrote that this limits SV eligibility for survey work to less than 1,000 SF, this is a substantial change from the current limit of 5,000 SF, and this could result in PCN s for routine survey work that has historically been conducted as SV work, resulting in additional and unnecessary burdens on the Corps and applicants.

Corps: The SV limit for 1000 SF is for permanent impacts. This was reduced from 5,000 SF to provide incentive to minimize these impacts. Survey work should generally cause no or a small area of permanent impacts and a PCN for impacts >1,000 will provide us with the opportunity to reduce and avoid unnecessary impacts. This will outweigh any additional permit application and processing work.

20. Agricultural Activities

Corps: No comments were received.

21. Fish and Wildlife Harvesting and Attraction Devices and Activities

a. In response to the September 2017 PN, one agency wrote that in Massachusetts, the MassDMF has sole jurisdiction over the management of fisheries harvest and the gear types used for that harvest (MGL C. 130 S. 17 and 17a), they successfully manage state water marine fisheries consistent with the Corps resource protection policies and regulation, recommended stating that the GP does not authorize these activities and that we clarify that the GP does not serve as the authorization to engage in the identified fish and wildlife harvesting techniques in state waters.

Corps: This wording is consistent with NWP 4, Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities. We regulate these activities as structures or work waterward of MHW under Section 10 of the Rivers and Harbors Act.

b. In response to the June 2016 PN, one commenter wrote that the SV section needs clarification as to what types of devices and activities are allowed to be consistent with previous GP activities, and suggested consultation with MassDMF to review these devices and activities. Another commenter recommended elaborating on activities that are SV Eligible rather than “Devices and activities that do not require a PCN”.

Corps: Authorized devices and activities are listed in the first part of this GP, the SV Eligible column states, “Fish and wildlife harvesting and attraction devices and activities that do not require a PCN or an IP” (we added “or an IP” based upon these comments), and the PCN column describes when a PCN is required. We believe that this is clear.

c. In response to the June 2016 PN, one commenter recommended clarifying the type and extent of recreational and/or commercial fishing, shellfishing, and hunting activities that are subject to GP 21. The language in the description is very broad and appears to infer that an SVNf must be submitted by individuals for activities such as “clam and oyster digging”.

Corps: We believe that this is not confusing since the notes state, “An SVNf is not required for work authorized under GP 21.”

22. Aquaculture Activities

a. In response to the October 2017 PN, one commenter wrote that the PCN requirements for certain aquaculture activities seems sensible rather than an automatic IP.

Corps: Aquaculture activities have the potential to cause effects to endangered species. We wrote this condition to provide SV eligibility for some activities with no effects to endangered species.

b. In response to the June 2016 PN, one commenter wrote that the SV section needs clarification as to what types of devices and activities are allowed. To be consistent with previous GP listed activities, specific devices and activities need to be listed, and suggested that we consult with MassDMF.

Corps: We constructed this GP in a way to be clear and reduce the wording as much as possible. Therefore we believe that we do not need to list activities in the SV column. We coordinated with MassDMF.

c. In response to the June 2016 PN, one group wrote that this GP will enhance the protection and conservation of marine resources, which is very important to their association and its members.

d. In response to the June 2016 PN, one agency wrote that PCN Required 4 applies to activities within 25 feet of "SAS" and requested that we instead use the term "vegetated shallows." The term SAS not only includes seagrass but also mudflats and saltmarsh. They also wrote that PCN Required 9 is not needed because it is included in the term "activities" used in Section 4.

Corps: We changed this to "Activities occur in SAS including mechanical or hydraulic dredging" after consulting with the NMFS as we believe that it's important to protect all of these SAS resources. Regarding PCN Required 4 and 9, we believe that these terms in the June 2016 PN differed and were both necessary. The wording was modified in the final GP.

e. In response to the June 2016 PN, one agency wrote that we should define longlines, which expressly includes lines used for the culture of living organisms, and recommended including a reference to the MA Shellfish Planting Guidelines (Hickey et al 2015, <http://www.mass.gov/eea/docs/dfg/dmf/programsandprojects/shellfish-planting-guidelines.pdf>).

Corps: We do not mention longlines; therefore we will not define them. We include the reference to the MA Shellfish Planting Guidelines.

f. In response to the June 2016 PN, one agency wrote that GP 22 is silent on whether the TOY restriction in GC 18 applies.

Corps: General Condition 18 was deleted. Instead, GC 16 states, "A PCN is required for GPs 1, 6-20 and 23 when an activity may cause greater than minimal sedimentation or turbidity in streams or tidal waters." This will protect fish and wildlife species and habitat from sedimentation and turbidity caused by dredging or other activities. We consulted with the NMFS and they advised that TOY restrictions are not needed for GC 22.

g. In response to the June 2016 PN, one agency recommended explaining why “Temporary impacts” are not authorized under GP22 since aquaculture facilities may need the ability to create temporary impacts during various stages of their operation. By not allowing temporary impacts under the GPs, it could potentially place a time-consuming burden on the operator or encourage non-compliance.

Corps: Temporary impacts are now allowed under this GP.

23. Aquatic Habitat Restoration, Establishment and Enhancement Activities

a. In response to the September 2017 PN, one commenter wrote that GP 23 only authorizes reestablishment of SAV in areas where it previously existed and felt that this is unnecessary. Published and unpublished site selection models and analysis take into consideration factors other than historic presence to find a suitable site. Any further conflicts would be adequately reviewed in the PCN process.

Corps: The wording in question is from NWP 27, Aquatic Habitat Restoration, Establishment, and Enhancement Activities. The GP states, “Activities authorized by this GP include, but are not limited to”. Thus, a number of other activities, including SAV establishment in areas where SAV did not exist, could be authorized under this GP.

b. In response to the September 2017 PN, one commenter wrote that projects can be SV eligible if they are authorized in writing by a local, state or non-corps Federal environmental resource management agency, and wanted to know what that means. For example, would the project need a permit from a conservation commission or the MassDEP or could a letter from NMFS endorsing the project suffice?

Corps: We coordinated with the MassDEP and changed this wording to make it clearer. It now reads, “Activities 1 and 2 above must be authorized by a Final Order of Conditions, or 401 Water Quality Certification if required, in order to be SV eligible”. This will ensure some environmental review for these activities.

c. In response to the June 2016 PN, one agency wrote that SV 1(b), PCN 1(b) and PCN 3 all refer to SAS. They recommended that the term “vegetated shallows” be used instead because it is the only SAS that applies to activities addressed in GP 23. They also recommended that the PCN column language be amended to state that it applies to the specified activities “if not SV eligible.”

Corps: We changed “SAS” to “eelgrass or salt marsh”. We added the term, “Activities that are not eligible for SV and do not require an IP.”

d. In response to the June 2016 PN, one commenter recommend clarification regarding the “*permanent or temporary impacts*” thresholds for restoration sites with multiple work areas. We recommend clarifying if this applies to each individual activity for a restoration project or cumulative impact for the entire project over a given period of time. For example, if two water control structures are removed a year apart on an abandoned cranberry bog that each have 2,600 SF of impact, is each structure SV Eligible or is a PCN required because the total impact is 5,200 SF? This is partially addressed in GC 5, however, it may be practical to specifically address restoration projects and potentially allow “piecemeal” work over time.

Corps: This is addressed in GC 5 and we do not believe that it is necessary to address it here.

e. In response to the June 2016 PN, one agency suggested the addition of particular activities to “Activities authorized by this GP include, but are not limited to”.

Corps: We do not believe that these changes are necessary. Our proposed wording is similar to the Corps NWP and we prefer consistency here. The suggested activities could be considered under this GP since the wording states, “Activities authorized by this GP *include, but are not limited to*” (emphasis added).

24. Previously Authorized Activities

In response to the June 2016 PN, one agency wrote that after reviewing the redline version of the proposed changes, they are not concerned with the deletion of the “Previously Authorized Activities” GP since those activities remain in effect under their original terms and General Condition 43, still oversees these activities.

IV. General Comments on General Conditions

1. In response to the June 2016 PN, one agency suggested that to ensure consistent application and compliance, DMF recommends that the Corps expressly identify all the GCs that apply to a particular GP. Another commenter recommended that a listing of all appropriate GCs be included as footnotes to each listed activity in the GPs. This will eliminate any confusion on the part of reviewers and stakeholders as to applicable conditions such as environmental windows etc.

Corps: We sometimes state that a particular GC(s) is particularly relevant to a GP when we feel that it is necessary. However, applicants are obligated to comply with all applicable GPs and applicable GPs may vary on a project-by-project basis.

2. In response to the September 2017 PN, one agency wrote that the GCs are well crafted and have improved since former drafts. They agreed with the addition of TOY restrictions on the installation and removal of sediment controls in GC16. They were to see that new tide gates will be reviewed as an IP and that any maintenance or replacement of tide gates without a Corp approved Operation and Maintenance Plan would need at least a PCN. In response to the June 2016 PN, one commenter society wrote that the proposed revisions to GC 42 and the deletion of GP 23 are an improvement to the overall document and further minimizes confusion.

V. Specific Comments on General Conditions

1. Other Permits

Corps: No comments were received.

2. Federal Jurisdictional Boundaries

In response to the June 2016 PN, two agencies wrote that a preliminary assessment of vegetated shallows should be undertaken by referencing the current Massachusetts eelgrass

maps, and recommend that we include such instruction and include a link to:
http://maps.massgis.state.ma.us/images/dep/eelgrass/eelgrass_map.htm.

Corps: Change made.

3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

One agency recommended that this section provide an explicit, unqualified exemption from compensatory mitigation requirements for proactive restoration projects. The current wording leaves the decision whether to require compensatory mitigation discretionary. They proposed language clearly stating that proactive restoration projects are categorically exempt from the requirement to provide compensatory mitigation.

Corps: We do not believe that this is necessary. There may be impacts resulting from proactive restoration projects, and we will weigh the impacts against the benefits to determine if mitigation is necessary.

4. Single and Complete Projects

a. In response to the June 2016 and September 2017 PN's, one company wrote that the requirement that "Proponents must quantify any permanent fill associated with the single and complete project that has occurred since October 5, 1984 and provide that information in the PCN" is confusing in the context of "single and complete" projects. They suggested that this either be removed or more carefully explained so that project proponents understand what past information they are required to provide to the Corps in a PCN.

Corps: We are requesting this information so that we can assess whether or not an activity is a single and complete project. The GPs shall not be used for piecemeal work. We do not feel that it is necessary to explain this in the GP.

b. In response to the June 2016 and September 2017 PN's, one company requested that we remove the sentence stating, "If any crossing requires a PCN review or an individual permit review, then the entire linear project shall be reviewed as one project under PCN or the individual permit procedures." This appears to be an unnecessary change from the current GPs for MA, which state that "Activities are not eligible for SV if they are part of an overall project for which an Individual Permit is required unless the Corps determines that the activity is a single and complete project based upon its analysis of the entire overall project." This current requirement appears to be grounded in 33 CFR 330.6(d), which prevents coverage under the NWP for portions of a linear project if dependent parts of that project require an IP. However, we are not aware of any similar requirement for what the Corps appears to be proposing, which is that if several distinct and distant crossings each qualify for SV coverage, but one crossing requires a PCN, then a single PCN must be filed for the entire project. We are not aware of any regulatory requirement for this change and believe that it will unnecessarily reduce the flexibility inherent in the definition of "single and complete linear project" without any environmental benefit.

Corps: Considering cumulative effects of the overall project for linear activities is not inconsistent with the NWPs. The preamble to the 2012 Corps NWP 12 states that: "each separate and distant crossing should be evaluated to determine if it meets the terms and conditions of the NWP, and cumulative effects of the overall utility line should be evaluated to

determine if the adverse cumulative effects on the aquatic environment are more than minimal and therefore do not qualify for NWP authorization." (77 FR 10184, 10196). District engineers are directed to evaluate cumulative effects caused by all of the crossings authorized by NWP (77 FR 10287). The level of cumulative effects assessment for each overall project is commensurate with the extent of work subject to Corps control and responsibility, and will be based on direct and indirect effects caused by the regulated activity, taking into consideration other appropriate factors such as type of resource that will be affected by the GP activity, the functions provided by the aquatic resources, the extent to which functions will be lost as a result of the GP activity, the duration of adverse effects and the importance of the resource functions to the region. Our review process is consistent with this process of considering the cumulative impacts of the single and complete project (individual crossing of jurisdictional waters of the U.S.) and the overall utility line project, which is composed of all of the individual waterbody crossings.

5. Activities Affecting Structures or Works Built by the United States

In response to the June 2016 PN, one association wrote, "Where projects are proposed within the boundaries of or which otherwise impact federal projects, including (but not limited to) dikes, levees, flowage easements, anchorages and federal navigation projects, these projects will require separate authorization from the District Commander, known as a "408 Approval". This approval must be obtained before a GP can be issued. This does not appear to burden association members, however it is unclear whether this extra approval will delay the permit process for permittees.

Corps: This could delay projects, but that will be determined on a project-by-project basis.

6. Navigation

Corps: No comments were received.

7. Historic Properties

a. In response to the June 2016 PN, commenters wrote that they support the proposal to have the Corps coordinate with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPOs) and the MA Board of Underwater Archaeological Resources (BUAR) so that the applicant will not need to contact these officials. One commenter wrote that this approach is consistent and better aligned with the traditional Section 106 consultation process, and it should result in a more efficient, timely and streamlined review with the Corps consulting directly with the THPO/SHPO. In response to the September 2017 PN, one commenter wrote that the Corps has withdrawn its proposal for the Corps to coordinate with the SHPO, THPOs and BUAR and they urged the Corps to add that change, particularly with respect to THPOs, since the Section 106 consultation is the Corps responsibility and some THPOs may not respond to a notice that is not sent by the Corps due to the government-to-government relationship between the federal government and federally recognized tribe.

Corps: We chose to require that the applicant coordinate with the SHPO, applicable THPOs and BUAR by submitting the form included in the GP and the basic description of work with plans. However, if it is determined by these entities that there may be an effect, the Corps will then assert itself into the process to determine the permit area and notify these agencies. We

believe that this is the most efficient way to handle this process. However, the public notice and proposed GPs were coordinated with the SHPO, applicable THPOs and BUAR and they are satisfied with or did not object to the process.

b. In response to the September 2017 PN, one company wrote that they support the 30-day comment deadlines imposed in this paragraph. They suggested that the Corps also add, after the third sentence, the following: “In the event that the Corps is not contacted by the SHPO, BUAR or an applicable THPO within 30 days, the Corps shall move forward to the next stage of the Section 106 process or conclude that the project is SV eligible if there are no other previously identified historic properties or areas with significant potential for the presence of historic resources within the permit area.” In response to the June 2016 PN, one commenter suggested adding the following: “In the event that the Corps is not contacted by the SHPO, BUAR or an applicable THPO within 30 days, the Corps shall move forward to the next stage of the Section 106 process or conclude the Section 106 process, as appropriate.” They also request that these timelines be restated in the Notification Form in Section IX so that the form is consistent with these provisions.

Corps: We do not believe that the suggested wording is necessary since we interpret a lack of response from the SHPO, THPOs or BUAR as meaning that there is no objection to the proposed project. We coordinate the public notice and proposed GPs with these entities and our regulations at 33 CFR 325.3(d)(3) state, “(3) It is presumed that all interested parties and agencies will wish to respond to public notices; therefore, a lack of response will be interpreted as meaning that there is no objection to the proposed project.” The Corps could still carry out identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey.

c. One commenter wrote that “the Narragansett's do not have, nor did they have “homelands” in Massachusetts. We resent your insistence on consulting with the Narragansett on matters within our ancestral homelands. Ignoring our cultural jurisdiction afforded by virtue of being a sovereign tribal nation could cause legal problems down the line.”

Corps: The document titled “Consultation with Indian Tribes in the Section 106 Review Process: A Handbook”, states:

“The requirements to consult with Indian tribes in the Section 106 review process are derived from the specific language of Section 101(d)(6)(B) of NHPA. They are also based on the unique legal relationship between federally recognized Indian tribes and the federal government embodied in the U.S. Constitution, treaties, court decisions, federal statutes, and executive orders. A common misunderstanding is that tribal consultation is only required for undertakings on tribal lands, when, in fact, consultation is also required for undertakings that occur off tribal lands. Tribal consultation for projects off tribal lands is required because the NHPA does not restrict tribal consultation to tribal lands alone and those off tribal lands may be the ancestral homelands of an Indian tribe or tribes, and thus may contain historic properties of religious and cultural significance to them.”

The Corps does not decide what are or are not a tribe’s homelands. The GP requires a notification to applicable tribes in their “area of concern”. Any disputes between tribes could be resolved through the Section 106 process on a project-by-project basis.

d. In response to the June 2016 PN, one commenter wrote that they appreciate and support

the Corps efforts to improve the Section 106 process, including the 30-day comment deadline imposed in GC 6(b). They noted that the revised subsection 6(c) no longer contains a reference to the Notification Form in Section VII and suggested revising the second sentence in 6(b) so that the acceptable method of sending the Notification Form is clear, so that it reads "Coordination with the SHPO and applicable THPOs by sending the MHC's Project Notification Form or the Notification Form in Section VII by courier, certified mail or overnight mail (with a receipt for delivery) is recommended to demonstrate due diligence to identify historic properties."

Corps: This GC now references the timeline and notification form for both SV eligible and PCN activities.

e. In response to the October 2017 PN, one commenter suggested that in GC 7(b) stating the acceptable method of sending the Notification Form by specifying that it should be sent by courier, certified mail or overnight mail (with a receipt for delivery).

Corps: The Corps prefers the current wording which states, "Include a copy of the "Historic Property Notification Form" and the email or certified mail receipt that was used to send the form to the SHPO (does not accept email), BUAR and applicable THPOs for their identification of historic properties in their area of concern".

8. Wild and Scenic Rivers

Corps: No comments were received.

9. Essential Fish Habitat and Fish and Wildlife Resources

Corps: No comments were received.

10. Federal Threatened and Endangered Species

a. In response to the September 2017 PN, one association wrote, some activities which might impact some endangered species would newly be SV eligible (northern long-eared bats (NLEB), roseate terns, piping plovers and red knots), and these are beneficial changes. Some work is now limited in critical habitat for Atlantic sturgeon, shortnose sturgeon and right whales. The work should be subject to closer review and scrutiny, but not forbidden before the review even occurs.

Corps: Work in critical habitat is eligible for authorization under the GPs. As stated in GC 10, "Non-Federal permittees must check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or designated critical habitat might be affected or if the activity is located in designated critical habitat." The Corps will then evaluate the potential effects and determine whether or not an IP is required.

b. In response to the June 2016 PN, one company wrote that they welcome changes to this GC that clarify when a PCN will be required. They were concerned about when a PCN will be required for the NLEB and suggested wording for the Corps to modify GC 8(b). They also proposed to eliminate the phrase "or is in the vicinity" and provided rationale.

Corps: We modified this condition to allow SV eligibility for the NLEB. We also eliminated the phrase "or is in the vicinity".

c. In response to the June 2016 and September 2017 PN, we received comments stating that were appreciative of the Corps efforts to clarify the language with respect to NLEB. However, they stated that the restriction on removing trees ≥ 3 inches dbh is unnecessary given the restriction that prevents activity within the buffers of NLEB hibemacula or maternity roost trees, and the additional PCNs will add cost and administrative burden with no corresponding environmental benefit. Comments received stated that the NLEB is mapped federally for nearly all parts of the Commonwealth, virtually all projects within Corps jurisdiction that require trees ≥ 3 inches dbh as a component will trigger PCN. They recommended changing the criteria to consider the available Massachusetts Natural Heritage & Endangered Species Program mapping for NLEB where projects outside of those mapped areas are eligible for SV. Alternatively, consideration could be given to establishing a minimum acreage of mature tree removal or another threshold that does not the Commonwealth.

Corps: Requiring a PCN for tree removal ≥ 3 inches dbh, including those outside the buffers of NLEB hibemacula or maternity roost trees, is necessary for the Corps to properly coordinate with the U.S. Fish and Wildlife Service (USFWS) using the NLEB 4(d) Rule Streamlined Consultation Form which allows federal agencies to rely upon the USFWS January 5, 2016, intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the NLEB for section 7(a)(2) compliance by: (1) notifying the USFWS that an action agency will use the streamlined framework; (2) describing the project with sufficient detail to support the required determination; and (3) enabling the USFWS to track effects and determine if reinitiation of consultation is required per 50 CFR 402.16.

11. Pile Driving and Removal

In response to the October 2017 PNs, one association wrote that the proposal to require a PCN for pile driving in certain endangered species areas is appropriate if the species is federally endangered AND if regulated parties are more clearly told what the federal agencies are expecting regarding how one checks for endangered species areas. They requested that we clarify where to check for endangered species information. The same issue applies to all the endangered species areas meant to be checked prior to permit usage.

Corps: For listed species under USFWS jurisdiction, applicants are required to check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or critical habitat may be impacted. For listed species under NMFS jurisdiction, we have drafted the GPs and conditions to require a PCN when there may be an effect to listed species.

12. Utility Line Installation and Removal

Corps: No comments were received.

13. Heavy Equipment in Waters and Wetlands

In response to the June 2016 and October 2017 PNs, one company wrote that we should amend this GC to allow for the use of equipment with ground pressure not to exceed 6 psi as a higher psi limit would encourage the use of tracked machines, which would lower the amount of construction matting and equipment required for projects. This proposed amendment is consistent with the construction mat BMP document created by the Corps and utilities, and would decrease the administrative burden on the Corps by removing the unnecessary step of

requiring a PCN where the mitigation that the Corps will require (temporary matting) is already known. They also requested that the Corps retain the current language addressing work on frozen or dry ground, which allows heavy equipment to "be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands."

Corps: The GC states, "Where construction requires heavy equipment operation in wetlands, the equipment shall: (i) Have low ground pressure (typically <3 psi)". Since this states "typically", six psi could be considered to be low ground pressure. We also retained the allowance for equipment on adequately dry or frozen wetlands.

14. Temporary Fill

Corps: No comments were received.

15. Removal of Temporary Fills and Restoration

Corps: No comments were received.

16. Soil Erosion and Sediment Controls

In response to the September 2017 PN, one agency wrote that the changes add TOY restrictions, turbidity and sedimentation reduction methods, and fish passage and spawning and rearing habitat protection without clear science to support the changes.

Corps: The changes were coordinated extensively with the NMFS and MassDMF. We do not believe that the proposed changes are too stringent. The changes will allow *appropriate* (emphasis added) soil erosion, sediment and turbidity controls. The TOY restrictions will help protect fish passage during upstream migration, while the condition is general enough to allow work to occur during the fall downstream migration provided proponents maintain safe, timely and effective downstream fish passage throughout the project.

17. Aquatic Life Movements

Corps: No comments were received.

18. Management of Water Flows

Corps: No comments were received.

18. Time of Year Restrictions (deleted)

This GC was deleted after the June 2016 public notice. There were several comments that included: both the TOY restrictions and the wording needs to be clarified and simplified, the terms "restriction" and "work window" are used interchangeably and are confusing, it should be clearly stated when work can and cannot be performed, and an explanation of TOY restrictions (e.g. TOY restrictions limit work to certain times of year to protect the migration, feeding, and/or breeding of important fisheries) is needed.

Corps: This GC was deleted after the June 2016 public notice. Instead, GP 5 references TOY restrictions for certain waterbodies or the TOY restrictions stated in Appendix B of the MassDMF Technical Report TR-47, which apply instead if they are provided for a specific waterbody and less restrictive. In addition, GC 16 states that a PCN is required for GPs 1, 6-20

and 23 when an activity may cause greater than minimal sedimentation or turbidity in streams or tidal waters. This will protect fish and wildlife species and habitat from sedimentation and turbidity caused by dredging or other activities.

19. Stream Work and Crossings and Wetland Crossings

One agency wrote that the impetus for the Corps stream crossing GP conditions is to prevent or reverse the detrimental impacts of inadequately sized, designed or installed crossing structures. After an existing inadequate crossing is replaced, the impacted stream reach in the area of the crossing undergoes an adaptation period with natural adjustments to stream slope, morphology and bed composition. They recommended that GC 19(c)(iii)-(v) include additional clarifying language to recognize the need for streams to attain a dynamic equilibrium over time, and noted that the need for this is already reflected in GC 19(b)(v) that requires post-construction adjustments to the stream bottom substrate following substantial high flow events. They recommended inserting the following italicized words:

19(c)(iii) Embed culverts or pipe arches below the *anticipated* grade of the streambed *after the stream readjusts its equilibrium following the stream crossing replacement*. This is not required when ledge/bedrock prevents embedment, in which case spans are required. The following depths are recommended to prevent streambed washout, and ensure compliance and long-term success.

Corps: We incorporated a similar change in a footnote.

19(c)(iv) Match the culvert gradient (slope) with the *anticipated* stream channel profile *that will form after the channel readjusts to post-crossing-replacement conditions*. A long profile of the stream channel, extending well above and below the hydraulic influence of the existing stream crossing, should be used to anticipate the post-construction dynamic equilibrium of the stream bed slope and elevation.

Corps: We made the suggested changes in the first sentence.

19(c)(v) Construct crossings with a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks *above or below the hydraulic influence of the existing stream crossing*, (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass substantial high flow events.

Corps: The proposed wording pertains to replacement crossings and not new crossings, which this condition also addresses. Thus including this could be confusing. The condition uses the term “natural stream channel and the banks”, which we believe is clear enough.

20. Floodplains and Floodways

Corps: No comments were received.

21. Storage of Seasonal Structures

Corps: No comments were received.

22. Spawning, Breeding, and Migratory Areas

In response to the June 2016 PN, the one agency wrote that the term "important spawning area" should be defined consistent with the definition used by MassDMF or the NMFS.

Corps: Important spawning areas could be those areas where winter flounder spawn between MLW and -6 meters MLW, known shellfish spawning areas, known fin fish spawning congregating areas, etc. These are too numerous to list. Self-verification activities in important spawning areas are limited and should not result in destruction of these areas. These would be reviewed on a project-by-project basis under a PCN.

23. Vernal Pools

a. In response to the September 2017 PN, one agency wrote that the term "Federal jurisdictional boundaries" in relation to vernal pools is unclear. Vernal pools are not currently federally regulated, perhaps because they are localized and highly transient in appearing and disappearing again.

Corps: Per GC 2, "Applicability of these GPs shall be evaluated with reference to Federal jurisdictional boundaries." Activities shall be evaluated with reference to "waters of the U.S." under the Clean Water Act (33 CFR 328) and "navigable waters of the U.S." under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Applicants are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of the Corps jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as that term is defined in 33 CFR 328.3(c). Applicants shall identify all aquatic resources on the project site."

b. In response to the June 2016 PN, one company questions whether the vernal pool requirements proposed by the Corps are consistent with legal precedent, which requires a significant nexus between Corps regulated areas and traditional navigable waters or their tributaries. They urged the Corps to adopt their previous recommendation on the previous GPs for MA. They wrote that the Corps has also increased the envelope in (b) and (c) from 500 to 750 feet, has not provided a basis for this change and, this will require more burden on utility permitting than necessary to be protective. One agency wrote that the proposed revisions require a PCN if there is a Vernal Pool within 750 feet of any regulated activity whereas the prior GC/GP limited this review threshold to 500 feet. They did not oppose the proposed change as it would "provide a "bright-line" test and important clarity for applicants when determining if a proposed activity is SVN or PCN eligible." One company wrote, Section (b.) states that "*The Corps will determine if a waterbody (e.g., a VP) is jurisdictional*" after submittal of a PCN. We recommend clarifying how this determination will be made and potentially creating a procedure for applicants to request a determination if a waterbody is jurisdictional prior to submitting a PCN.

Corps: We modified this GC in response to public comment. There is no longer an envelope reference as a PCN is now required if a discharge of dredged or fill material is proposed in a vernal pool located within Federal jurisdictional boundaries. Also, "Adverse impacts to vernal pools should be avoided and minimized to *the maximum extent practicable*" (emphasis added). The insertion of "known vernal pools" is not necessary.

24. Coral reefs

Corps: No comments were received.

25. Invasive and Other Unacceptable Species

Corps: No comments were received.

26. Blasting

Corps: No comments were received.

27. Suitable Material

Corps: No comments were received.

28. Stormwater Treatment or Detention Systems

In response to the September 2017 PN, one association that the intention of this proposed change may be to prevent new untreated discharges. However, the proposed change requires an Individual Permit for stormwater systems, which are already heavily regulated by the U.S. Environmental Protection Agency, and several layers of state statutes and regulations. This is the ideal type of project for which to use a GP, not an IP, to encourage stormwater treatment rather than discourage work on stormwater systems.

Corps: We wrote this GC after speaking with the MassDEP, who stated that they authorize very few, if any, stormwater treatment or detention systems in waters and wetlands. This should not impact the public.

29. Tide gates

In response to the September 2017 PN, one association wrote, “Why add another layer of mandatory detailed federal scrutiny instead of a PCN so the Corps can decide if a project is actually beneficial to proceed more quickly?”

Corps: New tide gates remain prohibited from authorization under the GPs. The Corps should evaluate these impacts since decreased tidal exchange may adversely affect tidal wetlands while increased tidal exchange may cause flooding, and due to the likelihood for greater than minimal effects.

30. Water Quality Certification

Corps: We worked with the MassDEP on the wording of this general condition.

31. Coastal Zone Management

In response to the September 2017 PN, one association wrote that it is beneficial that the Corps is proposing that federal consistency review is not needed for SV activities, and it is not beneficial for the Corps to propose all PCNs must go through federal consistency review as this is unnecessary and a duplicative process. At minimum, PCN projects should be assumed not to need federal consistency review unless CZM actively states such a review is needed. They wrote that they do not believe that MA CZM was included in the revisions proposed.

Corps: The GC states, “For PCN activities in the coastal zone, authorization under these GPs becomes valid only after MA CZM determines that the activity is consistent with the MA

CZM program.” This is consistent with Federal regulation. We have coordinated the GPs with MA CZM.

32. Permit On Site

Corps: No comments were received.

33. Self-Verification Notification Form

In response to the September 2017 PN, the MMTA wrote that the Self-Verification Notification Form, Section V: The changes are clear. The form anticipates true understanding of the extremely detailed and self-referential General Permits, however. More education of the regulated parties would be really helpful. We at MMTA understand how limited the Corps’ education budget is. More education is badly needed, where there is widespread absence of understanding of what the Corps intends to regulate.

34. Inspections

Corps: No comments were received.

35. Maintenance

Corps: No comments were received.

36. Property Rights

Corps: No comments were received.

37. Transfer of GP Verifications

Corps: No comments were received.

38. Modification, Suspension, and Revocation

Corps: No comments were received.

39. Special Conditions

Corps: No comments were received.

40. False or Incomplete Information

Corps: No comments were received.

41. Abandonment

Corps: No comments were received.

42. Enforcement Cases

Corps: No comments were received.

43. Previously Authorized Activities

Corps: No comments were received.

44. Duration of Authorization

Corps: No comments were received.

V. Definitions

1. In response to the June 2016 and September 2017 PNs, one agency wrote in the definitions section it would be helpful to include the GC in which that the word is referenced or relevant.

Corps: We only do this when it is necessary as an omission could be interpreted as irrelevant.

2. In response to the June 2016 and September 2017 PNs, one agency wrote that clarification is needed on the definition of “effects” vs. “impacts” where it refers to temporary or permanent impacts compared with temporary or permanent adverse effects. That is, a temporary project impact may have a permanent adverse effect on the resource. Providing a definition of effects may clarify GP1 and GC 3 as well as others.

Corps: We believe that this is clear and consistent with the NWP.

3. In response to the June 2016 and September 2017 PN, one agency recommended that the Corps define SAS more clearly in the document, preferably in the first few pages, and wrote that SAS are referenced within a number of the GPs, and one must turn to Section VIII, Definitions, to find a brief definition and that these areas are further defined at 40 CFR 230.3 with no additional information. A more thorough explanation in the document will help to facilitate understanding of SAS, especially for new or less experienced users.

Corps: We believe that the definition and references are clear, and they are consistent with the NWPs.

4. In response to the June 2016 PN, one agency recommended changing the definition of New Dredging to “New or Improvement Dredging” to be consistent with the State’s terminology.

Corps: We met with the commenter and the final wording satisfied their concerns.

5. In response to the June 2016 PN, one agency recommended changing the definition of vegetated shallows.

Corps: Change made.

Appendix B

Cumulative Effects Assessment for Issuing General Permits in New England

Cumulative Effects Assessment for Issuing General Permits in New England

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1. Background

The US Army Corps of Engineers New England District Regulatory Program needs a systematic and transparent approach to evaluate cumulative effects associated with regulated activities authorized under the general permitting program. This analysis seeks to address this issue for the regular evaluation of state general permits (GPs), and provides general methodology for conducting future analyses.

According to the National Environmental Policy Act (NEPA), the cumulative impacts of a project are the “total effects on a resource, ecosystem, or human community of the action and all other activities affecting that resource no matter what entity (federal, non-federal, or private) is taking the actions.” Cumulative effects are considered to be “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7).

The guidance available regarding Cumulative Effects Analysis (CEA) suggests that cumulative effects should be considered for most Federal Projects, when there may be a collective impact or in order to consider the impacts of activities at a larger scale. The NEPA process verifies that all direct, indirect and cumulative impacts of proposed projects should be considered in the Federal agencies’ decision-making process when taking actions that “could significantly affect the quality of the environment.” Council on Environmental Quality (CEQ) guidance (1997) on cumulative effects states that these effects should identify “minor but collectively significant” actions. A required CEA may be guided by the Corps’ Public Interest documentation [33 CFR 320.4(b)(3)] which states that the cumulative impact of a project may only be observed when the project is analyzed as a part of larger resources. Specifically, that document states that an application should be “evaluated with the recognition that it may be part of a complete and interrelated wetland area.”

This document described the approach, methodology, analysis and results of the original CEA done for all New England watersheds. Subsequent analyses for individual states, which have included some modifications to this approach, are described in the associated appendices. In order to develop a methodology for CEA in the context of the GPs, the original scope, scale and approach for the analysis needed to be specified. The potential impacts to be detected in the assessment need to account for the total effect of numerous projects that fall into the category of “minimal impacts.” The GPs permit two types of minimal impact activities: 1) self-verification GP activities are occasionally non-reporting and require <5,000 square feet of direct and secondary impacts, and 2) pre-construction notification (PCN) GP activities require submittal of notification to the Corps, as well as screening by other local, state, and federal agencies. Data for both categories of “minimal impact” projects is limited to location and project type.

For the scale of the analysis, we are considering the 8-digit hydrologic unit code basin (HUC 8, from here on “watersheds”) in the six New England states. A watershed-based approach was deemed appropriate for this analysis as it provides a unit that is relevant to the assessment of the quality of aquatic resource(s) in question. This approach also provides an integrated unit that is likely to reflect the overall effects of multiple activities or impacts. In addition, many state and national assessments are performed at the watershed scale; therefore, those data apply to these analyses.

This approach for the estimation and anticipation of the cumulative effects of the state GPs requires several steps: 1) the existing conditions of the natural resources must be assessed, regardless of which activities may have impacted those resources in the past; 2) the type, number and locations of GP permitted activities needs to be taken into account, where the potential for permitted activities to impact the condition of natural resources should be estimated to indicate the vulnerability of the watershed; 3) the vulnerability from the GP permitted activities needs to be compared to the assessed existing condition of the resources; and 4) identification of places where vulnerability and existing conditions combine to highlight the potential for impacts from future GP permitted activities must be identified for further scrutiny under the GP program.

2. Approach

We propose a systematic analytical approach to assess the existing conditions of aquatic resources in eight-digit hydrologic unit code (HUC8) basins (from here on “watersheds”). We provide an estimation of the vulnerability of these watersheds from GP authorized activities using both data analysis and best professional judgment. We then determine the relative relationship between these two assessments. The estimation of existing conditions and vulnerability consider aquatic resources to be evaluated in three categories generally following a hydrogeomorphic approach. Those categories are water quality, water quantity and habitat value. Water Quality is the ability of an aquatic resource to remove and/or convert excess nutrients, toxicants, or sediments from waters. Water quantity is considered as both surface water flow and ground water recharge. Habitat value is the general ability of an aquatic resource to provide food and cover for wildlife and plants. The assessment sought to collect relevant measurements for each category; the analysis of activities sought to estimate the potential vulnerability as a result of GP authorized actions on each of these resource categories. Together, they identify those watershed(s) where continued authorizations under the GP programs may have the potential for a cumulative impact, given current conditions.

Note that there are minor discrepancies in HUC utilization and delineation by different agencies. For the most part, the differences are that some agencies have not adopted new HUC8 numbers. We avoided this problem in large part by coordinating the HUC8 results according to the HUC8 names. However two additional differences needed to be addressed. First, the state of Vermont coordinates its water assessment according to Vermont state “planning basins.” The basins largely follow HUC8 designations. In some cases, however, estimations and adjustments had to be made to allocate the water quality data provided by the state. Details on the Vermont water quality data are reported in [Appendix VT](#). Second, the state of New Hampshire has 2 watersheds which are still considered as a single watershed by some federal agencies (USACE, EPA). HUC8 designations consider Winnepesaukee River (01070002) and Merrimack River (01070006) as two watersheds; the same area is labeled as Merrimack (01070002) in regional HUC8 maps. For our analysis, authorized activities under the GP as well as all the assessment data were considered to be reflective of one watershed, Merrimack (01070002).

2.1 Vulnerability from GP Authorized Activities

The original assessment and method development included GP data assessed for this CEA ranges from October 1, 2007 to October 23, 2012 and was extracted from the Operations and Maintenance Business Information Link (OMBIL) Regulatory Module (ORM). These data include 12,686 projects. Only actions permitted under the state programmatic regional general permits (RGP) were considered (“action type” in ORM; 11,539). Projects were grouped into categories corresponding to the GP activity of concern, based on the following attributes: work type, impact type, waters name, and project name. Project categories included: conversion of waters type; dredge material discharge; discharge of fill in tidal/non-tidal waters of the U.S. - including bank stabilization; transportation; and “other” maintenance dredging and dredging for navigation (new); ecological restoration; excavation associated with the discharge of dredged or fill material (inland); general structures; work (non-fill) including maintenance; replacement and removal; and “other”, which encompasses mainly directional boring, aerial and submarine crossings (Appendix 1). A listing of these types of projects and their classification is included in [Appendix 1](#), entitled “Subclasses and Associated Activities.”

Mitigation

Mitigation activities, as reported in ORM and the Restoration In-lieu and Banking Information Tracking System (RIBITS) databases, were excluded from this watershed analysis. Such activities include: permittee-responsible onsite mitigation, in-lieu fee programs (ILF), and mitigation banking. Several reasons prevented inclusion of mitigation efforts: (1) RIBITS data does not differentiate between state or federal credit withdrawals. (2) Not every state has mitigation banking and ILF options available. (3) The unaccountable inherent temporal losses associated with the ILF and mitigation banking construction sequencing (i.e., over the 5-year assessment period, ILF and mitigation banking projects may not have been completed and full ecological functionality likely have not been attained.) However, basic accounting information is available in the ORM database pertaining to aquatic resources lost. Of the 11,539 projects permitted in ORM, 320 mitigation projects are reported for the same period. In Lieu Fee mitigation was reported as covering 57,151.5 credits. Permittee-responsible off-site mitigation required 2327.3 acres and 1,200 linear feet of enhancement, establishment, preservation, re-establishment and rehabilitation. The mitigation area required as permittee-responsible on-site mitigation was 2,768.4 acres and 9,145.8 linear feet.

Since there is an anticipated future trend towards increasing the number of ILF and banking projects in New England, future analysis should incorporate such data provided that reports generated through the RIBITS database will contain the permit applicant, area of aquatic habitat types lost, and the ILF or mitigation bank credits created to offset such losses. Such assessments may become more feasible as the two databases, ORM and RIBITS, become compatible and mitigation banking and ILF program-options are expanded to previously subserviced states.

Further details on mitigation banking and in lieu fees can be found in the “Restoration In-lieu and Banking Information Tracking System” (RIBITS).

ORM Wetland Classification

For the aforementioned permit activities, the number of projects in each category was determined within each watershed. Projects were sorted according to a subset of relevant systems and subsystem, or classes for Palustrine systems, based upon the Cowardin et al. (1979) classification system. All of Cowardin types as reported in ORM were re-sorted into one of the following categories (see [Table 1](#)). Sorted ORM results are in [Appendix 2](#).

Table 1. Matching ORM Cowardin class with the classification grouping.

ORM COWARDIN_NAME	Classification Match
E1-ESTUARINE, SUBTIDAL	Estuarine Subtidal
E2-ESTUARINE, INTERTIDAL	Estuarine Intertidal
E-ESTUARINE	Estuarine Unspecified
L1-LACUSTRINE, LIMNETIC	Lacustrine Limnetic
L2-LACUSTRINE, LITTORAL	Lacustrine Littoral
L-LACUSTRINE	Lacustrine Unspecified
M1-MARINE, SUBTIDAL	Marine Subtidal
M2-MARINE, INTERTIDAL	Marine Intertidal
M-MARINE	Marine Unspecified
PAB-PALUSTRINE, AQUA BED	Palustrine Aquatic bed
PEM-PALUSTRINE, EMERGENT	Palustrine Emergent
PFO-PALUSTRINE, FORESTED	Palustrine Forested
PML-PALUSTRINE, MOSS-LICHENS	Palustrine Unspecified
POW-PALUSTRINE, OPEN WATER	Palustrine Unspecified
P-PALUSTRINE	Palustrine Unspecified

PRB-PALUSTRINE, ROCK BOTTOM	Palustrine Unspecified
PSS-PALUSTRINE, SCRUB-SHRUB	Palustrine Shrub
PUB-PALUSTRINE, UNCONSOL BOT	Palustrine Unspecified
R1-RIVERINE, TIDAL	Riverine Tidal
R2-RIVERINE, LOWER PERENNIAL	Riverine Lower Perennial
R3-RIVERINE, UPPER PERENNIAL	Riverine Upper Perennial
R4-RIVERINE, INTERMIT	Riverine Intermittent
R5-RIVERINE, UNKNOWN PERENNIAL	Riverine Unspecified
R6-RIVERINE, EPHEMERAL	Riverine Unspecified
RP1-RIPARIAN, LOTIC	Palustrine Unspecified
RP2-RIPARIAN, LENTIC	Palustrine Unspecified
RP-RIPARIAN	Palustrine Unspecified
R-RIVERINE	Riverine Unspecified

Estimating Vulnerability

The degree of vulnerability of an aquatic resource, as a result of GP authorizations, was estimated using best professional judgment. The vulnerability was judged assuming that all the terms and conditions of the GPs have been fulfilled (i.e., the projects are in compliance). The severity of the potential impact from many of these “minimal impact” activities was judged to be dependent the nature of the resource (Cowardin class) and the type of the activity permitted. The following definitions were utilized to judge the vulnerability of each type of activity in each wetland class:

Non-applicable (NA): the activity will have no effect on the aquatic resource, or the regulated activity does not occur in such resource(s) (e.g., discharge of dredged material into a pond).

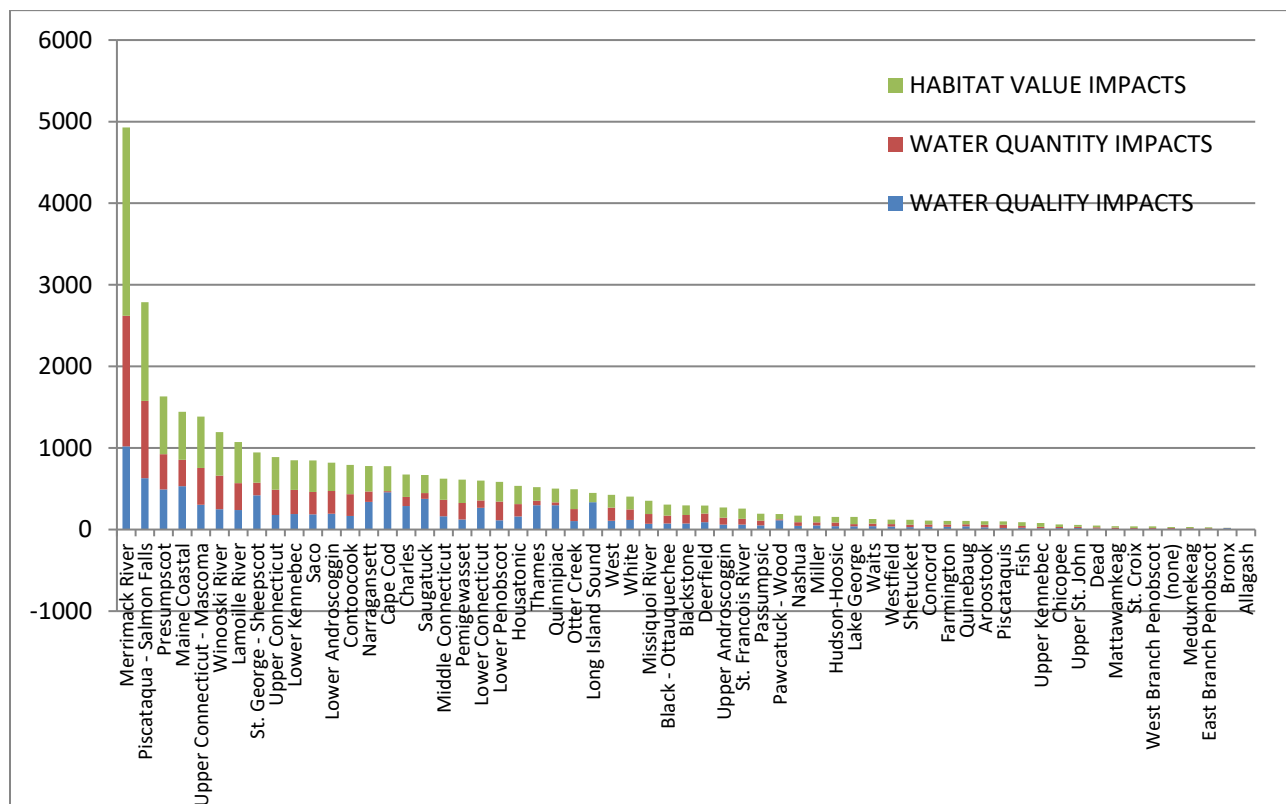
Severe (3): The combined direct and secondary effects lead to a complete loss of aquatic habitat, either through conversion to a terrestrial system, or through alterations leading to a significant loss in the ecosystems’ ability to function, in comparison to its unaltered state.

Moderate (2): Combined direct and secondary effects lead to the loss of an aquatic ecosystems’ ability to function in comparison to its unaltered state; the overall characteristics of the resource remains intact.

Minimal (1): The combined direct and secondary effects cause de minimus alteration(s), or disturbance to an aquatic ecosystems’ ability to function.

All vulnerability factors are included in the tables in [Appendix 3](#). Vulnerability factors were then multiplied by the number of authorized activities to create the “vulnerability score” for the 5-year review period ([Figure 1](#)).

Figure 1. Estimated vulnerability on the water quality, water quantity and habitat value of watersheds based on the number and type of projects over a five-year period authorized under the GPs.



2.2 Assessment of Aquatic Resources

Watersheds were assessed to gain insight on the existing condition of resource quality; these measures were expected to reflect any the impacts of previously authorized activities

permitted under the GPs as well as all the various unregulated activities, individually permitted activities and those effects outside the jurisdiction of the USACE. The assessment of existing conditions was divided into three categories: water quality, water quantity and habitat value. Water quality includes water chemistry, contaminant load, clarity, turbidity, dissolved oxygen, and other measurements of water properties. Water quantity includes surface flow, groundwater recharge and the potential for flooding. Habitat value refers to the capacity of the aquatic resource to support plant and animal productivity.

The New England states, in coordination with the New England Biological Assessment of Wetlands Workgroup (NEBAWWG) has been developing and testing wetland assessment methodologies. These efforts have been reported and archived in association with the New England Interstate Water Pollution Control Commission (NEIWPCC), and much of the wetlands assessment information is archived on their website (NEIWPCC, 2013). As these wetlands assessments are developed and inventoried, they could be combined with the assessment of quality of surface water and coastal waters. However, the methodologies developed by each state would need to be altered so that the results can be compared and combined across state borders and for individual HUC 8 watersheds.

2.2.1 Water Quality

Water quality was assessed according to the following types of water resources: surface water, ground water, and coastal resources.

Surface Water Quality

Surface water quality was assessed using data from the US Environmental Protection Agency Watershed Assessment Tracking and Environmental Results database (EPA WATERS). This database reflects water quality conditions reported by the six New England states to EPA under Sections 305(b) and 303(d) of the Clean Water Act. Details of the methodology for the determination of impaired status vary from state to state, as do the potential stressors that form the causes of impairment state (EPA National Water Quality Assessment Report 2013). These details are reflected in the integrated report for each state (EPA National Water Quality Assessment Report 2013; Appendix 4). In general, if a watercourse has a physical or chemical “stressor” that prevents it from fully serving its designated use(s) it is considered impaired.

Relevant watershed data were collected using the EPA waters website from the “Impaired Waters by State” listing. Since some HUC-8 level watersheds cross state boundaries, respective impairment data for each section of the watershed were collected for each state, and the total acres and impairments were then summed. Data included total impaired miles, acres, or square miles of river, lakes and ponds, and estuary. Pivot tables were used to analyze data, and to calculate the percent of assessed impaired waters.

Note, total river miles and areas of assessed surface waters were not available for the state of Vermont through the EPA waters website; therefore, Vermont impairment data were calculated from the results of the 2010 assessment from the Vermont Department of Environmental Conservation, Water Quality Division. Details of these data and its incorporation into this analysis can be found in their conversion and [Appendix VT](#).

The percent of surveyed length and area that were impaired was recorded for each watershed. A combined average of these two percentages was determined for each watershed; this value was considered the percent of impaired waters. The percent of impaired waters was included in the water quality score for each watershed.

Coastal Water Quality

EPA assessed coastal water quality as an aspect of the National Coastal Condition Report IV (EPA NCCR IV 2012). For the NCCR, a water quality index was characterized from available data collected between 2002 and 2006. A rating of water quality was developed for each site assessed considering the dissolved inorganic nitrogen [DIN], dissolved inorganic phosphorus [DIP], chlorophyll *a*, water clarity, and dissolved oxygen. Data was collected and contributed from EPA, NOAA, FWS, and U.S. Department of Agriculture. Water quality was rated as good, fair, and poor when enough information was available. If two or more of the five measures were not available for a site; a water quality score was not calculated. The evaluation of each component of the index (i.e., good, fair, poor) was determined by best professional judgment in consultation with state officials (EPA NCCR IV 2012), and was applied consistently across all sites in a region. The number of indicators, at each level (i.e., good, fair, poor), was used to determine the sites’ water quality index (WQI) rating ([Table 2](#); EPA NCCR IV 2012).

Table 2. Thresholds for Determining the WQI Rating by Site (reprinted from EPA NCCR IV 2012)

Rating	Threshold
Good	A maximum of one indicator is rated fair, and no indicators are rated poor.
Fair	One of the indicators is rated poor, or two or more indicators are rated fair.
Poor	Two or more of the five indicators are rated poor.
Missing	Two component indicators are missing, and the available indicators do not suggest a fair or poor rating.

Coastal Water Quality data for the Northeast was obtained from EPA and includes the coastal water quality rating for each watershed site ([Appendix 5](#)). Results for each site were sorted by watershed. The rating for each watershed was considered to be the mode of the WQI ratings for all the measured sites in that watershed. The coastal water quality rating for each watershed, for which data was available, was considered as one component of the overall water quality assessment for that watershed.

Ground Water Quality

Water quality for groundwater was inferred from the USGS public-supply well data report, “Quality of Source Water from Public-Supply Wells in the United States, 1993–2007” (Toccalino, Norman and Scott, 2012). The data is included in [Appendix 6](#). Note, the distribution of wells, and available data, was not evenly distributed across the 48 conterminous states, and certain states were excluded from analysis, such as Vermont.

Groundwater samples were analyzed for 215 contaminants and six additional water quality parameters. The concentrations of contaminants were compared to either US EPA Maximum Contaminant Levels (MCL) drinking water standards under the Safe Drinking Water Act (SDWA), or to USGS Health-Based Screening Levels (HBSL) for unregulated contaminants. The number of contaminants exceeding 10% of either the MCLs or the HBSLs in each well was collected for the well data reported in New England. Results were sorted into their respective watersheds. Where more than one well was sampled in a watershed, the mode was analyzed. If no mode was apparent, the lower of the two most frequent results was recorded for that watershed because the exceedences reported here are conservative. The mode number of contaminant MCL/SDWA exceedences was used as the indication of the watershed’s groundwater quality. However, because of the paucity of these data, they were not considered as part of the overall evaluation initially.

2.2.2 Water Quantity

Long-term Groundwater Level

Because of the complexity of determining aquifer relationships to watershed boundaries, different types of aquifers, and their distance to the nearest perennial water body, the results calculated for groundwater levels across New England are difficult to consider as an indicator of water quantity. These data were excluded from the initial analysis. However, the data collection and analysis are included here for future reference.

Historic groundwater records were obtained from the U. S. Geological Survey Long-Term Groundwater Data Network (USGS Long-Term Groundwater Data Network). Data included wells with at least 20 years of monitoring, in the form of real time, continuous and periodic data. The analysis is a comparison of the most recent year's annual data against the distribution of percentile classes (as established by USGS) of the historic data. Percentile classes as designated by USGS were: Low, Much Below Normal (<10%), Below Normal (10-24%), Normal (25-75%), Above Normal (76-90%), Much Above Normal (>90%), and Not Ranked. The well locations and percentile classes were downloaded in Google Earth format, along with the delineations of each of the watersheds

(<http://faculty.unlv.edu/jensen/gisdata/usgs/HUC/HUC8/>). The following data were recorded for each monitoring well: well name, location/town name (if available), state, HUC8, and percentile class. Data received from the USGS Long-Term Groundwater Data Network are included in **Appendix 7**.

For each HUC8 watershed, a summary of the well data was compiled and the number of wells in the watershed was recorded. The mode value of the well data recorded, and classified according to the aforementioned classes (e.g., low, much below normal, etc.). The mean value was calculated by assigning the median percentile values for each classification to each well (Low wells were assigned a percentile of 0, Much Below Normal = 10%, Below Normal wells = 17%, Normal wells = 50%, Above Normal = 83, and Much Above Normal = 90%). The average of these values for all the wells was calculated. When no mode value was apparent, the numeric average was used. For example, in the Lower Kennebec watershed there are two wells, one with "Normal" and another with "Above Normal" classifications. The numeric values assigned to these were 50% and 83%, respectively. Therefore the mean value for the watershed is 66.5%,

which falls into USGS designated “normal” range of 25-75%. The mean values were recorded as the watershed’s long-term groundwater levels.

Average Annual Flow Rate

The average annual flow rate was obtained for the major drainage systems of HUC 8 basins. These data were obtained from the USGS WaterWatch website (USGS WaterWatch). Data was downloaded 25 September 2012, and will reflect climatic conditions over the previous 5 years relative to historic (50 year) averages.

Five-year average flows were calculated for the five most recent available years (2005-2009) within each respective HUC8. The historic average flow was calculated by averaging the previous 50 years of water flow data (1954-2004). Percent historic flow is calculated as the current average divided by the historic average. All values for the current percentage of historic flow were greater than 100%, indicating an increase in surface flow over the last 50 years across New England. The increase in surface flow in New England has been analyzed and reported in other literature (Collins 2009, and references therein).

2.2.2 Habitat Value

State & Watershed Boundaries

State boundary lines and HUC8 basins were downloaded from the NRCS Geospatial Data Gateway (available online). State boundaries were merged into one file representing the six New England states, and all subsequent GIS data were clipped to its extent. Note, Winnepesaukee River (01070002) and Merrimack River (01070006) watersheds were combined into one watershed labeled as “Merrimack” (01070002) in order to coincide with ORM and EPA reports. All GIS data were analyzed in ESRI ArcGis® v10.1, and projected in UTM zone 19.

National Land Use Land Cover

National land use land cover data (2006) were obtained from the NRCS Geospatial Data Gateway in ArcGrid format for discrete data. The state-wide raster data were stitched together using the “mosaic” tool, and raster values were then reclassified to represent the following land use land cover types: open water, undeveloped land, and developed land (refer to [Table 3](#)). The “zonal statistics” tool in the “Spatial Analyst” extension was used to determine the number of

unique land use land cover cells residing within each watershed. Percent cover of open water, undeveloped land, and developed land were then determined for each watershed.

Note, working with raster data, area can be calculated using the following equation:

$$\text{Area} = \text{no. of pixels} * \text{pixel size}^2$$

(land use, land cover uses 30 m pixel size “resolution”)

For the results presented here, the percent of area developed comprised half of each watershed's value for habitat quality.

Table 3: 2006 Land Use, Land Cover Re-classifications.		
Values	Re-classified	Descriptions
11	Open Water	Open Water - All areas of open water, generally with less than 25% cover or vegetation or soil.
21	Developed	Developed, Open Space - Includes areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20 percent of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.
22	Developed	Developed, Low Intensity - Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.
23	Developed	Developed, Medium Intensity - Includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-79 percent of the total cover. These areas most commonly include single-family housing units.
24	Developed	Developed, High Intensity - Includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80 to 100 percent of the total cover.
31	Undeveloped	Barren Land (Rock/Sand/Clay) - Barren areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.
41	Undeveloped	Deciduous Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75 percent of the tree species shed foliage simultaneously in response to seasonal change.
42	Undeveloped	Evergreen Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75 percent of the tree species maintain their leaves all year. Canopy is never without green foliage. Enumerated_Domain_Value_Definition_Source: NLCD Legend Land Cover Class Descriptions.
43	Undeveloped	Mixed Forest - Areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75 percent of total tree cover.
51	Undeveloped	Dwarf Scrub - Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation.
52	Undeveloped	Shrub/Scrub - Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.
71	Undeveloped	Grassland/Herbaceous - Areas dominated by graminoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.
81	Developed	Pasture/Hay - Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation.
82	Developed	Cultivated Crops - Areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total vegetation. This class also includes all land being actively tilled.
90	Undeveloped	Woody Wetlands - Areas where forest or shrub land vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
95	Undeveloped	Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for greater than 80 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water.

Estimate of New England Aquatic Resources

Within each watershed, the amount of all types of potential aquatic resources (including open water), as classified according to Cowardin et al. 1979, were determined using the US Fish & Wildlife Service's National Wetlands Inventory (NWI). To summarize the extent of NWI resources occurring within each watershed, the "tabulate intersection" tool was used in the "analysis" toolbox, using watershed boundaries as the "zonal" field. In the final assessment, this value was not included because the amount of aquatic resources was not expected to be proportional to the amount or value of the habitat in a watershed.

Federally Listed Threatened, Endangered, & Candidate Species

To identify watersheds where critical habitat is most likely to occur for federally listed threatened, endangered and candidate species, the habitat ranges of all aforementioned species was analyzed within each watershed (data available upon request from US FWS New England and Maine Field Offices). At the time of this analysis, data for 20 species (Table 4) were reviewed. After attribute table structures were synced, an intersection was performed to incorporate watershed boundaries into species' ranges, and the "dissolve" tool was used to eliminate the occurrence of more than one type of any given species range within a respective watershed. Polygons were converted to points using the "feature to point" tool, and point data were merged into one dataset. Lastly, a frequency analysis was conducted to obtain counts within each respective watershed. Note that the use of batch processing in the above operations will vastly reduce redundancy as the twenty polygon shapefiles cannot be merged into a single file/geodatabase due to overlapping polygons. In the final assessment, the number of federal threatened, endangered or candidate species in each watershed was not included because the number was not expected to be proportional to the amount or value of habitat in a watershed.

Table 4: Included federal Threatened, Endangered and Candidate species

Name1	Name2	State	Listing
Sandplain Gerardia	<i>Agalinis acuta</i>	CT, MA, RI	E
Seabeach Amaranth	<i>Agalinis spp</i>	NA	T
Dwarf Wedgemussel	<i>Alasmodonta heterodon</i>	CT, MA, VT, NH	E
Jesup's Milk-Vetch	<i>Astragalus robbinsii</i> var. <i>jesupi</i>	NH, VT	E
Red Knot	<i>Calidris canutus rufa</i>	ME, CT, MA, NH, RI, VT	C
Piping Plover	<i>Charadrius melodus</i>	CT, ME, MA, NH, RI	T
Northeastern Beach Tiger Beetle	<i>Cicindela dorsalis dorsalis</i>	MA	T
Puritan Tiger Beetle	<i>Cicindela puritana</i>	CT, MA	T
Small Whorled Pogonia	<i>Isotria medeoloides</i>	CT, ME, MA, NH, RI	T
Karner Blue Butterfly	<i>Lycaeides melissa samuelis</i>	NH	E
Canada Lynx	<i>Lynx canadensis</i>	ME, NH, VT	T
Indiana Bat	<i>Myotis sodalis</i>	VT	E
American Burying Beetle	<i>Nicrophorus americanus</i>	RI, MA	E
Furbish Lousewort	<i>Pedicularis furbishiae</i>	ME	E
Eastern Prairie Fringed Orchid	<i>Platanthera leucophaea</i>	ME	T
Plymouth Red-Bellied Cooter	<i>Pseudemys rubriventris</i> ssp. <i>Bangsi</i>	MA	E
Atlantic Salmon	<i>Salmo salar</i>	ME	E
Northeastern Bulrush	<i>Scirpus ancistrochaetus</i>	MA, NH, VT	E
Roseate Tern	<i>Sterna dougallii dougallii</i>	CT, ME, MA, NH, RI	E&T
New England Cottontail	<i>Sylvilagus transitionalis</i>	ME	C

Stream Discontinuity

Potential stream crossings were used as a surrogate for stream habitat discontinuity. Studies conducted in both Vermont and Massachusetts validate this approach. In Massachusetts, a study involving the application of Massachusetts River and Stream Crossing Standards (S.D. Jackson et al. 2011) to 1,554 single and multiple culvert crossings in the five-state database, <1% met the standards for full aquatic organism passage (S. D. Jackson, pers. comm., UMass Amherst River and Stream Continuity Project). Another study conducted in the White River watershed of Vermont showed that out of 326 assessed culverts, only four structures had full aquatic organism passage, while nearly half of those assessed showed at least partial obstruction (Milone and MacBroom 2009). Crossings from Connecticut, Rhode Island, Massachusetts, Vermont, and New Hampshire were obtained from the UMass Amherst River and Stream Continuity Project, and Maine data were obtained from the USFWS Maine Field Office. In general, several GIS files from private, state, and federal entities were merged to create the regional culvert crossing database(s) (refer to metadata for specifics); however, the majority of crossings were identified using the intersections between state roads and national hydrography

flowlines. Potential duplicates were identified and filtered out from the UMass data using a 20-m buffer around existing crossings, and 23-m for the State of Maine. Attribute table structures were synced; the two databases were merged, and the result was 151,497 total potential crossings within New England. The amount of potential crossings to reside within respective watersheds was determined by overlaying crossings and watershed boundaries. Watershed attributes were then incorporated into the culvert data, and the Analysis toolbox “frequency” analysis tool was used to count the number of crossings within each watershed. In these results, this measure of stream discontinuity comprised half of each watershed’s value for habitat quality. This measure of stream discontinuity is highly correlated with the level of development in a watershed (Spearman Rank Correlation, $n = 68$, $R = 0.4526$, $p = 0.0001$).

2.2.4 Existing Conditions Assessment

The existing conditions assessment was designed to reflect the relative value of the watershed in terms of water quality, water quantity and habitat value. Each of these aspects of the existing conditions was considered equally important; the initial weighting scheme for calculation of an assessment score was set at 1/3 water quality, 1/3 water quantity, and 1/3 habitat value.

Each aspect of the existing conditions assessment was informed by one or more metric. The distribution of weights and inclusion of metrics is shown in [Table 5](#). The water quality assessment includes both surface water quality, which is informed by the percentage of impaired river lengths and areas of impaired surface water as reported to EPA, and coastal water quality, as informed by the coastal water quality index rating established in the National Coastal Condition Report IV (2012). Water quantity is assessed according to the surface flow, measured in the average flow for the last five years normalized to the previous 50 years. Habitat value was comprised of 2 components: percent of area developed and stream discontinuity. Neither the amount (acres) nor the percentage of area included as part of the NWI were considered in the final version of the assessment; these measures were not correlated with the number of authorized activities permitted under the GPs (acres: Spearman Rank Correlation, $n = 57$, $R = 0.0519$, $p = 0.70$; percentage: Spearman Rank Correlation, $n = 57$, $R = -0.0503$, $p = 0.71$). In those situations where a measurement was not available for a specific watershed (i.e. coastal

water quality for an inland watershed), the mean value of the available data was used as a default value.

Table 5. Inclusion of Metrics and Distribution of Weights for the Existing Conditions Assessment

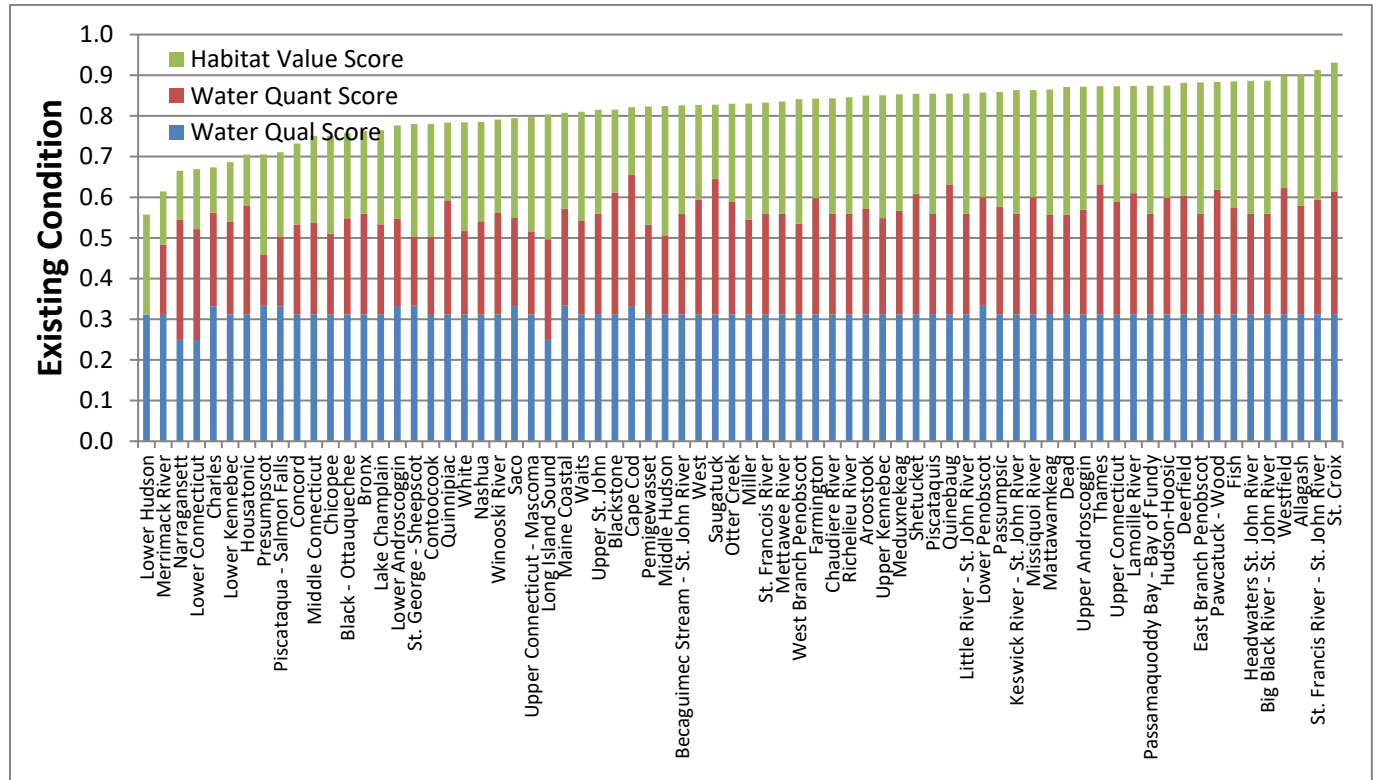
WATER QUALITY (33.3%)		
50%	Surface Water Quality	
	100%	Avg % Impaired EPA
50%	Coastal Water Quality	
	100%	EPA CC WQI
WATER QUANTITY (33.3%)		
100%	Surface Flow	
	100%	USGS %yr % of Historic
HABITAT VALUE (33.3%)		
50%	Development	
	100%	% Developed Acres
0%	Aquatic Resources	
	0%	% NWI
0%	Threatened & Endangered Species	
	0%	No. Fed T&E species
50%	Crossings	
	100%	No. potential culverts

The existing conditions assessment (Figure 2) was calculated using the multi-attribute value theory set at a global scale (i.e., the possible range for each measurement) for each metric (Linkov and Moberg, 2012). The overall score is normalized with the highest value given a score of 1, and the lowest value given a 0. The total utility, $U(a)$, for that alternative, a , is calculated as a weighted sum across the three objectives:

$$U(a) = w_1 \cdot V_1(a_1) + \dots + w_n \cdot V_n(a_n), \quad (\text{Keeney and Raiffa, 1976})$$

where a_i is the performance score of alternative a on objective O_i for $i = 1$ to n , $V_i(a_i)$ is the value of alternative a reflecting its performance on criterion O_i and w_i is the weight of criterion O_i where $\sum w_i = 1$. The existing condition assessments for each watershed are included in [Appendix 8](#).

Figure 2. Assessed watershed value, where the relative existing conditions are visualized as stacked bars consisting of water quality, water quantity and habitat value performance for the specified metrics.



3. Comparison of Existing Conditions and Vulnerability

The relationship between the estimated vulnerability of each watershed from GP authorized activities and the existing conditions assessment was compared using non-parametric correlation statistics. Relationships were considered for the number of ORM activities, vulnerability, the existing conditions assessment, and each of the three components of the assessment with their respective vulnerability score. The results of the correlation analysis are presented in [Table 6](#). The sample size for each test (n) is 59.

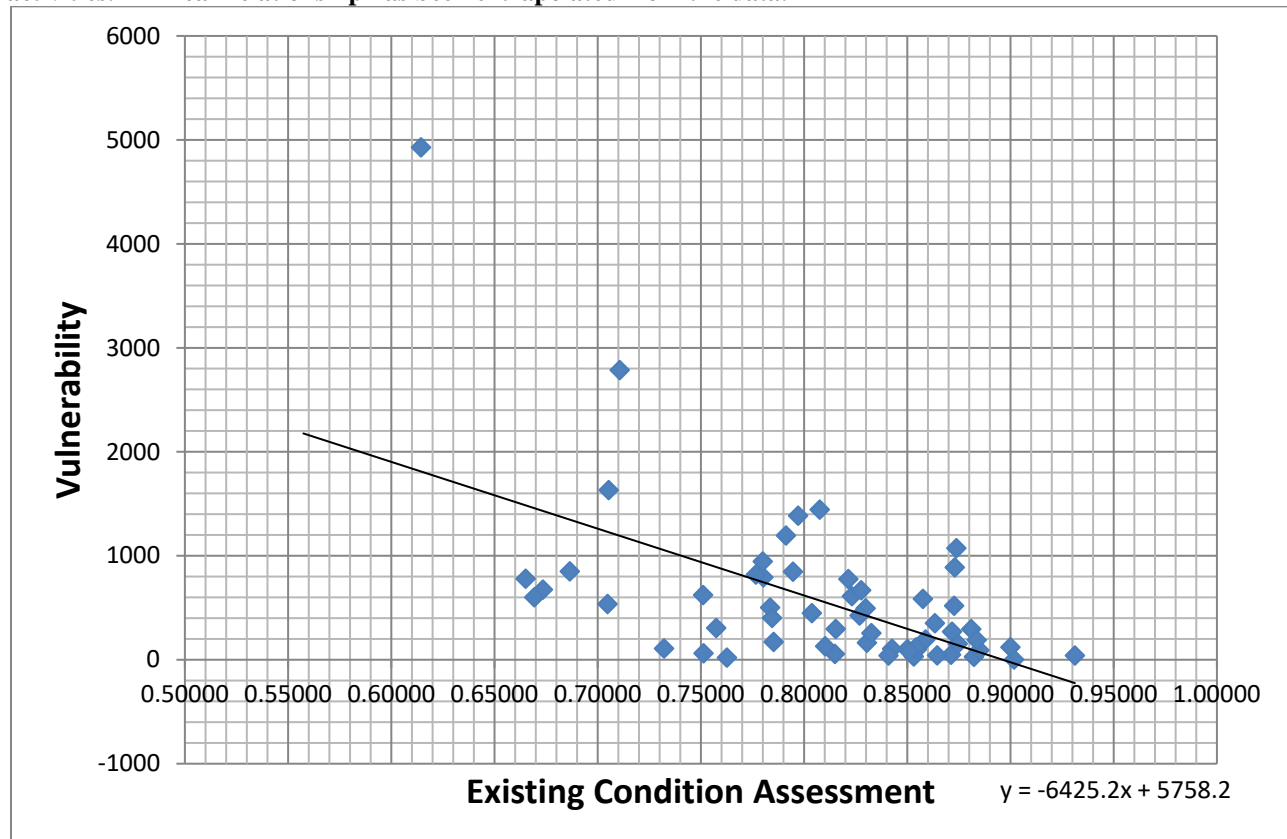
Table 6. Statistical Relationships between Existing Conditions and Vulnerability

Variable Pair	Spearman R	t(N-2)	p value
<i>Existing Condition & ORM Items</i>	-0.530	-4.723	<0.0001*
<i>Existing Condition & Potential Impacts</i>	-0.513	-4.511	<0.0001*
Water Quality: Existing Condition & Potential Impacts	-0.114	-0.870	0.387
Water Quantity: Existing Condition & Potential Impacts	-0.309	-2.457	0.017*
Habitat Value: Existing Condition & Potential Impacts	-0.474	-4.070	0.00015*

*Statistically significant correlation values.

A significant correlation was found between the existing condition of the aquatic resource and the estimated vulnerability from the GP authorized activities. The Spearman rho value for this relationship indicates that approximately 50% of the change in these two variables can be related by a monotonic function. This indicates that when one variable decreases, so does the other – although the two changes may not be proportional as they are in a linear relationship. The simple linear relationship between the two variables is best described as $Vulnerability = 5758 - 6425(Conditions)$. **Figure 3** shows the relationship between these variables.

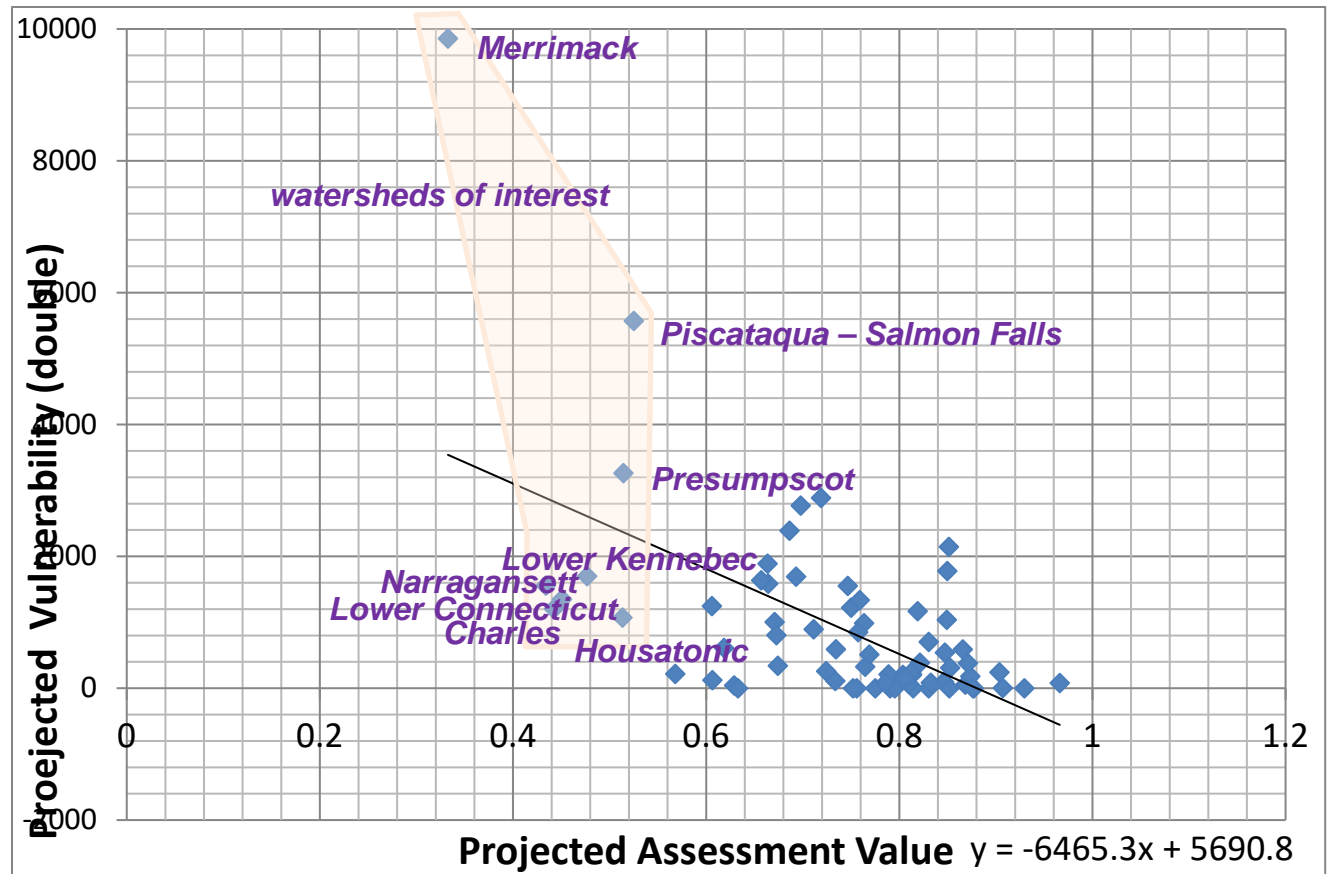
Figure 3. Correlation between watershed existing condition and the vulnerability from GP authorized activities. A linear relationship has been extrapolated from the data.



3.1 Projected Impacts of GP Activities

The relationship calculated between the vulnerability and the existing condition was used to project potential changes over the next five years of activities authorized under the GP. The number and type of activities in each watershed were assumed to be the same for the next five year period as they were for the previous five-year period. Therefore, the calculated vulnerability (from the linear regression) was doubled for each watershed. Due to the relative health of the US economy, it is difficult to ascertain whether the number of GP authorizations will increase or decrease over the next 5-year period. Using the doubled impacts, the projected future assessment value was calculated from the equation and the projected future assessment value was then plotted against a doubled vulnerability score from the ORM data for respective watersheds (Figure 4). The linear relationship for the projected assessment was also calculated.

Figure 4. Projected correlation between a doubled vulnerability score (assuming the same amount and type of activities in each watershed over the next 5 yrs) and the newly calculated watershed condition. The linear relationship extrapolated from the data is included as an inset equation. The shaded watersheds are those to be considered for further scrutiny under the GP process (Section 3.2). Labels indicate the watershed names for these identified HUC 8s.



3.2 Watersheds of Interest

Based on the projected change in conditions anticipated under the current pattern of permitted activities, eight watersheds were identified for further scrutiny. The identified watersheds were: Charles, Housatonic, Lower Connecticut, Lower Kennebec, Merrimack River, Narragansett, Piscataqua – Salmon Falls, and Presumpscot. Each of these watersheds is identified for different reasons. Three have a high number of activities authorized under the GP, specifically Merrimack River, Piscataqua – Salmon Falls, Presumpscot (Figure 1, “estimated vulnerability”). However, the existing conditions for each watershed also contributed to its identification.

Since the existing conditions assessment has three components (water quality, water quantity and habitat value), the value of each offers some insight into the current and anticipated impairments (Figure 2, “assessed values”). The assessed *water quality* value of the Narragansett watershed was relatively low (0.249/0.333); this value is likely to reflect its “fair” coastal water quality rating. On the other hand, several identified watersheds had a low assessed value for *water quantity*, specifically Merrimack River, Piscataqua – Salmon Falls, and Presumpscot. Each of these watersheds had recent surface flows (last 5 years) exceeding 140% of the historic 50-year averages. Other watersheds have low assessed *habitat values*. Many of the identified watersheds have a high score for stream discontinuity, with the number of potential stream crossings exceeding the average (2228) by a large amount. Watersheds impacted by stream discontinuity assessments were Charles (5962), Housatonic (7482), Lower Connecticut (5390), Lower Kennebec(7545), Merrimack (7251), Narragansett (6454), and Piscataqua – Salmon Falls (4116). Some of these watersheds have high levels of development. While the mean percentage of developed land was 17.5 across all watersheds, the amount of development was noticeably higher in the Charles (54.2%), Housatonic (25.8%), Lower Connecticut (40%), and Narragansett (42.7%).

There was no significant relationship between flow rate and the level of watershed development. USGS surface water flow describes higher than historic flows for all watersheds over the last 5 years. Specifically, all watersheds have recent flow greater than 100% of historic (last 50 years) flow. One hypothesis is that increased flow is related to climate change and the increased frequency of severe storm events; however, the amount of impervious surfaces in watersheds is also likely to be a contributing factor. We considered whether there was a relationship between the percent of historic flow and the percentage of developed land, where impervious surfaces are likely to be present. There was no statistical correlation detected between the rate of flow and the level of development in watersheds (Spearman Rank Correlations: percentages, $Rho = -0.200$, $p = 0.129$; raw data, $Rho = 0.0115$, $p = 0.93$).

A crucial step in this process is to relate these findings to the vulnerability of future activities permitted under the GPs. The first outcome of these analyses is that the condition and activities occurring in each of these eight watersheds should be reviewed with regional experts, including other state and federal agencies, as well as local watershed stewards. Concerns or evidence that permitted activities are impacting these watersheds should be investigated.

identification of the vulnerability from future activities allows for focused scrutiny and consideration of taking preventative actions.

4. Assessment Conclusions

Many actions with minimal impact have the potential to cause significant impacts when assessed collectively. Here we have developed an approach for CEA for the state GPs considering the effects of all activities in New England that meet the available regulatory guidance. NEPA requires the consideration of incremental impacts of an action in light of “past, present and reasonably foreseeable actions, regardless of what agency (Federal or non-Federal) or person undertakes such action.” (40 CFR 1508.7.) Therefore the scope of this analysis includes those activities outside the authority of the general permit. Guidance from the Council of Environmental Quality (CEQ 1997) suggests analysis of cumulative effects should focus on categories of resources, and identification of the stressors related to permitted activities. Therefore, the assessment of water resources, including water quality, water quantity, and habitat value, is designed to reflect the mission of the NAE. This current CEA, if met with general acceptance and backed by NAE Regulatory expertise, can be used as a baseline for future evaluations and extrapolations of trends in resource quality.

The goal of this analysis was to identify those watersheds where resource values are relatively degraded, and may be further harmed by authorized activities under the general permitting process. The existing condition of the various watersheds was compared to the vulnerability from GP authorized activities over 5 years. An association was detected between the declining existing condition of watersheds and increasing vulnerability scores, as described with a linear correlation. This association indicates that the amount and type of GP related vulnerability correspond to the collective loss of resources value in a watershed. A projected resource value was calculated based off this linear relationship, and the assumption of similar amounts and types of activities in each watershed. This analysis led to the identification of eight watersheds of interest where further scrutiny of the GP associated activities may be warranted. An analysis of the subset of these watersheds in each state may identify additional watersheds of interest (see [Appendix 9](#) for the State of Massachusetts Assessment).

4.1. Anticipated Changes to the GPs

The cumulative effects analysis generally supports the conclusion that there is a relationship between GP authorized activities and degradation of aquatic habitat. However, there is no evidence that GP authorized activities caused any specific degradation to these watersheds. Our analysis does suggest that the extent of GP permitted activities is associated, spatially, with a suite of activities inside and outside the authority of the GPs that may result in the eventual degradation of aquatic resources. More specifically, the overall number of GP authorized activities may reflect the level of development in watersheds. Thus, those watersheds with high levels of activities over the last five years may warrant further scrutiny and evaluation. Further evaluation of these watersheds with the appropriate state agencies and stakeholders may result in additional future guidance. Any future limit on the GPs in specific watersheds sacrifices the convenience of generally permitted activities in favor of increased assurance that authorized activities do not contribute to the degradation of aquatic resources in New England.

The approach described here for assessing cumulative effects, where the vulnerability and the existing condition of watersheds is compared, is unique. The national cumulative effects assessment acknowledges the wide variety of activities outside the nation-wide permit authorizations that impact the amount and function of wetlands,. The national assessment concludes the permitted activities will be a “minor” contribution to the cumulative effects because they are few of the many activities impacting national wetland resources. In contrast, this analysis was designed to identify watersheds with the most critical conditions and highest vulnerability to be impacted under the GPs reauthorization. This approach, which results in a relative ranking of the watersheds, is not designed to determine which resources are in need of protection through surpassing some threshold for impacts. Thresholds, such as the amount of impervious surface associated with watershed impairment, are most relevant to the location and the time for which they are developed; generalization of these levels to other sites or time periods may either not be protective or be over-protective of the resource. Rather, this effort aims to identify which of the New England watersheds should be considered for further scrutiny because of the relative vulnerability and condition of the aquatic resources.

4.2. Further Analyses of State Data

The cumulative effects analysis across New England generally supports the conclusion that there is a relationship between GP authorized activities and degradation of aquatic habitat. Further analyses have aimed to identify specific watershed and activities of concern. The watersheds with individual states, and the corresponding GP authorized activities have been isolated for state-specific analyses. An analysis was originally performed of Massachusetts (Appendix 9) and Maine (Appendix 10) watersheds. Both of these state analyses found a relationship between the number and potential impacts of GP authorized activities and the assessment of current conditions in the watersheds. The overall number of authorized activities is dependent upon the level of land use development in watersheds – in both aquatic and terrestrial environments. Thus, those watersheds with highest levels of activities over the last five years may warrant further scrutiny and evaluation.

For Connecticut watersheds (Appendix 11), the assessment of watersheds utilized hydrologic unit code (HUC) 12 basins. The approach considered cumulative impacts in terms of the water quality, water quantity and habitat value assessment. The vulnerability of watersheds was estimated from the total impacted area of activities permitted under the CT GP over two, 5-year time periods: 2006-11 and 2011-16. The assessed existing conditions vulnerability (i.e., filled resource area and associated secondary impacts) and the relationship between them was used to identify basins for further scrutiny. The same approach was subsequently utilized for consideration of the cumulative effects on HUC 12 watersheds in Rhode Island (Appendix 12), New Hampshire (Appendix 13) and Vermont (Appendix 14).

Subsequently, Massachusetts watershed were scrutinized at the HUC 12 level (Appendix 15). The approach considered cumulative impacts only in terms of the water quality and habitat value assessment. The vulnerability of watersheds was estimated from the total impacted area of activities permitted under the MA GP over a three-year time period: 2015-18. The analyses identified a relationship between the potential impacts of GP authorized activities and the assessment of current conditions in the watersheds, as well as between the summed area of impact from GP authorizations and the assessed current conditions. Basins with higher summed areas of impacts as well as basins with lower assessed current conditions were highlighted for further consideration.

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Alexoabbott@hotmail.com

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Appendix VT. Vermont Water Quality Data and Allocation into HUC8 Watersheds

Waters in Vermont are assessed according to the “water planning basin” in which it is contained. These planning basins have unique IDs and generally follow HUC delineations, although there are some exceptions as indicated below. The geographic relationship between the HUC8 boundaries and the planning basins were provided in an online map from Ryan Knox of the State’s Agency of Natural Resources (Ryan Knox, 802-729-0079, Ryan.Knox@state.vt.us). The map was accessed at:

<http://www.arcgis.com/explorer/?open=08a100b36a084fee99cbfa5df4d85d0e>

For each planning basin, the relationship to the HUC8 was described qualitatively (Table AVT 1), and these descriptions formed the basis of converting the Vermont data to HUC8 results.

Table AVT 1. The description of the relationships between planning basins and HUC8 watersheds.

VT Basin Name	VT Basin No.	HUC Name	HUC Number	HUC Overlap (qualitative)	Math Function for Conversion
Batten Kill - Walloomsic - Hoosic	1	Hudson - Hoosic	02020003	1/4 of HUC is in VT	Add
Poultney - Metawee	2	Metawee River	04140401	1/2 of HUC in NY, 1/2 in VT basin 2	Add if available
Otter Creek - Little Otter Creek - Lewis Creek	3	Otter Creek	04150402	VT basin contain HUC and small part of Lake Champlain HUC	None - estimation
Southern Lake Champlain	4	Lake Champlain	04150408	N and S part of same HUC	Divide in half
Northern Lake Champlain	5	Lake Champlain	04150408	N and S part of same HUC	Divide in half
Missiquoi	6	Missiquoi	04150407	2/3 of watershed in VT, 1/3 in Canada	None
Lamoille River	7	Lamoille River	04150405	Same	None
Winooski River	8	Winooski River	04150403	Same	None
White	9	White	01080105	Same	None
Ottawaquechee - Black	10	Black - Ottawaquechee	01080106	VT basin 10 is most of HUC, except along the river	None - estimation
West - Williams - Saxtons	11	West	01080107	HUC contains VT basin 7 and part of VT basin 10.	None - estimation
Deerfield	12	Deerfield	01080203	More than 1/2 of HUC in MA	Add
Lower Connecticut	13	Black - Ottawaquechee, West	01080106, 01080107	VT basin 13 contain part HUC along the river - Black - Ottawaquechee, West	Divide among Black - Ottawaquechee, West
Steven Wells Waits Ompompanoosuc	14	Upper Connecticut - Mascoma	01080104	HUC covers part of VT basin 16, half of VT basin14.	Divide between Waits, Upper Connecticut

Steven Wells Waits Ompompanoosuc	14	Waits	01080103	HUC covers part of VT basin 16, half of VT basin 14.	Divide between Waits, Upper Connecticut
Passumpsic	15	Passumpsic	01080102	Same	None
Upper Connecticut	16	Upper Connecticut	01080101	1/3 of VT Basin, 1/2 in NH	Add
Lake Memphremagog	17	St. Francois River	04150500	3/4 in VT, 1/4 in Canada	None

Impairments for each basin were reported as follows from **Cathy Kashanski** at the Vermont Department of Environmental Conservation, Water Quality Division (802-828-1554, Cathy.Kashanski@state.vt.us). Included here are the tables she provided Jan 12, 2013 (**Table AVT 2, Table AVT 3**).

Table AVT 2. River and Stream Miles that fully supported all functions or that are stressed, altered, or impaired in the 17 basins of Vermont – December 2012.

Basin #	Full Support	Stressed	Altered	Impaired	Not Assess
1	204.3	38.6	1.8	20.9	24.6
2	165.0	34.2	0	14.7	0
3	418.1	111.4	20.2	50.9	129.1
4	38.4	10.5	0	1.0	23.2
5	99.6	18.8	0	71.0	41.1
6	271.0	92.9	8.6	28.8	0
7	301.6	101.8	57.6	14.4	183.6
8	489.9	124.4	52.9	39.4	41.6
9	346.6	110.5	0	0.2	0
10	232.5	36.4	6.1	7.2	0
11	289.7	98.5	13.9	26.1	21.2
12	160.9	6.4	15.0	17.8	14.7
13	166.3	33.1	65.5	5.1	15.6
14	231.5	6.7	0.7	25.1	0
15	333.3	17.8	1.2	6.5	31.8
16	313.3	5.4	30	0	182.2
17	253.3	6.0	10.2	0.8	77.0

Table AVT 3. Lake and Pond Acres that fully supported all functions, stressed, altered, and impaired in the 17 basins of Vermont – January 2013.

Basin	USE	Fully Supporting	STRESSED	ALTERED	Not Supporting	Not Assessed
VT01	Aesthetic	250	175			27
VT01	Aquatic Biota, Wildlife, and Aquatic Habitat	68	198	20	139	27
VT01	Boating, Fishing, and Other Recreational Uses	310	115			27
VT01	Fish Consumption		452			0
VT01	Swimming and Other Primary Contact Recreation	291	134			27
VT02	Aesthetic	3059	1388	875		97

VT02	Aquatic Biota, Wildlife, and Aquatic Habitat	2953	1494	875		97
VT02	Boating, Fishing, and Other Recreational Uses	3719	643	875		97
VT02	Fish Consumption		5419			0
VT02	Public Water Supply	85				0
VT02	Swimming and Other Primary Contact Recreation	3719	643	875		97
VT03	Aesthetic	2528	495	424		18
VT03	Aquatic Biota, Wildlife, and Aquatic Habitat	399	705	2295	48	18
VT03	Boating, Fishing, and Other Recreational Uses	2515	475	444		18
VT03	Fish Consumption		2763		702	0
VT03	Public Water Supply	13				0
VT03	Swimming and Other Primary Contact Recreation	2515	495	424		18
VT04	Aesthetic	26	19		19113	8
VT04	Aquatic Biota, Wildlife, and Aquatic Habitat	12379	19	6760		8
VT04	Boating, Fishing, and Other Recreational Uses	16687	19	2452		8
VT04	Fish Consumption		53		19113	0
VT04	Public Water Supply	8372		930		0
VT04	Swimming and Other Primary Contact Recreation	26	19		19113	8
VT05	Aesthetic	35401	987	6878	114342	29
VT05	Aquatic Biota, Wildlife, and Aquatic Habitat	140424	987	14789	1408	29
VT05	Boating, Fishing, and Other Recreational Uses	140374	975	14789	1408	29
VT05	Fish Consumption	1402	1173		155062	0
VT05	Public Water Supply	140375		14743		0
VT05	Swimming and Other Primary Contact Recreation	35345	975	6878	114348	29
VT06	Aesthetic	31	384	322		7
VT06	Aquatic Biota, Wildlife, and Aquatic Habitat		409	322	6	7
VT06	Boating, Fishing, and Other Recreational Uses	31	384	322		7
VT06	Fish Consumption		744			0
VT06	Swimming and Other Primary Contact Recreation	58	357	322		7

VT07	Aesthetic	3026	761	136		164
VT07	Aquatic Biota, Wildlife, and Aquatic Habitat	962	2531	429	1	164
VT07	Boating, Fishing, and Other Recreational Uses	2864	630	429		164
VT07	Fish Consumption		3327		760	0
VT07	Public Water Supply	27				0
VT07	Swimming and Other Primary Contact Recreation	3009	778	136		164
VT08	Aesthetic	2147	1020	397	552	109
VT08	Aquatic Biota, Wildlife, and Aquatic Habitat	715	1669	1136	596	109
VT08	Boating, Fishing, and Other Recreational Uses	1792	930	397	552	125
VT08	Fish Consumption		4225			0
VT08	Public Water Supply	429				0
VT08	Swimming and Other Primary Contact Recreation	1964	758	397	552	125
VT09	Aesthetic	187	205			26
VT09	Aquatic Biota, Wildlife, and Aquatic Habitat	155	151	84	2	26
VT09	Boating, Fishing, and Other Recreational Uses	187	205			26
VT09	Fish Consumption		418			0
VT09	Swimming and Other Primary Contact Recreation	163	205			37
VT10	Aesthetic	850	600	215		90
VT10	Aquatic Biota, Wildlife, and Aquatic Habitat	764	686	215		90
VT10	Boating, Fishing, and Other Recreational Uses	855	595	215		90
VT10	Fish Consumption		1755			0
VT10	Swimming and Other Primary Contact Recreation	1021	429	215		90
VT11	Aesthetic	810	41	85		69
VT11	Aquatic Biota, Wildlife, and Aquatic Habitat	108	520	92	202	83
VT11	Boating, Fishing, and Other Recreational Uses	799	41			69
VT11	Fish Consumption		1005			0
VT11	Public Water Supply	96				5
VT11	Swimming and Other Primary Contact Recreation	799	41			69

VT12	Aesthetic	4360	20	194		15
VT12	Aquatic Biota, Wildlife, and Aquatic Habitat	227	256	194	3889	23
VT12	Boating, Fishing, and Other Recreational Uses	4301		194		15
VT12	Fish Consumption		712		3877	0
VT12	Public Water Supply	79				0
VT12	Swimming and Other Primary Contact Recreation	4301		194		15
VT13	Aesthetic	236	150	14		53
VT13	Aquatic Biota, Wildlife, and Aquatic Habitat	162	183	14	41	53
VT13	Boating, Fishing, and Other Recreational Uses	175	125	14		53
VT13	Fish Consumption		433			20
VT13	Public Water Supply	86				0
VT13	Swimming and Other Primary Contact Recreation	175	125	14		53
VT14	Aesthetic	918	940	91	54	74
VT14	Aquatic Biota, Wildlife, and Aquatic Habitat	387	1449	91	76	74
VT14	Boating, Fishing, and Other Recreational Uses	918	940	91	54	74
VT14	Fish Consumption		2077			0
VT14	Swimming and Other Primary Contact Recreation	918	940	91	54	74
VT15	Aesthetic	1209	138			48
VT15	Aquatic Biota, Wildlife, and Aquatic Habitat	696	255	396		48
VT15	Boating, Fishing, and Other Recreational Uses	1174	38			48
VT15	Fish Consumption		1395			0
VT15	Public Water Supply	203				0
VT15	Swimming and Other Primary Contact Recreation	1171	41			48
VT16	Aesthetic	4217	928	127		27
VT16	Aquatic Biota, Wildlife, and Aquatic Habitat	3059	2067	127	19	27
VT16	Boating, Fishing, and Other Recreational Uses	4217	928	127		27
VT16	Fish Consumption		3287		2012	0
VT16	Swimming and Other Primary Contact Recreation	4217	928	127		27

VT17	Aesthetic	8757	1856	848	5966	161
VT17	Aquatic Biota, Wildlife, and Aquatic Habitat	6739	2524	2143	6021	161
VT17	Boating, Fishing, and Other Recreational Uses	7539	1989	1933	5966	161
VT17	Fish Consumption		16737		814	37
VT17	Public Water Supply	116				0
VT17	Swimming and Other Primary Contact Recreation	8726	2680	55	5966	161

Impairments were calculated from these tables for each Vermont planning basin. A single stream mile of water body may fall into multiple categories. Therefore the maximum value for each basin was considered to be the total. For example, for river and stream miles in planning basin 1, 38.6 miles were considered to be “stressed” while 1.8 miles (of those same 38.6 miles) were considered “altered” and 20.9 of those miles “impaired.” For this basin, the reported miles of impaired waters for the cumulative effect assessment was considered to be all the distance not fully supporting all the assessed functions, in this case 38.6 miles. The total river and stream distance for this basin was calculated as the sum of the impaired miles (38.6), the miles fully supporting the river functions (204.3) and those not assessed (24.6). For basin 1, the total mileage was calculated as 267.5 miles. The same general procedure was applied to the lake and pond acres in [Table AVT 3](#). All functions for a specific planning basin were considered collectively. Among these, the maximum value for stressed, altered or impaired acres was extracts. This value, 452 acres for Vermont planning basin 1, is reported as the impaired acres value for the cumulative effect assessment. The impaired acres value is added to the maximum values for full support (310 for basin 1) and those not assessed (27 for basin 1) to determine the total acres for this basin (789 for basin 1). Once the level of impaired waters is determined for each planning basin, those values were estimated for each HUC 8 watershed according to the conversion described in [Table AVT 1](#).

Appendix 1. Subclasses and Associated Activities

This document lists the classes of activity as outlined in ORM. For each category, the types of activities included in each subclass are listed. Project categories included: conversion of waters type; dredge material discharge; discharge of fill in tidal/non-tidal waters of the U.S. - including bank stabilization; transportation; and “other” maintenance dredging and dredging for navigation (new); ecological restoration; excavation associated with the discharge of dredged or fill material (inland); general structures; work (non-fill) including maintenance; replacement and removal; and “other”, which encompasses mainly directional boring, aerial and submarine crossings. Note: the discharge of dredged material includes beach nourishment. If the type of dredging was unspecified in the project worktype, it was considered as maintenance dredging. Projects with “removal” listed as an impact type in ORM were reclassified into one of the other groups: “removal” projects were considered placed within the work category based on their description. However, a few dam removals were classified as ecological restoration. Project listed in ORM also contain a few projects with the impact type listed as “historical undetermined”; these projects were folded into the category of “other.”

ORM Impact Categories:

(Note: these titles match those of ORM verbatim for ease of matching impact values to # of activities)

1. “Conversion of waters type” (e.g., forested wetland to emergent wetland, stream to lake)
Here the discharge of fill is not causing a loss of aquatic resources (i.e., wetland to upland).
Example, build a dam get a lake.

- i. in ORM, this is not considered as an impact, it’s for tracking purposes
- ii. Secondary impacts are not included as they are not reported to Congress

2. “General discharge of dredged material”
-includes beach nourishment/near shore

3. “Discharge of fill material”
Includes maintenance, replacements and removals, and conversion of waters/wetlands to upland

- i. bank stabilization
- ii. transportation/roads/crossing/culvert
- iii. other, includes dams for conversions; for Wqt discharge in riverine systems is allowed if it does not alter hydraulic character of floodplain

4. “Dredging”

- i. maintenance dredging
- ii. general/navigation (new)

*in NAE, the only inland lacustrine waters include Lake Champlain, VT
(problem: lacustrine may get accounted for twice with excavation depending upon how its entered))

5. “Ecological restoration”
This is not factoring in discharge of fill or conversion of waters

- examples: dam removals, culvert replacements

6. “Excavation associated with the discharge of dredged or fill material” (inland)

-“dredging” of inland/S.404 waters

-utility lines (e.g., trenching with backfilling)

7. “General structures (Section 10)”

Includes aquaculture/fish wildlife harvesting activities

8. “Work (non-fill, Section 10)”

Includes maintenance, replacements and removals

-temporary impacts are excluded from this analysis

-replacement in-kind/in-place, but with minor deviations

9. “Other”

Includes: directional boring, aerial or submarine crossings

-Examples: overhead electrical wires, underground gas pipeline

Not included in the analysis are mitigation, temporary impacts and individual permitted activities.

Appendix 2. ORM-reported activities for each HUC8 watershed and Cowardin class

The results of sorting and classifying are shown in the following table for the activities reported in ORM under the state GPs for the period of this analysis.

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
		8	12	12		24												
		0	0	0	5	16				9		1			1	3		2
	Marine Subtidal	2	0	0	2	2										1		1
	Marine Unspecified	2	0	0	1	2												2
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Unspecified	3	9	9	1	3				3								
1010001		20	13	23		17												
		0	0	0	2	3				2					1			
	Palustrine Shrub	6	5	8	3	3	1			1	1							
	Palustrine Unspecified	7	3	9	2	4				1	3							
	Riverine Lower Perennial	1	1	0	1	1				1								
	Riverine Tidal	1	1	0	1	1				1								
	Riverine Unspecified	4	2	6	2	4				2								2
	Riverine Upper Perennial	1	1	0	1	1				1								
1010002		1	0	1		1												
	Riverine Upper Perennial	1	0	1	1	1						1						
1010003		21	22	48		26												
	Lacustrine Limnetic	0	0	0	2	6			4	2								
	Lacustrine Littoral	5	0	15	1	5				5								
	Lacustrine Unspecified	2	0	6	1	2				2								
	Palustrine Emergent	2	6	6	1	2				2								
	Palustrine Forested	3	9	9	2	5				3		2						
	Palustrine Shrub	4	6	8	2	3				2	1							
	Palustrine Unspecified	4	0	4	1	2					2							
	Riverine Lower Perennial	1	1	0	1	1				1								
1010004		28	30	44		29												
	Lacustrine Limnetic	1	0	0	2	3			2									1
	Lacustrine Littoral	1	0	3	1	1				1								
	Palustrine Emergent	1	0	1	1	1					1							
	Palustrine Forested	2	6	6	2	3				2						1		
	Palustrine Shrub	5	9	11	2	4				3	1							
	Palustrine Unspecified	10	11	20	4	9				4	3			1	1			
	Riverine Lower Perennial	4	4	0	1	4				4								
	Riverine Upper Perennial	4	0	3	2	4					3					1		
1010005		10	7	15		7												
	Palustrine Forested	2	6	6	1	2				2								
	Palustrine Shrub	0	1	1	1	1			1									
	Palustrine Unspecified	8	0	8	1	4					4							
1020001		8	12	20		7												
	Lacustrine Littoral	1	0	3	1	1				1								

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Palustrine Forested	3	3	5	2	2				1	1							
	Palustrine Unspecified	3	9	9	1	3				3								
1020002		6	10	12		6												
	Lacustrine Littoral	1	0	3	1	1				1								
	Palustrine Unspecified	3	9	9	1	3				3								
	Riverine Lower Perennial	2	1	0	2	2				1								1
1020003		6	18	18		6												
	Palustrine Forested	2	6	6	1	2				2								
	Palustrine Unspecified	4	12	12	1	4				4								
1020004		19	39	41		17												
	Palustrine Forested	2	6	6	1	2				2								
	Palustrine Unspecified	14	30	35	3	12				10	1				1			
	Riverine Lower Perennial	3	3	0	1	3				3								
1020005		113	230	242		112												
	Estuarine Intertidal	1	0	0	2	3				2								1
	Lacustrine Limnetic	0	0	0	1	1				1								
	Marine Intertidal	1	0	2	2	2			1	1								
	Marine Subtidal	1	0	0	1	1										1		
	Palustrine Emergent	9	24	25	3	10				8	1					1		
	Palustrine Forested	35	92	95	6	35	1			30	1		1			1		1
	Palustrine Shrub	22	47	53	4	19	1			15	2						1	
	Palustrine Unspecified	26	48	58	2	21				16	5							
	Riverine Intermittent	0	6	6	1	2				2								
	Riverine Lower Perennial	8	8	0	1	8				8								
	Riverine Tidal	9	4	3	4	9				4		1				2		2
	Riverine Upper Perennial	1	1	0	1	1				1								
1030001		16	18	46		29												
	Lacustrine Limnetic	0	0	0	2	10			2	8								
	Lacustrine Littoral	6	0	18	1	6				6								
	Lacustrine Unspecifec	4	0	7	3	4				2						1		1
	Palustrine Emergent	2	3	4	2	2				1	1							
	Palustrine Forested	2	6	6	1	2				2								
	Palustrine Unspecified	1	8	8	2	4				3				1				
	Riverine Unspecified	1	1	3	1	1				1								
1030002		11	16	22		10												
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Palustrine Emergent	1	3	3	1	1				1								
	Palustrine Forested	1	3	3	1	1				1								

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Palustrine Shrub	1	3	3	1	1				1								
	Palustrine Unspecified	6	6	10	2	4				2	2							
	Riverine Lower Perennial	1	1	0	1	1				1								
1030003		190	296	364		160												
		0	0	0	2	3				1							2	
	Lacustrine Littoral	3	1	7	2	3			1	2								
	Palustrine Emergent	12	33	34	2	12				11	1							
	Palustrine Forested	41	98	105	4	37	1			32	3							1
	Palustrine Shrub	16	42	44	2	15				14	1							
	Palustrine Unspecified	94	108	166	2	65				36	29							
	Riverine Lower Perennial	11	7	3	5	12				7	1	1					1	2
	Riverine Tidal	5	3	2	3	5				3		1				1		
	Riverine Unspecified	3	1	3	2	3				1								2
	Riverine Upper Perennial	5	3	0	2	5				3						2		
1040001		61	85	124		67												
		0	0	0	1	4				4								
	Lacustrine Limnetic	0	0	0	1	3				3						1		
	Lacustrine Littoral	5	0	13	2	5				4								
	Lacustrine Unspecified	2	0	6	1	2				2								
	Palustrine Aquatic bed	1	0	0	2	2				1						1		
	Palustrine Emergent	3	6	7	2	3				2	1							
	Palustrine Forested	12	18	24	3	10				6	3					1		
	Palustrine Shrub	4	6	8	2	3				2	1							
	Palustrine Unspecified	14	31	36	4	13			1	10	1				1			
	Riverine Intermittent	0	6	6	1	2				2								
	Riverine Lower Perennial	6	9	5	3	6			4	1	1							
	Riverine Tidal	3	1	2	2	3				1						2		
	Riverine Unspecified	5	5	15	1	5				5								
	Riverine Upper Perennial	6	3	2	3	6				3	2							1
1040002		194	279	346		170												
		0	0	0	1	3				3								
	Lacustrine Limnetic	1	0	0	2	3				2								1
	Lacustrine Littoral	3	1	5	3	3			1	1						1		
	Lacustrine Unspecified	2	0	6	1	2				2								
	Marine Intertidal	1	0	1	2	2				1						1		
	Palustrine Emergent	11	27	30	4	13				9	2						1	1
	Palustrine Forested	49	120	125	3	42	3			38	1							
	Palustrine Shrub	19	20	31	3	12	1			6	5							
	Palustrine Unspecified	68	84	124	2	48				28	20							
	Riverine Lower Perennial	20	14	7	5	20			1	12	4					2		1

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	Riverine Tidal	2	2	0	1	2				2								
	Riverine Unspecified	4	3	12	3	6				3					1		2	
	Riverine Upper Perennial	14	8	5	3	14				8	5					1		
1050001		8	12	20		9												
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Littoral	1	0	3	1	1				1								
	Lacustrine Unspecified	1	0	3	1	1				1								
	Palustrine Forested	3	3	5	2	2				1	1							
	Palustrine Unspecified	3	9	9	2	4				3						1		
1050002		532	324	588		578												
		0	0	0	3	6				4						1		1
	Estuarine Intertidal	7	0	3	3	7						1				2		4
	Estuarine Subtidal	6	0	1	2	6					1					5		
	Lacustrine Limnetic	0	0	0	1	4				4								
	Lacustrine Littoral	1	0	3	1	1				1								
	Lacustrine Unspecified	3	0	9	1	3				3								
	Marine Intertidal	182	0	195	9	219			24	36	1	1	1		1	141	1	13
	Marine Subtidal	165	0	6	5	170				6		3	1			158		2
	Marine Unspecified	6	0	5	3	10				4						5		1
	Palustrine Emergent	7	18	21	2	7				6					1			
	Palustrine Forested	72	174	189	7	69	1		1	57	6					1	2	1
	Palustrine Shrub	25	57	63	3	23				19	3					1		
	Palustrine Unspecified	41	68	88	4	36				23	10			1				2
	Riverine Lower Perennial	4	3	0	2	4				3								1
	Riverine Tidal	7	1	4	3	7				1						4		2
	Riverine Unspecified	1	0	0	1	1												1
	Riverine Upper Perennial	5	3	1	3	5				3	1					1		
1050003		419	156	370		454												
		0	0	0	2	4				1						3		
	Lacustrine Littoral	2	0	6	1	2				2								
	Marine Intertidal	95	0	105	6	113		1	12	18		1				79		2
	Marine Subtidal	164	0	5	6	171	1			6	2	1				154		7
	Marine Unspecified	61	0	56	3	81				20						56		5
	Palustrine Emergent	4	6	8	2	4				2	2							
	Palustrine Forested	23	50	57	4	20	1			16					2			1
	Palustrine Shrub	8	24	24	1	8				8								
	Palustrine Unspecified	57	73	108	5	42	1		2	23	14				2			
	Riverine Lower Perennial	2	2	0	1	2				2								
	Riverine Tidal	2	1	0	4	6				2				1		2	1	
	Riverine Upper Perennial	1	0	1	1	1						1						

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1060001		492	432	708		554												
		0	0	0	3	10				5		2				3		
	Estuarine Intertidal	4	0	7	3	8			3	4						1		
	Lacustrine Limnetic	0	0	0	2	6			1	5								
	Lacustrine Littoral	4	1	10	2	4			1	3								
	Lacustrine Unspecifec	5	0	15	2	5				4					1			
	Marine Intertidal	176	0	192	7	221			17	44	3	1				153	1	2
	Marine Subtidal	97	0	6	6	102		1		4		4				90	1	2
	Marine Unspecified	1	0	1	2	2				1						1		
	Palustrine Emergent	37	90	99	3	37				30	6				1			
	Palustrine Forested	77	206	213	4	76	1			68	3							4
	Palustrine Shrub	31	63	73	2	26				21	5							
	Palustrine Unspecified	44	67	89	4	35			1	22	11							1
	Riverine Lower Perennial	7	1	-1	5	13				5	4			2		1		1
	Riverine Tidal	4	1	2	3	4				1	2							1
	Riverine Unspecified	1	0	1	1	1										1		
	Riverine Upper Perennial	4	3	1	2	4				3	1							
1060002		187	274	386		219												
		0	0	0	4	25				18						5	1	1
	Estuarine Intertidal	0	0	0	1	1				1								
	Lacustrine Littoral	7	1	22	5	12			2	6				1		2	1	
	Lacustrine Unspecifec	12	1	28	3	12			1	9								2
	Marine Intertidal	7	0	7	3	8				1		1				6		
	Palustrine Aquatic bed	1	0	2	3	8			2	1						5		
	Palustrine Emergent	13	36	37	2	13				12	1							
	Palustrine Forested	37	74	86	7	37	1			24	5	2				2	1	2
	Palustrine Shrub	5	15	15	2	6				5						1		
	Palustrine Unspecified	67	123	151	4	57			1	41	14			1				
	Riverine Intermittent	0	0	0	1	1										1		
	Riverine Lower Perennial	22	12	13	4	22			2	8	11							1
	Riverine Tidal	4	3	2	3	5				3						1	1	
	Riverine Unspecified	10	7	23	4	10				7	1					1		1
	Riverine Upper Perennial	2	2	0	1	2				2								
1060003		630	946	1210		843												
		0	0	0	6	105			1	84		4				13	1	2
	Estuarine Intertidal	4	-6	3	6	20			1	8	2			2		5		2
	Estuarine Subtidal	5	0	1	3	8			1	3						4		
	Estuarine Unspecified	3	0	3	2	5				2						3		
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Littoral	14	2	29	4	14			2	8						3		1

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	Lacustrine Unspecifec	13	0	33	2	13				11								2
	Marine Intertidal	90	0	89	6	117		1	3	25					2	82		4
	Marine Subtidal	52	0	11	6	54		3		3		5	1			40		2
	Marine Unspecified	23	0	21	5	43				18		3				16	2	4
	Palustrine Aquatic bed	5	1	4	4	8	1			4	1					2		
	Palustrine Emergent	47	132	131	5	56		3		42	5	3				3		
	Palustrine Forested	85	256	254	8	99	1	2		83	1	3		1		7	1	
	Palustrine Shrub	34	63	70	4	32		3		18	8					3		
	Palustrine Unspecified	155	418	436	8	161			1	139	7	1			1	10	1	1
	Riverine Intermittent	2	15	11	4	6		1	1	3								1
	Riverine Lower Perennial	28	22	12	8	31			5	14	7	1		1	1	1		1
	Riverine Tidal	34	14	16	7	34		1	1	12	3	1				11		5
	Riverine Unspecified	35	28	86	5	35			1	26		1				6		1
	Riverine Upper Perennial	1	1	0	1	1				1								
1070001		124	202	285		165												
		0	0	0	5	30		1		19		1				8		1
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Littoral	14	2	27	6	15		1	2	7						3	1	1
	Lacustrine Unspecifec	8	0	18	2	8				6								2
	Palustrine Aquatic bed	1	0	1	3	3			1	1						1		
	Palustrine Emergent	10	27	28	2	10				9	1							
	Palustrine Forested	14	36	38	4	16				12	1	1				2		
	Palustrine Shrub	1	3	3	2	2				1						1		
	Palustrine Unspecified	38	102	106	4	39				34	2	2				1		
	Riverine Intermittent	0	6	6	1	2				2								
	Riverine Lower Perennial	14	10	7	4	14			2	6	5							1
	Riverine Tidal	5	1	2	3	5				1	2							2
	Riverine Unspecified	16	15	46	2	16				15						1		
	Riverine Upper Perennial	3	0	3	3	4					2						1	1
1070002		1020	1601	2307		1309												
		0	0	0	6	209				143	3	3				47	4	9
	Estuarine Intertidal	2	0	2	1	2										2		
	Estuarine Subtidal	0	0	0	1	1				1								
	Lacustrine Limnetic	1	0	1	3	9				7							1	1
	Lacustrine Littoral	102	10	173	7	108		3	10	47	3					13	6	26
	Lacustrine Unspecifec	111	0	261	2	111				87								24
	Marine Subtidal	1	0	0	1	1										1		
	Marine Unspecified	1	0	1	1	1										1		
	Palustrine Aquatic bed	18	0	9	5	32			4	15	2				1	10		
	Palustrine Emergent	70	189	194	6	76		2	2	61	9					1		1

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	Palustrine Forested	161	461	461	8	184		6		148	7			1	1	15	1	5
	Palustrine Shrub	34	89	94	6	38		1		29	4			1		2		1
	Palustrine Unspecified	249	670	701	10	254		2	1	223	12	1	1		1	4	4	5
	Riverine Intermittent	1	15	16	3	9				5	1							3
	Riverine Lower Perennial	98	51	50	8	98		1	5	41	39	1			2	3		6
	Riverine Tidal	28	5	18	6	29				5	3	1				13	1	6
	Riverine Unspecified	123	105	321	6	123		1		105	4				1	1		11
	Riverine Upper Perennial	20	6	5	6	24				8	5			1	2	7	1	
1070003		167	266	360		218												
		0	0	0	5	47				38	1	1				6		1
	Lacustrine Littoral	10	1	14	6	10		1	1	3	1					3		1
	Lacustrine Unspecifec	14	0	21	2	14				7								7
	Palustrine Aquatic bed	3	0	0	2	4				3						1		
	Palustrine Emergent	2	6	6	1	2				2								
	Palustrine Forested	37	98	98	6	38	1	2		30	2					2	1	
	Palustrine Shrub	5	11	9	4	5	1	1		2						1		
	Palustrine Unspecified	44	110	120	6	44	1			36	2				1	2	2	
	Riverine Intermittent	1	3	4	2	2				1	1							
	Riverine Lower Perennial	17	7	9	3	17				7	9							1
	Riverine Unspecified	29	25	77	4	30				25					1		1	3
	Riverine Upper Perennial	5	5	2	3	5			1	3	1							
1070004		46	45	80		62												
		0	0	0	5	13				8		1				1	1	2
	Lacustrine Limnetic	1	0	1	2	2				1	1							
	Lacustrine Littoral	2	0	6	2	2				1					1			
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Palustrine Emergent	3	6	7	3	4				2	1							1
	Palustrine Forested	6	19	19	2	7			1	6								
	Palustrine Shrub	6	6	10	2	4				2	2							
	Riverine Intermittent	1	3	4	3	3				1	1							1
	Riverine Lower Perennial	8	3	3	3	8				3	3							2
	Riverine Unspecified	16	8	26	4	16				8	1					1		6
	Riverine Upper Perennial	2	0	1	2	2					1					1		
1070005		33	30	46		46												
		0	0	0	4	9		1		4					3			1
	Lacustrine Limnetic	0	0	0	1	2				2								
	Palustrine Aquatic bed	1	0	3	2	2									1			1
	Palustrine Forested	3	12	9	2	4		1		3								
	Palustrine Shrub	3	9	9	1	3				3								
	Palustrine Unspecified	6	6	12	3	5				2					2			1

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	Riverine Intermittent	1	0	1	1	1									1			
	Riverine Lower Perennial	12	2	6	5	12		1		2	4				2			3
	Riverine Unspecified	5	1	5	4	6				1	1						1	3
	Riverine Upper Perennial	2	0	1	2	2		1			1							
1080101		179	310	400		226												
		0	0	0	2	21				17						4		
	Estuarine Unspecified	0	0	0	1	1				1								
	Lacustrine Littoral	9	0	14	3	9				4						2		3
	Lacustrine Unspecifec	4	0	9	2	4				3								1
	Palustrine Aquatic bed	4	0	2	3	5				2	2					1		
	Palustrine Emergent	17	50	49	4	19		1		16	1	1						
	Palustrine Forested	22	56	64	7	32				19	2	5		1	1	3	1	
	Palustrine Shrub	4	12	8	4	8		2		2	1					3		
	Palustrine Unspecified	49	135	142	4	51				45	2	1					3	
	Riverine Lower Perennial	22	17	3	4	28			2	17	7			2				
	Riverine Unspecified	37	35	106	3	37				35					1			1
	Riverine Upper Perennial	11	5	3	6	11		2	1	3	2					2		1
1080102		50	59	85		54												
	Palustrine Unspecified	5	15	15	1	5				5								
	Riverine Lower Perennial	24	25	17	5	28			7	11	5	1					4	
	Riverine Unspecified	20	17	52	3	20				17						1		2
	Riverine Upper Perennial	1	2	1	1	1			1									
1080103		41	31	58		43												
		0	0	0	1	1				1								
	Lacustrine Littoral	7	0	15	2	7				5								2
	Lacustrine Unspecifec	3	0	6	2	3				2								1
	Palustrine Unspecified	1	3	3	1	1				1								
	Riverine Lower Perennial	18	18	11	5	19			8	2	2						1	6
	Riverine Unspecified	10	7	22	3	10				7		1						2
	Riverine Upper Perennial	2	3	1	2	2			1	1								
1080104		304	451	630		385												
		0	0	0	4	64				51		3				7	3	
	Lacustrine Limnetic	1	0	0	2	2				1								1
	Lacustrine Littoral	7	0	16	4	8				4		1				2	1	
	Lacustrine Unspecifec	13	0	21	2	13				7								6
	Palustrine Aquatic bed	3	0	3	3	4				2					1	1		
	Palustrine Emergent	47	117	126	6	50	1	1		38	6				1	3		
	Palustrine Forested	27	75	78	5	32				25	1					3	1	2
	Palustrine Shrub	6	15	14	4	8		1		4	1					2		
	Palustrine Unspecified	57	124	142	5	52			1	41	6				2	2		

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Riverine Intermittent	0	6	6	2	3				2						1		
	Riverine Lower Perennial	73	56	38	8	76		1	12	32	16	1				6	3	5
	Riverine Tidal	2	0	2	3	3										1	1	1
	Riverine Unspecified	64	58	179	5	65				58		1				3	1	2
	Riverine Upper Perennial	4	0	5	2	5					4						1	
1080105		117	131	155		129												
		0	0	0	1	1				1								
	Lacustrine Littoral	1	0	3	1	1				1								
	Lacustrine Unspecified	1	0	3	1	1				1								
	Palustrine Emergent	2	6	6	2	3				2								1
	Palustrine Unspecified	1	3	3	1	1				1								
	Riverine Lower Perennial	83	92	64	8	93		1	40	16	24			2		2	4	4
	Riverine Unspecified	28	30	75	3	28			3	24								1
	Riverine Upper Perennial	1	0	1	1	1					1							
1080106		74	97	135		78												
		0	0	0	1	1					1							
	Lacustrine Littoral	4	0	12	1	4				4								
	Lacustrine Unspecified	3	0	9	1	3				3								
	Palustrine Emergent	3	6	7	2	3				2	1							
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Shrub	1	3	3	1	1				1								
	Palustrine Unspecified	6	18	18	1	6				6								
	Riverine Intermittent	2	6	5	2	2			1	1								
	Riverine Lower Perennial	30	41	22	4	33			18	7	7			1				
	Riverine Unspecified	23	18	55	3	23				18						1		4
	Riverine Upper Perennial	1	2	1	1	1			1									
1080107		108	160	157		113												
		0	0	0	1	2				2								
	Lacustrine Limnetic	1	0	0	1	1												1
	Lacustrine Littoral	2	0	6	1	2				2								
	Palustrine Emergent	1	3	3	2	2				1								1
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Shrub	2	6	6	1	2				2								
	Palustrine Unspecified	6	18	18	1	6				6								
	Riverine Intermittent	0	6	6	1	2				2								
	Riverine Lower Perennial	68	101	56	5	68		1	47	7	9							4
	Riverine Tidal	2	2	0	1	2				2								
	Riverine Unspecified	24	19	58	3	24				19						1		4
	Riverine Upper Perennial	1	2	1	1	1			1									
1080201		162	202	259		195												

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
		0	0	0	4	20				13						2	1	4
	Lacustrine Limnetic	2	0	6	2	3				1					2			
	Lacustrine Littoral	5	0	12	2	5		1		4								
	Lacustrine Unspecifec	2	0	3	2	2				1								1
	Palustrine Aquatic bed	2	0	0	2	3				2						1		
	Palustrine Emergent	5	12	13	2	5				4	1							
	Palustrine Forested	21	51	55	3	20				17	2					1		
	Palustrine Shrub	3	9	9	2	4				3								1
	Palustrine Unspecified	25	69	71	3	25				23	1							1
	Riverine Intermittent	1	1	1	3	3	1				1							1
	Riverine Lower Perennial	45	29	18	7	54			7	21	13			3	2	5		3
	Riverine Tidal	1	0	1	1	1					1							
	Riverine Unspecified	35	20	66	5	35				20	3				1	2		9
	Riverine Upper Perennial	15	11	4	2	15				11	4							
1080202		50	39	74		65												
		0	0	0	2	11				8	3							
	Lacustrine Littoral	2	0	6	1	2				2								
	Lacustrine Unspecifec	2	0	6	1	2				2								
	Palustrine Aquatic bed	0	0	0	1	1										1		
	Palustrine Emergent	1	3	3	2	2				1								1
	Palustrine Forested	4	12	12	1	4				4								
	Palustrine Shrub	1	6	3	2	2		1		1								
	Palustrine Unspecified	3	9	9	1	3				3								
	Riverine Intermittent	1	3	4	2	2				1	1							
	Riverine Lower Perennial	3	0	3	2	3					2				1			
	Riverine Tidal	2	0	2	1	2					2							
	Riverine Unspecified	2	1	3	2	2				1								1
	Riverine Upper Perennial	29	5	23	3	29				5	23							1
1080203		91	106	97		99												
		0	0	0	2	5				4								1
	Lacustrine Unspecifec	2	0	6	1	2				2								
	Palustrine Emergent	2	6	6	1	2				2								
	Palustrine Forested	2	6	6	2	3				2								1
	Palustrine Shrub	3	9	9	1	3				3								
	Palustrine Unspecified	5	15	15	2	6				5								1
	Riverine Intermittent	0	3	3	1	1				1								
	Riverine Lower Perennial	45	48	21	4	45			12	24	8				1			
	Riverine Unspecified	17	9	28	3	17				9	1							7
	Riverine Upper Perennial	15	10	3	4	15		3	3	4								5
1080204		18	13	31		35												

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
		0	0	0	4	7		1		3	2							1
	Lacustrine Limnetic	2	0	0	2	3				1								2
	Palustrine Aquatic bed	1	0	2	2	2			1		1							
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Unspecified	-2	-1	-1	1	1								1				
	Riverine Intermittent	0	6	6	1	2				2								
	Riverine Lower Perennial	9	1	5	5	9		2		1	4				1			1
	Riverine Unspecified	7	4	16	4	10				6	1			1				2
1080205		266	91	244		280												
		0	0	0	3	7						1	1			5		
	Estuarine Intertidal	15	0	15	4	18			2	3						11		2
	Estuarine Subtidal	11	0	2	4	13	1			1						9		2
	Estuarine Unspecified	3	0	2	2	3										2		1
	Lacustrine Limnetic	2	0	3	3	6				4					1	1		
	Lacustrine Littoral	7	0	21	2	7				5					2			
	Marine Intertidal	4	0	4	1	4										4		
	Marine Subtidal	4	0	0	3	6				1					1	4		
	Marine Unspecified	7	0	4	4	9				2		2				2		3
	Palustrine Aquatic bed	2	0	2	4	4			1	1	1							1
	Palustrine Emergent	6	16	17	3	7			1	5	1							
	Palustrine Forested	32	24	50	4	25				8	10				2			5
	Palustrine Shrub	4	0	4	1	2					2							
	Palustrine Unspecified	9	15	19	3	8				5	2							1
	Riverine Intermittent	3	0	3	3	4					1				2			1
	Riverine Lower Perennial	19	8	11	4	19				8	8	1			2			
	Riverine Tidal	104	17	65	7	104			1	15		11	2		2	47		26
	Riverine Unspecified	21	4	17	4	21				4		2				3		12
	Riverine Upper Perennial	13	7	5	4	13				7	4				1	1		
1080206		38	29	54		51												
		0	0	0	4	12			2	6		1						3
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Littoral	4	0	12	1	4				4								
	Palustrine Emergent	1	0	1	1	1					1							
	Palustrine Shrub	3	3	5	2	2				1	1							
	Palustrine Unspecified	4	12	12	1	4				4								
	Riverine Intermittent	3	3	6	2	4				1	3							
	Riverine Lower Perennial	5	2	2	3	5				2					2			1
	Riverine Unspecified	12	4	15	3	12				4					3			5
	Riverine Upper Perennial	6	5	1	2	6				5	1							
1080207		33	29	43		41												

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
		0	0	0	3	6				3					1			2
	Lacustrine Littoral	2	0	6	1	2				2								
	Lacustrine Unspecifec	1	0	1	1	1					1							
	Palustrine Aquatic bed	0	0	0	1	1												1
	Palustrine Emergent	1	0	1	1	1					1							
	Palustrine Forested	2	0	2	1	1					1							
	Palustrine Shrub	2	6	6	1	2				2								
	Palustrine Unspecified	4	6	9	5	6				2	1	1					1	1
	Riverine Intermittent	3	6	6	3	3			1	1	1							
	Riverine Lower Perennial	6	3	4	5	6			1	1	2	1						1
	Riverine Tidal	2	0	2	1	2					2							
	Riverine Unspecified	3	1	3	2	3				1								2
	Riverine Upper Perennial	7	7	3	4	7		1	2	3	1							
1090001		288	113	274		417												
		0	0	0	8	77		3		21	2	3			1	25	5	17
	Estuarine Intertidal	11	0	10	6	20				6	1	1				5	3	4
	Estuarine Subtidal	13	-3	1	8	17		1	1	1	1	1		1		7		4
	Estuarine Unspecified	4	0	4	5	6						1			1	2	1	1
	Lacustrine Limnetic	3	0	9	2	6				3					3			
	Lacustrine Littoral	4	1	6	3	4			1						1	2		
	Lacustrine Unspecifec	5	0	10	3	5				3						1		1
	Marine Intertidal	30	0	14	6	41		1		10		1			1	12		16
	Marine Subtidal	40	-3	5	6	49				5		6		1		29	1	7
	Marine Unspecified	24	0	17	5	33				9	1	5				11		7
	Palustrine Aquatic bed	1	0	0	2	2				1								1
	Palustrine Emergent	5	12	13	2	5				4	1							
	Palustrine Forested	20	18	32	3	14				6	7							1
	Palustrine Shrub	10	18	22	2	8				6	2							
	Palustrine Unspecified	16	30	39	3	15				10					3			2
	Riverine Intermittent	2	6	8	4	5				2	1				1			1
	Riverine Lower Perennial	22	14	8	7	23		1	2	10	3					2	1	4
	Riverine Tidal	32	6	19	9	38		1		7	1	3		1	1	16	2	6
	Riverine Unspecified	38	13	51	6	41				13	7				1	1	3	16
	Riverine Upper Perennial	8	1	6	4	8				1	5				1	1		
1090002		456	15	305		667												
		0	0	0	7	81				23	1	9		1		29	1	17
	Estuarine Intertidal	18	-3	13	8	32				8	1	3		1	1	11	1	6
	Estuarine Subtidal	12	0	8	6	17				4	2	5				4	1	1
	Estuarine Unspecified	29	-6	23	6	49				11		10		2		18	1	7
	Lacustrine Unspecifec	1	0	3	1	1				1								

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Marine Intertidal	84	-3	56	8	112		5	3	22		5		1		40	2	34
	Marine Subtidal	122	-21	37	8	162		1		10		37	1	7		71	10	25
	Marine Unspecified	58	0	53	5	71				11		8				43	2	7
	Palustrine Aquatic bed	19	0	0	3	23		2		19						2		
	Palustrine Emergent	2	3	4	2	2				1	1							
	Palustrine Forested	2	6	6	2	3				2						1		
	Palustrine Shrub	4	6	8	2	3				2	1							
	Palustrine Unspecified	5	15	16	2	6				5							1	
	Riverine Intermittent	0	3	3	2	2				1								1
	Riverine Lower Perennial	16	4	5	6	19				6	5			1	1	2		4
	Riverine Tidal	68	5	56	6	68				5		6	1			46	1	9
	Riverine Unspecified	12	4	14	3	12				4	2							6
	Riverine Upper Perennial	4	2	0	3	4				2						1		1
1090003		75	103	118		94												
		0	0	0	3	9				6					1			2
	Estuarine Unspecified	0	0	0	2	3				1					2			
	Lacustrine Limnetic	2	0	1	4	7		1		4	1							1
	Lacustrine Littoral	2	0	6	1	2				2								
	Palustrine Aquatic bed	0	0	0	1	1												1
	Palustrine Emergent	3	11	9	2	4		1		3								
	Palustrine Forested	3	9	9	2	4				3								1
	Palustrine Shrub	15	21	29	4	14				7	4					2		1
	Palustrine Unspecified	18	44	49	4	17	1			14					1		1	
	Riverine Lower Perennial	17	14	4	4	17			1	12	3							1
	Riverine Tidal	2	0	2	1	2										2		
	Riverine Unspecified	7	1	8	4	8				1	4						1	2
	Riverine Upper Perennial	6	3	1	4	6		1		3	1							1
1090004		340	127	312		443												
		0	0	0	6	31			1	12	1					13	3	1
	Estuarine Intertidal	0	-3	0	3	5								1	1	3		
	Estuarine Subtidal	8	0	0	2	8										7		1
	Estuarine Unspecified	2	0	2	3	9				4					3	2		
	Lacustrine Littoral	2	1	4	2	2			1	1								
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Marine Intertidal	10	-3	9	6	17				3	2	1		1		8		2
	Marine Subtidal	91	0	11	6	95		2	1	4		8				62		18
	Marine Unspecified	69	0	72	8	82			2	7	1	10			1	52	5	4
	Palustrine Aquatic bed	7	0	4	4	11				3	4					1		3
	Palustrine Emergent	0	2	3	4	5				1	1			1				2
	Palustrine Forested	9	15	19	4	9				5	2					1		1

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Palustrine Shrub	27	32	47	5	23	1			10	7					2		3
	Palustrine Unspecified	11	37	43	6	28				13				2	1	4	3	5
	Riverine Intermittent	3	12	15	4	9				4	3					1		1
	Riverine Lower Perennial	27	11	12	8	34			1	13	12	1		2		3	1	1
	Riverine Tidal	33	5	26	6	34			2	1		1				22	1	7
	Riverine Unspecified	24	9	36	4	24				9	8					1		6
	Riverine Upper Perennial	16	9	6	5	16			1	7	5					2		1
1090005		114	11	65		137												
		0	0	0	4	7				1		1				4		1
	Estuarine Intertidal	0	-3	0	2	4								1		3		
	Estuarine Subtidal	6	0	0	2	7				1						6		
	Lacustrine Limnetic	0	0	0	1	1				1								
	Lacustrine Littoral	-1	-1	5	3	3				1				1	1			
	Lacustrine Unspecifec	1	0	1	1	1						1						
	Marine Intertidal	3	0	3	1	3										3		
	Marine Subtidal	43	0	3	3	43						3				32		8
	Marine Unspecified	36	0	32	3	36						1				31		4
	Palustrine Aquatic bed	1	0	0	2	2				1						1		
	Palustrine Emergent	1	3	3	1	1				1								
	Palustrine Forested	2	6	6	3	4				2						1		1
	Palustrine Shrub	2	0	2	1	1					1							
	Palustrine Unspecified	-1	2	2	3	3				1				1		1		
	Riverine Lower Perennial	3	1	1	3	3				1						1		1
	Riverine Tidal	9	1	3	3	9				1						3		5
	Riverine Unspecified	4	0	2	3	4						1				1		2
	Riverine Upper Perennial	5	2	2	3	5				2	2							1
1100001		39	25	41		52												
		0	0	0	2	7				6								1
	Lacustrine Limnetic	4	0	0	2	5				1						4		
	Lacustrine Littoral	2	0	0	1	2												2
	Palustrine Aquatic bed	0	0	0	1	1										1		
	Palustrine Emergent	1	3	3	2	2				1								1
	Palustrine Forested	5	9	11	3	5				3	1							1
	Palustrine Shrub	4	0	4	1	2					2							
	Palustrine Unspecified	3	3	7	4	4				1					1		1	1
	Riverine Intermittent	0	3	3	1	1				1								
	Riverine Lower Perennial	5	1	4	2	5				1	4							
	Riverine Tidal	2	0	2	2	4					2				2			
	Riverine Unspecified	4	1	5	4	5				1	1						1	2
	Riverine Upper Perennial	9	5	2	4	9				5	1				1			2

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
1100002		29	30	60		33												
	Lacustrine Limnetic	0	0	0	1	1				1								
	Palustrine Emergent	3	2	12	5	8				1	1			1	3			2
	Palustrine Forested	11	9	19	4	10				3	2				2			3
	Palustrine Shrub	6	18	18	1	6				6								
	Palustrine Unspecified	4	0	5	3	3					1				1			1
	Riverine Lower Perennial	1	0	1	1	1					1							
	Riverine Unspecified	4	1	5	3	4				1					2			1
1100003		299	53	167		359												
		0	0	0	2	4										3		1
	Estuarine Intertidal	22	-3	18	7	45	2			11		1		1	6	16		8
	Estuarine Subtidal	63	0	1	5	72		1		7					2	38		24
	Estuarine Unspecified	9	0	7	3	10				1						7		2
	Lacustrine Limnetic	0	0	0	1	2				2								
	Lacustrine Littoral	1	0	0	1	1		1										
	Lacustrine Unspecifec	2	0	4	2	2				1		1						
	Marine Intertidal	10	0	10	4	14				1		1			3	9		
	Marine Subtidal	28	0	1	4	29				1		1				6		21
	Marine Unspecified	22	0	11	4	24				2		1				10		11
	Palustrine Aquatic bed	0	0	0	1	2												2
	Palustrine Forested	6	18	18	2	8				6								2
	Palustrine Shrub	6	6	10	2	4				2	2							
	Palustrine Unspecified	4	13	13	4	11			1	4						1		5
	Riverine Lower Perennial	3	3	3	3	4	1			2								1
	Riverine Tidal	98	10	55	7	102			2	7		4		1	1	52		35
	Riverine Unspecified	22	3	16	3	22				3						7		12
	Riverine Upper Perennial	3	3	0	1	3				3								
1100004		299	34	169		373												
		0	0	0	4	9				1		1				5		2
	Estuarine Intertidal	24	-9	14	8	50		3	2	12		1		3	2	15		12
	Estuarine Subtidal	65	0	4	6	75			2	8		2			2	27		34
	Estuarine Unspecified	1	0	0	2	3				2								1
	Lacustrine Limnetic	0	0	0	1	2				2								
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Marine Intertidal	13	0	10	5	17			1	4		2				6		4
	Marine Subtidal	30	0	0	4	34				3					1	10		20
	Marine Unspecified	33	0	17	5	44				10		3			1	14		16
	Palustrine Emergent	1	3	3	2	2				1								1
	Palustrine Forested	12	18	26	4	11				6	1				2			2
	Palustrine Shrub	4	6	9	2	3				2					1			

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Palustrine Unspecified	3	3	6	3	4				1					1			2
	Riverine Intermittent	1	0	1	1	1					1							
	Riverine Lower Perennial	7	3	6	3	7			1	1	5							
	Riverine Tidal	85	6	54	6	91				6		16			5	37	1	26
	Riverine Unspecified	18	4	15	4	18				4		2				1		11
	Riverine Upper Perennial	1	0	1	1	1					1							
1100005		161	151	224		192												
		0	0	0	5	21		1		14	3				1			2
	Estuarine Intertidal	2	0	2	2	4				2						2		
	Estuarine Subtidal	2	0	1	2	2						1						1
	Estuarine Unspecified	1	0	1	1	1										1		
	Lacustrine Limnetic	1	0	3	2	5				4					1			
	Lacustrine Littoral	6	0	10	4	6				2	1				1			2
	Lacustrine Unspecifec	5	0	16	2	6				5							1	
	Marine Unspecified	1	0	1	1	1										1		
	Palustrine Aquatic bed	3	0	0	1	3				3								
	Palustrine Emergent	4	3	8	3	4				1	2				1			
	Palustrine Forested	12	18	24	3	12				6	3							3
	Palustrine Shrub	10	18	22	2	8				6	2							
	Palustrine Unspecified	27	63	70	5	26		1		21	2				1			1
	Riverine Intermittent	0	3	3	2	2				1								1
	Riverine Lower Perennial	26	20	13	5	26			4	12	8				1			1
	Riverine Tidal	33	6	22	4	33				6		4				18		5
	Riverine Unspecified	8	5	19	5	9				5	1				1	1	1	
	Riverine Upper Perennial	20	15	9	5	23			5	7	7			1				3
1100006		376	71	221		444												
		0	0	0	2	11										5		6
	Estuarine Intertidal	33	-6	23	8	47			1	4		3		2	1	23	1	12
	Estuarine Subtidal	54	0	2	4	58				4		2				30		22
	Estuarine Unspecified	7	0	4	4	10				2						3	1	4
	Lacustrine Limnetic	1	0	3	1	1									1			
	Lacustrine Littoral	1	0	3	1	1									1			
	Lacustrine Unspecifec	1	0	3	1	1				1								
	Marine Intertidal	24	0	22	7	31			2	6	1	1			1	16		4
	Marine Subtidal	53	0	4	5	56			2	3		2				12		37
	Marine Unspecified	25	0	8	5	34				7		3			2	5		17
	Palustrine Aquatic bed	0	0	0	1	1												1
	Palustrine Emergent	2	6	6	2	3				2								1
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Shrub	2	6	6	1	2				2								

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Palustrine Unspecified	9	21	25	3	9				7					1		1	
	Riverine Intermittent	0	9	9	1	3				3								
	Riverine Lower Perennial	7	4	3	3	7				4	1					2		
	Riverine Tidal	132	20	75	8	141			3	16		16		2	2	61	1	40
	Riverine Unspecified	21	5	20	4	24				7				1		2		14
	Riverine Upper Perennial	3	3	2	3	3			1	1	1							
1100007		335	-2	115		375												
		0	0	0	3	4						1				2	1	
	Estuarine Intertidal	22	-3	19	7	35			1	7		1		1	2	19		4
	Estuarine Subtidal	80	0	2	4	90				10		2				34		44
	Estuarine Unspecified	6	0	3	2	6										3		3
	Marine Intertidal	28	0	25	4	31			1	3						23		4
	Marine Subtidal	65	0	2	4	67				2		2				19		44
	Marine Unspecified	62	0	27	5	67				4		7				19	1	36
	Palustrine Unspecified	0	0	0	2	2										1		1
	Riverine Tidal	65	0	31	4	66						8			1	23		34
	Riverine Unspecified	7	1	6	3	7				1						3		3
1110000		61	70	125		79												
		0	0	0	1	5				5								
	Lacustrine Littoral	12	1	25	5	13			1	7	2						1	2
	Lacustrine Unspecifec	10	0	19	3	10				6						1		3
	Palustrine Emergent	0	7	8	3	6				3	1			2				
	Palustrine Forested	3	9	12	2	6				3							3	
	Palustrine Shrub	1	3	3	1	1				1								
	Palustrine Unspecified	8	24	26	2	10				8							2	
	Riverine Lower Perennial	16	15	4	5	17			2	11	1						1	2
	Riverine Unspecified	10	11	28	2	10			1	9								
	Riverine Upper Perennial	1	0	0	1	1												1
2010001		39	28	87		54												
		0	0	0	1	1				1								
	Lacustrine Limnetic	1	0	0	2	3				2						1		
	Lacustrine Littoral	13	2	25	5	13			2	7		1				1		2
	Lacustrine Unspecifec	9	0	19	3	9				6						1		2
	Palustrine Emergent	-4	5	6	3	8				3	1			4				
	Palustrine Forested	3	3	5	2	2				1	1							
	Palustrine Shrub	1	3	3	1	1				1								
	Palustrine Unspecified	5	9	13	4	6				3					1		1	1
	Riverine Lower Perennial	7	2	4	3	7				2	4							1
	Riverine Unspecified	4	4	12	1	4				4								
2010002		103	148	243		165												

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
		0	0	0	3	10				8	1						1	
	Lacustrine Littoral	8	0	21	2	8				7								1
	Lacustrine Unspecifec	5	0	12	2	5				4								1
	Palustrine Emergent	-10	19	26	3	32				11	7			14				
	Palustrine Forested	1	3	3	1	1				1								
	Palustrine Shrub	4	12	12	1	4				4								
	Palustrine Unspecified	22	59	67	4	27				20	2			1			4	
	Riverine Lower Perennial	47	31	40	6	51			11	9	23	2					4	2
	Riverine Unspecified	23	19	60	4	24				19	2						1	2
	Riverine Upper Perennial	3	5	2	2	3			2	1								
2010003		250	410	535		288												
		0	0	0	2	11				10							1	
	Lacustrine Littoral	18	5	36	4	18			5	10						1		2
	Lacustrine Unspecifec	13	0	30	4	13				9		1				2		1
	Palustrine Emergent	47	123	131	5	52			1	41	8			1				1
	Palustrine Forested	7	21	21	1	7				7								
	Palustrine Shrub	11	27	29	3	11				9	1	1						
	Palustrine Unspecified	42	126	127	2	43				42							1	
	Riverine Intermittent	1	3	4	2	2				1	1							
	Riverine Lower Perennial	64	64	45	7	83			21	26	16	1		2			13	4
	Riverine Tidal	0	0	1	1	1											1	
	Riverine Unspecified	42	38	111	4	42			1	36						2		3
	Riverine Upper Perennial	5	3	0	2	5				3								2
2010005		239	329	505		261												
		0	0	0	2	9			1	8								
	Lacustrine Limnetic	1	0	1	2	2				1		1						
	Lacustrine Littoral	52	14	71	6	52			14	15	2	5				5		11
	Lacustrine Unspecifec	31	0	80	4	31				25		1				4		1
	Palustrine Emergent	32	84	88	3	33				28	4							1
	Palustrine Forested	12	30	32	3	12				10	1							1
	Palustrine Shrub	7	21	21	1	7				7								
	Palustrine Unspecified	40	120	121	2	41				40							1	
	Riverine Lower Perennial	39	38	38	7	49			14	10	11	1				2	10	1
	Riverine Tidal	1	1	0	1	1				1								
	Riverine Unspecified	20	19	52	3	20			1	17								2
	Riverine Upper Perennial	4	2	1	3	4				2	1							1
2010007		70	120	162		73												
	Lacustrine Littoral	2	1	4	2	2			1	1								
	Lacustrine Unspecifec	1	0	0	1	1												1
	Palustrine Emergent	6	15	16	2	6				5	1							

HUC	Cowardin Class	WATER QUALITY	WATER QUANTITY	PLANT & WILDLIFE HABITAT VALUE	New Category ORM Impact Count	Items Count	Conversion of waters type	Discharge of dredged material	Discharge of fill - bank stabilization	Discharge of fill - other	Discharge of fill - transportation	Dredging - maintenance	Dredging - navigation	Ecological Restoration	Excavation associated with fill/DM discharge	General structures (non-fill), Section 10	Other	Work
	Palustrine Forested	2	6	6	1	2				2								
	Palustrine Shrub	4	12	12	1	4				4								
	Palustrine Unspecified	21	59	60	2	20	1			19								
	Riverine Lower Perennial	17	11	15	6	21			3	5	6	2					4	1
	Riverine Unspecified	17	16	49	2	17				16		1						
2020003		42	45	68		69												
		0	0	0	2	7				5					2			
	Lacustrine Unspecifec	2	0	3	2	2				1								1
	Palustrine Emergent	1	3	3	1	1				1								
	Palustrine Forested	5	3	7	2	3				1	2							
	Palustrine Shrub	2	6	6	1	2				2								
	Palustrine Unspecified	3	9	9	1	3				3								
	Riverine Lower Perennial	8	11	-5	6	30			9	7	5			7		1	1	
	Riverine Unspecified	17	13	42	3	17				13	3							1
	Riverine Upper Perennial	4	0	3	2	4					3							1
2030102		18	1	2		19												
	Estuarine Intertidal	1	0	1	1	1										1		
	Estuarine Subtidal	4	0	0	2	4										2		2
	Marine Subtidal	6	0	0	2	6										2		4
	Marine Unspecified	0	0	0	1	1				1								
	Riverine Tidal	7	1	1	3	7				1						1		5
3040103		1	0	3		1												
	Lacustrine Littoral	1	0	3	1	1				1								
7090005		1	3	3		1												
	Palustrine Forested	1	3	3	1	1				1								
7140204		-2	-2	-3		1												
	Riverine Unspecified	-2	-2	-3	1	1								1				
10290106		0	0	0		1												
		0	0	0	1	1									1			
21010006		1	3	3		1												
	Palustrine Unspecified	1	3	3	1	1				1								

Appendix 3. Vulnerability Factors

The activities authorized under the general permit fall into several categories of - conversion of waters type; dredge material discharge; discharge of fill in tidal/non-tidal waters of the U.S. - including bank stabilization; transportation; and “other” maintenance dredging and dredging for navigation (new); ecological restoration; excavation associated with the discharge of dredged or fill material (inland); general structures; work (non-fill) including maintenance; replacement and removal; and “other”, which encompasses mainly directional boring, aerial and submarine crossings. These activities occur in many different types of wetlands. The potential for each type of activity, in each type of Cowardin subsystem/subclass, and its anticipated impact to water quality, water quantity and habitat value was estimated on a relative scale using best professional judgment. The vulnerability factors from these relative impacts were estimated on a scale of 1 for low potential for impact, 2 for moderate potential for impact and 3 for high potential for impact. The symbol NA indicates that the activity is not applicable for that type of wetland system. In those cases where the subsystem was unspecified in ORM (i.e. “marine”), the following procedures were used to determine a vulnerability score. If enough subsystems were specified for that category of activity, the mode, median or average value (rounded up to the nearest integer) was utilized as the vulnerability factor for that system. If “NA” makes up the mode of the system vulnerability, the highest vulnerability factor for that system was used. Vulnerability factor tables for water quality, water quantity and habitat value are included below.

WATER QUALITY
Category

Cowardin Class	Discharge of fill material (bank stabilization)*	Discharge of fill material (transportation: roads/crossing/culvert)*	Discharge of "other" fill material*	General discharge of dredged material	Conversion of waters type	Dredging (new)	Dredging (maintenance)	Ecological Restoration	Excavation Associated with discharge (inland S.404 only)	General S.10 Structures	Work & Maintenance (non-fill, S.10)	Other (directional boring, aerial or submarine crossings)
Estuarine Intertida	1	1	NA	1	NA	2	1	-3	NA	1	1	NA
Estuarine Subtida	1	1	NA	1	NA	2	1	-2	NA	1	1	NA
Estuarine Unspecifie	1	1	NA	1	NA	2	1	-3	NA	1	1	NA
Marine Intertida	1	1	NA	1	NA	2	1	-3	NA	1	1	NA
Marine Subtida	1	1	NA	1	NA	2	1	-2	NA	1	1	NA
Marine Unspecifie	1	1	NA	1	NA	2	1	-3	NA	1	1	NA
Lacustrine Limnetic	NA	1	NA	NA	NA	1	1	-1	1	1	1	NA
Lacustrine Littora	1	1	1	1	1	1	1	-3	1	1	1	NA
Lacustrine Unspecifie	1	1	1	1	1	1	1	-2	1	1	1	NA
Riverine Intermitten	2	1	NA	NA	NA	NA	NA	-2	1	NA	NA	NA
Riverine Upper Perennic	1	1	1	1	NA	2	1	-2	1	1	1	NA
Riverine Lower Perennic	1	1	1	1	NA	2	1	-2	1	1	1	NA
Riverine Tida	1	1	1	1	NA	2	1	-2	NA	1	1	NA
Riverine Unspecifie	1	1	1	1	NA	2	1	-2	1	1	1	NA
Palustrine Aquatic bed	NA	1	1	NA	NA	NA	NA	-1	1	NA	NA	NA
Palustrine Emergent	NA	1	1	NA	2	NA	NA	-2	1	NA	NA	NA
Palustrine Forested	NA	2	1	NA	3	NA	NA	-3	2	NA	NA	NA
Palustrine Shrub	NA	2	1	NA	3	NA	NA	-3	2	NA	NA	NA
Palustrine Unspecifie	NA	2	1	NA	2	NA	NA	-2	2	NA	NA	NA

WATER QUANTITY
Category

Cowardin Class	Discharge of fill material (bank stabilization)*	Discharge of fill material (transportation: roads/crossing/culvert)*	Discharge of "other" fill material*	General discharge of dredged material	Conversion of waters type	Dredging (new)	Dredging (maintenance)	Ecological Restoration	Excavation Associated with discharge (inland S.404 only)	General S.10 Structures	Work & Maintenance (non- fill, S.10)	Other (directional boring, aerial or submarine crossings)
Estuarine Intertidal	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Estuarine Subtidal	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Estuarine Unspecified	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Marine Intertidal	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Marine Subtidal	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Marine Unspecified	NA	NA	NA	NA	NA	NA	NA	-3	NA	NA	NA	NA
Lacustrine Limnetic	NA	NA	NA	NA	1	NA	NA	-1	NA	NA	NA	NA
Lacustrine Littoral	1	NA	NA	NA	1	NA	NA	-1	NA	NA	NA	NA
Lacustrine Unspecified	1	NA	NA	NA	1	NA	NA	-1	NA	NA	NA	NA
Riverine Intermittent	3	NA	3	3	1	NA	NA	-1	NA	NA	NA	NA
Riverine Upper Perennial	2	NA	1	NA	1	NA	NA	-2	NA	NA	NA	NA
Riverine Lower Perennial	2	NA	1	NA	1	NA	NA	-2	NA	NA	NA	NA
Riverine Tidal	2	NA	1	NA	1	NA	NA	-1	NA	NA	NA	NA
Riverine Unspecified	2	NA	1	NA	1	NA	NA	-2	NA	NA	NA	NA
Palustrine Aquatic bed	NA	NA	NA	NA	1	NA	NA	-1	NA	NA	NA	NA
Palustrine Emergent	1	NA	3	2	1	NA	NA	-1	NA	NA	NA	NA
Palustrine Forested	1	NA	3	3	2	NA	NA	-1	NA	NA	NA	NA
Palustrine Shrub	1	NA	3	3	2	NA	NA	-1	NA	NA	NA	NA
Palustrine Unspecified	1	NA	3	NA	2	NA	NA	-1	NA	NA	NA	NA

FISH & WILDLIFE HABITAT VALUE
Category

Cowardin Class	Discharge of fill material (bank stabilization)*	Discharge of fill material (transportation: roads/crossing/culvert)*	Discharge of "other" fill material*	General discharge of dredged material	Conversion of waters type	Dredging (new)	Dredging (maintenance)	Ecological Restoration	Excavation Associated with discharge (inland S. 404 only)	General S. 10 Structures	Work & Maintenance (non-fill, S. 10)	Other (directional boring, aerial or submarine crossings)
Estuarine Intertida	2	1	NA	1	2	3	1	-3	NA	1	NA	1
Estuarine Subtida	1	1	NA	1	2	3	1	-3	NA	NA	NA	1
Estuarine Unspecified	2	1	NA	1	2	3	1	-3	NA	1	NA	1
Marine Intertida	2	1	NA	1	2	3	1	-2	NA	1	NA	1
Marine Subtida	1	1	NA	1	2	3	1	-2	NA	NA	NA	1
Marine Unspecified	2	1	NA	1	2	3	1	-2	NA	1	NA	1
Lacustrine Limnetic	NA	1	NA	NA	NA	3	1	-2	3	NA	NA	1
Lacustrine Littoral	1	1	3	NA	2	3	1	-1	3	1	NA	1
Lacustrine Unspecified	1	1	3	NA	2	3	1	-2	3	1	NA	1
Riverine Intermittent	2	1	3	NA	NA	NA	NA	-3	1	NA	NA	1
Riverine Upper Perennial	1	1	NA	NA	3	3	1	-3	1	NA	NA	1
Riverine Lower Perennial	1	1	NA	NA	3	3	1	-3	1	1	NA	1
Riverine Tidal	1	1	NA	NA	3	3	1	-3	NA	1	NA	1
Riverine Unspecified	1	1	3	NA	3	3	1	-3	1	1	NA	1
Palustrine Aquatic bed	1	1	NA	NA	3	NA	NA	-1	3	NA	NA	1
Palustrine Emergent	1	1	3	NA	3	NA	NA	-1	3	NA	NA	1
Palustrine Forested	1	2	3	NA	3	NA	NA	-1	3	NA	NA	1
Palustrine Shrub	1	2	3	NA	3	NA	NA	-1	3	NA	NA	1
Palustrine Unspecified	1	2	3	NA	3	NA	NA	-1	3	NA	NA	1

Appendix 4. State Integrated Water Quality Assessment Reports

Included here are the state summaries of the integrated water quality assessment reports to the US EPA. These documents are summaries of the data utilized in the determination of water quality for each HUC8 watershed. Note that the state summary for VT is included in the *Appendix VT*.



Watershed Assessment, Tracking & Environmental Results

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Rhode Island Water Quality

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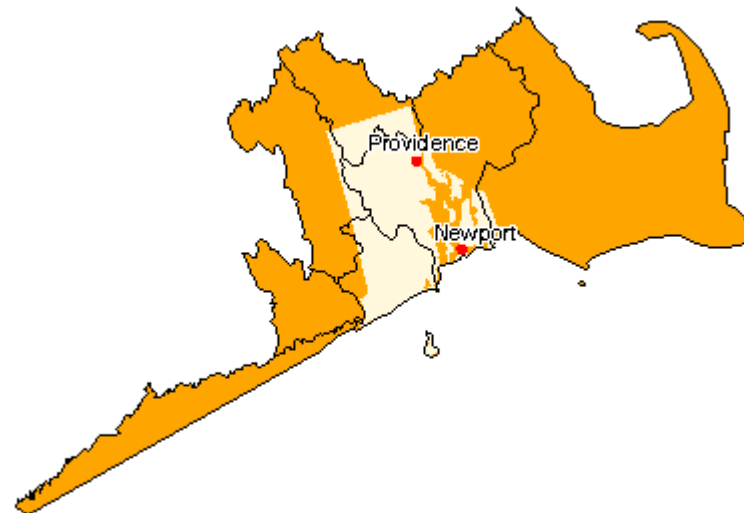
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[Previously Impaired Waters Now Attaining All Assessed Uses](#)
[Causes of Impairment for 303 \(d\) Listed Waters](#)
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[Cumulative Number of TMDLs](#)

Rhode Island Water Quality Assessment Report

Assessed Waters of Rhode Island by Watershed

Select a watershed from the list:

or click on the map to choose a watershed:



Search for a waterbody within Rhode Island

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[Summary Document](#)

303(d) Listed Waters for
2012

**Data are also available
for these cycles:**

2002 2004 2006 2008 2010

Waterbody Changes from
Prior Cycle

For More Information:

Rhode Island Assessment
Report [EXIT Disclaimer](#)

State Water Quality
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Site-specific Targeted Monitoring Summary Results

Rhode Island (2012)

[Description of this table](#)

	<u>Size of Water</u>			
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>	<u>Coastal Shoreline (Miles)</u>
<u>Good Waters</u>	366.6	6,826.2	102.6	78.6
<u>Previously impaired waters now attaining all uses</u>	3.1	14.7	.0	
<u>Threatened Waters</u>				
<u>TMDL completed</u>				
<u>TMDL alternative</u>				

Non-pollutant impairment				
TMDL needed				
Impaired Waters	550.9	8,454.8	56.3	
TMDL completed	280.9	3,500.0	5.5	
TMDL alternative				
Non-pollutant impairment	23.7	3,585.8	.6	
TMDL needed	246.3	1,369.0	50.1	
New TMDLs completed	.0	.0	.0	.0
Remaining TMDLs needed	246.3	1,369.0	50.1	
Total Assessed Waters	917.5	15,281.0	158.8	78.6
Total Waters	1,420.0	20,749.0	159.0	78.6
Percent of Waters Assessed	64.6	73.6	99.9	100.0

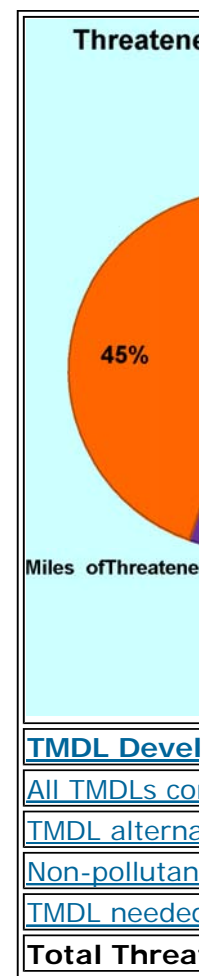
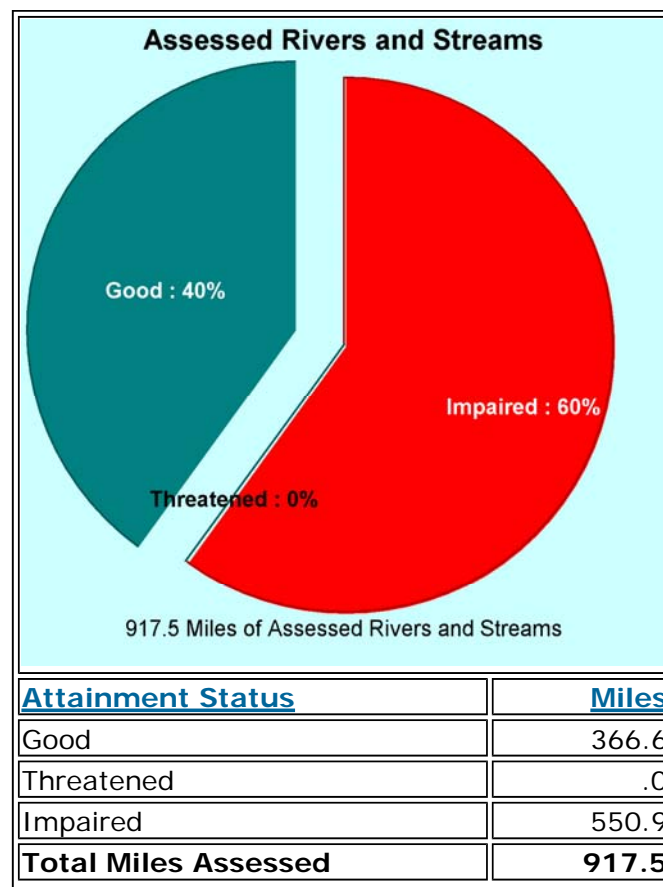
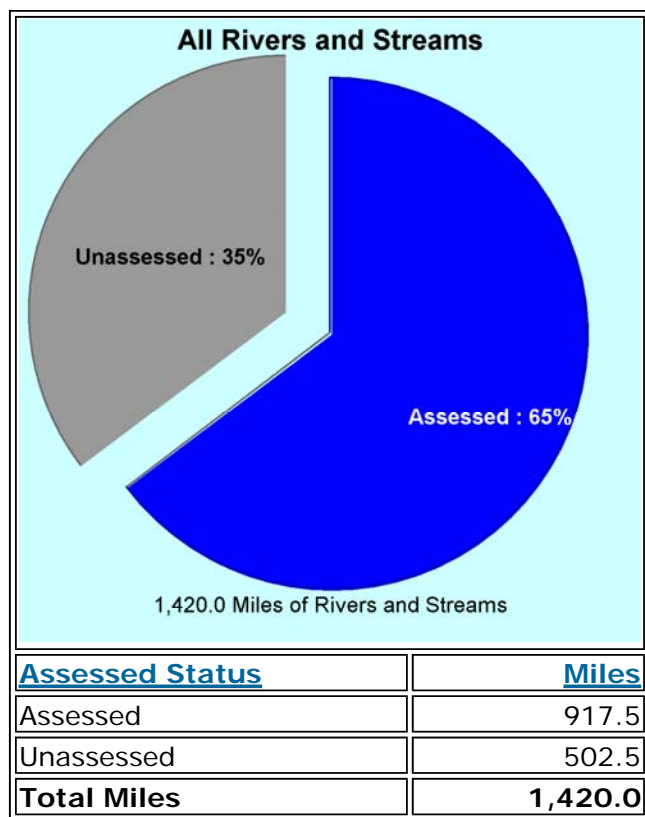
Summary of Water Quality Assessments for Each Waterbody Type for Reporting Year 2012

Site-specific Targeted Monitoring Results Rhode Island Rivers and Streams 2012

[Description of this table](#)

[Description of this table](#)







Site-specific Targeted Monitoring Results







Individual Designated Use Support

Rhode Island Rivers and Streams 2012

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)













<u>Designated Use</u>	<u>Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened















					% Impaired
Fish And Wildlife Habitat	882.3	68.6	.0	31.4	
Fish Consumption	53.8	18.9	.0	81.1	
Primary Contact Recreation	865.7	45.8	.0	54.2	
Public Drinking Water Supply	6.1	100.0	.0	.0	
Secondary Contact Recreation	865.7	45.8	.0	54.2	
Shellfish Controlled Relay And Depuration	.2	.0	.0	100.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Rhode Island Rivers and Streams 2012

[Description of this table](#)




<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Miles Threatened or Impaired</u>
Enterococcus Bacteria	Pathogens	 367.9
Fecal Coliform	Pathogens	 141.9
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	 122.4
Non-Native Aquatic Plants	Nuisance Exotic Species	 115.4
Lead	Metals (other than Mercury)	 110.8
Cadmium	Metals (other than Mercury)	 68.2
Copper	Metals (other than Mercury)	 64.7
Iron	Metals (other than Mercury)	 48.0
Mercury in Fish Tissue	Mercury	 43.7
Phosphorus, Total	Nutrients	 38.9
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 37.1
PCB(s) in Fish Tissue	Polychlorinated Biphenyls (PCBs)	 28.4





















Eurasian Water Milfoil, Myriophyllum Spicatum	Nuisance Exotic Species	 18.1
Chloride	Salinity/Total Dissolved Solids/Chlorides/Sulfates	 17.4
Zinc	Metals (other than Mercury)	 15.0
Mercury	Mercury	 8.7
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	 8.7
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 8.7
Aluminum	Metals (other than Mercury)	 6.8
Ambient Bioassays - Chronic Aquatic Toxicity	Total Toxics	 4.7
Mercury in Water Column	Mercury	 4.6
Turbidity	Turbidity	 4.2
Aquatic Macroinvertebrate Bioassessments	Cause Unknown - Impaired Biota	 4.1
Whole Effluent Toxicity (WET)	Total Toxics	 2.2
Aquatic Plants - Native	Nuisance Native Species	 1.6
Escherichia Coli (E. Coli)	Pathogens	 .1

Site-specific Targeted Monitoring Results

Probable Sources Rhode Island Rivers and Streams 2012

[Description of this table](#)

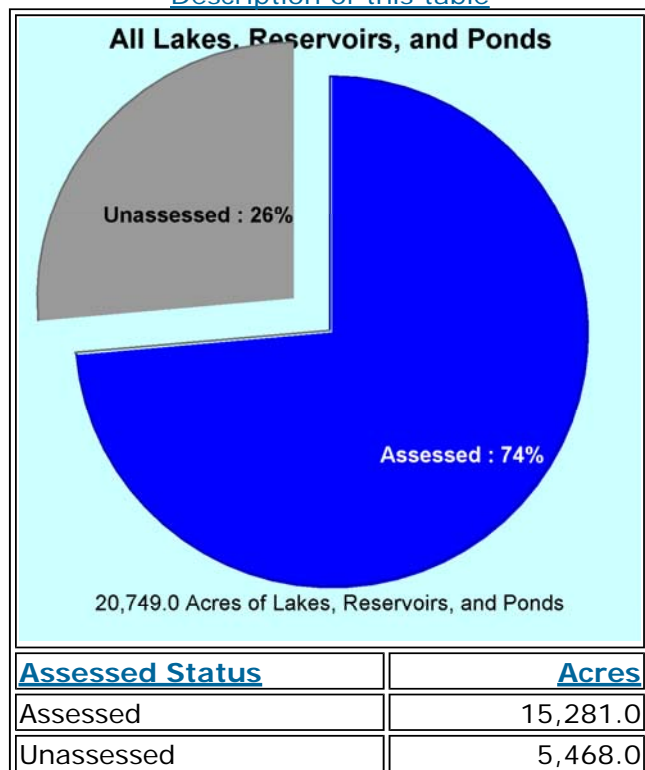
Probable Source	Probable Source Group	Miles Threatened or Impaired
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	 347.8
Wildlife Other Than Waterfowl	Natural/Wildlife	 337.3
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	 303.7

Wastes From Pets	Urban-Related Runoff/Stormwater	 290.0
Source Unknown	Unknown	 244.4
Agriculture	Agriculture	 203.6
Introduction Of Non-Native Organisms (Accidental Or Intentional)	Other	 115.4
Waterfowl	Natural/Wildlife	 34.7
Municipal Point Source Discharges	Municipal Discharges/Sewage	 25.7
Natural Sources	Natural/Wildlife	 18.3
Cercla Npl (Superfund) Sites	Legacy/Historical Pollutants	 17.4
Impervious Surface/Parking Lot Runoff	Urban-Related Runoff/Stormwater	 14.4
Upstream/Downstream Source	Other	 12.0
Atmospheric Deposition - Toxics	Atmospheric Deposition	 11.0
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	 10.4
Contaminated Sediments	Legacy/Historical Pollutants	 8.7
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	 8.7
Contaminated Groundwater	Groundwater Loadings/Withdrawals	 8.2
Landfills	Land Application/Waste Sites/Tanks	 8.2
Industrial Point Source Discharge	Industrial	 7.3
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	 5.2
Internal Nutrient Recycling	Natural/Wildlife	 4.6
Manure Runoff	Agriculture	 4.4

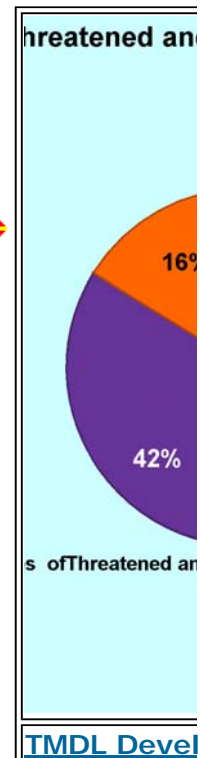
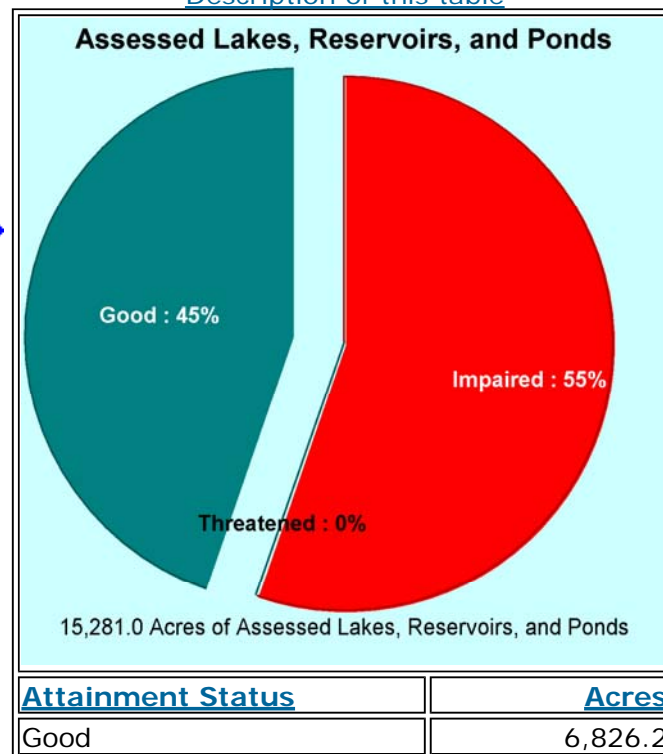
Combined Sewer Overflows	Municipal Discharges/Sewage	3.6
Sediment Resuspension (Clean Sediment)	Hydromodification	3.0
Aquaculture (Permitted)	Aquaculture	3.0
Animal Feeding Operations (Nps)	Agriculture	2.7
Unrestricted Cattle Access	Agriculture	1.6
Illegal Dumps Or Other Inappropriate Waste Disposal	Spills/Dumping	1.7

Site-specific Targeted Monitoring Results Rhode Island Lakes, Reservoirs, and Ponds 2012

[Description of this table](#)



[Description of this table](#)



Total Acres	20,749.0
--------------------	-----------------

Threatened	.0
Impaired	8,454.8
Total Acres Assessed	15,281.0

All TMDLs co
TMDL alterna
Non-pollutan
TMDL neede
Total Threa









Site-specific Targeted Monitoring Results

Individual Designated Use Support

Rhode Island Lakes, Reservoirs, and Ponds 2012

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)




Designated Use	Acres Assessed	Percent Good	Percent Threatened	Percent Impaired	 % Good
					 % Threatened
					 % Impaired
Fish And Wildlife Habitat	14,788.7	53.7	.0	46.3	
Fish Consumption	3,123.8	23.4	.0	76.6	
Primary Contact Recreation	14,167.2	97.7	.0	2.3	
Public Drinking Water Supply	4,322.5	98.7	.0	1.3	
Secondary Contact Recreation	14,167.2	97.7	.0	2.3	

Site-specific Targeted Monitoring Results

Causes of Impairment

Rhode Island Lakes, Reservoirs, and Ponds 2012

[Description of this table](#)

Cause of Impairment	Cause of Impairment Group	Acres Threatened or Impaired
Non-Native Aquatic Plants	Nuisance Exotic Species	 4,783.8
Mercury in Fish Tissue	Mercury	 2,315.0
Phosphorus, Total	Nutrients	 2,251.3




















Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	1,529.7
Excess Algal Growth	Algal Growth	1,079.5
Other Flow Regime Alterations	Flow Alteration(s)	497.1
Lead	Metals (other than Mercury)	477.3
Fecal Coliform	Pathogens	327.4
Eurasian Water Milfoil, Myriophyllum Spicatum	Nuisance Exotic Species	301.8
Copper	Metals (other than Mercury)	282.4
Non-Native Fish/Shellfish/Zooplankton	Nuisance Exotic Species	280.9
Cadmium	Metals (other than Mercury)	245.0
Aluminum	Metals (other than Mercury)	245.0
Turbidity	Turbidity	163.9
PCB(s) in Fish Tissue	Polychlorinated Biphenyls (PCBs)	76.7
Taste and Odor	Taste, Color and Odor	42.2
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	40.7
Aquatic Macroinvertebrate Bioassessments	Cause Unknown - Impaired Biota	38.0
Total Suspended Solids (TSS)	Turbidity	26.3
Chloride	Salinity/Total Dissolved Solids/Chlorides/Sulfates	26.3
Chlorophyll-A	Algal Growth	12.7

Site-specific Targeted Monitoring Results

Probable Sources Rhode Island Lakes, Reservoirs, and Ponds 2012

[Description of this table](#)

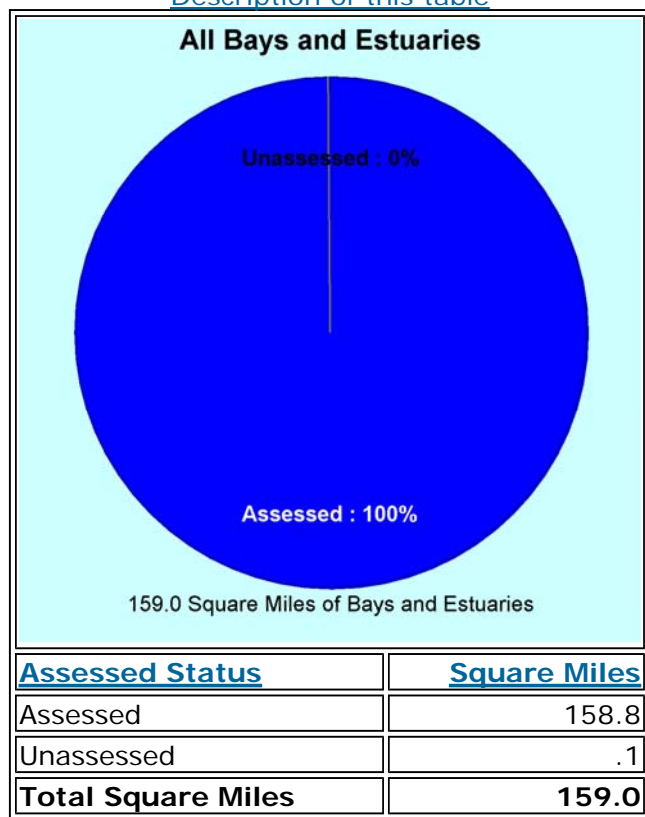
Probable Source	Probable Source Group	Acres Threatened or Impaired
---------------------------------	---------------------------------------	--

Introduction Of Non-Native Organisms (Accidental Or Intentional)	Other	 4,783.8
Atmospheric Deposition - Toxics	Atmospheric Deposition	 2,315.0
Source Unknown	Unknown	 1,692.6
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	 1,590.0
Internal Nutrient Recycling	Natural/Wildlife	 1,285.5
Waterfowl	Natural/Wildlife	 981.0
Agriculture	Agriculture	 522.4
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	 497.1
Flow Alterations From Water Diversions	Hydromodification	 497.1
Wildlife Other Than Waterfowl	Natural/Wildlife	 376.3
Upstream/Downstream Source	Other	 361.5
Post-Development Erosion And Sedimentation	Hydromodification	 311.2
Wastes From Pets	Urban-Related Runoff/Stormwater	 232.9
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	 221.4
Illegal Dumps Or Other Inappropriate Waste Disposal	Spills/Dumping	 143.4
Aquaculture (Permitted)	Aquaculture	 130.3
Sediment Resuspension (Clean Sediment)	Hydromodification	 130.3
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	 113.2
Atmospheric Deposition - Nitrogen	Atmospheric Deposition	 104.9

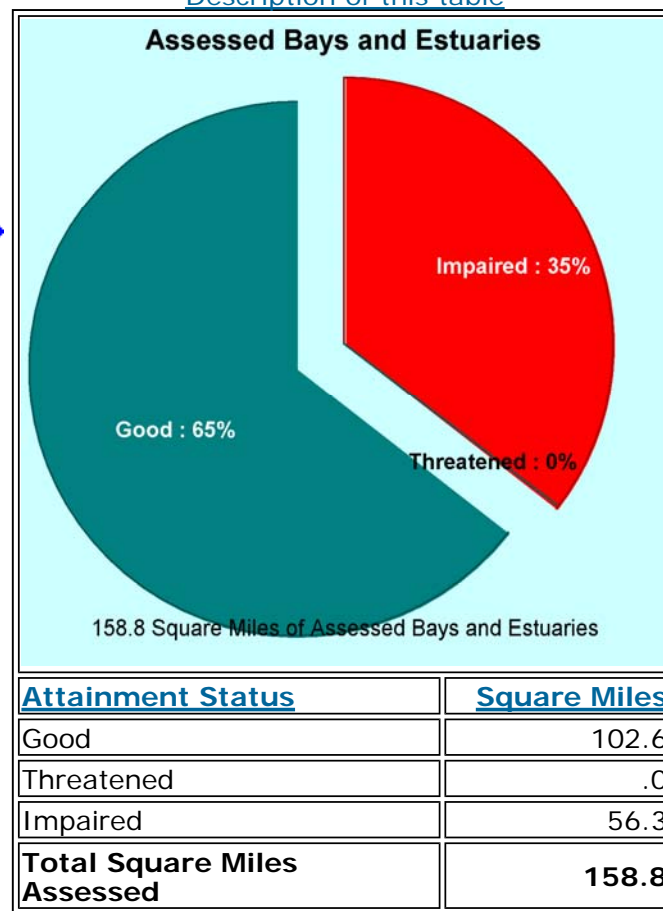
Combined Sewer Overflows	Municipal Discharges/Sewage	38.0
Municipal Point Source Discharges	Municipal Discharges/Sewage	38.0

Site-specific Targeted Monitoring Results Rhode Island Bays and Estuaries 2012

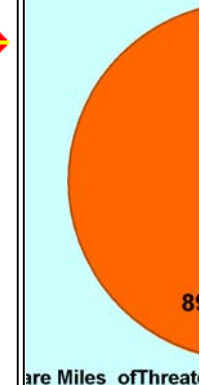
[Description of this table](#)



[Description of this table](#)



Threatened












[TMDL Development](#)
[All TMDLs completed](#)
[TMDL alternative](#)
[Non-pollutant](#)
[TMDL needed](#)
Total Threatened
Impaired

Site-specific Targeted Monitoring Results

Individual Designated Use Support Rhode Island Bays and Estuaries 2012

* Waters assessed for more than one designated use are included in multiple designated use groups below.






[Description of this table](#)





<u>Designated Use</u>	<u>Square Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened
					 % Impaired
Fish And Wildlife Habitat	109.3	54.1	.0	45.9	
Fish Consumption	158.8	100.0	.0	.0	
Primary Contact Recreation	153.3	89.8	.0	10.2	
Secondary Contact Recreation	153.3	89.8	.0	10.2	
Shellfish Consumption	131.7	75.9	.0	24.1	
Shellfish Controlled Relay And Depuration	16.5	95.4	.0	4.6	

Site-specific Targeted Monitoring Results

Causes of Impairment Rhode Island Bays and Estuaries 2012

[Description of this table](#)













<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Square Miles Threatened or Impaired</u>
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 48.6
Fecal Coliform	Pathogens	 46.4
Nitrogen, Total	Nutrients	 39.5
Fish Bioassessments	Cause Unknown - Impaired Biota	 9.8
Temperature, Water	Temperature	 9.8

Sediment Bioassays for Estuarine and Marine Water	Total Toxics	 1.0
Non-Native Aquatic Plants	Nuisance Exotic Species	 .6
Enterococcus Bacteria	Pathogens	 .0
Phosphorus, Total	Nutrients	 .0

Site-specific Targeted Monitoring Results

Probable Sources Rhode Island Bays and Estuaries 2012

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Square Miles Threatened or Impaired</u>
Source Unknown	Unknown	 44.9
Combined Sewer Overflows	Municipal Discharges/Sewage	 34.1
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	 18.0
Industrial Thermal Discharges	Industrial	 9.8
Cooling Water Intake Structures (Impingement Or Entrainment)	Industrial	 9.8
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	 7.3
Waterfowl	Natural/Wildlife	 5.5
Wildlife Other Than Waterfowl	Natural/Wildlife	 5.4
Wastes From Pets	Urban-Related Runoff/Stormwater	 2.7
Upstream Source	Other	 2.1
Upstream/Downstream Source	Other	 1.7
Contaminated Sediments	Legacy/Historical Pollutants	 1.0

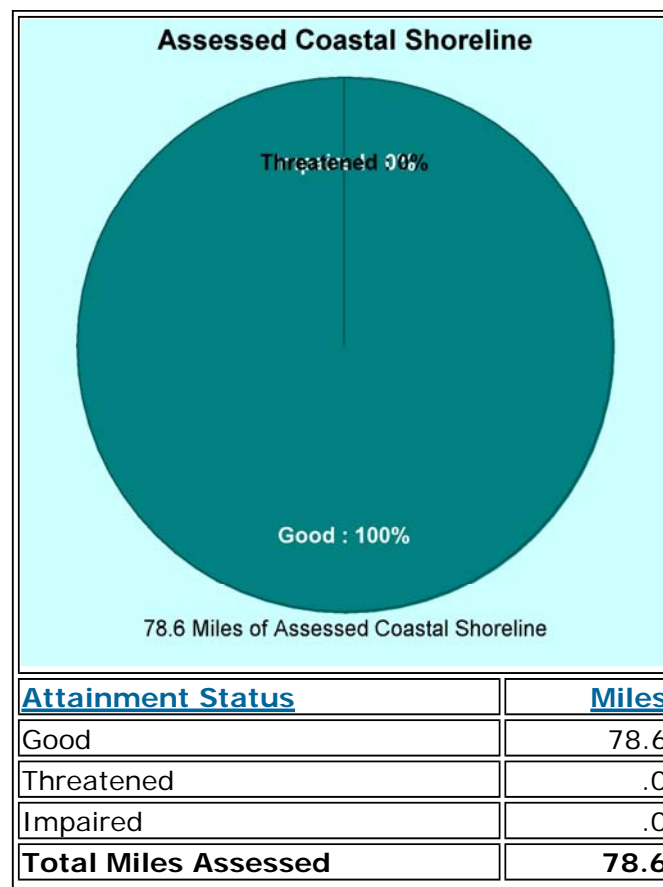
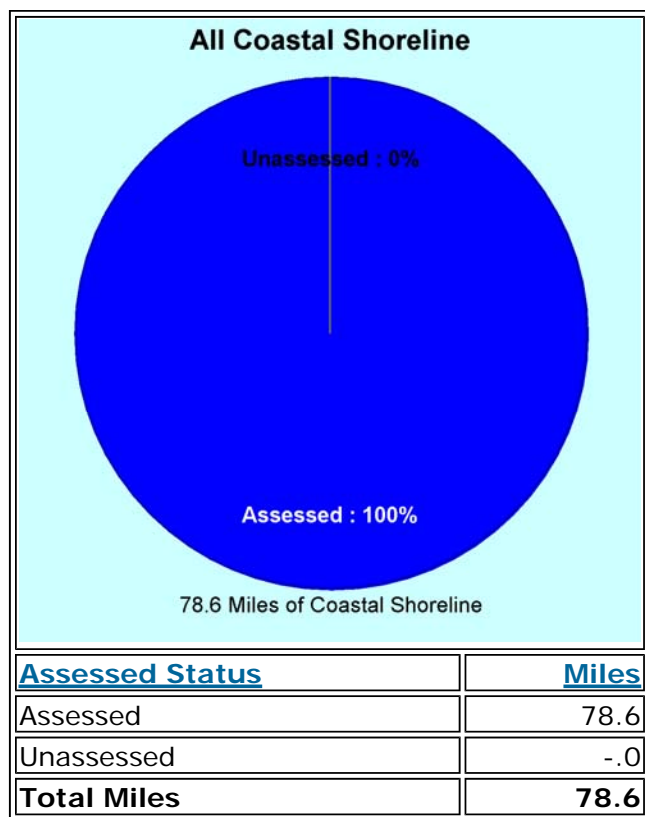
Municipal Point Source Discharges	Municipal Discharges/Sewage	1.0
Rcra Hazardous Waste Sites	Industrial	1.0
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	.9
Impervious Surface/Parking Lot Runoff	Urban-Related Runoff/Stormwater	.9
Agriculture	Agriculture	.7
Introduction Of Non-Native Organisms (Accidental Or Intentional)	Other	.6
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	.4
Landfills	Land Application/Waste Sites/Tanks	.1

Site-specific Targeted Monitoring Results Rhode Island Coastal Shoreline 2012

[Description of this table](#)

[Description of this table](#)







Site-specific Targeted Monitoring Results






Individual Designated Use Support

Rhode Island Coastal Shoreline 2012

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)

<u>Designated Use</u>	<u>Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened

					 % Impaired
Fish Consumption	78.6	100.0	.0	.0	
Primary Contact Recreation	78.6	100.0	.0	.0	
Secondary Contact Recreation	78.6	100.0	.0	.0	
Shellfish Consumption	78.6	100.0	.0	.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Rhode Island Coastal Shoreline 2012

No causes of impairment reported.

Site-specific Targeted Monitoring Results

Probable Sources Rhode Island Coastal Shoreline 2012

No probable sources of impairments reported.

Rhode Island Causes of Impairment for Reporting Year 2012

[Description of this table](#)

NOTE: Click on the underlined Cause of Impairment Group to see a list of specific state causes of impairment making up the Cause of Impairment Group. See also [Pollution categories summary document \(PDF\)](#) (20 pp, 557K, [About PDF](#)) for brief, non-technical descriptions of general cause categories.

Cause of Impairment Group	Size of Assessed Waters with Listed Causes of Impairment			
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)	Coastal Shoreline (Miles)
Algal Growth		1,079.5		
Cause Unknown - Impaired Biota	126.5	78.7	9.8	

<u>Dioxins</u>	<u>8.7</u>			
<u>Flow Alteration(s)</u>		<u>497.1</u>		
<u>Mercury</u>	<u>48.3</u>	<u>2,315.0</u>		
<u>Metals (other than Mercury)</u>	<u>198.1</u>	<u>764.4</u>		
<u>Nuisance Exotic Species</u>	<u>115.4</u>	<u>4,783.8</u>	<u>.6</u>	
<u>Nuisance Native Species</u>	<u>1.6</u>			
<u>Nutrients</u>	<u>38.9</u>	<u>2,251.3</u>	<u>39.5</u>	
<u>Organic Enrichment/Oxygen Depletion</u>	<u>37.1</u>	<u>1,529.7</u>	<u>48.6</u>	
<u>Pathogens</u>	<u>469.4</u>	<u>327.4</u>	<u>46.4</u>	
<u>Polychlorinated Biphenyls (PCBs)</u>	<u>28.4</u>	<u>76.7</u>		
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	<u>17.4</u>	<u>26.3</u>		
<u>Taste, Color and Odor</u>		<u>42.2</u>		
<u>Temperature</u>			<u>9.8</u>	
<u>Total Toxics</u>	<u>6.9</u>		<u>1.0</u>	
<u>Turbidity</u>	<u>4.2</u>	<u>190.2</u>		

Rhode Island Probable Sources Contributing to Impairments for Reporting Year 2012

[Description of this table](#)

NOTE: Click on the underlined Probable Source Group to see a list of specific state Probable Sources making up the Probable Source Group.				
<u>Probable Source Group</u>	Size of Assessed Waters with Probable Sources of Impairments			
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>	<u>Coastal Shoreline (Miles)</u>
<u>Agriculture</u>	<u>208.0</u>	<u>522.4</u>	<u>.7</u>	
<u>Aquaculture</u>	<u>3.0</u>	<u>130.3</u>		
<u>Atmospheric Deposition</u>	<u>11.0</u>	<u>2,419.9</u>		

<u>Groundwater Loadings/Withdrawals</u>	<u>8.2</u>			
<u>Hydromodification</u>	<u>3.0</u>	<u>825.4</u>		
<u>Industrial</u>	<u>7.3</u>		<u>10.8</u>	
<u>Land Application/Waste Sites/Tanks</u>	<u>8.2</u>		<u>.1</u>	
<u>Legacy/Historical Pollutants</u>	<u>17.4</u>		<u>1.0</u>	
<u>Municipal Discharges/Sewage</u>	<u>327.0</u>	<u>372.6</u>	<u>41.8</u>	
<u>Natural/Wildlife</u>	<u>350.6</u>	<u>1,489.2</u>	<u>5.5</u>	
<u>Other</u>	<u>123.4</u>	<u>5,117.1</u>	<u>4.4</u>	
<u>Spills/Dumping</u>	<u>.7</u>	<u>143.4</u>		
<u>Unknown</u>	<u>244.4</u>	<u>1,692.6</u>	<u>44.9</u>	
<u>Urban-Related Runoff/Stormwater</u>	<u>349.9</u>	<u>1,590.0</u>	<u>19.0</u>	

Rhode Island TMDL Alternatives by Cause of Impairment 2012

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDL Alternatives by Cause of Impairment " value to see a listing of those Causes of Impairment.		
<u>Cause of Impairment</u>	<u>Number of TMDL Alternatives</u>	<u>Bays and Estuaries (Square Miles)</u>
Fish Bioassessments	<u>4</u>	10
Temperature, Water	<u>4</u>	10

Total: 8 TMDL Alternatives

Rhode Island Previously Impaired Waters Now Attaining All Assessed Uses

[Description of this table](#)

NOTE: Click on the underlined "Number of Waters Attaining" value for a detailed list of those waters now attaining all uses.

Cycle Attaining	Number of Waters Attaining	Number of Causes of Impairment Addressed
2008	4	4
2011	1	1
2012	1	1

Rhode Island Causes of Impairment for 303(d) Listed Waters

[Description of this table](#)

NOTE: Click on a cause of impairment (e.g. pathogens) to see the specific state-reported causes that are grouped to make up this category. Click on the "Number of Causes of Impairment Reported" to see a list of waters with that cause of impairment.	
Cause of Impairment Group Name	Number of Causes of Impairment Reported
Metals (other than Mercury)	76
Nutrients	43
Organic Enrichment/Oxygen Depletion	39
Pathogens	36
Cause Unknown - Impaired Biota	30
Mercury	10
Total Toxics	7
Polychlorinated Biphenyls (PCBs)	7
Turbidity	3
Salinity/Total Dissolved Solids/Chlorides/Sulfates	2
Dioxins	2

Total: 255 Causes of Impairment

Rhode Island Cumulative TMDLs by Pollutant

This chart includes TMDLs since October 1, 1995.

[Description of this table](#)

NOTE: Click on the underlined "Pollutant" value to see associated listed waters for which a TMDL was developed. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant.		
<u>Pollutant</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
<u>Enterococcus Bacteria</u>	<u>55</u>	55
<u>Fecal Coliform</u>	<u>55</u>	55
<u>Pathogens</u>	<u>20</u>	20
<u>Mercury</u>	<u>19</u>	19
<u>Phosphorus, Total</u>	<u>17</u>	37
<u>Zinc</u>	<u>4</u>	4
<u>Copper</u>	<u>2</u>	2
<u>Lead</u>	<u>2</u>	2
<u>Escherichia Coli (E. Coli)</u>	<u>1</u>	1
<u>Nutrients</u>	<u>1</u>	4

Total: 176 TMDLs; 199 Causes of Impairment Addressed

Rhode Island Cumulative Number of TMDLs

EPA Fiscal Year starts October 1 and ends September 30.

Description of this table

NOTE: Click on the underlined "Number of TMDLs Completed" value for a detailed list of the TMDLs for the fiscal year.		
<u>Fiscal Year</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
1999	<u>1</u>	3
2001	<u>3</u>	3

2002	7	7
2003	5	5
2004	3	6
2005	2	2
2006	25	28
2007	18	30
2008	28	31
2009	12	12
2010	7	7
2011	65	65

Last updated on Thursday, December 20, 2012

Total: 176 TMDLs; 199 Causes of Impairment Addressed

TMDL Document Search

[Full Text Search of TMDL Documents](#)



Watershed Assessment, Tracking & Environmental Results

You are here: [EPA Home](#) [Water](#) [WATERS](#) [Water Quality Assessment and TMDL Information](#) New Hampshire Water Quality Assessment Report

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On This Page

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[Rivers and Streams](#)

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[Causes of Impairment](#)

[Probable Sources Contributing to Impairments](#)

[TMDL Alternatives by Cause of Impairment](#)

[Previously Impaired Waters Now Attaining All Assessed Uses](#)

[Causes of Impairment for 303\(d\) Listed Waters](#)

[Cumulative TMDLs by Pollutant](#)

[Cumulative Number of TMDLs](#)

[303\(d\) Listed Waters for 2010](#)

New Hampshire Water Quality Assessment Report

Assessed Waters of New Hampshire by Watershed

Select a watershed from the list:



or click on the map to choose a watershed:



Search for a waterbody within New Hampshire

Enter Waterbody Name:



Display impaired waters and TMDL information only

Features

[About This Database \(Integrated Report\)](#)

[Assessing Water Quality \(Questions and Answers\)](#)

[Integrated Reporting Guidance](#)

[Previous National Water Quality Reports](#)

[EnviroMapper for Water](#)

[AskWATERS](#)

[EPA WATERS Homepage](#)

[Exchange Network](#)

[Assessment Database](#)

[Statewide Statistical Surveys](#)

[How's My Waterway Local Search tool](#)

[Pollution Categories Summary Document](#)

**Data are also available
for these cycles:**[2002](#) [2004](#) [2006](#) [2008](#)[Waterbody Changes from
Prior Cycle](#)

NOTE: In New Hampshire, all surface waters are listed as impaired for fish/shellfish consumption due to a statewide fish consumption advisory that is in effect because of elevated mercury levels in fish tissue. Excluding the statewide mercury fish/shellfish consumption advisory, the number of impaired waters is significantly less. To see assessment summaries that exclude the statewide mercury fish consumption advisory, see New Hampshire's Water Quality Assessment website.

For More Information:

[New Hampshire Assessment
Report](#) [EXIT Disclaimer](#)
[State Water Quality
Program](#) [EXIT Disclaimer](#)

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information](#)[Download GIS Information](#)

Site-specific Targeted Monitoring Summary Results

New Hampshire (2010)

[Description of this table](#)

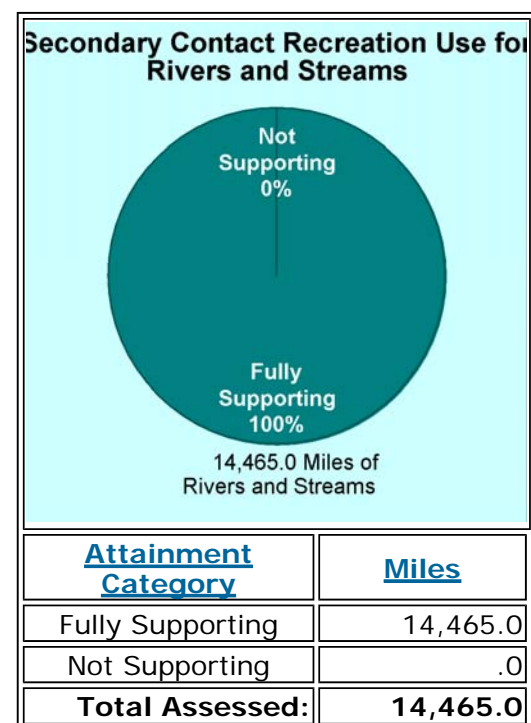
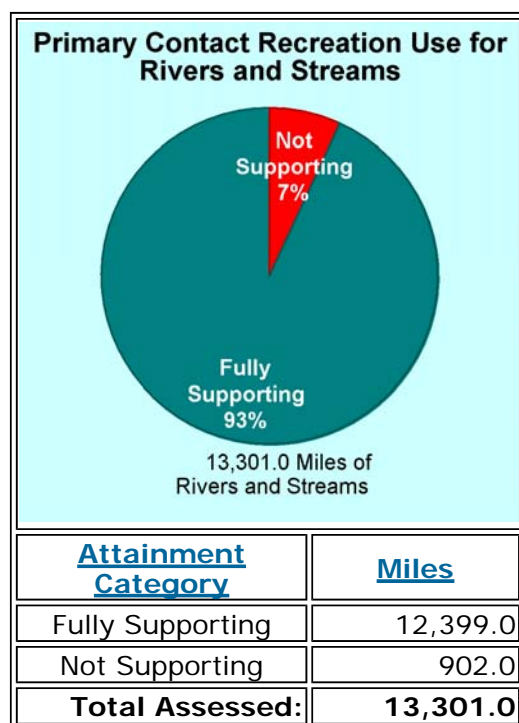
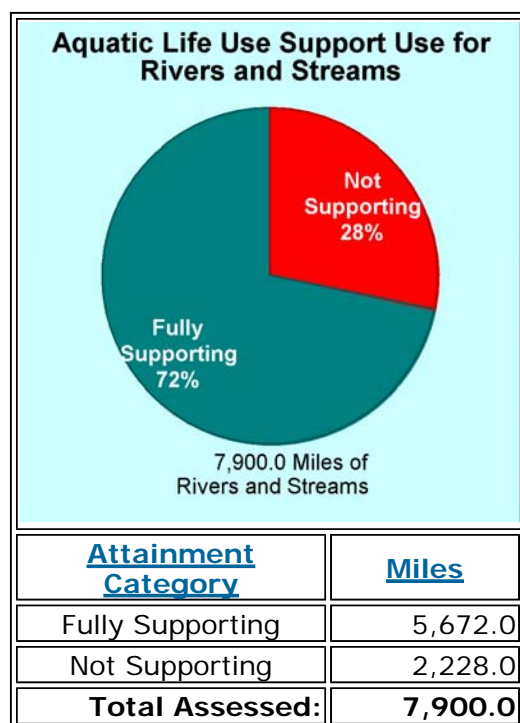
	Size of Water		
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Good Waters			
Previously impaired waters now attaining all uses			
Threatened Waters			
TMDL completed			
TMDL alternative			
Non-pollutant impairment			
TMDL needed			

<u>Impaired Waters</u>	16,896.3	185,272.5	99.3
<u>TMDL completed</u>	12,759.3	103,023.5	
<u>TMDL alternative</u>			
<u>Non-pollutant impairment</u>			
<u>TMDL needed</u>	4,137.0	82,249.0	99.3
<u>New TMDLs completed</u>	309.1	3,747.7	.0
<u>Remaining TMDLs needed</u>	3,827.9	78,501.3	99.3
<u>Total Assessed Waters</u>	16,896.3	185,272.5	99.3
<u>Total Waters</u>	16,896.3	185,272.5	99.3
<u>Percent of Waters Assessed</u>	100.0	100.0	100.0

Summary of Water Quality Assessments for Each Waterbody Type for Reporting Year 2010

Statewide Statistical Survey Summary Results New Hampshire Rivers and Streams 2010

[Description of this table](#)



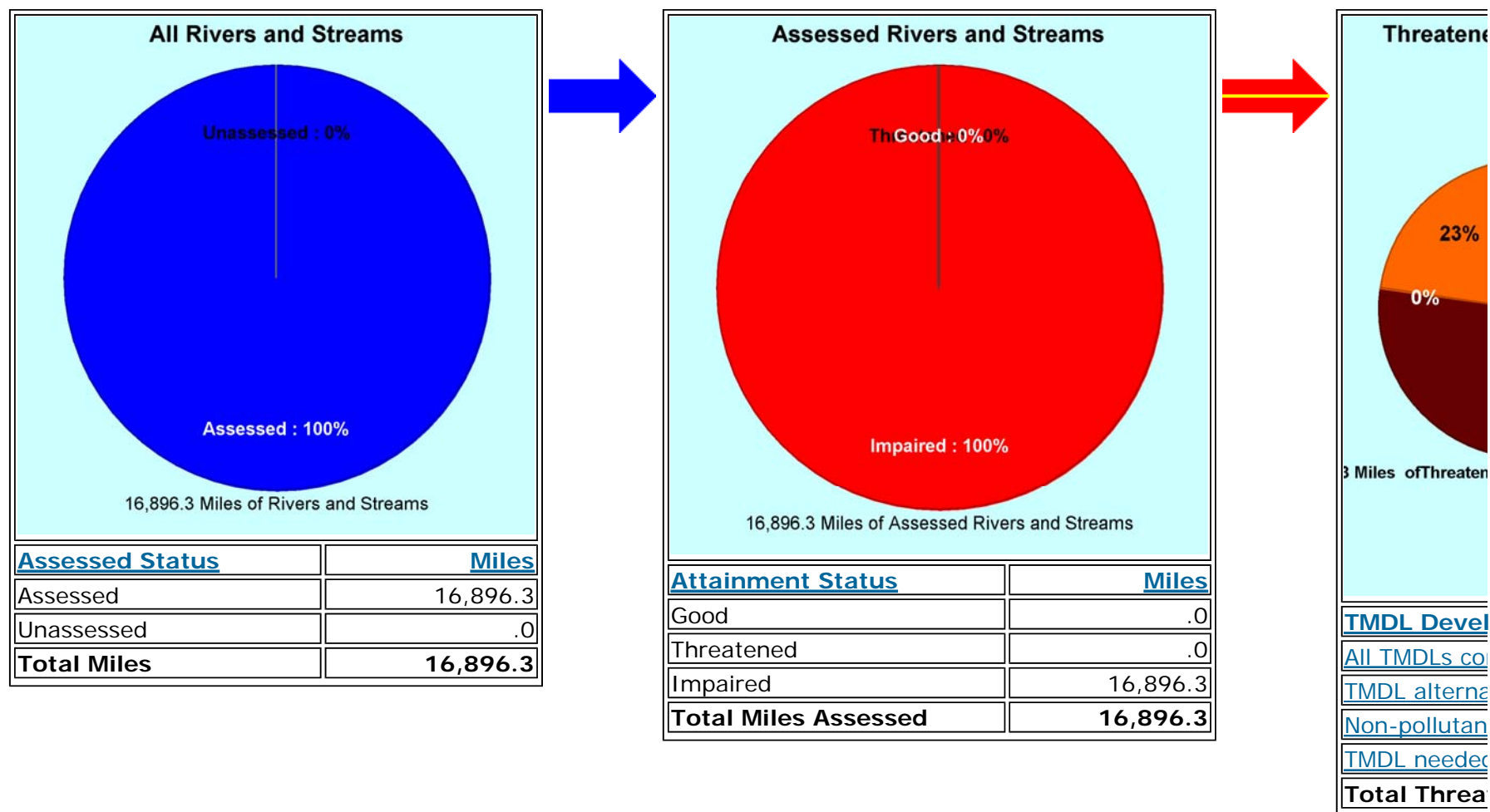
Statewide Statistical Survey Stressors New Hampshire Rivers and Streams 2010

No stressor data reported.

Site-specific Targeted Monitoring Results New Hampshire Rivers and Streams 2010

[Description of this table](#)

[Description of this table](#)





Site-specific Targeted Monitoring Results

Individual Designated Use Support New Hampshire Rivers and Streams 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)

Designated Use	Miles Assessed	Percent Good	Percent Threatened	Percent Impaired	 % Good
					 % Threatened

					% Impaired
Aquatic Life	4,200.9	5.2	.0	94.8	
Drinking Water Supply	16,896.3	100.0	.0	.0	
Fish Consumption	16,896.3	.0	.0	100.0	
Primary Contact Recreation	2,572.6	50.0	.0	50.0	
Secondary Contact Recreation	2,434.9	92.1	.0	7.9	

Site-specific Targeted Monitoring Results

Causes of Impairment New Hampshire Rivers and Streams 2010

[Description of this table](#)



Cause of Impairment	Cause of Impairment Group	Miles Threatened or Impaired
Mercury	Mercury	16,896.3
pH	pH/Acidity/Caustic Conditions	3,419.1
Escherichia Coli (E. Coli)	Pathogens	1,263.7
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	600.5
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	449.9
Aluminum	Metals (other than Mercury)	396.4
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	376.7
Fish Bioassessments	Cause Unknown - Impaired Biota	179.6
Lead	Metals (other than Mercury)	121.5
Chloride	Salinity/Total Dissolved Solids/Chlorides/Sulfates	99.6
Aquatic Algae	Algal Growth	98.6
Habitat Assessment (Streams)	Cause Unknown - Impaired Biota	93.2
Iron	Metals (other than Mercury)	63.8

Other Flow Regime Alterations	Flow Alteration(s)	61.8
Non-Native Aquatic Plants	Nuisance Exotic Species	38.2
Copper	Metals (other than Mercury)	35.1
Physical Substrate Habitat Alterations	Habitat Alterations	33.7
Chlorophyll-A	Algal Growth	32.3
Phosphorus, Total	Nutrients	23.8
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	17.4
Biochemical Oxygen Demand (BOD)	Organic Enrichment/Oxygen Depletion	10.9
Foam/Flocs/Scum/Oil Slicks	Other Cause	9.0
Zinc	Metals (other than Mercury)	8.7
Ammonia, Un-ionized	Ammonia	7.1
Taste and Odor	Taste, Color and Odor	6.6
Low Flow Alterations	Flow Alteration(s)	5.6
Ammonia, Total	Ammonia	5.1
Creosote	Toxic Organics	4.1
Manganese	Metals (other than Mercury)	3.2
Total Suspended Solids (TSS)	Turbidity	2.7
Arsenic	Metals (other than Mercury)	1.3
Chromium, Total	Metals (other than Mercury)	1.1
Sedimentation/Siltation	Sediment	.6
DDD	Pesticides	.5
Turbidity	Turbidity	.5
Benzo[a]pyrene (PAHs)	Toxic Organics	.2
Cadmium	Metals (other than Mercury)	.1

Site-specific Targeted Monitoring Results

Probable Sources New Hampshire Rivers and Streams 2010

[Description of this table](#)

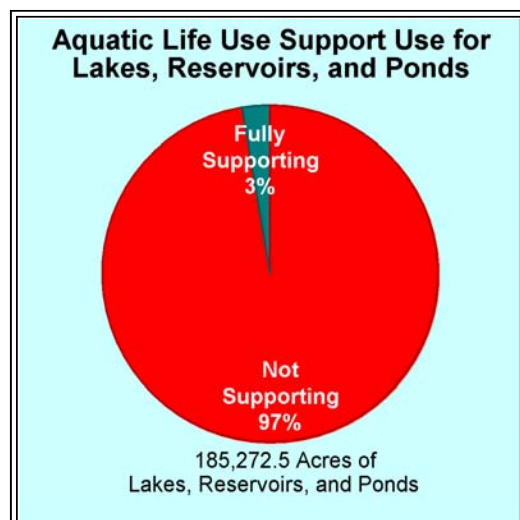
Probable Source	Probable Source Group	Miles Threatened or Impaired
Atmospheric Deposition - Toxics	Atmospheric Deposition	 16,896.3
Source Unknown	Unknown	 4,168.5
Municipal (Urbanized High Density Area)	Urban-Related Runoff/Stormwater	73.7
Municipal Point Source Discharges	Municipal Discharges/Sewage	70.4
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	58.1
Commercial Districts (Shopping/Office Complexes)	Urban-Related Runoff/Stormwater	57.2
Combined Sewer Overflows	Municipal Discharges/Sewage	56.9
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	49.1
Streambank Modifications/Destabilization	Hydromodification	44.3
Industrial Point Source Discharge	Industrial	35.2
Landfills	Land Application/Waste Sites/Tanks	29.6
Impervious Surface/Parking Lot Runoff	Urban-Related Runoff/Stormwater	29.1
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	28.6
Freshettes Or Major Flooding	Natural/Wildlife	23.6
Contaminated Groundwater	Groundwater Loadings/Withdrawals	15.3
Channelization	Hydromodification	12.1

Inappropriate Waste Disposal	Spills/Dumping	11.2
Livestock (Grazing Or Feeding Operations)	Agriculture	8.7
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	8.5
Manure Runoff	Agriculture	7.5
Industrial/Commercial Site Stormwater Discharge (Permitted)	Urban-Related Runoff/Stormwater	7.2
Airports	Industrial	7.2
Acid Mine Drainage	Resource Extraction	6.5
Flow Alterations From Water Diversions	Hydromodification	5.6
Rcra Hazardous Waste Sites	Industrial	4.1
Sand/Gravel/Rock Mining Or Quarries	Resource Extraction	3.9
Unpermitted Discharge (Industrial/Commercial Wastes)	Spills/Dumping	2.9
Unpermitted Discharge (Domestic Wastes)	Municipal Discharges/Sewage	2.5
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	2.1
Habitat Modification - Other Than Hydromodification	Habitat Alterations (Not Directly Related To Hydromodification)	1.3
Animal Feeding Operations (Nps)	Agriculture	.8
Highways, Roads, Bridges, Infrastructure (New Construction)	Construction	.5
Petroleum/Natural Gas Activities	Resource Extraction	.2
Pollutants From Public Bathing Areas	Recreation And Tourism (Non-Boating)	.0

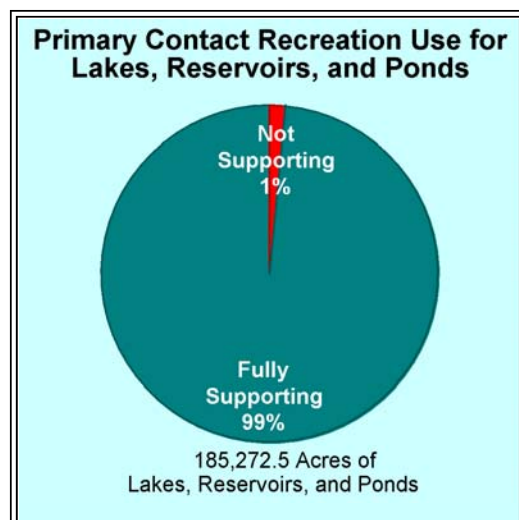
Statewide Statistical Survey Summary Results

New Hampshire Lakes, Reservoirs, and Ponds 2010

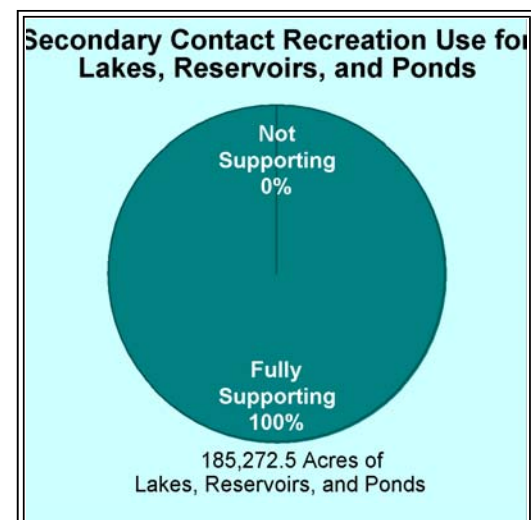
[Description of this table](#)



Attainment Category	Acres
Fully Supporting	4,969.5
Not Supporting	180,303.0
Total Assessed:	185,272.5



Attainment Category	Acres
Fully Supporting	182,635.4
Not Supporting	2,637.0
Total Assessed:	185,272.5



Attainment Category	Acres
Fully Supporting	185,272.5
Not Supporting	.0
Total Assessed:	185,272.5

Statewide Statistical Survey Stressors

New Hampshire Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

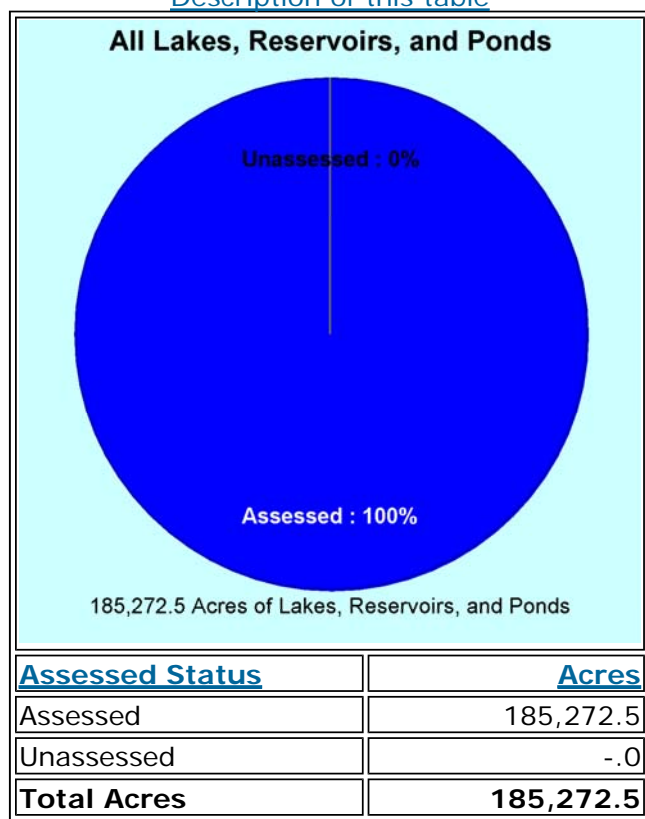
Stressor	Acres Fully Supporting	Acres Partially or Not Supporting	Total Acres
pH	9,996.4	175,276.0	185,272.5
Non-Native Aquatic Plants	66,624.1	118,648.3	185,272.5

Chlorophyll-A - Aquatic Life Use Support	145,109.4	40,163.0	185,272.5
Phosphorus, Total	138,692.1	40,163.0	178,855.1
Dissolved Oxygen Saturation	162,367.5	9,525.4	171,892.9
Dissolved Oxygen	176,548.5	7,809.1	184,357.7
Cyanobacteria Hepatotoxic Microcystins	183,952.1	1,320.3	185,272.5
Chlorophyll-A - Primary Contact Recreation	183,955.7	1,316.7	185,272.5
E. Coli - Primary Contact Recreation	185,272.5	.0	185,272.5
E. Coli - Secondary Contact Recreation	185,272.5	.0	185,272.5

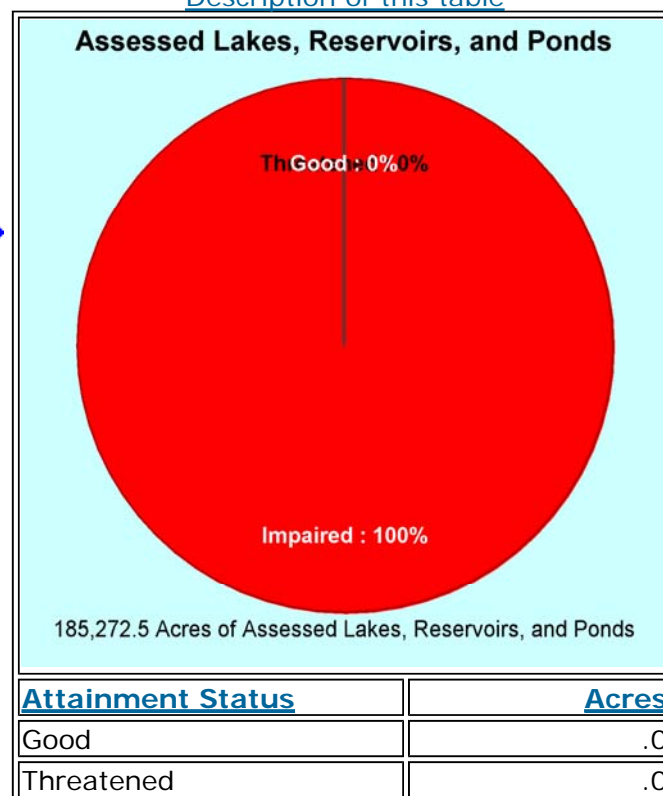
Site-specific Targeted Monitoring Results

New Hampshire Lakes, Reservoirs, and Ponds 2010

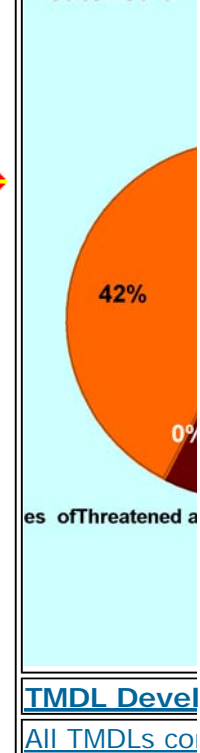
[Description of this table](#)



[Description of this table](#)



Threatened and



Impaired	185,272.5
Total Acres Assessed	185,272.5

TMDL alternative
Non-pollutant
TMDL needed
Total Threatened or Impaired

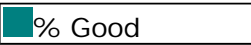







Site-specific Targeted Monitoring Results

Individual Designated Use Support

New Hampshire Lakes, Reservoirs, and Ponds 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)




Designated Use	Acres Assessed	Percent Good	Percent Threatened	Percent Impaired	 % Good
					 % Threatened
					 % Impaired
Aquatic Life	144,872.8	.0	.0	100.0	
Drinking Water Supply	185,272.5	100.0	.0	.0	
Fish Consumption	185,272.5	.0	.0	100.0	
Primary Contact Recreation	125,023.1	81.4	.0	18.6	
Secondary Contact Recreation	124,294.4	98.6	.0	1.4	

Site-specific Targeted Monitoring Results

Causes of Impairment

New Hampshire Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

Cause of Impairment	Cause of Impairment Group	Acres Threatened or Impaired
Mercury	Mercury	 185,272.5
pH	pH/Acidity/Caustic Conditions	 138,908.0
Non-Native Aquatic Plants	Nuisance Exotic Species	 70,823.2






Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	31,639.3
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	27,069.4
Cyanobacteria Hepatotoxic Microcystins	Biotoxins	17,257.9
Chlorophyll-A	Algal Growth	13,800.1
Phosphorus, Total	Nutrients	12,542.0
Escherichia Coli (E. Coli)	Pathogens	5,338.4
Turbidity	Turbidity	4,203.9
Aluminum	Metals (other than Mercury)	1,546.1
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	280.2
Sedimentation/Siltation	Sediment	244.1
Chloride	Salinity/Total Dissolved Solids/Chlorides/Sulfates	155.6
Iron	Metals (other than Mercury)	151.3
Other Flow Regime Alterations	Flow Alteration(s)	70.7
Zinc	Metals (other than Mercury)	69.9
Benzo[b]fluoranthene	Toxic Organics	57.9
Benzo[a]pyrene (PAHs)	Toxic Organics	57.9
Benzo[k]fluoranthene	Toxic Organics	57.9
DDE	Pesticides	57.9
Indeno[1,2,3-Cd]Pyrene	Pesticides	57.9
DDD	Pesticides	56.5
Arsenic	Metals (other than Mercury)	47.9
Barium	Radiation	47.9
Nickel	Metals (other than Mercury)	47.9
Lead	Metals (other than Mercury)	46.5
Anthracene	Toxic Organics	46.5

Ammonia, Total	Ammonia	22.0
Biochemical Oxygen Demand (BOD)	Organic Enrichment/Oxygen Depletion	22.0
Heptachlor	Pesticides	10.0
Dieldrin	Pesticides	10.0
Benzo[a]anthracene	Toxic Organics	10.0
Chrysene	Toxic Organics	10.0
Endrin	Pesticides	10.0
Pyrene	Toxic Organics	10.0
2-Methylnaphthalene	Pesticides	10.0
Acenaphthene	Toxic Organics	10.0
Lindane	Pesticides	10.0
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	3.5
Excess Algal Growth	Algal Growth	1.3

Site-specific Targeted Monitoring Results

Probable Sources New Hampshire Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Acres Threatened or Impaired</u>
Atmospheric Deposition - Toxics	Atmospheric Deposition	 185,272.5
Atmospheric Deposition - Acidity	Atmospheric Deposition	 138,908.0
Source Unknown	Unknown	 108,652.5
Naturally Occurring Organic Acids	Natural/Wildlife	 18,027.6
Highways, Roads, Bridges, Infrastructure (New Construction)	Construction	 4,206.3

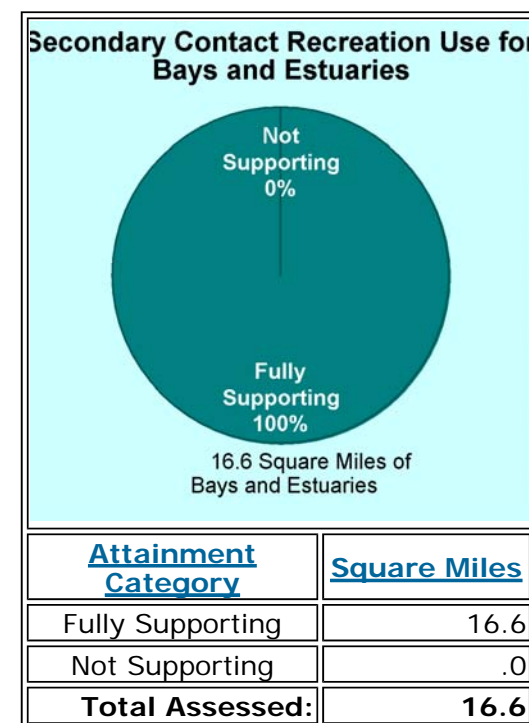
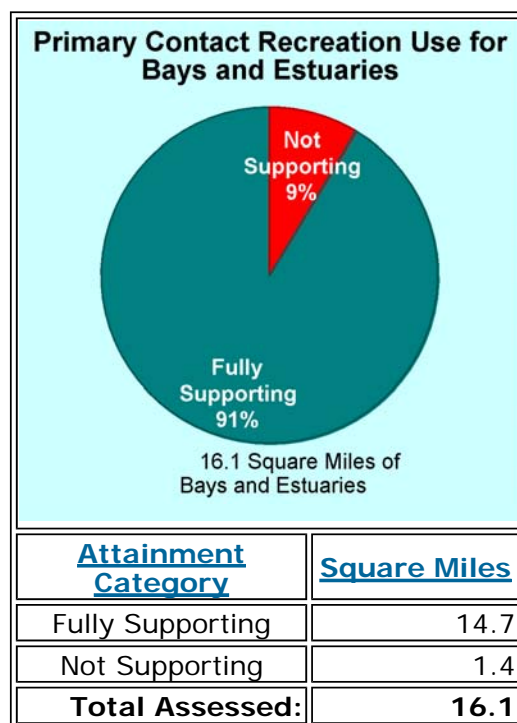
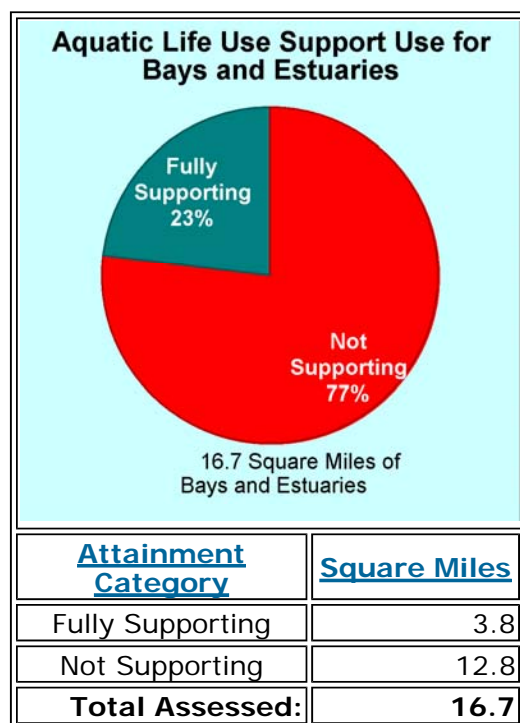
Municipal Point Source Discharges	Municipal Discharges/Sewage	1,020.5
Combined Sewer Overflows	Municipal Discharges/Sewage	597.0
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	568.2
Municipal (Urbanized High Density Area)	Urban-Related Runoff/Stormwater	443.0
Industrial Point Source Discharge	Industrial	311.1
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	279.0
Streambank Modifications/Destabilization	Hydromodification	238.5
Channel Erosion/Incision From Upstream Hydromodifications	Hydromodification	238.5
Waterfowl	Natural/Wildlife	235.9
Unpermitted Discharge (Domestic Wastes)	Municipal Discharges/Sewage	229.2
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	227.9
Package Plant Or Other Permitted Small Flows Discharges	Municipal Discharges/Sewage	191.1
Highway/Road/Bridge Runoff (Non -Construction Related)	Urban-Related Runoff/Stormwater	118.2
Commercial Districts (Shopping/Office Complexes)	Urban-Related Runoff/Stormwater	115.8
Residential Districts	Urban-Related Runoff/Stormwater	73.6
Flow Alterations From Water Diversions	Hydromodification	53.9
Pollutants From Public Bathing Areas	Recreation And Tourism (Non-Boating)	20.7
Animal Feeding Operations (Nps)	Agriculture	16.4

Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	6.8
Freshettes Or Major Flooding	Natural/Wildlife	5.0
Yard Maintenance	Urban-Related Runoff/Stormwater	6

Statewide Statistical Survey Summary Results

New Hampshire Bays and Estuaries 2010

[Description of this table](#)



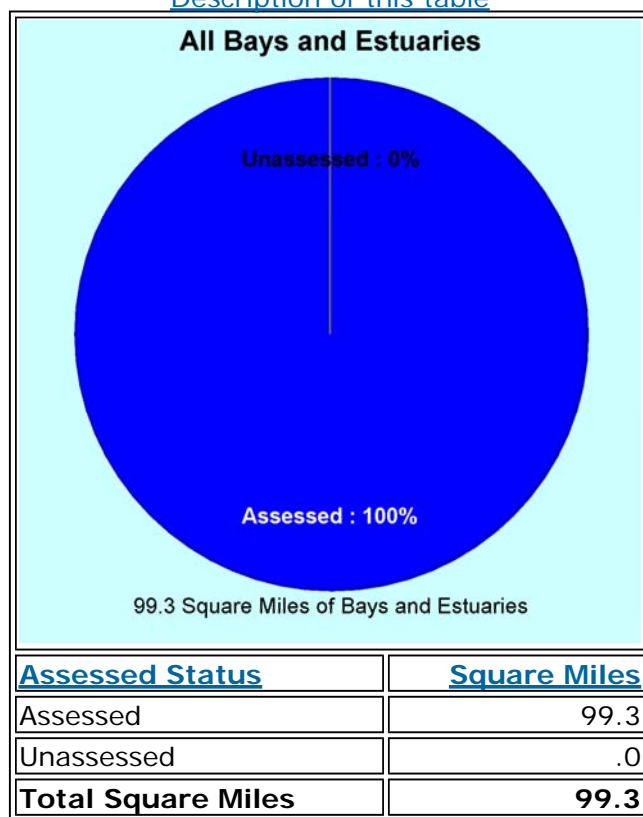
Statewide Statistical Survey Stressors

New Hampshire Bays and Estuaries 2010

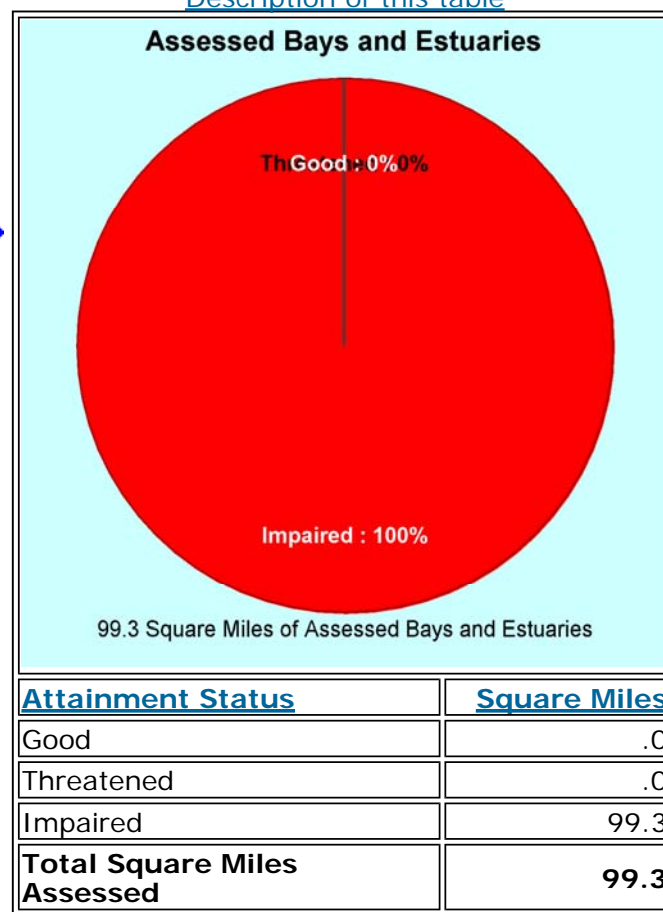
No stressor data reported.

Site-specific Targeted Monitoring Results New Hampshire Bays and Estuaries 2010

[Description of this table](#)



[Description of this table](#)



Threatened


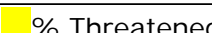
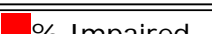








Site-specific Targeted Monitoring Results

Individual Designated Use Support New Hampshire Bays and Estuaries 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.







[Description of this table](#)

<u>Designated Use</u>	<u>Square Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened
					 % Impaired
Aquatic Life	93.1	82.3	.0	17.7	
Drinking Water Supply	99.3	100.0	.0	.0	
Fish Consumption	99.3	.0	.0	100.0	
Primary Contact Recreation	97.7	88.0	.0	12.0	
Secondary Contact Recreation	97.8	95.3	.0	4.7	
Shellfish Consumption	99.3	.0	.0	100.0	

Site-specific Targeted Monitoring Results

Causes of Impairment New Hampshire Bays and Estuaries 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Square Miles Threatened or Impaired</u>
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 99.3
Mercury	Mercury	 99.3
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	 99.3
Estuarine Bioassessments	Cause Unknown - Impaired Biota	 15.2
Nitrogen, Total	Nutrients	 14.2
Light Attenuation Coefficient	Turbidity	 12.9

Enterococcus Bacteria	Pathogens	11.7
Fecal Coliform	Pathogens	11.0
pH	pH/Acidity/Caustic Conditions	8.4
Chlorophyll-A	Algal Growth	1.7
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	1.4
Aluminum	Metals (other than Mercury)	1.4
Trans-Nonachlor	Pesticides	1.4
Fluoranthene	Toxic Organics	1.1
Benzo[a]anthracene	Toxic Organics	1.1
Pyrene	Toxic Organics	1.1
Chrysene	Toxic Organics	1.1
Phenanthrene	Toxic Organics	1.1
Acenaphthylene	Toxic Organics	1.1
Benzo[a]pyrene (PAHs)	Toxic Organics	1.1
Dibenz[a,h]anthracene	Toxic Organics	1.1
DDD	Pesticides	1.1
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	1.0
Anthracene	Toxic Organics	.9
Acenaphthene	Toxic Organics	.9
Fluorene	Toxic Organics	.9
Dieldrin	Pesticides	.9
Cadmium	Metals (other than Mercury)	.8
Copper	Metals (other than Mercury)	.8
Arsenic	Metals (other than Mercury)	.8
Nickel	Metals (other than Mercury)	.8

Lead	Metals (other than Mercury)	.8
Lindane	Pesticides	.6
Zinc	Metals (other than Mercury)	.5
2-Methylnaphthalene	Pesticides	.4
DDE	Pesticides	.4
DDT	Pesticides	.4
Naphthalene	Pesticides	.4
Biphenyl	Toxic Organics	.3
Benzo[g,h,i]perylene	Toxic Organics	.3
Indeno[1,2,3-Cd]Pyrene	Pesticides	.3

Site-specific Targeted Monitoring Results

Probable Sources New Hampshire Bays and Estuaries 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Square Miles Threatened or Impaired</u>
Atmospheric Deposition - Toxics	Atmospheric Deposition	99.3
Source Unknown	Unknown	99.3
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	2.6
Combined Sewer Overflows	Municipal Discharges/Sewage	1.0
Animal Feeding Operations (Nps)	Agriculture	.5
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	.4
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	.4

Unpermitted Discharge (Domestic Wastes)	Municipal Discharges/Sewage	.2
Petroleum/Natural Gas Activities	Resource Extraction	.2
Forced Drainage Pumping	Hydromodification	.1
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	.1
Waterfowl	Natural/Wildlife	.1
Sewage Discharges In Unsewered Areas	Municipal Discharges/Sewage	.0

New Hampshire Causes of Impairment for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Cause of Impairment Group to see a list of specific state causes of impairment making up the Cause of Impairment Group. See also [Pollution categories summary document \(PDF\)](#) (20 pp, 557K, [About PDF](#)) for brief, non-technical descriptions of general cause categories.

Cause of Impairment Group	Size of Assessed Waters with Listed Causes of Impairment		
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Algal Growth	130.9	13,801.4	1.7
Ammonia	12.1	22.0	
Biotoxins		17,257.9	
Cause Unknown - Impaired Biota	547.1	3.5	15.2
Dioxins	17.4	280.2	99.3
Flow Alteration(s)	67.5	70.7	
Habitat Alterations	33.7		
Mercury	16,896.3	185,272.5	99.3
Metals (other than Mercury)	503.8	1,767.3	1.4

<u>Nuisance Exotic Species</u>	<u>38.2</u>	<u>70,823.2</u>	
<u>Nutrients</u>	<u>23.8</u>	<u>12,542.0</u>	<u>14.2</u>
<u>Organic Enrichment/Oxygen Depletion</u>	<u>676.2</u>	<u>39,318.2</u>	<u>1.4</u>
<u>Other Cause</u>	<u>9.0</u>		
<u>Pathogens</u>	<u>1,263.7</u>	<u>5,338.4</u>	<u>14.6</u>
<u>Pesticides</u>	<u>.5</u>	<u>57.9</u>	<u>1.7</u>
<u>pH/Acidity/Caustic Conditions</u>	<u>3,419.1</u>	<u>138,908.0</u>	<u>8.4</u>
<u>Polychlorinated Biphenyls (PCBs)</u>			<u>99.3</u>
<u>Radiation</u>		<u>47.9</u>	
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	<u>99.6</u>	<u>155.6</u>	
<u>Sediment</u>	<u>.6</u>	<u>244.1</u>	
<u>Taste, Color and Odor</u>	<u>6.6</u>		
<u>Toxic Organics</u>	<u>4.3</u>	<u>57.9</u>	<u>1.1</u>
<u>Turbidity</u>	<u>3.2</u>	<u>4,203.9</u>	<u>12.9</u>

New Hampshire Probable Sources Contributing to Impairments for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Probable Source Group to see a list of specific state Probable Sources making up the Probable Source Group.			
<u>Probable Source Group</u>	Size of Assessed Waters with Probable Sources of Impairments		
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>
<u>Agriculture</u>	<u>17.0</u>	<u>16.4</u>	<u>.5</u>
<u>Atmospheric Deposition</u>	<u>16,896.3</u>	<u>185,272.5</u>	<u>99.3</u>
<u>Construction</u>	<u>.5</u>	<u>4,206.3</u>	
<u>Groundwater Loadings/Withdrawals</u>	<u>15.3</u>		

<u>Habitat Alterations (Not Directly Related To Hydromodification)</u>	<u>1.3</u>		
<u>Hydromodification</u>	<u>70.6</u>	<u>860.5</u>	<u>.1</u>
<u>Industrial</u>	<u>46.5</u>	<u>311.1</u>	
<u>Land Application/Waste Sites/Tanks</u>	<u>29.6</u>		
<u>Municipal Discharges/Sewage</u>	<u>178.6</u>	<u>2,273.6</u>	<u>3.6</u>
<u>Natural/Wildlife</u>	<u>23.6</u>	<u>18,040.6</u>	<u>.1</u>
<u>Recreation And Tourism (Non-Boating)</u>	<u>.0</u>	<u>20.7</u>	
<u>Resource Extraction</u>	<u>10.5</u>		<u>.2</u>
<u>Spills/Dumping</u>	<u>14.1</u>		
<u>Unknown</u>	<u>4,168.5</u>	<u>108,652.5</u>	<u>99.3</u>
<u>Urban-Related Runoff/Stormwater</u>	<u>86.6</u>	<u>519.6</u>	

New Hampshire TMDL Alternatives by Cause of Impairment 2010

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDL Alternatives by Cause of Impairment " value to see a listing of those Causes of Impairment.

<u>Cause of Impairment</u>	<u>Number of TMDL Alternatives</u>	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>
Escherichia Coli (E. Coli)	<u>27</u>	59	218
Dioxin (Including 2,3,7,8-TCDD)	<u>18</u>	17	280
Ammonia, Total	<u>3</u>	5	22
Iron	<u>3</u>	12	
Phosphorus, Total	<u>3</u>	15	

Biochemical Oxygen Demand (BOD)	2	11	22
Copper	1	12	
Dissolved Oxygen	1	4	
Total Suspended Solids (TSS)	1	3	
Zinc	1		22

Total: 60 TMDL Alternatives

New Hampshire Previously Impaired Waters Now Attaining All Assessed Uses










No previously impaired waters reported as attaining all uses.

New Hampshire Causes of Impairment for 303(d) Listed Waters

[Description of this table](#)

NOTE: Click on a cause of impairment (e.g. pathogens) to see the specific state-reported causes that are grouped to make up this category. Click on the "Number of Causes of Impairment Reported" to see a list of waters with that cause of impairment.

Cause of Impairment Group Name	Number of Causes of Impairment Reported
pH/Acidity/Caustic Conditions	939
Pathogens	454
Organic Enrichment/Oxygen Depletion	409
Metals (other than Mercury)	164
Algal Growth	113
Nutrients	112
Cause Unknown - Impaired Biota	107
Mercury	99
Polychlorinated Biphenyls (PCBs)	95
Dioxins	95
Biotoxins	77









<u>Toxic Organics</u>	 <u>59</u>
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	 <u>36</u>
<u>Pesticides</u>	 <u>33</u>
<u>Turbidity</u>	 <u>30</u>
<u>Sediment</u>	 <u>4</u>
<u>Other Cause</u>	 <u>2</u>
<u>Radiation</u>	 <u>2</u>
<u>Ammonia</u>	 <u>1</u>
<u>Taste, Color and Odor</u>	 <u>1</u>

Total: 2,832 Causes of Impairment

New Hampshire Cumulative TMDLs by Pollutant

This chart includes TMDLs since October 1, 1995.

[Description of this table](#)

NOTE: Click on the underlined "Pollutant" value to see associated listed waters for which a TMDL was developed. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant.		
<u>Pollutant</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
<u>Mercury</u>	 <u>5,124</u>	5,124
<u>Escherichia Coli (E. Coli)</u>	 <u>380</u>	380
<u>pH</u>	 <u>372</u>	372
<u>Fecal Coliform</u>	 <u>48</u>	48
<u>Enterococcus Bacteria</u>	 <u>39</u>	39
<u>Phosphorus, Total</u>	 <u>29</u>	69
<u>Chloride</u>	 <u>4</u>	4
<u>pH, Low</u>	 <u>3</u>	6

<u>Carbonaceous Bod</u>	<u>2</u>	2
<u>NH3-N</u>	<u>2</u>	2
<u>Biochemical Oxygen Demand (BOD)</u>	<u>1</u>	2
<u>Iron</u>	<u>1</u>	1
<u>NH3</u>	<u>1</u>	2

Total: 6,006 TMDLs; 6,051 Causes of Impairment Addressed

New Hampshire Cumulative Number of TMDLs

EPA Fiscal Year starts October 1 and ends September 30.

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDLs Completed" value for a detailed list of the TMDLs for the fiscal year.		
<u>Fiscal Year</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
2000	<u>5</u>	8
2001	<u>3</u>	3
2002	<u>1</u>	1
2003	<u>2</u>	2
2004	<u>53</u>	53
2005	<u>20</u>	20
2006	<u>23</u>	26
2007	<u>160</u>	160
2008	<u>5,238</u>	5,238

2009	4	http://ofmpub.epa.gov/waters10/attains_state.control?p_state=NH	4
2010	403	Last updated on Thursday, December 20, 2012	403
2011	91		130
2012	3		3

Total: 6,006 TMDLs; 6,051 Causes of Impairment Addressed

TMDL Document Search

Full Text Search of TMDL Documents



Watershed Assessment, Tracking & Environmental Results

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Maine Water Quality Assessment Report

Assessed Waters of Maine by Watershed

Select a watershed from the list:
or click on the map to choose a watershed:



Search for a waterbody within Maine

Enter Waterbody Name:



Display impaired waters and TMDL information only

NOTE: The data and information provided on this web site may differ from the information provided in Maine's 2010 Integrated Water

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[Summary Document](#)

[303\(d\) Listed Waters for 2010](#)

Quality Monitoring and Assessment Report. The EPA-approved version of Maine's 2010 Integrated Report is available at <http://www.maine.gov/dep/water/monitoring/305b/index.htm>.

Data are also available for these cycles:

[2002](#) [2004](#) [2006](#) [2008](#)

[Waterbody Changes from Prior Cycle](#)

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Site-specific Targeted Monitoring Summary Results Maine (2010)

[Description of this table](#)

	Size of Water			
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)	Wetlands (Acres)
Good Waters	29,732.3	906,588.0		260.0
Previously impaired waters now attaining all uses	70.3	6,926.0		

Threatened Waters				
TMDL completed				
TMDL alternative				
Non-pollutant impairment				
TMDL needed				
Impaired Waters	1,165.2	85,497.0	156.4	33.0
TMDL completed	91.4	27,750.0	153.7	
TMDL alternative	324.8			10.0
Non-pollutant impairment	30.2	48,964.0		
TMDL needed	718.8	8,783.0	2.7	23.0
New TMDLs completed	52.5	.0	.0	10.0
Remaining TMDLs needed	666.3	8,783.0	2.7	13.0
Total Assessed Waters	30,897.4	992,085.0	156.4	293.0
Total Waters	45,177.0	992,085.0	2,846.0	Unavailable
Percent of Waters Assessed	68.4	100.0	5.5	Unavailable

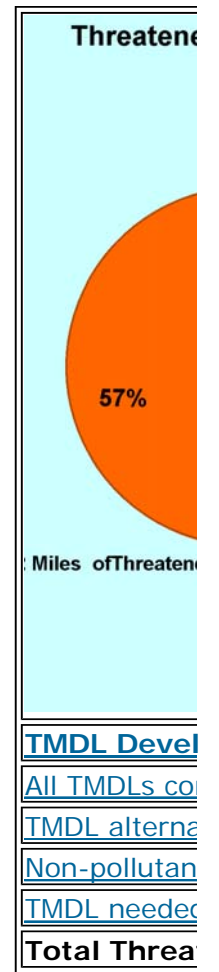
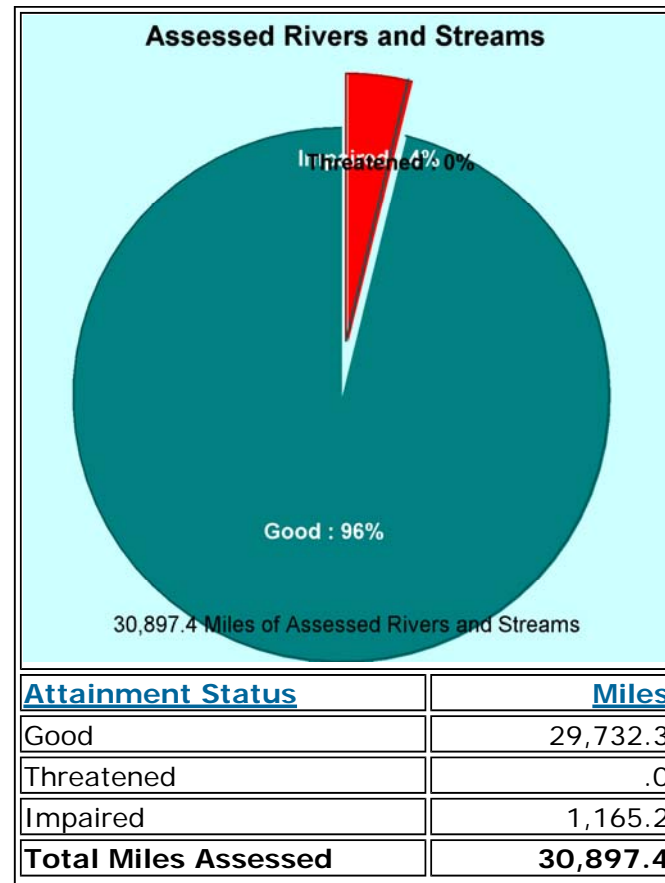
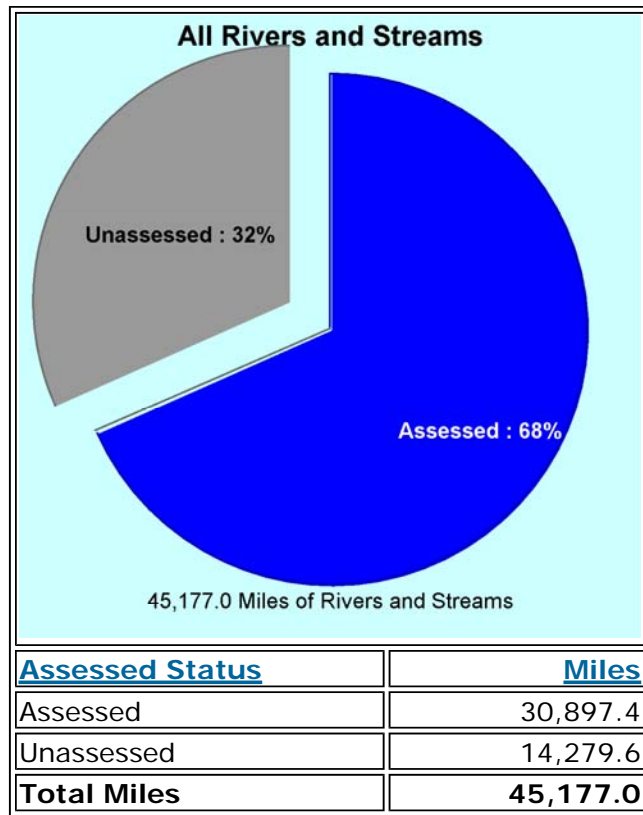
Summary of Water Quality Assessments for Each Waterbody Type for Reporting Year 2010

Site-specific Targeted Monitoring Results Maine Rivers and Streams 2010

[Description of this table](#)

[Description of this table](#)















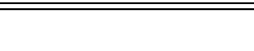
Site-specific Targeted Monitoring Results

Individual Designated Use Support Maine Rivers and Streams 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)







<u>Designated Use</u>	<u>Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	% Good
					% Threatened

					 % Impaired
Drinking Water Supply After Disinfection	4,400.1	100.0	.0	.0	
Drinking Water Supply After Treatment	1,040.9	99.7	.0	.3	
Fish And Other Aquatic Life	30,590.5	97.8	.0	2.2	
Fish Consumption	5,513.9	88.5	.0	11.5	
Fishing	5,435.2	99.8	.0	.2	
Hydroelectric Power Generation	1,650.9	100.0	.0	.0	
Industrial Process And Cooling Water Supply	1,650.9	100.0	.0	.0	
Navigation	5,428.6	99.9	.0	.1	
Primary Contact Recreation	5,417.3	96.7	.0	3.3	
Secondary Contact Recreation	5,415.0	97.0	.0	3.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Maine Rivers and Streams 2010

[Description of this table](#)

Cause of Impairment	Cause of Impairment Group	Miles Threatened or Impaired
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 446.8
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 383.0
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	 372.2
DDT	Pesticides	 214.2
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	 194.4
Nutrient/Eutrophication Biological Indicators	Nutrients	 191.0
Escherichia Coli (E. Coli)	Pathogens	159.2












Habitat Assessment (Streams)	Cause Unknown - Impaired Biota	70.2
Phosphorus, Total	Nutrients	48.3
Other Flow Regime Alterations	Flow Alteration(s)	30.2
Periphyton (Aufwuchs) Indicator Bioassessments (Streams)	Cause Unknown - Impaired Biota	27.8
Biochemical Oxygen Demand (BOD)	Organic Enrichment/Oxygen Depletion	15.2
Ammonia, Un-ionized	Ammonia	12.6
Nitrogen, Total	Nutrients	9.9
Copper	Metals (other than Mercury)	9.8
Zinc	Metals (other than Mercury)	9.8
Lead	Metals (other than Mercury)	9.8
Iron	Metals (other than Mercury)	9.4
Total Suspended Solids (TSS)	Turbidity	8.2
Chlorophyll-A	Algal Growth	8.2
Sedimentation/Siltation	Sediment	6.4
Chromium, Total	Metals (other than Mercury)	6.1
Cadmium	Metals (other than Mercury)	6.1
Nickel	Metals (other than Mercury)	6.1
Benzene	Toxic Organics	4.5
Fish Passage Barrier	Habitat Alterations	4.5
Selenium	Metals (other than Mercury)	3.7
Aluminum	Metals (other than Mercury)	3.7
Silver	Metals (other than Mercury)	3.7
Arsenic	Metals (other than Mercury)	3.7
1,1-Dichloroethane	Toxic Organics	3.2

1,2-Dichloroethane	Pesticides	3.2
pH	pH/Acidity/Caustic Conditions	1.0
Cause Unknown	Cause Unknown	.6

Site-specific Targeted Monitoring Results

Probable Sources Maine Rivers and Streams 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Miles Threatened or Impaired</u>
Non-Point Source	Unspecified Nonpoint Source	 333.3
Agriculture	Agriculture	 327.3
Inappropriate Waste Disposal	Spills/Dumping	 267.1
Industrial Point Source Discharge	Industrial	 176.3
Municipal Point Source Discharges	Municipal Discharges/Sewage	 163.2
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 62.5
Post-Development Erosion And Sedimentation	Hydromodification	 58.1
Dam Or Impoundment	Hydromodification	 56.1
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	 39.8
Upstream Source	Other	 26.0
Habitat Modification - Other Than Hydromodification	Habitat Alterations (Not Directly Related To Hydromodification)	 25.8

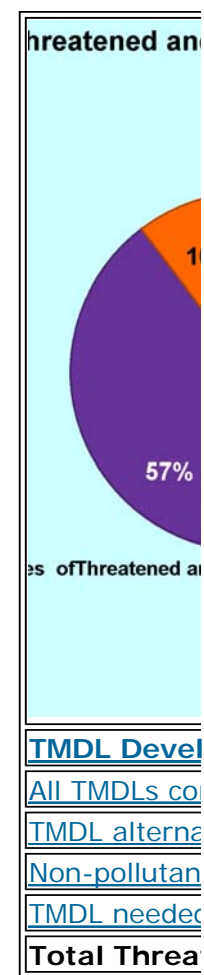
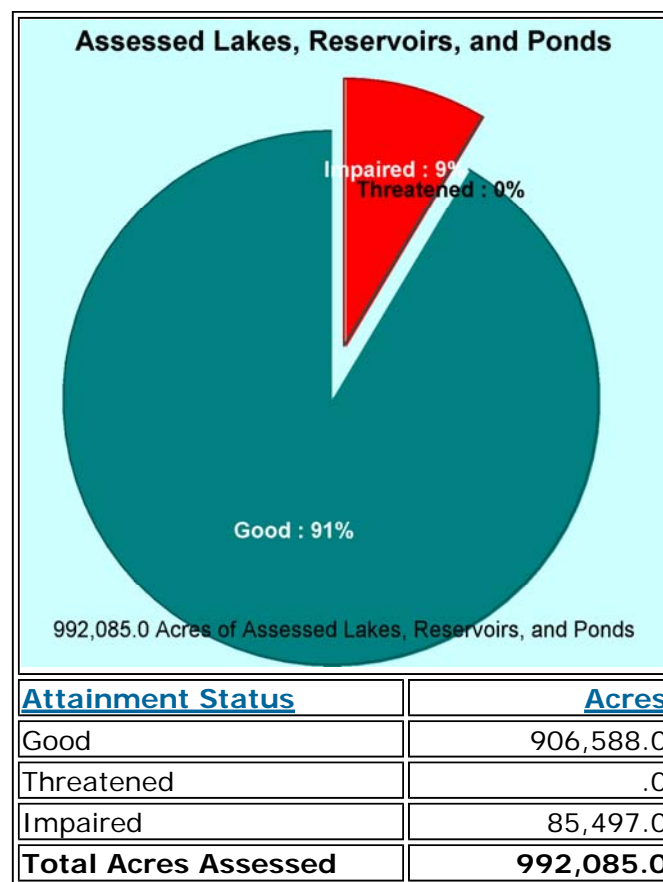
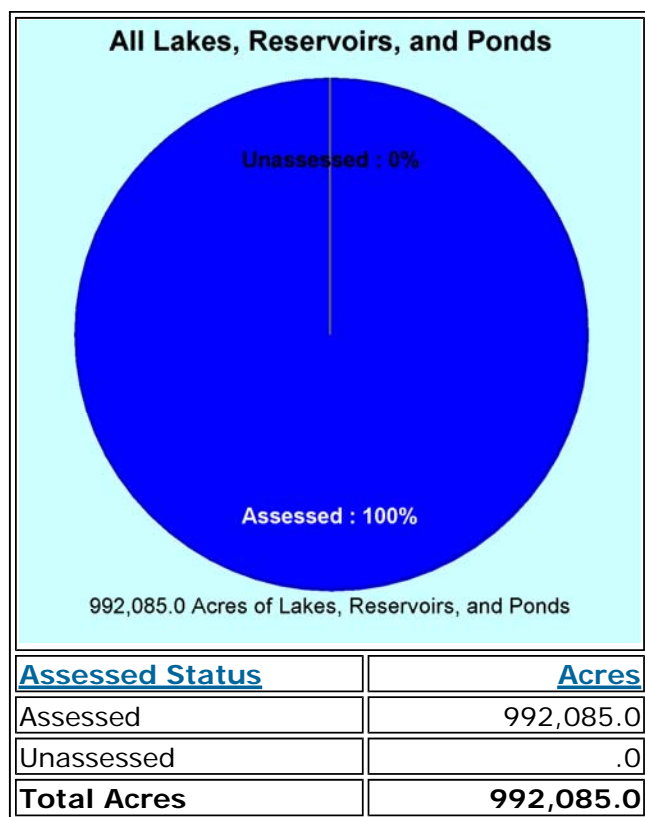
Flow Alterations From Water Diversions	Hydromodification	25.0
Impervious Surface/Parking Lot Runoff	Urban-Related Runoff/Stormwater	16.4
Wet Weather Discharges (Non-Point Source)	Urban-Related Runoff/Stormwater	13.4
Rcra Hazardous Waste Sites	Industrial	12.2
Airports	Industrial	10.7
Aquaculture (Permitted)	Aquaculture	9.8
Landfills	Land Application/Waste Sites/Tanks	9.0
Sources Outside State Jurisdiction Or Borders	Other	8.2
Impacts From Abandoned Mine Lands (Inactive)	Resource Extraction	3.0
Illegal Dumps Or Other Inappropriate Waste Disposal	Spills/Dumping	3.0
Source Unknown	Unknown	2.6
Mine Tailings	Resource Extraction	1.2
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	1.0

Site-specific Targeted Monitoring Results Maine Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

[Description of this table](#)
















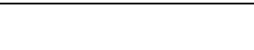
Site-specific Targeted Monitoring Results

Individual Designated Use Support Maine Lakes, Reservoirs, and Ponds 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)




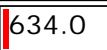

<u>Designated Use</u>	<u>Acres Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened

					 % Impaired
Drinking Water Supply After Disinfection	988,867.0	100.0	.0	.0	
Fish And Other Aquatic Life	380,940.0	77.6	.0	22.4	
Fish Consumption	988,867.0	100.0	.0	.0	
Fishing	988,867.0	100.0	.0	.0	
Hydroelectric Power Generation	987,719.0	100.0	.0	.0	
Industrial Process And Cooling Water Supply	988,867.0	100.0	.0	.0	
Navigation	992,085.0	100.0	.0	.0	
Primary Contact Recreation	983,249.0	97.5	.0	2.5	
Secondary Contact Recreation	988,867.0	100.0	.0	.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Maine Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

Cause of Impairment	Cause of Impairment Group	Acres Threatened or Impaired
Habitat Assessment (Lakes)	Cause Unknown - Impaired Biota	 48,964.0
Phosphorus, Total	Nutrients	 35,899.0
Secchi Disk Transparency	Turbidity	 35,899.0
Turbidity	Turbidity	 7,865.0
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 634.0

Site-specific Targeted Monitoring Results

Probable Sources Maine Lakes, Reservoirs, and Ponds 2010

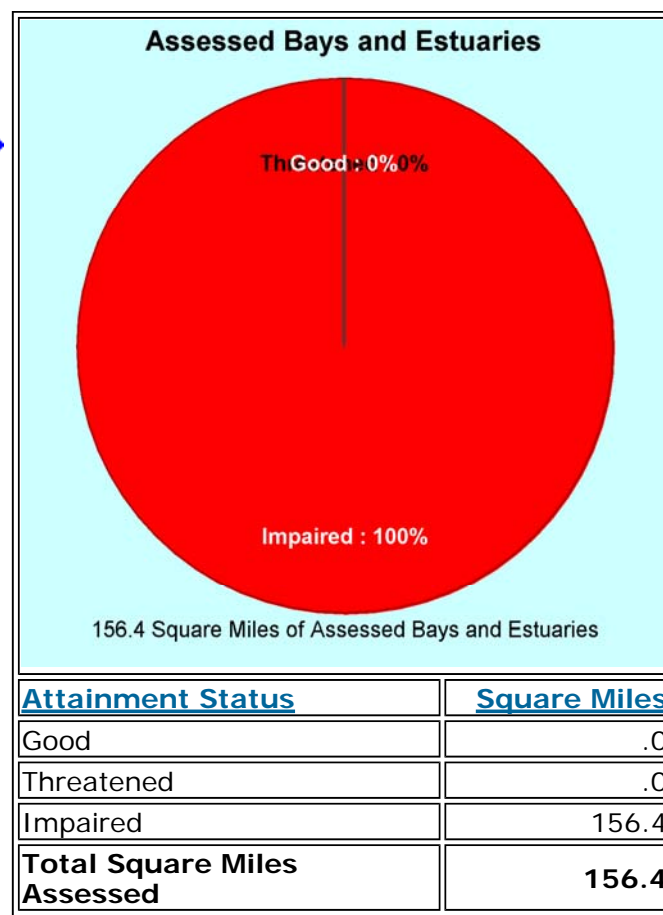
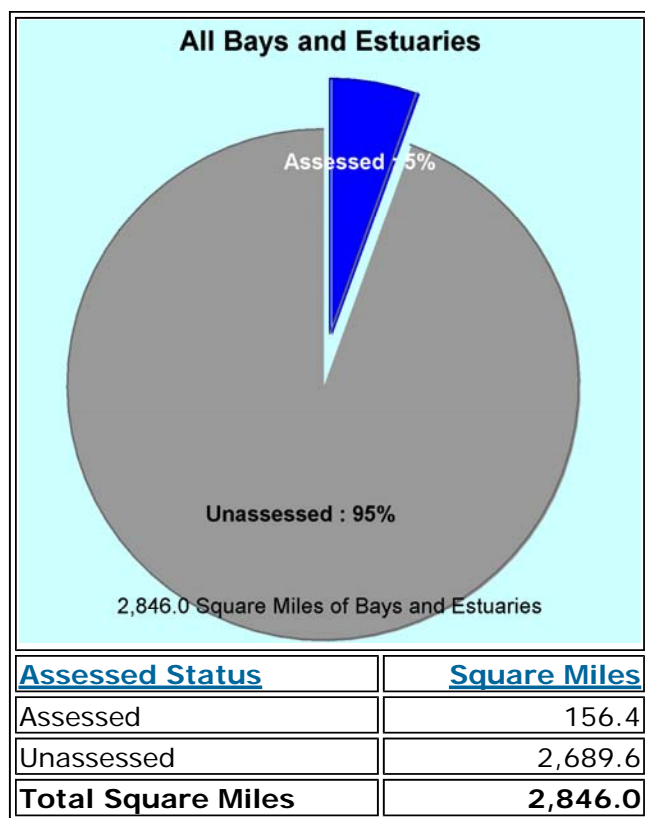
[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Acres Threatened or Impaired</u>
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	48,964.0
Rural (Residential Areas)	Other	22,580.0
Residential Districts	Urban-Related Runoff/Stormwater	13,358.0
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	11,535.0
Unspecified Unpaved Road Or Trail	Urban-Related Runoff/Stormwater	11,535.0
Internal Nutrient Recycling	Natural/Wildlife	11,490.0
Non-Irrigated Crop Production	Agriculture	10,532.0
Natural Sources	Natural/Wildlife	10,195.0
Crop Production (Crop Land Or Dry Land)	Agriculture	7,491.0
Livestock (Grazing Or Feeding Operations)	Agriculture	5,093.0
Municipal Point Source Discharges	Municipal Discharges/Sewage	4,288.0
Industrial Land Treatment	Industrial	1,820.0
Upstream/Downstream Source	Other	83.0
Flow Alterations From Water Diversions	Hydromodification	30.0
Landfills	Land Application/Waste Sites/Tanks	29.0

Site-specific Targeted Monitoring Results Maine Bays and Estuaries 2010

[Description of this table](#)

[Description of this table](#)



Site-specific Targeted Monitoring Results



Individual Designated Use Support

Maine Bays and Estuaries 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)








<u>Designated Use</u>	<u>Square Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	<div></div> <div>% Good</div> <div></div> <div>% Threatened</div>
-----------------------	------------------------------	---------------------	---------------------------	-------------------------	---

					% Impaired
Fish And Other Estuarine And Marine Life	2.7	.0	.0	100.0	
Propagation And Harvesting Of Shellfish	153.7	.0	.0	100.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Maine Bays and Estuaries 2010




[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Square Miles Threatened or Impaired</u>
Fecal Coliform	Pathogens	 156.4
Aquatic Life	Cause Unknown - Impaired Biota	 1.2
Toxics	Total Toxics	 1.2
Toxicity	Total Toxics	 .9
Copper	Metals (other than Mercury)	 .9
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 .6
Undetermined NPS Stressor	Cause Unknown - Impaired Biota	 .6

Site-specific Targeted Monitoring Results

Probable Sources Maine Bays and Estuaries 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Square Miles Threatened or Impaired</u>
Municipal Point Sources	Municipal Discharges/Sewage	 156.4
Nonpoint Source	Unspecified Nonpoint Source	 155.5
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 155.2

Combined Sewer Overflows	Municipal Discharges/Sewage	2.1
Hazardous Wastes	Land Application/Waste Sites	1.2
Sediment	Hydromodification	.3

Site-specific Targeted Monitoring Results Maine Wetlands 2010

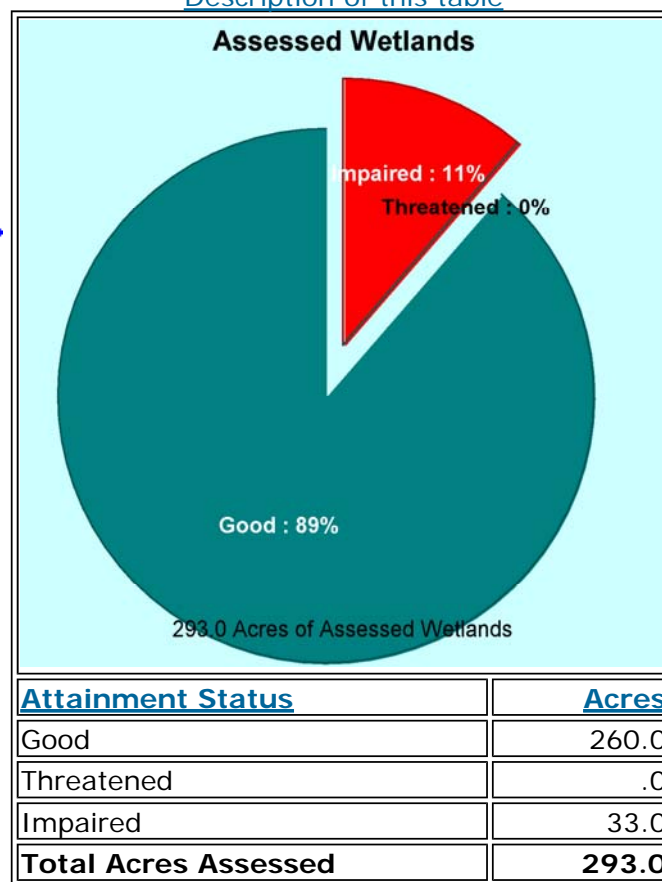
[Description of this table](#)

Pie chart not displayed because total size for Wetlands is unavailable.

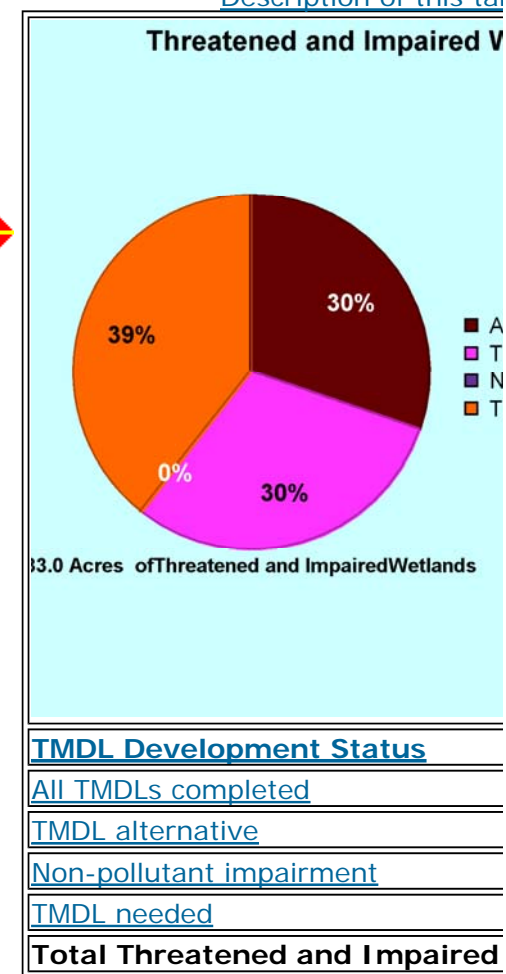
Assessed Status	Acres
Assessed	293.0
Unassessed	Unavailable
Total Acres	Unavailable



[Description of this table](#)



[Description of this table](#)















Site-specific Targeted Monitoring Results

Individual Designated Use Support Maine Wetlands 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.



[Description of this table](#)

<u>Designated Use</u>	<u>Acres Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened
					 % Impaired
Drinking Water Supply After Treatment	8.0	100.0	.0	.0	
Fish And Other Aquatic Life	293.0	88.7	.0	11.3	
Fish Consumption	8.0	100.0	.0	.0	
Fishing	8.0	100.0	.0	.0	
Hydroelectric Power Generation	8.0	100.0	.0	.0	
Industrial Process And Cooling Water Supply	8.0	100.0	.0	.0	
Navigation	8.0	100.0	.0	.0	
Primary Contact Recreation	8.0	.0	.0	100.0	
Secondary Contact Recreation	8.0	.0	.0	100.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Maine Wetlands 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Acres Threatened or Impaired</u>
Benthic Macroinvertebrates Bioassessments	Cause Unknown - Impaired Biota	 33.0
Escherichia Coli (E. Coli)	Pathogens	 8.0

Site-specific Targeted Monitoring Results

Probable Sources Maine Wetlands 2010

No probable sources of impairments reported.

Maine Causes of Impairment for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Cause of Impairment Group to see a list of specific state causes of impairment making up the Cause of Impairment Group. See also [Pollution categories summary document \(PDF\)](#) (20 pp, 557K, [About PDF](#)) for brief, non-technical descriptions of general cause categories.

Cause of Impairment Group	Size of Assessed Waters with Listed Causes of Impairment			
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)	Wetlands (Acres)
Algal Growth	8.2			
Ammonia	12.6			
Cause Unknown	.6			
Cause Unknown - Impaired Biota	224.2	48,964.0	1.8	33.0
Dioxins	372.2			
Flow Alteration(s)	30.2			
Habitat Alterations	4.5			
Metals (other than Mercury)	13.1		.9	
Nutrients	242.9	35,899.0		
Organic Enrichment/Oxygen Depletion	451.5	634.0	.6	
Pathogens	159.2		156.4	8.0
Pesticides	217.4			

<u>pH/Acidity/Caustic Conditions</u>	<u>1.0</u>			
<u>Polychlorinated Biphenyls (PCBs)</u>	<u>383.0</u>			
<u>Sediment</u>	<u>6.4</u>			
<u>Total Toxics</u>			<u>2.1</u>	
<u>Toxic Organics</u>	<u>7.7</u>			
<u>Turbidity</u>	<u>8.2</u>	<u>43,764.0</u>		

Maine Probable Sources Contributing to Impairments for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Probable Source Group to see a list of specific state Probable Sources making up the Probable Source Group.				
<u>Probable Source Group</u>	Size of Assessed Waters with Probable Sources of Impairments			
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>	<u>Wetlands (Acres)</u>
<u>Agriculture</u>	<u>327.3</u>	<u>23,116.0</u>		
<u>Aquaculture</u>	<u>9.8</u>			
<u>Habitat Alterations (Not Directly Related To Hydromodification)</u>	<u>25.8</u>			
<u>Hydromodification</u>	<u>140.2</u>	<u>48,994.0</u>	<u>.3</u>	
<u>Industrial</u>	<u>195.9</u>	<u>1,820.0</u>		
<u>Land Application/Waste Sites</u>			<u>1.2</u>	
<u>Land Application/Waste Sites/Tanks</u>	<u>9.0</u>	<u>29.0</u>		
<u>Municipal Discharges/Sewage</u>	<u>167.6</u>	<u>4,288.0</u>	<u>156.4</u>	
<u>Natural/Wildlife</u>		<u>21,639.0</u>		
<u>Other</u>	<u>34.2</u>	<u>22,663.0</u>		
<u>Resource Extraction</u>	<u>4.2</u>			

<u>Spills/Dumping</u>	<u>267.8</u>			
<u>Unknown</u>	<u>2.6</u>			
<u>Unspecified Nonpoint Source</u>	<u>333.3</u>		<u>155.5</u>	
<u>Urban-Related Runoff/Stormwater</u>	<u>75.9</u>	<u>13,358.0</u>	<u>155.2</u>	

Maine TMDL Alternatives by Cause of Impairment 2010



[Description of this table](#)

NOTE: Click on the underlined "Number of TMDL Alternatives by Cause of Impairment " value to see a listing of those Causes of Impairment.			
<u>Cause of Impairment</u>	<u>Number of TMDL Alternatives</u>	<u>Rivers and Streams (Miles)</u>	<u>Wetlands (Acres)</u>
Polychlorinated Biphenyls (PCBs)	<u>24</u>	315	
Dioxin (Including 2,3,7,8-TCDD)	<u>22</u>	309	
Benthic Macroinvertebrates Bioassessments	<u>9</u>	18	10
Dissolved Oxygen	<u>5</u>	44	
Nutrient/Eutrophication Biological Indicators	<u>4</u>	39	
Ammonia, Un-ionized	<u>1</u>	1	
Benzene	<u>1</u>	5	
Biochemical Oxygen Demand (BOD)	<u>1</u>	2	
Habitat Assessment (Streams)	<u>1</u>	4	
Nitrogen, Total	<u>1</u>	4	

Total: 69 TMDL Alternatives















Maine Previously Impaired Waters Now Attaining All Assessed Uses

[Description of this table](#)

NOTE: Click on the underlined "Number of Waters Attaining" value for a detailed list of those waters now attaining all uses.		
Cycle Attaining	Number of Waters Attaining	Number of Causes of Impairment Addressed
2008	 <u>1</u>	1
2011	 <u>6</u>	7

Maine Causes of Impairment for 303(d) Listed Waters

[Description of this table](#)

NOTE: Click on a cause of impairment (e.g. pathogens) to see the specific state-reported causes that are grouped to make up this category. Click on the "Number of Causes of Impairment Reported" to see a list of waters with that cause of impairment.	
Cause of Impairment Group Name	Number of Causes of Impairment Reported
Cause Unknown - Impaired Biota	 <u>77</u>
Organic Enrichment/Oxygen Depletion	 <u>50</u>
Nutrients	 <u>14</u>
Dioxins	 <u>6</u>
Pesticides	 <u>6</u>
Polychlorinated Biphenyls (PCBs)	 <u>6</u>
Pathogens	 <u>4</u>
Turbidity	 <u>3</u>
Metals (other than Mercury)	 <u>3</u>
Total Toxics	 <u>2</u>
Cause Unknown	 <u>1</u>
Algal Growth	 <u>1</u>
Toxic Organics	 <u>1</u>
pH/Acidity/Caustic Conditions	 <u>1</u>

Total: 175 Causes of Impairment

Maine Cumulative TMDLs by Pollutant

This chart includes TMDLs since October 1, 1995.

[Description of this table](#)

NOTE: Click on the underlined "Pollutant" value to see associated listed waters for which a TMDL was developed. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant.		
<u>Pollutant</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
<u>Fecal Coliform</u>	<u>143</u>	143
<u>Escherichia Coli (E. Coli)</u>	<u>61</u>	62
<u>Phosphorus, Total</u>	<u>47</u>	56
<u>Pollutants in Urban Stormwater</u>	<u>38</u>	70
<u>Lead</u>	<u>6</u>	6
<u>Zinc</u>	<u>6</u>	6
<u>Biochemical Oxygen Demand (BOD)</u>	<u>5</u>	5
<u>NH3</u>	<u>4</u>	4
<u>Copper</u>	<u>3</u>	3
<u>Nitrogen, Total</u>	<u>3</u>	5
<u>Sediment</u>	<u>3</u>	5
<u>Total Suspended Solids (TSS)</u>	<u>3</u>	5
<u>Cadmium</u>	<u>2</u>	2
<u>Carbonaceous Bod</u>	<u>2</u>	6
<u>Iron</u>	<u>2</u>	2








<u>Orthophosphorus</u>	<u>2</u>	6
<u>Aluminum</u>	<u>1</u>	1
<u>Arsenic</u>	<u>1</u>	1
<u>Chromium, Total</u>	<u>1</u>	1
<u>Nickel</u>	<u>1</u>	1
<u>Selenium</u>	<u>1</u>	1
<u>Silver</u>	<u>1</u>	1

Total: 336 TMDLs; 392 Causes of Impairment Addressed

Maine Cumulative Number of TMDLs

EPA Fiscal Year starts October 1 and ends September 30.

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDLs Completed" value for a detailed list of the TMDLs for the fiscal year.		
<u>Fiscal Year</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
1999	<u>2</u>	2
2000	 <u>11</u>	11
2001	 <u>12</u>	12
2002	<u>2</u>	2
2003	 <u>12</u>	12
2004	 <u>7</u>	7
2005	 <u>19</u>	27
2006	 <u>6</u>	8
2007		11

	11	
2008	5	5
2009	204	205
2010	10	23
2012	35	67

Total: 336 TMDLs; 392 Causes of Impairment Addressed

TMDL Document Search

[Full Text Search of TMDL Documents](#)



Watershed Assessment, Tracking & Environmental Results

You are here: [EPA Home](#) [Water](#) [WATERS](#) [Water Quality Assessment and TMDL Information](#) Assessment Report

Massachusetts Water Quality

[Return to home page](#)

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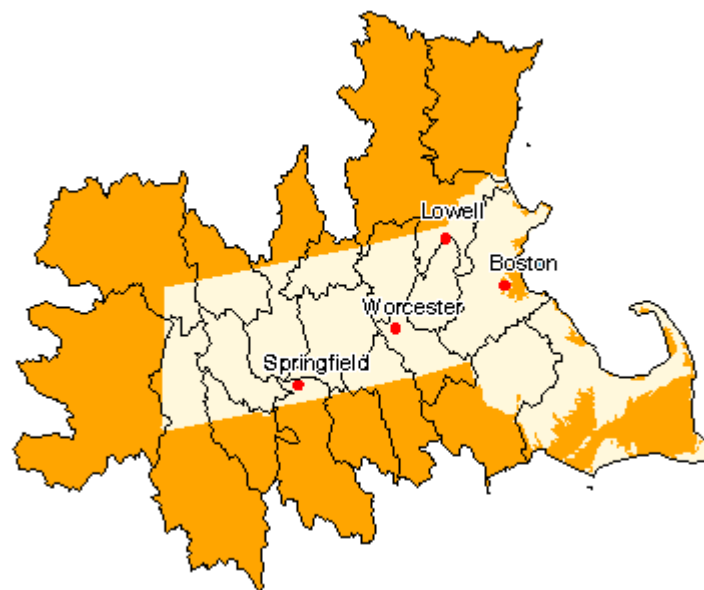
[Massachusetts Assessment Summary](#)
[Water Quality by Waterbody Type](#)
[Rivers and Streams](#)
[Lakes, Reservoirs, and Ponds](#)
[Bays and Estuaries](#)
[Causes of Impairment](#)
[Probable Sources Contributing to Impairments](#)
[TMDL Alternatives by Cause of Impairment](#)
[Previously Impaired Waters Now Attaining All Assessed Uses](#)
[Causes of Impairment for 303\(d\) Listed Waters](#)
[Cumulative TMDLs by Pollutant](#)
[Cumulative Number of TMDLs](#)

Massachusetts Water Quality Assessment Report

Assessed Waters of Massachusetts by Watershed

Select a watershed from the list:

or click on the map to choose a watershed:



Search for a waterbody within Massachusetts

Enter Waterbody Name:

☐ Display impaired waters and TMDL information only

Features

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[303\(d\) Listed Waters for 2010](#)

Data are also available for these cycles:

[2002](#) [2004](#) [2006](#)

[Waterbody Changes from Prior Cycle](#)

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NOTE: The Commonwealth of Massachusetts displays the geographic extent of Clean Water Act Section 303(d) and 305(b) assessment units at 1:24,000 scale. For purposes of displaying this information in ATTAINS, the EPA conflates this geographic information to 1:100,000 scale for display. To obtain the geographic information prepared by the Commonwealth of Massachusetts, please visit <http://www.mass.gov/mgis/wbs2010.htm>

Site-specific Targeted Monitoring Summary Results Massachusetts (2010)

[Description of this table](#)

	Size of Water		
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Good Waters	971.1	2,500.5	22.9
Previously impaired waters now attaining all uses			

Threatened Waters			
TMDL completed			
TMDL alternative			
Non-pollutant impairment			
TMDL needed			
Impaired Waters	1,774.3	82,555.2	224.3
TMDL completed	87.9	45,954.4	47.0
TMDL alternative			
Non-pollutant impairment	84.5	15,405.5	
TMDL needed	1,601.8	21,195.3	177.4
New TMDLs completed	4.5	625.1	.0
Remaining TMDLs needed	1,597.3	20,570.2	177.4
Total Assessed Waters	2,745.3	85,055.7	247.2
Total Waters	9,962.0	151,173.0	248.5
Percent of Waters Assessed	27.6	56.3	99.5

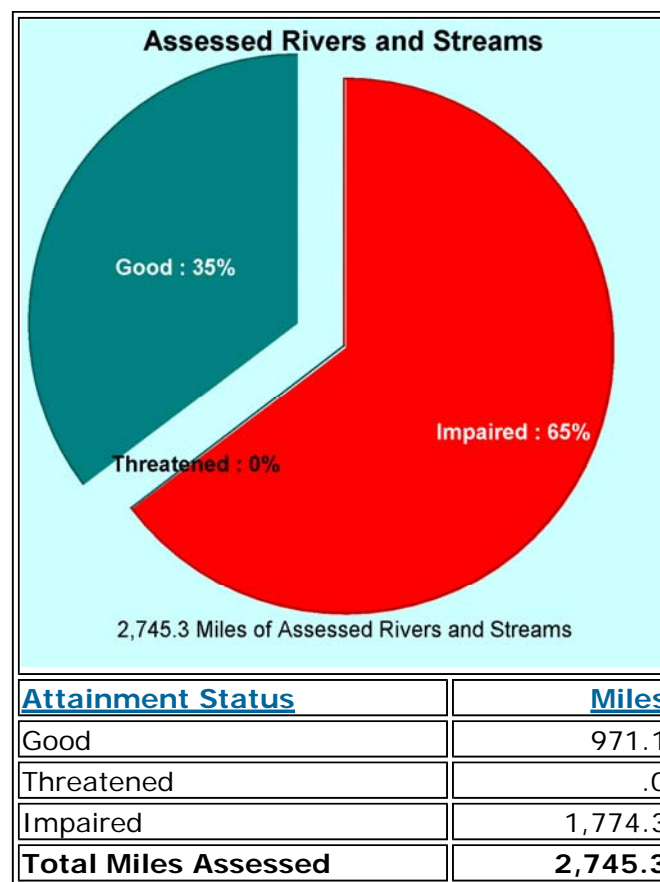
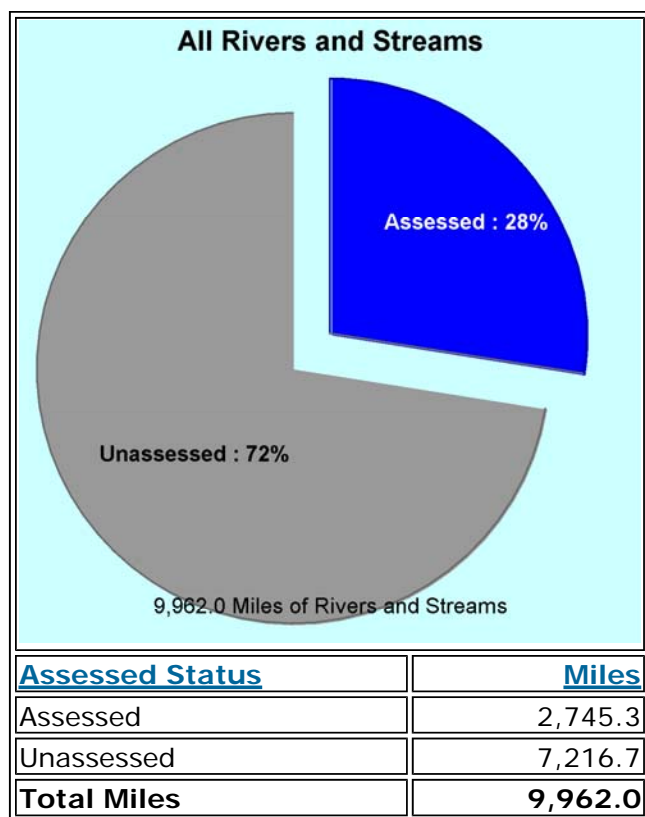
Summary of Water Quality Assessments for Each Waterbody Type for Reporting Year 2010

Site-specific Targeted Monitoring Results Massachusetts Rivers and Streams 2010

[Description of this table](#)

[Description of this table](#)





Site-specific Targeted Monitoring Results






Individual Designated Use Support

Massachusetts Rivers and Streams 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)













<u>Designated Use</u>	<u>Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened

					% Impaired
Aesthetic	2,095.0	74.5	.0	25.5	
Fish Consumption	603.2	.2	.0	99.8	
Fish, Other Aquatic Life And Wildlife	2,404.1	50.0	.0	50.0	
Primary Contact Recreation	1,849.8	36.9	.0	63.1	
Secondary Contact Recreation	1,640.3	67.6	.0	32.4	
























Site-specific Targeted Monitoring Results

Causes of Impairment Massachusetts Rivers and Streams 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Miles Threatened or Impaired</u>
Fecal Coliform	Pathogens	 779.3
PCB(s) in Fish Tissue	Polychlorinated Biphenyls (PCBs)	 384.0
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 377.4
Phosphorus, Total	Nutrients	 352.3
Escherichia Coli (E. Coli)	Pathogens	 315.0
Aquatic Macroinvertebrate Bioassessments	Cause Unknown - Impaired Biota	 296.5
Turbidity	Turbidity	 240.0
Non-Native Aquatic Plants	Nuisance Exotic Species	 228.6
Mercury in Fish Tissue	Mercury	 220.2
Excess Algal Growth	Algal Growth	 183.8
Nutrient/Eutrophication Biological Indicators	Nutrients	 183.2
Low Flow Alterations	Flow Alteration(s)	 163.8

Other Flow Regime Alterations	Flow Alteration(s)	153.7
Physical Substrate Habitat Alterations	Habitat Alterations	147.0
Other Cause	Other Cause	135.7
Debris/Floatables/Trash	Trash	127.6
Sedimentation/Siltation	Sediment	124.7
Fish Bioassessments	Cause Unknown - Impaired Biota	122.7
Taste and Odor	Taste, Color and Odor	121.4
Aquatic Plants (Macrophytes)	Noxious Aquatic Plants	98.8
DDT	Pesticides	91.7
Total Suspended Solids (TSS)	Turbidity	66.8
Lead	Metals (other than Mercury)	62.2
pH, Low	pH/Acidity/Caustic Conditions	60.6
Alteration in Stream-Side or Littoral Vegetative Covers	Habitat Alterations	55.8
Fish Passage Barrier	Habitat Alterations	54.8
Temperature, Water	Temperature	53.9
Copper	Metals (other than Mercury)	52.7
Chlordane	Pesticides	50.2
Ambient Bioassays - Chronic Aquatic Toxicity	Total Toxics	48.9
Lack of a Coldwater Assemblage	Other Cause	47.8
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	47.1
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	42.4
Eurasian Water Milfoil, Myriophyllum Spicatum	Nuisance Exotic Species	37.2
Cadmium	Metals (other than Mercury)	31.0
Foam/Flocs/Scum/Oil Slicks	Other Cause	28.9











Organic Enrichment (Sewage) Biological Indicators	Organic Enrichment/Oxygen Depletion	 24.6
Zebra Mussel, Dreissena Polymorph	Nuisance Exotic Species	 20.7
Sediment Bioassays - Acute Toxicity Freshwater	Total Toxics	 20.3
Chloride	Salinity/Total Dissolved Solids/Chlorides/Sulfates	 20.1
Oil and Grease	Oil and Grease	 16.5
Habitat Assessment (Streams)	Cause Unknown - Impaired Biota	 15.1
Color	Taste, Color and Odor	 14.9
Combined Biota/Habitat Bioassessments (Streams)	Cause Unknown - Impaired Biota	 14.8
Ammonia, Un-ionized	Ammonia	 14.8
Arsenic	Metals (other than Mercury)	 14.2
Secchi Disk Transparency	Turbidity	 12.6
Nitrogen, Total	Nutrients	 10.3
Chlorophyll-A	Algal Growth	 9.1
pH, High	pH/Acidity/Caustic Conditions	 8.2
Pentachlorophenol (PCP)	Toxic Organics	 8.0
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	 8.0
Whole Effluent Toxicity (WET)	Total Toxics	 7.4
Other Anthropogenic Substrate Alterations	Habitat Alterations	 7.0
Mercury in Water Column	Mercury	 5.8
Bottom Deposits	Sediment	 5.6
Total Dissolved Solids (TDS)	Salinity/Total Dissolved Solids/Chlorides/Sulfates	 5.5
Sediment Screening Value (Exceedence)	Total Toxics	 4.1
Aluminum	Metals (other than Mercury)	 3.6

Salinity	Salinity/Total Dissolved Solids/Chlorides/Sulfates	3.1
Fish Kill(s)	Cause Unknown - Fish Kills	2.9
Petroleum Hydrocarbons	Oil and Grease	.2
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Toxic Organics	.2
Enterococcus Bacteria	Pathogens	.0

Site-specific Targeted Monitoring Results

Probable Sources Massachusetts Rivers and Streams 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Miles Threatened or Impaired</u>
Source Unknown	Unknown	 1,299.5
Municipal Point Source Discharges	Municipal Discharges/Sewage	 405.6
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 359.4
Contaminated Sediments	Legacy/Historical Pollutants	 208.0
Introduction Of Non-Native Organisms (Accidental Or Intentional)	Other	 201.5
Dam Or Impoundment	Hydromodification	 150.4
Discharges From Municipal Separate Storm Sewer Systems (MS4)	Urban-Related Runoff/Stormwater	 147.9
Combined Sewer Overflows	Municipal Discharges/Sewage	 127.8
Channelization	Hydromodification	 112.4
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	 112.1

Inappropriate Waste Disposal	Spills/Dumping	 97.8
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	 97.0
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	 95.1
Releases From Waste Sites Or Dumps	Land Application/Waste Sites/Tanks	 87.8
Non-Point Source	Unspecified Nonpoint Source	 78.3
Atmospheric Deposition - Toxics	Atmospheric Deposition	 68.6
Streambank Modifications/Destabilization	Hydromodification	 64.3
Wet Weather Discharges (Non-Point Source)	Urban-Related Runoff/Stormwater	 60.3
Cercla Npl (Superfund) Sites	Legacy/Historical Pollutants	 56.2
Municipal (Urbanized High Density Area)	Urban-Related Runoff/Stormwater	 55.7
Industrial Point Source Discharge	Industrial	 48.2
Agriculture	Agriculture	 43.3
Loss Of Riparian Habitat	Habitat Alterations (Not Directly Related To Hydromodification)	 43.0
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	 41.2
Baseflow Depletion From Groundwater Withdrawals	Hydromodification	 38.9
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	 33.8
Flow Alterations From Water Diversions	Hydromodification	 30.2
Upstream Source	Other	 29.0
Upstream/Downstream Source	Other	 27.7

On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	27.7
Internal Nutrient Recycling	Natural/Wildlife	26.4
Habitat Modification - Other Than Hydromodification	Habitat Alterations (Not Directly Related To Hydromodification)	25.4
Waterfowl	Natural/Wildlife	25.2
Hydrostructure Impacts On Fish Passage	Hydromodification	18.6
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	17.4
Post-Development Erosion And Sedimentation	Hydromodification	13.8
Highways, Roads, Bridges, Infrastructure (New Construction)	Construction	13.3
Managed Pasture Grazing	Agriculture	12.5
Unrestricted Cattle Access	Agriculture	12.5
Package Plant Or Other Permitted Small Flows Discharges	Municipal Discharges/Sewage	9.7
Golf Courses	Recreation And Tourism (Non-Boating)	9.3
Changes In Tidal Circulation/Flushing	Hydromodification	9.3
Grazing In Riparian Or Shoreline Zones	Agriculture	8.5
Brownfield (Non-Npl) Sites	Legacy/Historical Pollutants	8.2
Crop Production (Crop Land Or Dry Land)	Agriculture	7.5
Industrial/Commercial Site Stormwater Discharge (Permitted)	Urban-Related Runoff/Stormwater	7.1

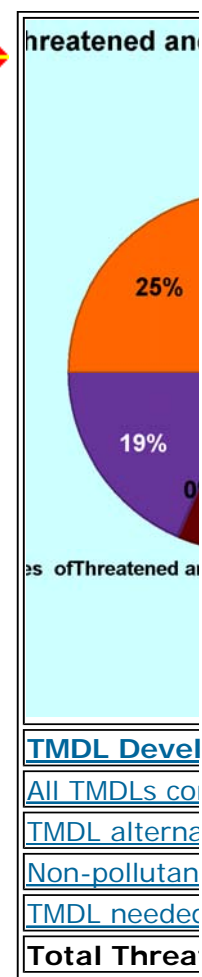
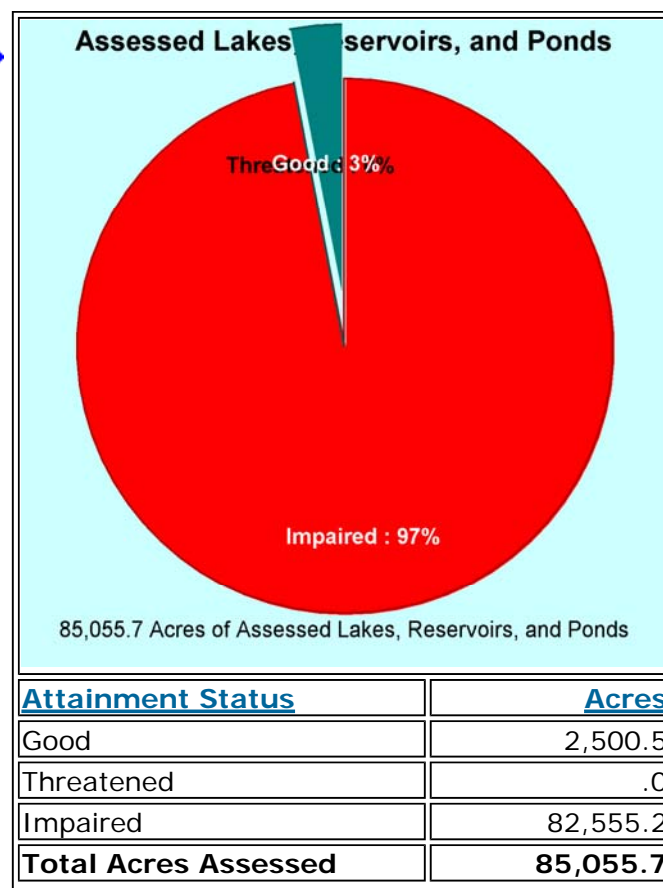
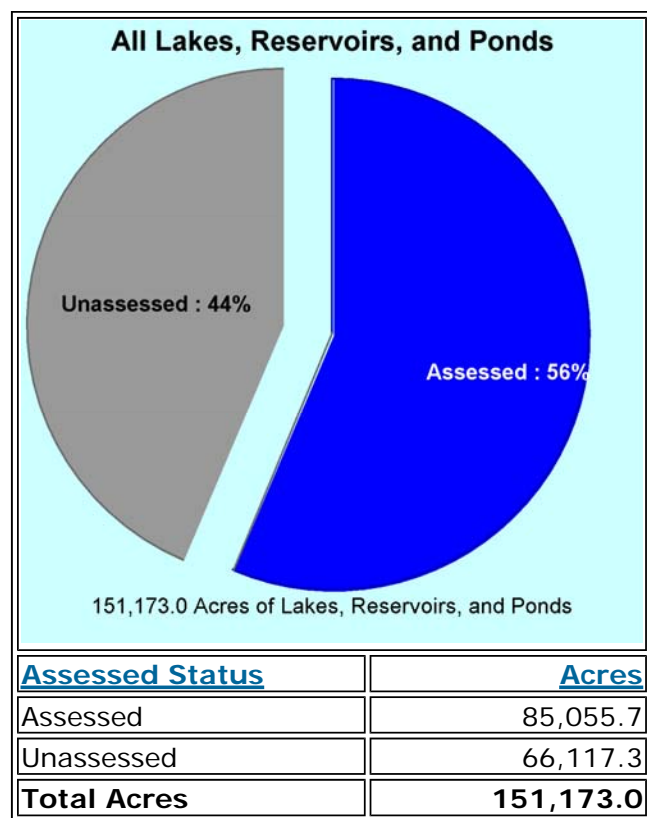
Landfills	Land Application/Waste Sites/Tanks	6.5
Pipeline Breaks	Spills/Dumping	5.8
Other Turf Management	Recreation And Tourism (Non-Boating)	5.4
Salt Storage Sites	Land Application/Waste Sites/Tanks	4.1
Specialty Crop Production	Agriculture	4.0
Upstream Impoundments (E.G., PI-566 Nracs Structures)	Hydromodification	3.5
Acid Mine Drainage	Resource Extraction	3.3
Channel Erosion/Incision From Upstream Hydromodifications	Hydromodification	3.2
Changes In Ordinary Stratification And Bottom Water Hypoxia/Anoxia	Natural/Wildlife	3.1
Cooling Water Intake Structures (Impingement Or Entrainment)	Industrial	3.1
Industrial Thermal Discharges	Industrial	3.1
Animal Feeding Operations (Nps)	Agriculture	2.5
Illegal Dumping	Spills/Dumping	2.4
Commercial Districts (Shopping/Office Complexes)	Urban-Related Runoff/Stormwater	1.5
Dairies (Outside Milk Parlor Areas)	Agriculture	.4

Site-specific Targeted Monitoring Results

Massachusetts Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

[Description of this table](#)








Site-specific Targeted Monitoring Results Individual Designated Use Support Massachusetts Lakes, Reservoirs, and Ponds 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

Description of this table













<u>Designated Use</u>	<u>Acres Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened

					% Impaired
Aesthetic	51,526.2	72.5	.0	27.5	
Fish Consumption	53,078.5	.0	.0	100.0	
Fish, Other Aquatic Life And Wildlife	68,074.5	2.0	.0	98.0	
Primary Contact Recreation	51,955.6	68.7	.0	31.3	
Secondary Contact Recreation	54,405.9	72.4	.0	27.6	

Site-specific Targeted Monitoring Results

Causes of Impairment Massachusetts Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Acres Threatened or Impaired</u>
Non-Native Aquatic Plants	Nuisance Exotic Species	 58,021.3
Mercury in Fish Tissue	Mercury	 50,680.4
Eurasian Water Milfoil, Myriophyllum Spicatum	Nuisance Exotic Species	 15,569.5
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 9,574.1
Excess Algal Growth	Algal Growth	 6,623.9
Turbidity	Turbidity	 5,588.3
Phosphorus, Total	Nutrients	 5,554.7
Aquatic Plants (Macrophytes)	Noxious Aquatic Plants	 4,708.8
DDT	Pesticides	 1,879.6
Nutrient/Eutrophication Biological Indicators	Nutrients	 1,811.4
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	 1,057.5
Secchi Disk Transparency	Turbidity	 1,010.6

PCB(s) in Fish Tissue	Polychlorinated Biphenyls (PCBs)	948.1
Other Flow Regime Alterations	Flow Alteration(s)	702.8
Pentachlorophenol (PCP)	Toxic Organics	581.4
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	581.4
Chlordane	Pesticides	468.0
Fecal Coliform	Pathogens	453.6
Chlorophyll-A	Algal Growth	406.0
Escherichia Coli (E. Coli)	Pathogens	284.0
Enterococcus Bacteria	Pathogens	273.4
Nitrogen, Total	Nutrients	256.9
Fish Passage Barrier	Habitat Alterations	228.4
Zebra Mussel, Dreissena Polymorph	Nuisance Exotic Species	173.5
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (Only)	Dioxins	131.3
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Toxic Organics	122.9
Arsenic	Metals (other than Mercury)	96.0
Sediment Bioassay	Total Toxics	96.0
Sulfide-Hydrogen Sulfide	Toxic Inorganics	92.8
Salinity	Salinity/Total Dissolved Solids/Chlorides/Sulfates	92.8
Low Flow Alterations	Flow Alteration(s)	67.9
DEHP (Di-Sec-Octyl Phthalate)	Pesticides	67.0
Taste and Odor	Taste, Color and Odor	49.0
Organic Enrichment (Sewage) Biological Indicators	Organic Enrichment/Oxygen Depletion	34.3
Chromium, Total	Metals (other than Mercury)	29.0
Total Suspended Solids (TSS)	Turbidity	23.3

Debris/Floatables/Trash	Trash	15.9
Sedimentation/Siltation	Sediment	15.8

Site-specific Targeted Monitoring Results
Probable Sources
Massachusetts Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Acres Threatened or Impaired</u>
Introduction Of Non-Native Organisms (Accidental Or Intentional)	Other	61,631.9
Atmospheric Deposition - Toxics	Atmospheric Deposition	46,276.2
Source Unknown	Unknown	25,632.8
Internal Nutrient Recycling	Natural/Wildlife	1,554.5
Municipal Point Source Discharges	Municipal Discharges/Sewage	786.4
Cercla Npl (Superfund) Sites	Legacy/Historical Pollutants	762.5
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	629.4
Flow Alterations From Water Diversions	Hydromodification	616.7
Non-Point Source	Unspecified Nonpoint Source	544.0
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	473.6
Agriculture	Agriculture	284.0
Hydrostructure Impacts On Fish Passage	Hydromodification	228.4
Waterfowl	Natural/Wildlife	144.8

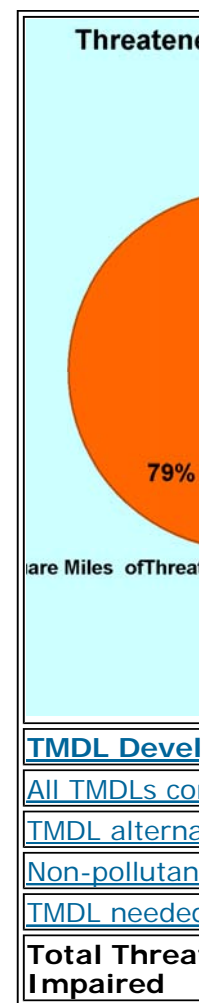
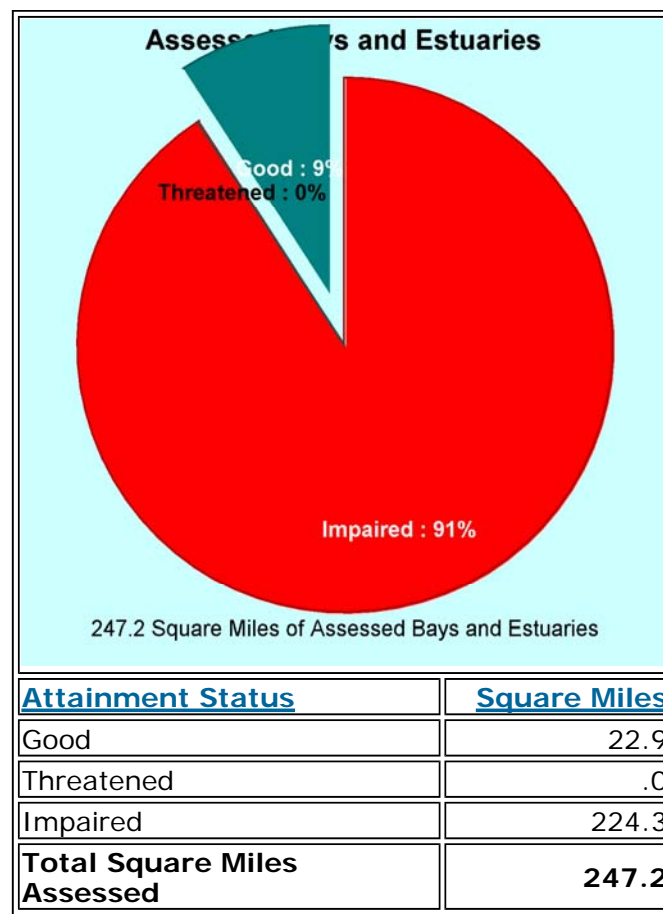
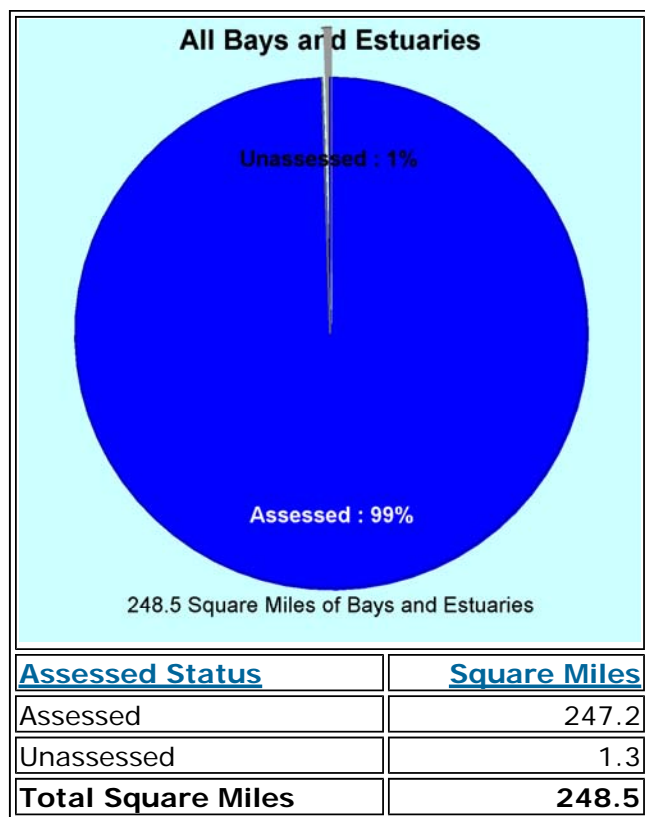
Pesticide Application	Land Application/Waste Sites/Tanks	131.3
Contaminated Sediments	Legacy/Historical Pollutants	96.0
Contaminated Groundwater	Groundwater Loadings/Withdrawals	96.0
Sewage Discharges In Unsewered Areas	Municipal Discharges/Sewage	91.7
Other Turf Management	Recreation And Tourism (Non-Boating)	90.3
Inappropriate Waste Disposal	Spills/Dumping	66.8
Residential Districts	Urban-Related Runoff/Stormwater	61.6
Runoff From Forest/Grassland/Parkland	Other	50.9
Petroleum/Natural Gas Production Activities (Permitted)	Industrial	41.9
Municipal (Urbanized High Density Area)	Urban-Related Runoff/Stormwater	34.3
Discharges From Municipal Separate Storm Sewer Systems (Ms4)	Urban-Related Runoff/Stormwater	34.3
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	26.2

Site-specific Targeted Monitoring Results Massachusetts Bays and Estuaries 2010

[Description of this table](#)

[Description of this table](#)





Site-specific Targeted Monitoring Results







Individual Designated Use Support

Massachusetts Bays and Estuaries 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)












<u>Designated Use</u>	<u>Square Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	% Good
					% Threatened

					% Impaired
Aesthetic	113.6	87.2	.0	12.8	
Fish Consumption	56.2	.0	.0	100.0	
Fish, Other Aquatic Life And Wildlife	154.1	61.1	.0	38.9	
Primary Contact Recreation	157.5	86.8	.0	13.2	
Secondary Contact Recreation	157.6	88.3	.0	11.7	
Shellfish Harvesting	239.6	11.1	.0	88.9	

Site-specific Targeted Monitoring Results

Causes of Impairment Massachusetts Bays and Estuaries 2010

[Description of this table](#)

















<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Square Miles Threatened or Impaired</u>
Fecal Coliform	Pathogens	 213.3
PCB(s) in Fish Tissue	Polychlorinated Biphenyls (PCBs)	 62.2
Other Cause	Other Cause	 45.2
Nitrogen, Total	Nutrients	 32.9
Estuarine Bioassessments	Cause Unknown - Impaired Biota	 23.1
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 19.8
Nutrient/Eutrophication Biological Indicators	Nutrients	 10.5
Fish Bioassessments	Cause Unknown - Impaired Biota	 6.8
Chlorophyll-A	Algal Growth	 5.1
Turbidity	Turbidity	 4.5
Temperature, Water	Temperature	

		4.1
Total Suspended Solids (TSS)	Turbidity	3.5
Debris/Floatables/Trash	Trash	3.1
Taste and Odor	Taste, Color and Odor	3.0
Combined Biota/Habitat Bioassessments (Streams)	Cause Unknown - Impaired Biota	2.3
Oil and Grease	Oil and Grease	2.0
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	1.6
Ammonia, Un-ionized	Ammonia	1.2
Foam/Flocs/Scum/Oil Slicks	Other Cause	.5
Petroleum Hydrocarbons	Oil and Grease	.5
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	.4
Color	Taste, Color and Odor	.3
Mercury in Fish Tissue	Mercury	.3
Excess Algal Growth	Algal Growth	.3
Whole Effluent Toxicity (WET)	Total Toxics	.2
Other Flow Regime Alterations	Flow Alteration(s)	.1
Secchi Disk Transparency	Turbidity	.1
Phosphorus, Total	Nutrients	.1
Physical Substrate Habitat Alterations	Habitat Alterations	.0
Alteration in Stream-Side or Littoral Vegetative Covers	Habitat Alterations	.0
Aquatic Macroinvertebrate Bioassessments	Cause Unknown - Impaired Biota	.0

Site-specific Targeted Monitoring Results

Probable Sources Massachusetts Bays and Estuaries 2010

[Description of this table](#)

<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Square Miles Threatened or Impaired</u>
Source Unknown	Unknown	 175.4
Discharges From Municipal Separate Storm Sewer Systems (Ms4)	Urban-Related Runoff/Stormwater	 52.0
Combined Sewer Overflows	Municipal Discharges/Sewage	 33.7
Contaminated Sediments	Legacy/Historical Pollutants	 19.2
Marina/Boating Pumpout Releases	Recreational Boating And Marinas	 18.6
Cercla Npl (Superfund) Sites	Legacy/Historical Pollutants	 18.3
Municipal Point Source Discharges	Municipal Discharges/Sewage	 18.2
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 17.4
Marina/Boating Sanitary On-Vessel Discharges	Recreational Boating And Marinas	 17.4
Industrial Point Source Discharge	Industrial	 12.0
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	 10.9
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	 7.9
Unpermitted Discharge (Domestic Wastes)	Municipal Discharges/Sewage	 5.1
Cooling Water Intake Structures (Impingement Or Entrainment)	Industrial	 4.1
Municipal (Urbanized High Density Area)	Urban-Related Runoff/Stormwater	 4.0
Grazing In Riparian Or Shoreline Zones	Agriculture	 2.7
Dairies (Outside Milk Parlor Areas)	Agriculture	 2.7

Animal Feeding Operations (Nps)	Agriculture	2.7
Changes In Tidal Circulation/Flushing	Hydromodification	2.4
Dredging (E.G., For Navigation Channels)	Hydromodification	2.3
Changes In Ordinary Stratification And Bottom Water Hypoxia/Anoxia	Natural/Wildlife	2.3
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	2.3
Industrial Thermal Discharges	Industrial	1.7
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	1.6
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	1.0
Upstream Source	Other	.6
Septage Disposal	Municipal Discharges/Sewage	.3
Agriculture	Agriculture	.2
Yard Maintenance	Urban-Related Runoff/Stormwater	.1
Streambank Modifications/Destabilization	Hydromodification	.0
Channelization	Hydromodification	.0
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	.0
Channel Erosion/Incision From Upstream Hydromodifications	Hydromodification	.0
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	.0

Massachusetts Causes of Impairment for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Cause of Impairment Group to see a list of specific state causes of impairment making up the Cause of Impairment Group. See also Pollution categories summary document (PDF) (20 pp, 557K, About PDF) for brief, non-technical descriptions of general cause categories.			
<u>Cause of Impairment Group</u>	Size of Assessed Waters with Listed Causes of Impairment		
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>
<u>Algal Growth</u>	<u>189.9</u>	<u>6,638.2</u>	<u>5.2</u>
<u>Ammonia</u>	<u>14.8</u>		<u>1.2</u>
<u>Cause Unknown - Fish Kills</u>	<u>2.9</u>		
<u>Cause Unknown - Impaired Biota</u>	<u>413.7</u>		<u>32.2</u>
<u>Dioxins</u>	<u>8.0</u>	<u>712.8</u>	
<u>Flow Alteration(s)</u>	<u>311.2</u>	<u>770.6</u>	<u>.1</u>
<u>Habitat Alterations</u>	<u>251.2</u>	<u>228.4</u>	<u>.0</u>
<u>Mercury</u>	<u>226.0</u>	<u>50,680.4</u>	<u>.3</u>
<u>Metals (other than Mercury)</u>	<u>85.8</u>	<u>96.0</u>	
<u>Noxious Aquatic Plants</u>	<u>98.8</u>	<u>4,708.8</u>	
<u>Nuisance Exotic Species</u>	<u>253.3</u>	<u>61,706.9</u>	
<u>Nutrients</u>	<u>463.6</u>	<u>7,318.9</u>	<u>43.0</u>
<u>Oil and Grease</u>	<u>16.7</u>		<u>2.4</u>
<u>Organic Enrichment/Oxygen Depletion</u>	<u>386.3</u>	<u>9,787.5</u>	<u>20.1</u>
<u>Other Cause</u>	<u>194.6</u>		<u>45.2</u>
<u>Pathogens</u>	<u>1,088.9</u>	<u>1,011.0</u>	<u>213.3</u>
<u>Pesticides</u>	<u>100.8</u>	<u>2,212.5</u>	
<u>pH/Acidity/Caustic Conditions</u>	<u>68.8</u>		
<u>Polychlorinated Biphenyls (PCBs)</u>	<u>399.0</u>	<u>948.1</u>	<u>62.5</u>
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	<u>28.7</u>	<u>92.8</u>	

<u>Sediment</u>	<u>130.1</u>	<u>15.8</u>	
<u>Taste, Color and Odor</u>	<u>132.1</u>	<u>49.0</u>	<u>3.0</u>
<u>Temperature</u>	<u>53.9</u>		<u>4.1</u>
<u>Total Toxics</u>	<u>80.7</u>	<u>96.0</u>	<u>.2</u>
<u>Toxic Inorganics</u>		<u>92.8</u>	
<u>Toxic Organics</u>	<u>8.2</u>	<u>704.4</u>	
<u>Trash</u>	<u>127.6</u>	<u>15.9</u>	<u>3.1</u>
<u>Turbidity</u>	<u>282.7</u>	<u>6,622.2</u>	<u>4.6</u>

Massachusetts Probable Sources Contributing to Impairments for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Probable Source Group to see a list of specific state Probable Sources making up the Probable Source Group.			
<u>Probable Source Group</u>	Size of Assessed Waters with Probable Sources of Impairments		
	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>
<u>Agriculture</u>	<u>77.9</u>	<u>284.0</u>	<u>2.8</u>
<u>Atmospheric Deposition</u>	<u>68.6</u>	<u>46,276.2</u>	
<u>Construction</u>	<u>13.3</u>		
<u>Groundwater Loadings/Withdrawals</u>		<u>96.0</u>	
<u>Habitat Alterations (Not Directly Related To Hydromodification)</u>	<u>57.8</u>		
<u>Hydromodification</u>	<u>434.8</u>	<u>845.1</u>	<u>2.5</u>
<u>Industrial</u>	<u>51.3</u>	<u>41.9</u>	<u>13.7</u>
<u>Land Application/Waste Sites/Tanks</u>	<u>98.4</u>	<u>131.3</u>	
<u>Legacy/Historical Pollutants</u>	<u>271.1</u>	<u>858.5</u>	<u>19.2</u>
<u>Municipal Discharges/Sewage</u>	<u>582.5</u>	<u>1,415.9</u>	<u>56.1</u>
<u>Natural/Wildlife</u>	<u>54.7</u>	<u>1,699.2</u>	<u>2.3</u>

<u>Other</u>	<u>232.3</u>	<u>61,682.8</u>	<u>.6</u>
<u>Recreation And Tourism (Non-Boating)</u>	<u>14.7</u>	<u>90.3</u>	
<u>Recreational Boating And Marinas</u>			<u>18.6</u>
<u>Resource Extraction</u>	<u>3.3</u>		
<u>Spills/Dumping</u>	<u>103.6</u>	<u>66.8</u>	
<u>Unknown</u>	<u>1,299.5</u>	<u>25,632.8</u>	<u>175.4</u>
<u>Unspecified Nonpoint Source</u>	<u>78.3</u>	<u>544.0</u>	
<u>Urban-Related Runoff/Stormwater</u>	<u>588.4</u>	<u>595.5</u>	<u>71.6</u>

Massachusetts TMDL Alternatives by Cause of Impairment 2010

No TMDL Alternatives reported.

Massachusetts Previously Impaired Waters Now Attaining All Assessed Uses

[Description of this table](#)

NOTE: Click on the underlined "Number of Waters Attaining" value for a detailed list of those waters now attaining all uses.		
<u>Cycle Attaining</u>	<u>Number of Waters Attaining</u>	<u>Number of Causes of Impairment Addressed</u>
2006	<u>5</u>	8

Massachusetts Causes of Impairment for 303(d) Listed Waters

[Description of this table](#)

NOTE: Click on a cause of impairment (e.g. pathogens) to see the specific state-reported causes that are grouped to make up this category. Click on the "Number of Causes of Impairment Reported" to see a list of waters with that cause of impairment.	
<u>Cause of Impairment Group Name</u>	<u>Number of Causes of Impairment Reported</u>
<u>Pathogens</u>	<u>284</u>
<u>Organic Enrichment/Oxygen Depletion</u>	<u>201</u>
<u>Nutrients</u>	<u>190</u>

<u>Turbidity</u>	156
<u>Noxious Aquatic Plants</u>	136
<u>Cause Unknown - Impaired Biota</u>	108
<u>Algal Growth</u>	100
<u>Polychlorinated Biphenyls (PCBs)</u>	83
<u>Mercury</u>	71
<u>Other Cause</u>	45
<u>Taste, Color and Odor</u>	42
<u>Pesticides</u>	38
<u>Sediment</u>	30
<u>Temperature</u>	28
<u>Metals (other than Mercury)</u>	26
<u>Total Toxics</u>	18
<u>pH/Acidity/Caustic Conditions</u>	14
<u>Oil and Grease</u>	9
<u>Ammonia</u>	6
<u>Dioxins</u>	6
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	5
<u>Toxic Organics</u>	4
<u>Nuisance Exotic Species</u>	3
<u>Habitat Alterations</u>	1

Total: 1,604 Causes of Impairment

Massachusetts Cumulative TMDLs by Pollutant

This chart includes TMDLs since October 1, 1995.

[Description of this table](#)

NOTE: Click on the underlined "Pollutant" value to see associated listed waters for which a TMDL was developed. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant.		
<u>Pollutant</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
<u>Fecal Coliform</u>	<u>130</u>	130
<u>Mercury</u>	<u>78</u>	78
<u>Phosphorus, Total</u>	<u>78</u>	135
<u>Nitrogen, Total</u>	<u>67</u>	70
<u>Phosphorus</u>	<u>49</u>	61
<u>Fecal</u>	<u>45</u>	45
<u>Pathogens</u>	<u>36</u>	36
<u>Mercury in Fish Tissue</u>	<u>20</u>	20
<u>Escherichia Coli (E. Coli)</u>	<u>19</u>	19
<u>Enterococcus Bacteria</u>	<u>1</u>	1











Total: 523 TMDLs; 595 Causes of Impairment Addressed

Massachusetts Cumulative Number of TMDLs

EPA Fiscal Year starts October 1 and ends September 30.

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDLs Completed" value for a detailed list of the TMDLs for the fiscal year.		
<u>Fiscal Year</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
2000	<u>1</u>	1
2002	<u>102</u>	119

2003	 28	http://iaspub.epa.gov/waters10/attains_state.control?p_state=MA&p_cycle=2010	31
2004	 20	Last updated on Thursday, December 20, 2012	20
2005	 2		2
2006	 11		13
2007	 25		25
2008	 122		127
2009	 115		115
2010	 9		14
2011	 50		90
2012	 38		38

Total: 523 TMDLs; 595 Causes of Impairment Addressed

TMDL Document Search

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Watershed Assessment, Tracking & Environmental Results

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Connecticut Water Quality Assessment

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On This Page

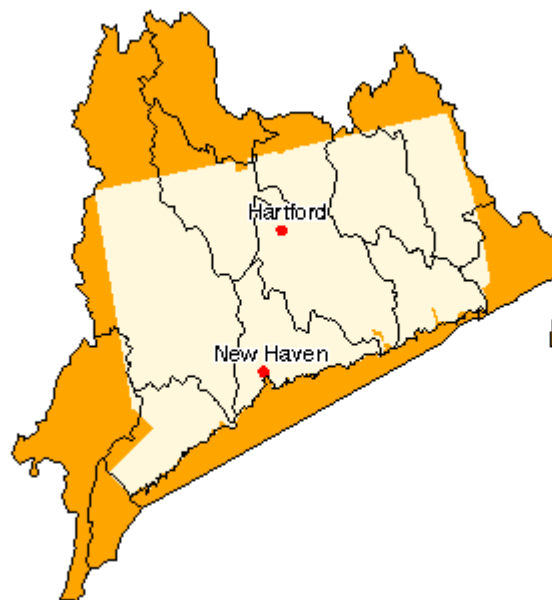
[Connecticut Assessment Summary](#)
[Water Quality by Waterbody Type](#)
 [Rivers and Streams](#)
 [Lakes, Reservoirs, and Ponds](#)
 [Bays and Estuaries](#)
[Causes of Impairment](#)
[Probable Sources Contributing to Impairments](#)
[TMDL Alternatives by Cause of Impairment](#)
[Previously Impaired Waters Now Attaining All Assessed Uses](#)
[Causes of Impairment for 303\(d\) Listed Waters](#)
[Cumulative TMDLs by Pollutant](#)
[Cumulative Number of TMDLs](#)

Connecticut Water Quality Assessment Report

Assessed Waters of Connecticut by Watershed

Select a watershed from the list:

or click on the map to choose a watershed:



Search for a waterbody within Connecticut

Enter Waterbody Name:

☐ Display impaired waters and TMDL information only

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[303\(d\) Listed Waters for 2010](#)

Data are also available for these cycles:

[2002](#) [2004](#) [2006](#) [2008](#)

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Site-specific Targeted Monitoring Summary Results Connecticut (2010)

[Description of this table](#)

	Size of Water		
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Good Waters	1,360.2	24,216.9	192.8
Previously impaired waters now attaining all uses	63.0		4.3
Threatened Waters			
TMDL completed			
TMDL alternative			

Non-pollutant impairment			
TMDL needed			
Impaired Waters	1,006.7	6,220.6	419.1
TMDL completed	84.8	256.7	179.5
TMDL alternative	23.7	339.3	
Non-pollutant impairment	35.4	392.1	
TMDL needed	862.8	5,232.6	239.6
New TMDLs completed	244.8	1,060.0	85.3
Remaining TMDLs needed	618.1	4,172.6	154.2
Total Assessed Waters	2,366.8	30,437.5	611.9
Total Waters	5,830.0	64,973.0	613.3
Percent of Waters Assessed	40.6	46.8	99.8

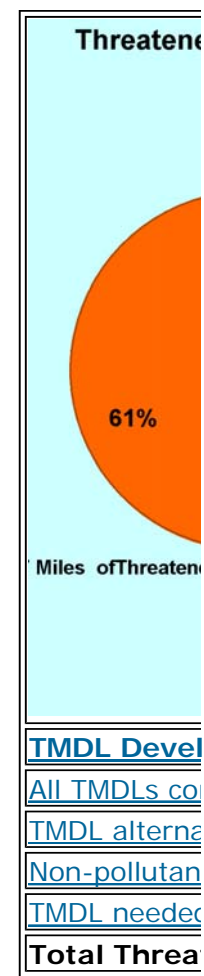
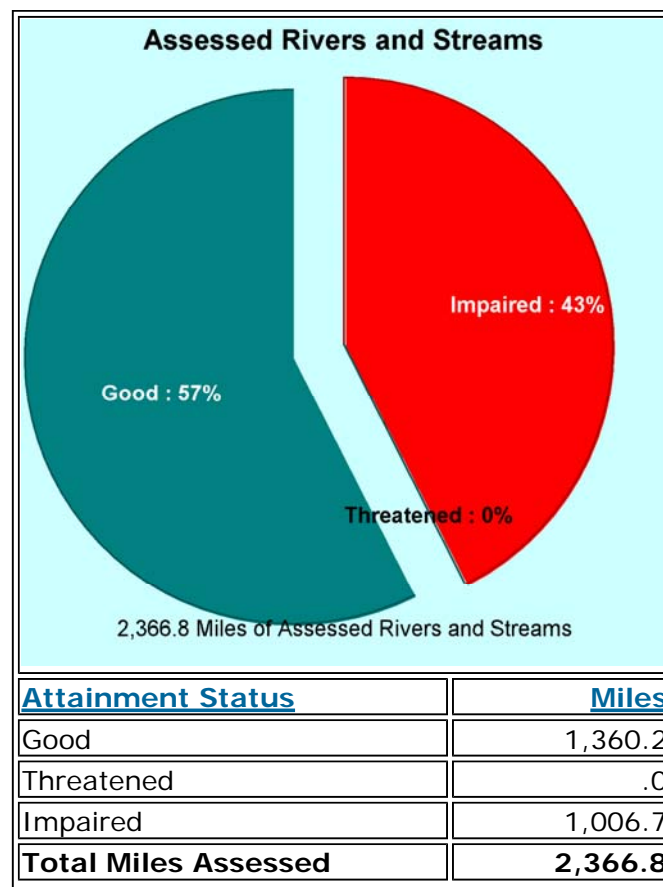
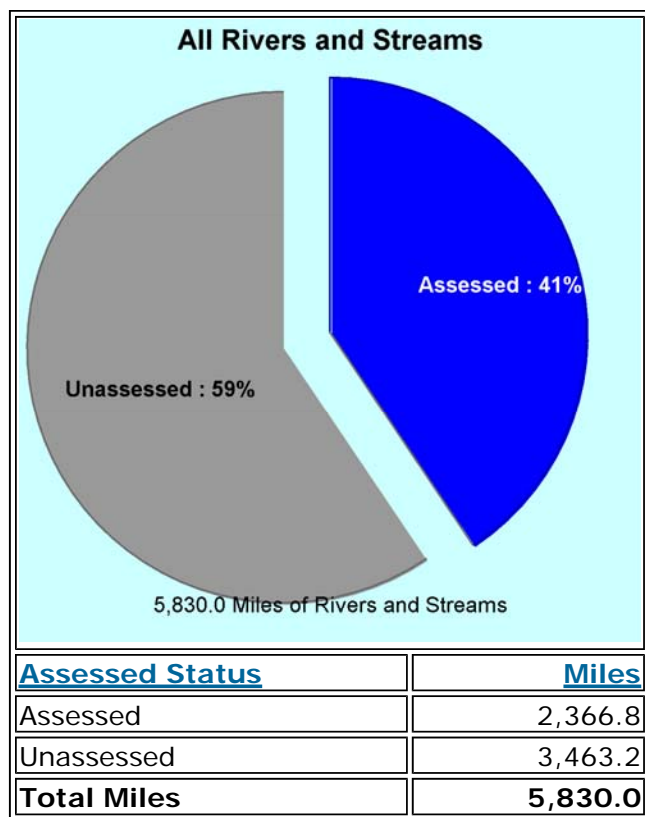
Summary of Water Quality Assessments for Each Waterbody Type for Reporting Year 2010

Site-specific Targeted Monitoring Results Connecticut Rivers and Streams 2010

[Description of this table](#)

[Description of this table](#)







Site-specific Targeted Monitoring Results





Individual Designated Use Support

Connecticut Rivers and Streams 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.

[Description of this table](#)















<u>Designated Use</u>	<u>Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened

					% Impaired
Existing Or Proposed Drinking Water	1.2	.0	.0	100.0	
Fish Consumption	2,365.0	94.5	.0	5.5	
Habitat For Fish, Other Aquatic Life And Wildlife	1,313.5	65.7	.0	34.3	
Recreation	902.6	9.5	.0	90.5	

Site-specific Targeted Monitoring Results

Causes of Impairment Connecticut Rivers and Streams 2010

[Description of this table](#)




<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Miles Threatened or Impaired</u>
Escherichia Coli (E. Coli)	Pathogens	 816.4
Cause Unknown	Cause Unknown	 395.0
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 127.8
Enterococcus Bacteria	Pathogens	 54.2
Other Flow Regime Alterations	Flow Alteration(s)	 39.2
Physical Substrate Habitat Alterations	Habitat Alterations	 32.3
Sedimentation/Siltation	Sediment	 5.6
Whole Effluent Toxicity (WET)	Total Toxics	 5.4
Iron	Metals (other than Mercury)	 5.3
Alterations in Wetland Habitats	Habitat Alterations	 4.5
Chlorine	Chlorine	 3.9
Copper	Metals (other than Mercury)	 3.8
Mercury	Mercury	 3.8
Zinc	Metals (other than Mercury)	 3.3

Propylene Glycol	Toxic Organics	3.1
Ethylene Glycol	Toxic Organics	3.1
Lead	Metals (other than Mercury)	2.7
Ammonia, Un-ionized	Ammonia	2.2
Temperature, Water	Temperature	1.8
Turbidity	Turbidity	1.4
Sodium	Salinity/Total Dissolved Solids/Chlorides/Sulfates	1.4
Uranium	Radiation	.7
Cobalt	Metals (other than Mercury)	.7
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	.6
Organic Enrichment (Sewage) Biological Indicators	Organic Enrichment/Oxygen Depletion	.6
Nutrient/Eutrophication Biological Indicators	Nutrients	.6
Diesel Fuel	Oil and Grease	.1
Sulfates	Salinity/Total Dissolved Solids/Chlorides/Sulfates	.1

Site-specific Targeted Monitoring Results

Probable Sources Connecticut Rivers and Streams 2010

[Description of this table](#)

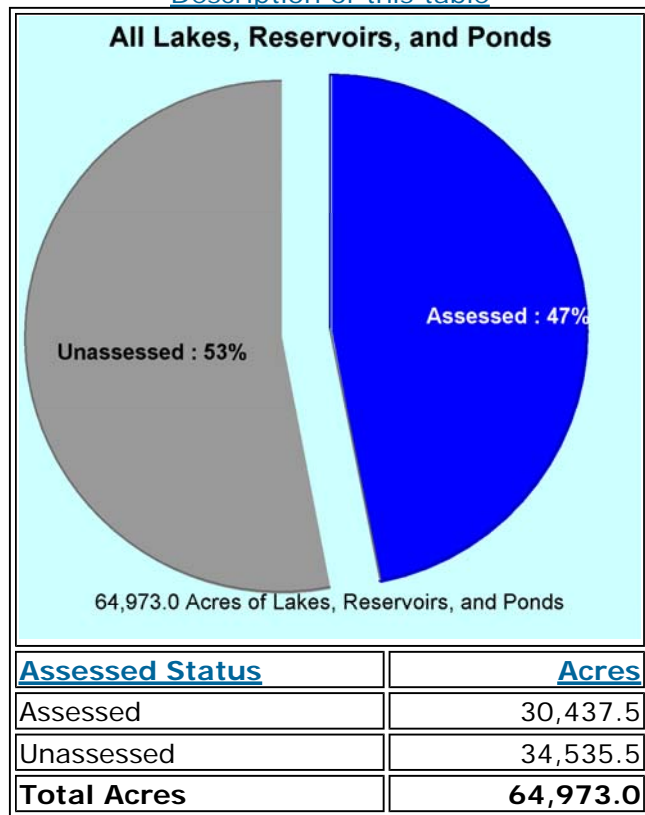
Probable Source	Probable Source Group	Miles Threatened or Impaired
Source Unknown	Unknown	 902.9
Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 221.8
Municipal Point Source Discharges	Municipal Discharges/Sewage	 130.5

Sources Outside State Jurisdiction Or Borders	Other	106.6
Industrial Point Source Discharge	Industrial	105.3
Combined Sewer Overflows	Municipal Discharges/Sewage	78.2
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	52.0
Landfills	Land Application/Waste Sites/Tanks	49.5
Contaminated Sediments	Legacy/Historical Pollutants	48.8
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	46.6
Agriculture	Agriculture	43.1
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	42.4
Upstream Impoundments (E.G., PI-566 Nrcs Structures)	Hydromodification	41.1
Channelization	Hydromodification	39.4
Site Clearance (Land Development Or Redevelopment)	Construction	37.9
Baseflow Depletion From Groundwater Withdrawals	Hydromodification	32.3
Flow Alterations From Water Diversions	Hydromodification	29.4
Above Ground Storage Tank Leaks (Tank Farms)	Spills/Dumping	25.5
Golf Courses	Recreation And Tourism (Non-Boating)	22.2
Dredge Mining	Resource Extraction	15.7
Loss Of Riparian Habitat	Habitat Alterations (Not Directly Related To Hydromodification)	15.2
Animal Feeding Operations (Nps)	Agriculture	11.9

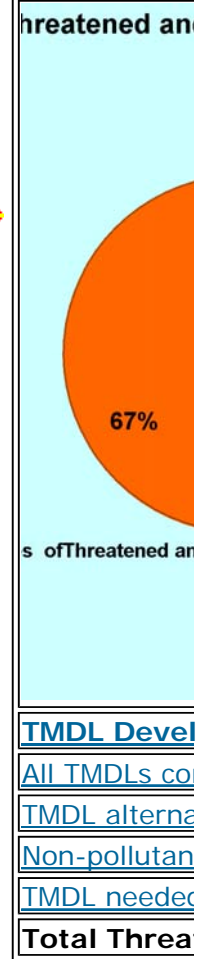
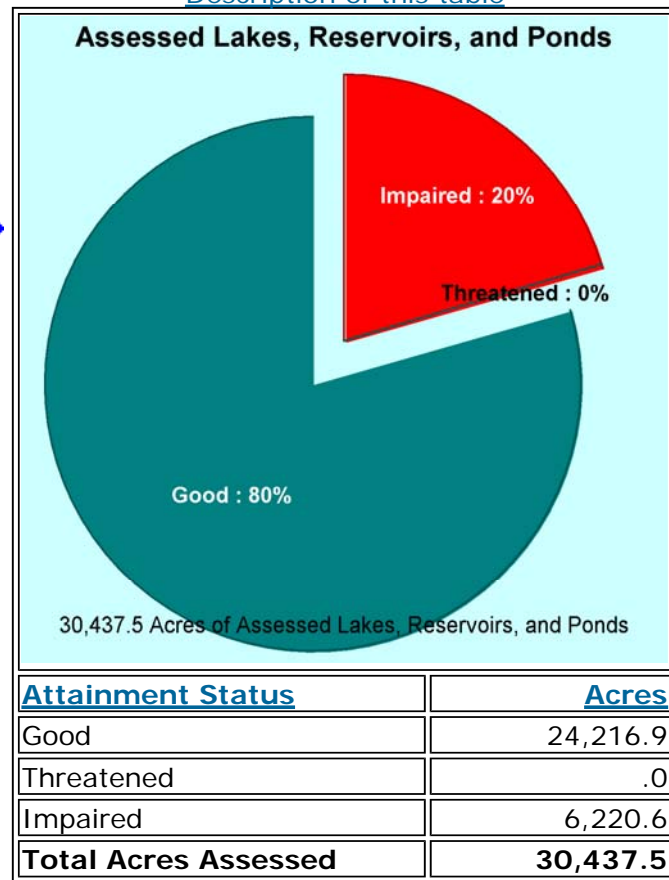
Livestock (Grazing Or Feeding Operations)	Agriculture	10.4
Waterfowl	Natural/Wildlife	8.9
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	7.2
Surface Mining	Resource Extraction	4.9
Habitat Modification - Other Than Hydromodification	Habitat Alterations (Not Directly Related To Hydromodification)	4.6
Irrigated Crop Production	Agriculture	4.2
Post-Development Erosion And Sedimentation	Hydromodification	4.0
Industrial Land Treatment	Industrial	3.8
Natural Sources	Natural/Wildlife	3.2
Airports	Industrial	3.1
Accidental Release/Spill	Spills/Dumping	2.4
Non-Point Source	Unspecified Nonpoint Source	2.1
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	2.0
Streambank Modifications/Destabilization	Hydromodification	1.7
Drainage/Filling/Loss Of Wetlands	Habitat Alterations (Not Directly Related To Hydromodification)	1.5
Managed Pasture Grazing	Agriculture	1.2
Discharges From Biosolids (Sludge) Storage, Application Or Disposal	Land Application/Waste Sites/Tanks	.6
Inappropriate Waste Disposal	Spills/Dumping	.4
Non-Irrigated Crop Production	Agriculture	.2

Site-specific Targeted Monitoring Results Connecticut Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)





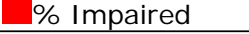




[Description of this table](#)



Site-specific Targeted Monitoring Results Individual Designated Use Support Connecticut Lakes, Reservoirs, and Ponds 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.








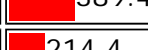




[Description of this table](#)

<u>Designated Use</u>	<u>Acres Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened
					 % Impaired
Existing Or Proposed Drinking Water	1,190.3	100.0	.0	.0	
Fish Consumption	30,426.7	87.6	.0	12.4	
Habitat For Fish, Other Aquatic Life And Wildlife	30,181.2	96.2	.0	3.8	
Recreation	26,672.0	82.0	.0	18.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Connecticut Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Acres Threatened or Impaired</u>
Nutrient/Eutrophication Biological Indicators	Nutrients	 3,520.0
Excess Algal Growth	Algal Growth	 3,353.4
Chlorophyll-A	Algal Growth	 3,213.6
Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 3,068.6
Taste and Odor	Taste, Color and Odor	 1,594.9
Debris/Floatables/Trash	Trash	 1,594.9
Escherichia Coli (E. Coli)	Pathogens	 1,146.2
Mercury	Mercury	 810.0
Non-Native Aquatic Plants	Nuisance Exotic Species	 389.4
Other Flow Regime Alterations	Flow Alteration(s)	 214.4
Sedimentation/Siltation	Sediment	 195.5
Turbidity	Turbidity	 194.5













Phosphorus, Total	Nutrients	112.8
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	110.7
Alterations in Wetland Habitats	Habitat Alterations	95.6
Enterococcus Bacteria	Pathogens	70.5
Chlordane	Pesticides	53.9
Lead	Metals (other than Mercury)	24.1
Total Suspended Solids (TSS)	Turbidity	9.4
Cadmium	Metals (other than Mercury)	5.0
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	4.0
Copper	Metals (other than Mercury)	.6
Ammonia, Un-ionized	Ammonia	.6
Organic Enrichment (Sewage) Biological Indicators	Organic Enrichment/Oxygen Depletion	.6

Site-specific Targeted Monitoring Results

Probable Sources Connecticut Lakes, Reservoirs, and Ponds 2010

[Description of this table](#)

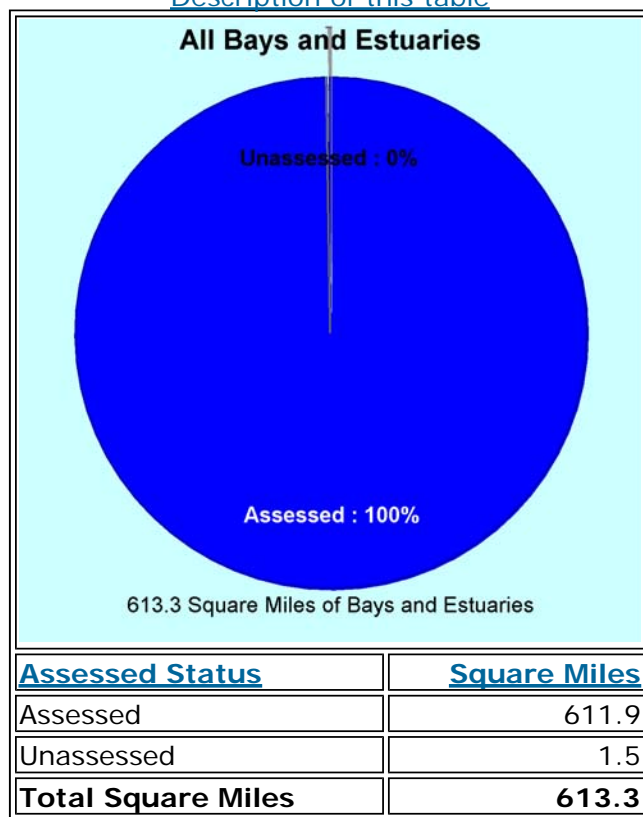
<u>Probable Source</u>	<u>Probable Source Group</u>	<u>Acres Threatened or Impaired</u>
Contaminated Sediments	Legacy/Historical Pollutants	3,098.3
Sources Outside State Jurisdiction Or Borders	Other	3,050.2
Industrial Point Source Discharge	Industrial	3,018.8
Source Unknown	Unknown	2,891.9

Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 2,211.3
Agriculture	Agriculture	 1,971.9
Municipal Point Source Discharges	Municipal Discharges/Sewage	 1,854.7
Non-Point Source	Unspecified Nonpoint Source	 1,782.4
Atmospheric Deposition - Toxics	Atmospheric Deposition	 625.3
Internal Nutrient Recycling	Natural/Wildlife	 508.4
Waterfowl	Natural/Wildlife	 443.9
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	 279.0
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	 216.0
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	 214.4
Post-Development Erosion And Sedimentation	Hydromodification	 204.8
Sediment Resuspension (Clean Sediment)	Hydromodification	 140.6
Habitat Modification - Other Than Hydromodification	Habitat Alterations (Not Directly Related To Hydromodification)	 95.6
Above Ground Storage Tank Leaks (Tank Farms)	Spills/Dumping	 70.5
Natural Sources	Natural/Wildlife	 56.8
Surface Mining	Resource Extraction	 44.5
Other Spill Related Impacts	Spills/Dumping	 29.6
Streambank Modifications/Destabilization	Hydromodification	 9.4
Discharges From Biosolids (Sludge) Storage, Application Or Disposal	Land Application/Waste Sites/Tanks	 .6

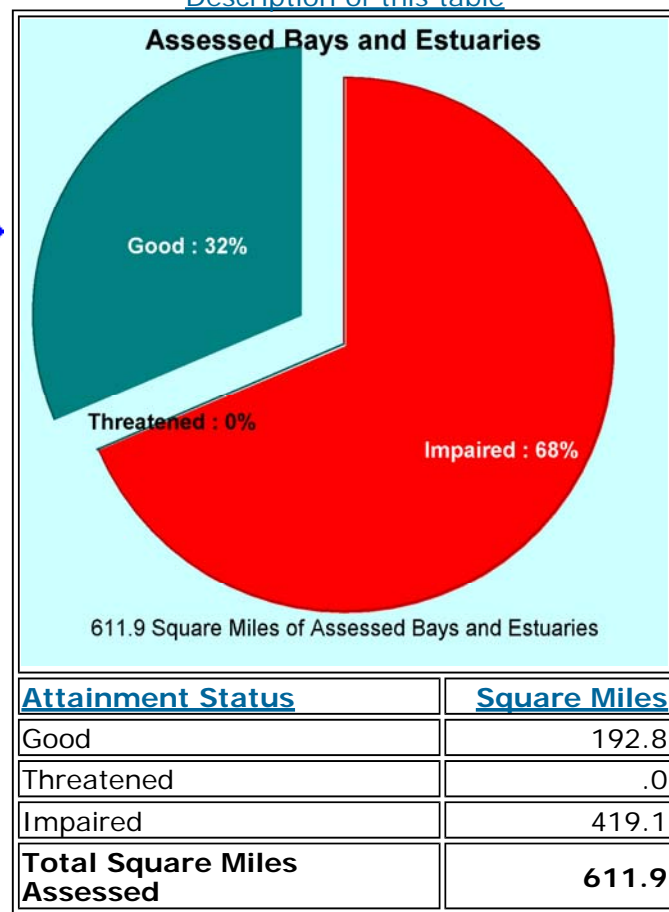
Landfills	Land Application/Waste Sites/Tanks	.6
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Site-specific Targeted Monitoring Results Connecticut Bays and Estuaries 2010

[Description of this table](#)



[Description of this table](#)



Threatened











Site-specific Targeted Monitoring Results

Individual Designated Use Support Connecticut Bays and Estuaries 2010

* Waters assessed for more than one designated use are included in multiple designated use groups below.





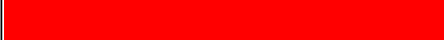
[Description of this table](#)



















<u>Designated Use</u>	<u>Square Miles Assessed</u>	<u>Percent Good</u>	<u>Percent Threatened</u>	<u>Percent Impaired</u>	 % Good
					 % Threatened
					 % Impaired
Commercial Shellfish Harvesting Where Authorized	60.4	64.8	.0	35.2	
Fish Consumption	611.9	98.6	.0	1.4	
Habitat For Marine Fish, Other Aquatic Life And Wildlife	549.4	42.8	.0	57.2	
Recreation	40.7	71.4	.0	28.6	
Shellfish Harvesting For Direct Consumption Where Authorized	245.9	17.0	.0	83.0	

Site-specific Targeted Monitoring Results

Causes of Impairment Connecticut Bays and Estuaries 2010

[Description of this table](#)

<u>Cause of Impairment</u>	<u>Cause of Impairment Group</u>	<u>Square Miles Threatened or Impaired</u>
Dissolved Oxygen Saturation	Organic Enrichment/Oxygen Depletion	 304.0
Dissolved Oxygen	Organic Enrichment/Oxygen Depletion	 304.0
Nutrient/Eutrophication Biological Indicators	Nutrients	 291.5
Nitrogen, Total	Nutrients	 278.0
Fecal Coliform	Pathogens	 225.3



















Polychlorinated Biphenyls (PCBs)	Polychlorinated Biphenyls (PCBs)	 17.8
Estuarine Bioassessments	Cause Unknown - Impaired Biota	 15.1
Enterococcus Bacteria	Pathogens	 11.6
Oil and Grease	Oil and Grease	 9.5
Cause Unknown	Cause Unknown	 8.8
Organic Enrichment (Sewage) Biological Indicators	Organic Enrichment/Oxygen Depletion	 2.0
Polycyclic Aromatic Hydrocarbons (PAHs) (Aquatic Ecosystems)	Toxic Organics	 1.9
Zinc	Metals (other than Mercury)	 1.5
Copper	Metals (other than Mercury)	 1.5
Dioxin (Including 2,3,7,8-TCDD)	Dioxins	 1.4
Lead	Metals (other than Mercury)	 1.0
Mercury	Mercury	 .9
Alterations in Wetland Habitats	Habitat Alterations	 .4
Gold	Metals (other than Mercury)	 .2
Silver	Metals (other than Mercury)	 .2
Chromium, Total	Metals (other than Mercury)	 .0
Chromium, Hexavalent	Metals (other than Mercury)	 .0
Escherichia Coli (E. Coli)	Pathogens	 .0

Site-specific Targeted Monitoring Results

Probable Sources Connecticut Bays and Estuaries 2010

[Description of this table](#)

Probable Source	Probable Source Group	Square Miles Threatened or Impaired
---------------------------------	---------------------------------------	---

Unspecified Urban Stormwater	Urban-Related Runoff/Stormwater	 413.4
Residential Districts	Urban-Related Runoff/Stormwater	 412.1
Non-Point Source	Unspecified Nonpoint Source	 377.7
Atmospheric Deposition - Nitrogen	Atmospheric Deposition	 291.2
Municipal Point Source Discharges	Municipal Discharges/Sewage	 289.5
Industrial Point Source Discharge	Industrial	 278.3
Marina/Boating Sanitary On-Vessel Discharges	Recreational Boating And Marinas	 238.8
Combined Sewer Overflows	Municipal Discharges/Sewage	 228.2
Waterfowl	Natural/Wildlife	 216.1
On-Site Treatment Systems (Septic Systems And Similar Decentralized Systems)	Municipal Discharges/Sewage	 122.9
Wet Weather Discharges (Point Source And Combination Of Stormwater, Sso Or Cso)	Municipal Discharges/Sewage	 89.4
Source Unknown	Unknown	 40.2
Contaminated Sediments	Legacy/Historical Pollutants	 12.1
Natural Sources	Natural/Wildlife	 11.4
Landfills	Land Application/Waste Sites/Tanks	 9.8
Illicit Connections/Hook-Ups To Storm Sewers	Municipal Discharges/Sewage	 6.1
Sources Outside State Jurisdiction Or Borders	Other	 4.0
Sanitary Sewer Overflows (Collection System Failures)	Municipal Discharges/Sewage	 3.9

Agriculture	Agriculture	1.6
Industrial/Commercial Site Stormwater Discharge (Permitted)	Urban-Related Runoff/Stormwater	1.5
Airports	Industrial	1.4
Flow Alterations From Water Diversions	Hydromodification	1.4
Upstream Impoundments (E.G., PI-566 Nrcs Structures)	Hydromodification	.8
Highway/Road/Bridge Runoff (Non-Construction Related)	Urban-Related Runoff/Stormwater	.6
Other Spill Related Impacts	Spills/Dumping	.4
Dredge Mining	Resource Extraction	.4
Non-Irrigated Crop Production	Agriculture	.3
Urban Runoff/Storm Sewers	Urban-Related Runoff/Stormwater	.1
Impervious Surface/Parking Lot Runoff	Urban-Related Runoff/Stormwater	.1
Impacts From Hydrostructure Flow Regulation/Modification	Hydromodification	.1
Changes In Tidal Circulation/Flushing	Hydromodification	.1

Connecticut Causes of Impairment for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Cause of Impairment Group to see a list of specific state causes of impairment making up the Cause of Impairment Group. See also [Pollution categories summary document \(PDF\)](#) (20 pp, 557K, [About PDF](#)) for brief, non-technical descriptions of general cause categories.

Cause of Impairment Group	Size of Assessed Waters with Listed Causes of Impairment
---	--

	<u>Rivers and Streams (Miles)</u>	<u>Lakes, Reservoirs, and Ponds (Acres)</u>	<u>Bays and Estuaries (Square Miles)</u>
<u>Algal Growth</u>		<u>3,353.4</u>	
<u>Ammonia</u>	<u>2.2</u>	<u>.6</u>	
<u>Cause Unknown</u>	<u>395.0</u>		<u>8.8</u>
<u>Cause Unknown - Impaired Biota</u>			<u>15.1</u>
<u>Chlorine</u>	<u>3.9</u>		
<u>Dioxins</u>			<u>1.4</u>
<u>Flow Alteration(s)</u>	<u>39.2</u>	<u>214.4</u>	
<u>Habitat Alterations</u>	<u>36.8</u>	<u>95.6</u>	<u>.4</u>
<u>Mercury</u>	<u>3.8</u>	<u>810.0</u>	<u>.9</u>
<u>Metals (other than Mercury)</u>	<u>13.1</u>	<u>24.1</u>	<u>2.6</u>
<u>Nuisance Exotic Species</u>		<u>389.4</u>	
<u>Nutrients</u>	<u>.6</u>	<u>3,632.8</u>	<u>293.5</u>
<u>Oil and Grease</u>	<u>.1</u>		<u>9.5</u>
<u>Organic Enrichment/Oxygen Depletion</u>	<u>.6</u>	<u>114.8</u>	<u>304.0</u>
<u>Pathogens</u>	<u>821.5</u>	<u>1,216.8</u>	<u>225.4</u>
<u>Pesticides</u>		<u>53.9</u>	
<u>Polychlorinated Biphenyls (PCBs)</u>	<u>127.8</u>	<u>3,068.6</u>	<u>17.8</u>
<u>Radiation</u>	<u>.7</u>		
<u>Salinity/Total Dissolved Solids/Chlorides/Sulfates</u>	<u>1.5</u>		
<u>Sediment</u>	<u>5.6</u>	<u>195.5</u>	
<u>Taste, Color and Odor</u>		<u>1,594.9</u>	
<u>Temperature</u>	<u>1.8</u>		
<u>Total Toxics</u>	<u>5.4</u>		
<u>Toxic Organics</u>	<u>3.1</u>		<u>1.9</u>
<u>Trash</u>		<u>1,594.9</u>	
<u>Turbidity</u>	<u>1.4</u>	<u>194.5</u>	

Connecticut Probable Sources Contributing to Impairments for Reporting Year 2010

[Description of this table](#)

NOTE: Click on the underlined Probable Source Group to see a list of specific state Probable Sources making up the Probable Source Group.			
Probable Source Group	Size of Assessed Waters with Probable Sources of Impairments		
	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Agriculture	57.4	1,971.9	1.9
Atmospheric Deposition		625.3	291.2
Construction	37.9		
Habitat Alterations (Not Directly Related To Hydromodification)	21.3	95.6	
Hydromodification	116.8	559.8	2.1
Industrial	109.3	3,018.8	278.3
Land Application/Waste Sites/Tanks	49.5	.6	9.8
Legacy/Historical Pollutants	48.8	3,098.3	12.1
Municipal Discharges/Sewage	222.8	2,133.7	374.4
Natural/Wildlife	8.9	1,009.0	227.4
Other	106.6	3,050.2	4.0
Recreation And Tourism (Non-Boating)	22.2		
Recreational Boating And Marinas			238.8
Resource Extraction	20.6	44.5	.4
Spills/Dumping	28.3	100.1	.4
Unknown	902.9	2,891.9	40.2
Unspecified Nonpoint Source	2.1	1,782.4	377.7
Urban-Related Runoff/Stormwater	223.8	2,211.3	414.6

Connecticut TMDL Alternatives by Cause of Impairment 2010

[Description of this table](#)




NOTE: Click on the underlined "Number of TMDL Alternatives by Cause of Impairment " value to see a listing of those Causes of Impairment.				
Cause of Impairment	Number of TMDL Alternatives	Rivers and Streams (Miles)	Lakes, Reservoirs, and Ponds (Acres)	Bays and Estuaries (Square Miles)
Polychlorinated Biphenyls (PCBs)	10	49	2,861	
Chromium, Hexavalent	1			0
Chromium, Total	1			0
Cobalt	1	1		
Diesel Fuel	1	0		
Lead	1			0
Mercury	1	0		
Sulfates	1	0		
Uranium	1	1		

Total: 18 TMDL Alternatives

Connecticut Previously Impaired Waters Now Attaining All Assessed Uses



















[Description of this table](#)

NOTE: Click on the underlined "Number of Waters Attaining" value for a detailed list of those waters now attaining all uses.		
Cycle Attaining	Number of Waters Attaining	Number of Causes of Impairment Addressed

2004	 6	9
2006	 3	5
2011	 9	9

Connecticut Causes of Impairment for 303(d) Listed Waters

[Description of this table](#)

NOTE: Click on a cause of impairment (e.g. pathogens) to see the specific state-reported causes that are grouped to make up this category. Click on the "Number of Causes of Impairment Reported" to see a list of waters with that cause of impairment.	
Cause of Impairment Group Name	Number of Causes of Impairment Reported
Pathogens	 320
Cause Unknown	 131
Organic Enrichment/Oxygen Depletion	 67
Nutrients	 45
Polychlorinated Biphenyls (PCBs)	 31
Metals (other than Mercury)	 20
Algal Growth	 19
Mercury	 11
Cause Unknown - Impaired Biota	 9
Oil and Grease	 9
Sediment	 5
Turbidity	 4
Toxic Organics	 2
Dioxins	 2
Ammonia	 2
Pesticides	 2
Salinity/Total Dissolved Solids/Chlorides/Sulfates	 1
Taste, Color and Odor	 1

Total Toxics	<u>1</u>
Trash	<u>1</u>

Total: 683 Causes of Impairment

Connecticut Cumulative TMDLs by Pollutant

This chart includes TMDLs since October 1, 1995.

[Description of this table](#)

NOTE: Click on the underlined "Pollutant" value to see associated listed waters for which a TMDL was developed. Click on the underlined "Number of TMDLs" value to see a listing of those TMDLs for the pollutant.		
<u>Pollutant</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
<u>Escherichia Coli (E. Coli)</u>	<u>234</u>	235
<u>Fecal Coliform</u>	<u>47</u>	47
<u>Copper</u>	<u>6</u>	6
<u>Zinc</u>	<u>5</u>	5
<u>Chlorine</u>	<u>4</u>	4
<u>Enterococcus Bacteria</u>	<u>4</u>	4
<u>Algal Growth</u>	<u>3</u>	3
<u>Ammonia</u>	<u>3</u>	3
<u>Lead</u>	<u>3</u>	3
<u>1,2-Propanediol</u>	<u>2</u>	2
<u>Ethylene Glycol</u>	<u>2</u>	2
<u>Nitrogen, Total</u>	<u>2</u>	2
<u>Nutrients</u>	<u>2</u>	2

<u>Organic Enrichment/Low Dissolved Oxygen</u>	<u>2</u>	2
<u>Phosphorus, Total</u>	<u>2</u>	2
<u>Pollutants in Urban Stormwater</u>	<u>2</u>	2
<u>Turbidity</u>	<u>2</u>	2
<u>Algal Growth/Chlorophyll A</u>	<u>1</u>	1
<u>Chlorophyll-A</u>	<u>1</u>	1
<u>Nitrogen</u>	<u>1</u>	1
<u>Toxicity</u>	<u>1</u>	1





Total: 329 TMDLs; 330 Causes of Impairment Addressed

Connecticut Cumulative Number of TMDLs

EPA Fiscal Year starts October 1 and ends September 30.

[Description of this table](#)

NOTE: Click on the underlined "Number of TMDLs Completed" value for a detailed list of the TMDLs for the fiscal year.		
<u>Fiscal Year</u>	<u>Number of TMDLs</u>	<u>Number of Causes of Impairment Addressed</u>
2000	<u>11</u>	11
2001	<u>9</u>	9
2002	<u>7</u>	7
2004	<u>3</u>	3
2005	<u>30</u>	30
2006	<u>16</u>	16
2007	<u>7</u>	7

2008	 26	http://ofmpub.epa.gov/waters10/attains_state.control?p_state=CT	27
2010	 9	Last updated on Thursday, December 20, 2012	
2011	 25		25
2012	 186		186

Total: 329 TMDLs; 330 Causes of Impairment Addressed

TMDL Document Search

[Full Text Search of TMDL Documents](#)

Appendix 5. National Coastal Condition Data for the Northeast Region

Coastal Water Quality data for the Northeast was received from EPA's John Kiddon (USEPA Environmental Effects Research Laboratory, Atlantic Ecology Division/ORD, 27 Tarzwell Drive, Narragansett, RI 02882, Kiddon.john@Epa.gov, 401-782-3044). Each site was characterized in terms of their latitude and longitude; these coordinates were used to determine in which HUC8 watershed the site was located.

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
CT02-0200	VP	02	CT	CT Coastal (Phase II)		41.1455	-73.2166	CT	Connecticut Ponds	Long Island Sound
CT02-0202	VP	02	CT	CT Coastal (Phase II)		41.2254	-73.1118	CT	Housatonic River	Long Island Sound
CT02-0203	VP	02	CT	CT Coastal (Phase II)		41.2736	-72.9269	CT	New Haven Harbor	Long Island Sound
CT02-0205	VP	02	CT	CT Coastal (Phase II)		41.3104	-73.0792	CT	Housatonic River	Long Island Sound
CT02-0206	VP	02	CT	CT Coastal (Phase II)		41.2994	-73.066	CT	Housatonic River	Long Island Sound
CT02-0207	VP	02	CT	CT Coastal (Phase II)		41.2858	-72.9091	CT	New Haven Harbor	Long Island Sound
CT02-0208	VP	02	CT	CT Coastal (Phase II)		41.3316	-72.3438	CT	Connecticut River	Long Island Sound
CT02-0210	VP	02	CT	CT Coastal (Phase II)		41.3191	-72.0864	CT	Thames River	Long Island Sound
CT02-0212	VP	02	CT	CT Coastal (Phase II)		41.4027	-72.4097	CT	Connecticut River	Long Island Sound
CT02-0213	VP	02	CT	CT Coastal (Phase II)		41.3834	-72.3547	CT	Connecticut River	Long Island Sound
CT02-0215	VP	02	CT	CT Coastal (Phase II)		41.4133	-72.0925	CT	Thames River	Long Island Sound
CT02-0217	VP	02	CT	CT Coastal (Phase II)		41.4516	-72.081	CT	Thames River	Long Island Sound
CT02-0219	VP	02	CT	CT Coastal (Phase II)		41.5043	-72.0858	CT	Thames River	Long Island Sound
CT03-0021	VP	03	CT	Long Island Sound (Phase II)		40.963	-73.623	CT	Long Island Sound	Long Island Sound
CT03-0034	VP	03	CT	Long Island Sound (Phase II)		41.232	-72.829	CT	Long Island Sound	Long Island Sound
CT03-0035	VP	03	CT	Long Island Sound (Phase II)		41.209	-72.908	CT	Long Island Sound	Long Island Sound
CT03-0039	VP	03	CT	Long Island Sound (Phase II)		41.242	-72.665	CT	Long Island Sound	Long Island Sound
CT04-0023	VP	04	CT	Long Island Sound (Phase II)		40.979	-73.56	CT	Long Island Sound	Long Island Sound
CT04-0027	VP	04	CT	Long Island Sound (Phase II)		41.058	-73.234	CT	Long Island Sound	Long Island Sound
CT04-0029	VP	04	CT	Long Island Sound (Phase II)		41.12	-73.162	CT	Long Island Sound	Long Island Sound
CT04-0030	VP	04	CT	Long Island Sound (Phase II)		41.082	-73.022	CT	Long Island Sound	Long Island Sound
CT04-0032	VP	04	CT	Long Island Sound (Phase II)		41.159	-72.849	CT	Long Island Sound	Long Island Sound
CT04-0040	VP	04	CT	Long Island Sound (Phase II)		40.994	-73.411	CT	Long Island Sound	Long Island Sound
CT04-0044	VP	04	CT	Long Island Sound (Phase II)		41.178	-72.96	CT	Long Island Sound	Long Island Sound
CT04-0049	VP	04	CT	Long Island Sound (Phase II)		41.234	-72.265	CT	Long Island Sound	Long Island Sound
CT04-0309	VP	04	CT	CT Coastal East (Phase II)		41.27	-72.926	CT	New Haven Harbor	Long Island Sound
CT04-0312	VP	04	CT	CT Coastal East (Phase II)		41.332	-72.18	CT	Niantic River	Long Island Sound
CT04-0313	VP	04	CT	CT Coastal East (Phase II)		41.324	-71.97	CT	Mystic River	Long Island Sound
CT04-0316	VP	04	CT	CT Coastal East (Phase II)		41.428	-72.1	CT	Thames River	Long Island Sound
CT04-0317	VP	04	CT	CT Coastal East (Phase II)		41.348	-71.97	CT	Mystic River	Long Island Sound
CT05-0001	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.241	-72.932	CT	New Haven Harbor	Long Island Sound
CT05-0003	VP	05/06	CT	Long Island Sound (Phase III)		41.018	-73.144	NY	Long Island Sound	Long Island Sound
CT05-0004	VP	05/06	CT	Long Island Sound (Phase III)		41.058	-73.234	CT	Long Island Sound	Long Island Sound
CT05-0008	VP	05/06	CT	Long Island Sound (Phase III)		41.242	-72.665	CT	Long Island Sound	Long Island Sound
CT05-0011	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.551	-72.557	CT	Connecticut River	Long Island Sound
CT05-0012	VP	05/06	CT	Long Island Sound (Phase III)		40.994	-73.411	CT	Long Island Sound	Long Island Sound
CT05-0013	VP	05/06	CT	Long Island Sound (Phase III)		40.961	-73.476	NY	Long Island Sound	Long Island Sound
CT05-0015	VP	05/06	CT	Long Island Sound (Phase III)		41.009	-73.513	CT	Long Island Sound	Long Island Sound
CT05-0017	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.28	-72.364	CT	Connecticut River	Long Island Sound
CT05-0018	VP	05/06	CT	Long Island Sound (Phase III)		41.055	-73.08	NY	Long Island Sound	Long Island Sound
CT05-0019	VP	05/06	CT	Long Island Sound (Phase III)		40.956	-73.58	NY	Long Island Sound	Long Island Sound
CT05-0021	VP	05/06	CT	Long Island Sound (Phase III)		40.873	-73.734	NY	Long Island Sound	Long Island Sound
CT05-0023	VP	05/06	CT	Long Island Sound (Phase III)		41.138	-72.655	NY	Long Island Sound	Long Island Sound
CT05-0024	VP	05/06	CT	Long Island Sound (Phase III)		41.019	-73.291	CT	Long Island Sound	Long Island Sound
CT05-0025	VP	05/06	CT	Long Island Sound (Phase III)		41.178	-72.96	CT	Long Island Sound	Long Island Sound
CT06-0002	VP	05/06	CT	Long Island Sound (Phase III)		41.078	-72.833	NY	Long Island Sound	Long Island Sound
CT06-0003	VP	05/06	CT	Long Island Sound (Phase III)		41.018	-73.144	NY	Long Island Sound	Long Island Sound
CT06-0005	VP	05/06	CT	Long Island Sound (Phase III)		41.237	-72.053	NY	Long Island Sound	Long Island Sound
CT06-0006	VP	05/06	CT	Long Island Sound (Phase III)		41.246	-72.468	CT	Long Island Sound	Long Island Sound
CT06-0007	VP	05/06	CT	Long Island Sound (Phase III)		41.004	-72.651	NY	Long Island Sound	Long Island Sound
CT06-0009	VP	05/06	CT	Long Island Sound (Phase III)		41.12	-73.162	CT	Long Island Sound	Long Island Sound
CT06-0010	VP	05/06	CT	Long Island Sound (Phase III)		41.122	-73.09	CT	Long Island Sound	Long Island Sound
CT06-0014	VP	05/06	CT	Long Island Sound (Phase III)		41.026	-72.913	NY	Long Island Sound	Long Island Sound
CT06-0016	VP	05/06	CT	Long Island Sound (Phase III)		40.981	-72.918	NY	Long Island Sound	Long Island Sound
CT06-0020	VP	05/06	CT	Long Island Sound (Phase III)		41.14	-72.948	CT	Long Island Sound	Long Island Sound
CT06-0022	VP	05/06	CT	Long Island Sound (Phase III)		41.109	-73.253	CT	Long Island Sound	Long Island Sound
CT06-0026	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.343	-72.365	CT	Connecticut River	Long Island Sound
CT06-0027	VP	05/06	CT	Long Island Sound (Phase III)		41.004	-72.768	NY	Long Island Sound	Long Island Sound
CT06-0028	VP	05/06	CT	Long Island Sound (Phase III)		40.935	-73.6	NY	Long Island Sound	Long Island Sound

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
CT06-0029	VP	05/06	CT	Long Island Sound (Phase III)		41.08	-73.165	CT	Long Island Sound	Long Island Sound
CT06-0030	VP	05/06	CT	Long Island Sound (Phase III)		40.984	-73.502	CT	Long Island Sound	Long Island Sound
CT06-0031	VP	05/06	CT	Long Island Sound (Phase III)		41.102	-72.934	CT	Long Island Sound	Long Island Sound
CT06-0032	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.442	-72.457	CT	Connecticut River	Long Island Sound
CT06-0033	VP	05/06	CT	Long Island Sound (Phase III)		40.994	-73.042	NY	Long Island Sound	Long Island Sound
CT06-0034	VP	05/06	CT	Long Island Sound (Phase III)		41.071	-73.336	CT	Long Island Sound	Long Island Sound
CT06-0035	VP	05/06	CT	Long Island Sound (Phase III)		41.082	-73.022	NY	Long Island Sound	Long Island Sound
CT06-0036	VP	05/06	CT	Long Island Sound (Phase III)		41.196	-72.775	CT	Long Island Sound	Long Island Sound
CT06-0037	VP	05/06	CT	Long Island Sound (Phase III)		40.963	-73.623	CT	Long Island Sound	Long Island Sound
CT06-0038	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.384	-72.095	CT	Thames River	Long Island Sound
CT06-0039	VP	05/06	CT	Long Island Sound (Phase III)		40.952	-73.332	NY	Long Island Sound	Long Island Sound
CT06-0040	VP	05/06	CT	Long Island Sound (Phase III)		41.209	-72.908	CT	Long Island Sound	Long Island Sound
CT06-0041	VP	05/06	CT	CT Tidal Rivers (Phase III)		41.273	-72.906	CT	New Haven Harbor	Long Island Sound
CT06-0042	VP	05/06	CT	Long Island Sound (Phase III)		41.232	-72.829	CT	Long Island Sound	Long Island Sound
CT06-0043	VP	05/06	CT	Long Island Sound (Phase III)		40.95	-73.425	NY	Long Island Sound	Long Island Sound
CT06-0045	VP	05/06	CT	Long Island Sound (Phase III)		41.098	-72.45	NY	Long Island Sound	Long Island Sound
CT06-0047	VP	05/06	CT	Long Island Sound (Phase III)		41.164	-73.014	CT	Long Island Sound	Long Island Sound
CT06-0048	VP	05/06	CT	Long Island Sound (Phase III)		41.041	-73.418	CT	Long Island Sound	Long Island Sound
CT06-0049	VP	05/06	CT	Long Island Sound (Phase III)		41.271	-72.275	CT	Long Island Sound	Long Island Sound
CT06-0050	VP	05/06	CT	Long Island Sound (Phase III)		40.979	-73.56	CT	Long Island Sound	Long Island Sound
MA03-0011	AP	03	MA	Massachussetts (Phase II)		41.7458	-70.3679	MA	Cape Cod Bay	Cape Cod
MA03-0051	VP	03	MA	Massachussetts (Phase II)		41.3602	-70.5016	MA	Katama Bay	MA South Coast
MA03-0100	VP	03	MA	Massachussetts (Phase II)		41.331	-70.7691	MA	Menemsha Pond	MA South Coast
MA03-0103	VP	03	MA	Massachussetts (Phase II)		41.4333	-70.9533	MA	Buzzards Bay	Buzzards Bay
MA03-0106	VP	03	MA	Massachussetts (Phase II)		41.3359	-70.0157	MA	Nantucket Harbor	MA South Coast
MA03-0109	VP	03	MA	Massachussetts (Phase II)		41.5355	-70.7242	MA	Buzzards Bay	Buzzards Bay
MA03-0112	VP	03	MA	Massachussetts (Phase II)		41.552	-70.79	MA	Buzzards Bay	Buzzards Bay
MA03-0115	VP	03	MA	Massachussetts (Phase II)		41.6772	-70.9169	MA	New Bedford Harbor	Buzzards Bay
MA03-0118	AP	03	MA	Massachussetts (Phase II)		41.7472	-70.2204	MA	Cape Cod Bay	Cape Cod
MA03-0121	VP	03	MA	Massachussetts (Phase II)		41.7357	-70.6293	MA	Buzzards Bay	Buzzards Bay
MA03-0124	AP	03	MA	Massachussetts (Phase II)		41.8312	-70.1273	MA	Cape Cod Bay	Cape Cod
MA03-0127	AP	03	MA	Massachussetts (Phase II)		41.8879	-70.5134	MA	Cape Cod Bay	Cape Cod
MA03-0130	VP	03	MA	Massachussetts (Phase II)		41.8413	-69.9508	MA	Nauset Harbor	MA South Coast
MA03-0133	AP	03	MA	Massachussetts (Phase II)		42.0114	-70.3538	MA	Cape Cod Bay	Cape Cod
MA03-0136	AP	03	MA	Massachussetts (Phase II)		42.1602	-70.731	MA	North/South Rivers	MA (North) & NH Coast
MA03-0139	AP	03	MA	Massachussetts (Phase II)		42.2733	-70.9773	MA	Quincy Bay	MA (North) & NH Coast
MA03-0142	AP	03	MA	Massachussetts (Phase II)		42.4053	-71.0718	MA	Boston Inner Harbor	MA (North) & NH Coast
MA03-0145	AP	03	MA	Massachussetts (Phase II)		42.5833	-70.6656	MA	Gloucester Harbor	MA (North) & NH Coast
MA03-0148	AP	03	MA	Massachussetts (Phase II)		42.6767	-70.6226	MA	Sandy Bay	MA (North) & NH Coast
MA03-0301	VP	03	RI	RI Deep Water (Phase II)		41.713	-71.162	MA	Taunton River	Narragansett Bay
MA03-0306	VP	03	RI	RI Mid-Depth (Phase II)		41.874	-71.093	MA	Taunton River	Narragansett Bay
MA04-0002	AP	04	MA	Massachussetts (Phase II)		42.5316	-70.8522	MA	Salem Sound	MA (North) & NH Coast
MA04-0021	AP	04	MA	Massachussetts (Phase II)		41.8766	-70.2528	MA	Cape Cod Bay	Cape Cod
MA04-0028	AP	04	MA	Massachussetts (Phase II)		41.9495	-70.2122	MA	Cape Cod Bay	Cape Cod
MA04-0040	VP	04	MA	Massachussetts (Phase II)		41.6431	-70.9115	MA	New Bedford Harbor	Buzzards Bay
MA04-0101	VP	04	MA	Massachussetts (Phase II)		41.29	-70.224	MA	Maddaket Harbor	MA South Coast
MA04-0104	VP	04	MA	Massachussetts (Phase II)		41.3515	-70.7665	MA	Menemsha Pond	MA South Coast
MA04-0107	VP	04	MA	Massachussetts (Phase II)		41.5459	-71.0615	MA	Westport River	Buzzards Bay
MA04-0110	VP	04	MA	Massachussetts (Phase II)		41.4587	-70.6227	MA	Vineyard Ponds	MA South Coast
MA04-0113	VP	04	MA	Massachussetts (Phase II)		41.5699	-70.7213	MA	Buzzards Bay	Buzzards Bay
MA04-0116	VP	04	MA	Massachussetts (Phase II)		41.6538	-70.7275	MA	Buzzards Bay	Buzzards Bay
MA04-0119	VP	04	MA	Massachussetts (Phase II)		41.7229	-69.9345	MA	Chatham Harbor	MA South Coast
MA04-0122	AP	04	MA	Massachussetts (Phase II)		41.8361	-70.4544	MA	Cape Cod Bay	Cape Cod
MA04-0125	VP	04	MA	Massachussetts (Phase II)		41.7317	-69.981	MA	Chatham Harbor	MA South Coast
MA04-0128	AP	04	MA	Massachussetts (Phase II)		41.9537	-70.3598	MA	Cape Cod Bay	Cape Cod
MA04-0131	AP	04	MA	Massachussetts (Phase II)		42.0056	-70.7038	MA	Kingston Bay	MA (North) & NH Coast
MA04-0134	AP	04	MA	Massachussetts (Phase II)		41.9915	-70.0951	MA	Cape Cod Bay	Cape Cod
MA04-0137	AP	04	MA	Massachussetts (Phase II)		42.0547	-70.2371	MA	Cape Cod Bay	Cape Cod
MA04-0140	AP	04	MA	Massachussetts (Phase II)		42.1583	-70.7656	MA	North/South Rivers	MA (North) & NH Coast

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
MA04-0143	AP	04	MA	Massachusetts (Phase II)		42.4337	-70.9149	MA	Nahant Bay	MA (North) & NH Coast
MA04-0146	AP	04	MA	Massachusetts (Phase II)		42.6825	-70.8236	MA	Plum Island Sound	MA (North) & NH Coast
MA04-0149	AP	04	MA	Massachusetts (Phase II)		42.688	-70.6672	MA	Ipswich Bay	MA (North) & NH Coast
MA04-0300	VP	04	RI	RI Deep Water (Phase II)		41.697	-71.184	MA	Taunton River	Narragansett Bay
MA04-0304	VP	04	RI	RI Mid-Depth (Phase II)		41.778	-71.118	MA	Taunton River	Narragansett Bay
MA05-0001	VP	05/06	MA	Massachusetts (Phase III)		41.593	-70.716	MA	Buzzards Bay	Buzzards Bay
MA05-0002	AP	05/06	MA	Massachusetts (Phase III)		42.04	-70.153	MA	Cape Cod Bay	Cape Cod
MA05-0003	AP	05/06	MA	Massachusetts (Phase III)		41.921	-70.28	MA	Cape Cod Bay	Cape Cod
MA05-0004	AP	05/06	MA	Massachusetts (Phase III)		41.772	-70.424	MA	Cape Cod Bay	Cape Cod
MA05-0005	VP	05/06	MA	Massachusetts (Phase III)		41.513	-70.811	MA	Buzzards Bay	Buzzards Bay
MA05-0006	AP	05/06	MA	Massachusetts (Phase III)		42.348	-71.017	MA	Boston Inner Harbor	MA (North) & NH Coast
MA05-0007	VP	05/06	MA	Massachusetts (Phase III)		41.615	-70.89	MA	Buzzards Bay	Buzzards Bay
MA05-0008	AP	05/06	MA	Massachusetts (Phase III)		42.525	-70.798	MA	Salem Sound	MA (North) & NH Coast
MA05-0009	VP	05/06	MA	Massachusetts (Phase III)		41.698	-70.643	MA	Buzzards Bay	Buzzards Bay
MA05-0010	AP	05/06	MA	Massachusetts (Phase III)		41.858	-70.355	MA	Cape Cod Bay	Cape Cod
MA05-0011	AP	05/06	MA	Massachusetts (Phase III)		41.956	-70.083	MA	Cape Cod Bay	Cape Cod
MA05-0012	AP	05/06	MA	Massachusetts (Phase III)		41.794	-70.246	MA	Cape Cod Bay	Cape Cod
MA05-0013	VP	05/06	MA	Massachusetts (Phase III)		41.561	-70.705	MA	Buzzards Bay	Buzzards Bay
MA05-0015	AP	05/06	MA	Massachusetts (Phase III)		41.994	-70.685	MA	Kingston Bay	MA (North) & NH Coast
MA05-0016	AP	05/06	MA	Massachusetts (Phase III)		42.683	-70.675	MA	Ipswich Bay	MA (North) & NH Coast
MA05-0018	AP	05/06	MA	Massachusetts (Phase III)		41.954	-70.443	MA	Cape Cod Bay	Cape Cod
MA05-0019	VP	05/06	MA	Massachusetts (Phase III)		41.64	-70.776	MA	Buzzards Bay	Buzzards Bay
MA05-0020	VP	05/06	MA	Massachusetts (Phase III)		41.448	-70.902	MA	Buzzards Bay	Buzzards Bay
MA05-0021	AP	05/06	MA	Massachusetts (Phase III)		41.835	-70.17	MA	Cape Cod Bay	Cape Cod
MA05-0022	AP	05/06	MA	Massachusetts (Phase III)		41.845	-70.307	MA	Cape Cod Bay	Cape Cod
MA05-0023	AP	05/06	MA	Massachusetts (Phase III)		41.882	-70.158	MA	Cape Cod Bay	Cape Cod
MA05-0024	AP	05/06	MA	Massachusetts (Phase III)		41.827	-70.497	MA	Cape Cod Bay	Cape Cod
MA05-0025	AP	05/06	MA	Massachusetts (Phase III)		41.773	-70.183	MA	Cape Cod Bay	Cape Cod
MA06-0026	AP	05/06	MA	Massachusetts (Phase III)		41.679	-69.968	MA	Stage Harbor	Cape Cod Bay
MA06-0027	AP	05/06	MA	Massachusetts (Phase III)		41.934	-70.453	MA	Cape Cod Bay	Cape Cod
MA06-0028	VP	05/06	MA	Massachusetts (Phase III)		41.678	-70.73	MA	Buzzards Bay	Buzzards Bay
MA06-0029	VP	05/06	MA	Massachusetts (Phase III)		41.505	-70.862	MA	Buzzards Bay	Buzzards Bay
MA06-0030	AP	05/06	MA	Massachusetts (Phase III)		41.816	-70.164	MA	Cape Cod Bay	Cape Cod
MA06-0031	AP	05/06	MA	Massachusetts (Phase III)		41.91	-70.395	MA	Cape Cod Bay	Cape Cod
MA06-0032	AP	05/06	MA	Massachusetts (Phase III)		42.009	-70.152	MA	Cape Cod Bay	Cape Cod
MA06-0033	AP	05/06	MA	Massachusetts (Phase III)		41.864	-70.417	MA	Cape Cod Bay	Cape Cod
MA06-0034	AP	05/06	MA	Massachusetts (Phase III)		41.81	-70.037	MA	Cape Cod Bay	Cape Cod
MA06-0035	AP	05/06	MA	Massachusetts (Phase III)		42.038	-70.646	MA	Duxbury Bay	MA (North) & NH Coast
MA06-0036	VP	05/06	MA	Massachusetts (Phase III)		41.516	-70.979	MA	Buzzards Bay	Buzzards Bay
MA06-0037	AP	05/06	MA	Massachusetts (Phase III)		42.454	-70.946	MA	Broad Sound	MA (North) & NH Coast
MA06-0038	AP	05/06	MA	Massachusetts (Phase III)		42	-70.309	MA	Cape Cod Bay	Cape Cod
MA06-0039	AP	05/06	MA	Massachusetts (Phase III)		41.822	-70.347	MA	Cape Cod Bay	Cape Cod
MA06-0040	AP	05/06	MA	Massachusetts (Phase III)		41.928	-70.122	MA	Cape Cod Bay	Cape Cod
MA06-0041	AP	05/06	MA	Massachusetts (Phase III)		41.795	-70.482	MA	Cape Cod Bay	Cape Cod
MA06-0042	VP	05/06	MA	Massachusetts (Phase III)		41.6	-70.645	MA	Buzzards Bay	Buzzards Bay
MA06-0043	AP	05/06	MA	Massachusetts (Phase III)		41.892	-70.285	MA	Cape Cod Bay	Cape Cod
MA06-0044	AP	05/06	MA	Massachusetts (Phase III)		42.016	-70.247	MA	Cape Cod Bay	Cape Cod
MA06-0045	AP	05/06	MA	Massachusetts (Phase III)		41.753	-70.257	MA	Cape Cod Bay	Cape Cod
MA06-0046	VP	05/06	MA	Massachusetts (Phase III)		41.566	-70.809	MA	Buzzards Bay	Buzzards Bay
MA06-0047	AP	05/06	MA	Massachusetts (Phase III)		42.308	-70.987	MA	Sculpin Ledge	MA (North) & NH Coast
MA06-0048	AP	05/06	MA	Massachusetts (Phase III)		41.954	-70.643	MA	Plymouth Harbor	MA (North) & NH Coast
MA06-0049	AP	05/06	MA	Massachusetts (Phase III)		42.598	-70.662	MA	Gloucester Harbor	MA (North) & NH Coast
MA06-0050	VP	05/06	MA	Massachusetts (Phase III)		41.491	-70.843	MA	Buzzards Bay	Buzzards Bay
ME02-0200	AP	02	ME	Blue Hill Bay (Phase II)		44.1365	-68.4677	ME	Toothacher Bay	Blue Hill Bay
ME02-0201	AP	02	ME	Blue Hill Bay (Phase II)		44.1303	-68.452	ME	Toothacher Bay	Blue Hill Bay
ME02-0202	AP	02	ME	Blue Hill Bay (Phase II)		44.2259	-68.5215	ME	Jericho Bay	Blue Hill Bay
ME02-0203	AP	02	ME	Blue Hill Bay (Phase II)		44.1987	-68.4152	ME	Blue Hill Bay	Blue Hill Bay
ME02-0204	AP	02	ME	Blue Hill Bay (Phase II)		44.1749	-68.3607	ME	Blue Hill Bay	Blue Hill Bay
ME02-0205	AP	02	ME	Blue Hill Bay (Phase II)		44.2717	-68.4472	ME	Blue Hill Bay	Blue Hill Bay

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
ME02-0206	AP	02	ME	Blue Hill Bay (Phase II)		44.2318	-68.3846	ME	Blue Hill Bay	Blue Hill Bay
ME02-0207	AP	02	ME	Blue Hill Bay (Phase II)		44.3861	-68.5296	ME	Blue Hill Bay	Blue Hill Bay
ME02-0208	AP	02	ME	Blue Hill Bay (Phase II)		44.3653	-68.493	ME	Blue Hill Bay	Blue Hill Bay
ME02-0209	AP	02	ME	Blue Hill Bay (Phase II)		44.4706	-68.4358	ME	Union River Bay	Blue Hill Bay
ME02-0210	AP	02	ME	Blue Hill Bay (Phase II)		44.4193	-68.375	ME	Western Bay	Blue Hill Bay
ME02-0211	AP	02	ME	Blue Hill Bay (Phase II)		44.4948	-68.4303	ME	Union River Bay	Blue Hill Bay
ME02-0213	AP	02	ME	Cobscook Bay (Phase II)		44.8457	-67.1523	ME	Whiting Bay	Cobscook Bay
ME02-0214	AP	02	ME	Cobscook Bay (Phase II)		44.825	-67.0624	ME	South Bay	Cobscook Bay
ME02-0215	AP	02	ME	Cobscook Bay (Phase II)		44.8873	-67.1763	ME	Dennys Bay	Cobscook Bay
ME02-0216	AP	02	ME	Cobscook Bay (Phase II)		44.8653	-67.1154	ME	Cobscook Bay	Cobscook Bay
ME02-0217	AP	02	ME	Cobscook Bay (Phase II)		44.8698	-66.9932	ME	Cobscook Bay	Cobscook Bay
ME02-0219	AP	02	ME	Cobscook Bay (Phase II)		44.9325	-67.1066	ME	East Bay	Cobscook Bay
ME02-0220	AP	02	ME	Cobscook Bay (Phase II)		44.939	-67.0421	ME	Bar Harbor	Cobscook Bay
ME02-0221	AP	02	ME	ME North Coast (Phase II)		44.2633	-68.265	ME	Southwest Bay	Maine Coast (Other)
ME02-0222	AP	02	ME	ME North Coast (Phase II)		44.3343	-68.0821	ME	Frenchman Bay	Maine Coast (Other)
ME02-0223	AP	02	ME	ME North Coast (Phase II)		44.4414	-68.3349	ME	Mount Desert Narrows/Eastern Bay	Maine Coast (Other)
ME02-0224	AP	02	ME	ME North Coast (Phase II)		44.4597	-68.1565	ME	Frenchman Bay	Maine Coast (Other)
ME02-0225	AP	02	ME	ME North Coast (Phase II)		44.4897	-67.8091	ME	Narraguagus Bay	Maine Coast (Other)
ME02-0228	AP	02	ME	ME North Coast (Phase II)		44.5307	-67.7557	ME	Pleasant Bay	Maine Coast (Other)
ME02-0229	AP	02	ME	ME North Coast (Phase II)		44.6059	-67.4988	ME	Englishman Bay	Maine Coast (Other)
ME02-0232	AP	02	ME	ME North Coast (Phase II)		44.824	-66.9564	ME	Lubec Channel	Cobscook Bay
ME02-0233	AP	02	ME	ME North Coast (Phase II)		44.8336	-66.9878	ME	Lubec Channel	Cobscook Bay
ME02-0234	AP	02	ME	ME North Coast (Phase II)		45.0511	-67.0984	ME	St. Croix River	Maine Coast (Other)
ME03-0255	AP	03	NH	New Hampshire (Phase II)		43.0837	-70.6917	ME	Portsmouth Harbor	Great Bay Region
ME03-0257	AP	03	NH	New Hampshire (Phase II)		43.0919	-70.7569	ME	Piscataqua River	Great Bay Region
ME03-0259	AP	03	NH	New Hampshire (Phase II)		43.0833	-70.6973	ME	Portsmouth Harbor	Great Bay Region
ME03-0262	AP	03	NH	New Hampshire (Phase II)		43.1043	-70.771	ME	Spinney Creek	Great Bay Region
ME03-0264	AP	03	NH	New Hampshire (Phase II)		43.1259	-70.8247	ME	Piscataqua River	Great Bay Region
ME03-0266	AP	03	NH	New Hampshire (Phase II)		43.1163	-70.726	ME	Portsmouth Harbor	Great Bay Region
ME03-0269	AP	03	NH	New Hampshire (Phase II)		43.154	-70.8169	ME	Piscataqua River	Great Bay Region
ME03-0272	AP	03	NH	New Hampshire (Phase II)		43.192	-70.82	ME	Piscataqua River	Great Bay Region
ME03-0300	AP	03	ME	ME Mid Coast (Phase II)		43.753	-69.771	ME	Kennebec River	Casco Bay
ME03-0301	AP	03	ME	ME Mid Coast (Phase II)		43.784	-69.648	ME	Booth Bay	Maine Coast (Other)
ME03-0302	AP	03	ME	ME Mid Coast (Phase II)		43.877	-69.751	ME	Hockomock Bay	Maine Coast (Other)
ME03-0303	AP	03	ME	ME Mid Coast (Phase II)		43.832	-69.64	ME	Booth Bay	Maine Coast (Other)
ME03-0304	AP	03	ME	ME Mid Coast (Phase II)		43.921	-69.79	ME	Sasnoa River	Maine Coast (Other)
ME03-0305	AP	03	ME	ME Mid Coast (Phase II)		43.907	-69.691	ME	Sheepscot River	Maine Coast (Other)
ME03-0306	AP	03	ME	ME Mid Coast (Phase II)		43.882	-69.512	ME	Johns Bay	Maine Coast (Other)
ME03-0307	AP	03	ME	ME Mid Coast (Phase II)		43.935	-69.371	ME	Muscongus Bay	Maine Coast (Other)
ME03-0308	AP	03	ME	ME Mid Coast (Phase II)		43.93	-69.226	ME	Mosquito Harbor	Penobscot Bay
ME03-0309	AP	03	ME	ME Mid Coast (Phase II)		44.029	-69.537	ME	Damariscotta River	Maine Coast (Other)
ME03-0310	AP	03	ME	ME Mid Coast (Phase II)		43.982	-69.431	ME	Muscongus Sound	Maine Coast (Other)
ME03-0311	AP	03	ME	ME Mid Coast (Phase II)		43.977	-69.259	ME	St. George River	Maine Coast (Other)
ME03-0312	AP	03	ME	ME Mid Coast (Phase II)		44.045	-69.126	ME	Weskeag River	Penobscot Bay
ME03-0313	AP	03	ME	ME Mid Coast (Phase II)		44.044	-68.836	ME	The Reach	Penobscot Bay
ME03-0314	AP	03	ME	ME Mid Coast (Phase II)		44.028	-68.702	ME	East Penobscot Bay	Penobscot Bay
ME03-0316	AP	03	ME	ME Mid Coast (Phase II)		44.16	-69.075	ME	West Penobscot Bay	Penobscot Bay
ME03-0317	AP	03	ME	ME Mid Coast (Phase II)		44.186	-68.995	ME	West Penobscot Bay	Penobscot Bay
ME03-0318	AP	03	ME	ME Mid Coast (Phase II)		44.168	-68.816	ME	East Penobscot Bay	Penobscot Bay
ME03-0319	AP	03	ME	ME Mid Coast (Phase II)		44.169	-68.64	ME	Deer Island Thorofare	Blue Hill Bay
ME03-0320	AP	03	ME	ME Mid Coast (Phase II)		44.116	-68.549	ME	Jericho Bay	Blue Hill Bay
ME03-0321	AP	03	ME	ME Mid Coast (Phase II)		44.176	-69.044	ME	West Penobscot Bay	Penobscot Bay
ME03-0322	AP	03	ME	ME Mid Coast (Phase II)		44.171	-68.915	ME	West Penobscot Bay	Penobscot Bay
ME03-0323	AP	03	ME	ME Mid Coast (Phase II)		44.196	-68.756	ME	East Penobscot Bay	Penobscot Bay
ME03-0324	AP	03	ME	ME Mid Coast (Phase II)		44.183	-68.587	ME	Deer Island Thorofare	Blue Hill Bay
ME03-0325	AP	03	ME	ME Mid Coast (Phase II)		44.356	-68.926	ME	West Penobscot Bay	Penobscot Bay
ME03-0326	AP	03	ME	ME Mid Coast (Phase II)		44.275	-68.837	ME	East Penobscot Bay	Penobscot Bay
ME03-0327	AP	03	ME	ME Mid Coast (Phase II)		44.273	-68.625	ME	Eggemoggin Reach	Blue Hill Bay
ME03-0328	AP	03	ME	ME Mid Coast (Phase II)		44.415	-68.982	ME	West Penobscot Bay	Penobscot Bay

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
ME03-0329	AP	03	ME	ME Mid Coast (Phase II)		44.403	-68.868	ME	West Penobscot Bay	Penobscot Bay
ME03-0330	AP	03	ME	ME Mid Coast (Phase II)		44.408	-68.723	ME	Bagaduce River	Penobscot Bay
ME03-0332	AP	03	ME	ME Mid Coast (Phase II)		44.508	-68.796	ME	Penobscot River	Penobscot Bay
ME03-0333	AP	03	ME	ME Mid Coast (Phase II)		44.583	-68.821	ME	Penobscot River	Penobscot Bay
ME04-0251	AP	04	NH	New Hampshire (Phase II)		43.0644	-70.6882	ME	Portsmouth Harbor	Great Bay Region
ME04-0258	AP	04	NH	New Hampshire (Phase II)		43.0916	-70.7165	ME	Portsmouth Harbor	Great Bay Region
ME04-0260	AP	04	NH	New Hampshire (Phase II)		43.0868	-70.6768	ME	Portsmouth Harbor	Great Bay Region
ME04-0263	AP	04	NH	New Hampshire (Phase II)		43.1063	-70.7311	ME	Portsmouth Harbor	Great Bay Region
ME04-0265	AP	04	NH	New Hampshire (Phase II)		43.1192	-70.736	ME	Portsmouth Harbor	Great Bay Region
ME04-0400	AP	04	ME	ME South Coast (Phase II)		43.877	-69.855	ME	New Meadows River	Casco Bay
ME04-0401	AP	04	ME	ME South Coast (Phase II)		43.831	-70.096	ME	Harraseeket River	Casco Bay
ME04-0402	AP	04	ME	ME South Coast (Phase II)		43.812	-70.007	ME	Middle Bay - ME	Casco Bay
ME04-0403	AP	04	ME	ME South Coast (Phase II)		43.823	-69.915	ME	Quahog Bay	Casco Bay
ME04-0404	AP	04	ME	ME South Coast (Phase II)		43.828	-69.849	ME	Winnegance Harbor	Casco Bay
ME04-0405	AP	04	ME	ME South Coast (Phase II)		43.757	-70.16	ME	Cousins Island Sound	Casco Bay
ME04-0406	AP	04	ME	ME South Coast (Phase II)		43.809	-70.047	ME	Middle Bay - ME	Casco Bay
ME04-0407	AP	04	ME	ME South Coast (Phase II)		43.78	-69.98	ME	Harpswell Sound	Casco Bay
ME04-0408	AP	04	ME	ME South Coast (Phase II)		43.777	-69.907	ME	Casco Bay	Casco Bay
ME04-0409	AP	04	ME	ME South Coast (Phase II)		43.71	-70.189	ME	Cousins Island Sound	Casco Bay
ME04-0410	AP	04	ME	ME South Coast (Phase II)		43.708	-70.152	ME	Cousins Island Sound	Casco Bay
ME04-0411	AP	04	ME	ME South Coast (Phase II)		43.682	-70.02	ME	Casco Bay	Casco Bay
ME04-0412	AP	04	ME	ME South Coast (Phase II)		43.748	-69.898	ME	Casco Bay	Casco Bay
ME04-0413	AP	04	ME	ME South Coast (Phase II)		43.708	-69.856	ME	Casco Bay	Casco Bay
ME04-0414	AP	04	ME	ME South Coast (Phase II)		43.649	-70.254	ME	Portland Harbor	Casco Bay
ME04-0415	AP	04	ME	ME South Coast (Phase II)		43.673	-70.235	ME	Diamond Island Roads	Casco Bay
ME04-0416	AP	04	ME	ME South Coast (Phase II)		43.644	-70.071	ME	Casco Bay	Casco Bay
ME04-0417	AP	04	ME	ME South Coast (Phase II)		43.648	-70.004	ME	Casco Bay	Casco Bay
ME04-0418	AP	04	ME	ME South Coast (Phase II)		43.564	-70.363	ME	Scarborough River	Maine Coast (Other)
ME04-0419	AP	04	ME	ME South Coast (Phase II)		43.604	-70.207	ME	Casco Bay	Casco Bay
ME04-0420	AP	04	ME	ME South Coast (Phase II)		43.608	-70.18	ME	Casco Bay	Casco Bay
ME04-0421	AP	04	ME	ME South Coast (Phase II)		43.511	-70.361	ME	Saco Bay	Maine Coast (Other)
ME04-0422	AP	04	ME	ME South Coast (Phase II)		43.552	-70.273	ME	Saco Bay	Maine Coast (Other)
ME04-0423	AP	04	ME	ME South Coast (Phase II)		43.544	-70.242	ME	Saco Bay	Maine Coast (Other)
ME04-0424	AP	04	ME	ME South Coast (Phase II)		43.492	-70.44	ME	Saco Bay	Maine Coast (Other)
ME04-0425	AP	04	ME	ME South Coast (Phase II)		43.486	-70.366	ME	Saco Bay	Maine Coast (Other)
ME04-0426	AP	04	ME	ME South Coast (Phase II)		43.484	-70.303	ME	Saco Bay	Maine Coast (Other)
ME04-0427	AP	04	ME	ME South Coast (Phase II)		43.392	-70.419	ME	Goosefare Bay	Maine Coast (Other)
ME04-0428	AP	04	ME	ME South Coast (Phase II)		43.337	-70.531	ME	Wells Embayment	Maine Coast (Other)
ME04-0429	AP	04	ME	ME South Coast (Phase II)		43.317	-70.529	ME	Wells Embayment	Maine Coast (Other)
ME04-0430	AP	04	ME	ME South Coast (Phase II)		43.254	-70.589	ME	Wells Embayment	Maine Coast (Other)
ME04-0431	AP	04	ME	ME South Coast (Phase II)		43.278	-70.529	ME	Wells Embayment	Maine Coast (Other)
ME04-0432	AP	04	ME	ME South Coast (Phase II)		43.248	-70.586	ME	Wells Embayment	Maine Coast (Other)
ME04-0433	AP	04	ME	ME South Coast (Phase II)		43.157	-70.706	ME	York Harbor	Great Bay Region
ME04-0434	AP	04	ME	ME South Coast (Phase II)		43.128	-70.629	ME	York Harbor	Great Bay Region
ME05-0001	AP	05/06	ME	ME North Coast (Phase III)		44.07	-68.736	ME	East Penobscot Bay	Penobscot Bay
ME05-0002	AP	05/06	ME	ME North Coast (Phase III)		44.351	-68.132	ME	Frenchman Bay	Maine Coast (Other)
ME05-0003	AP	05/06	ME	ME North Coast (Phase III)		44.443	-68.341	ME	Mount Desert Narrows/Eastern Bay	Maine Coast (Other)
ME05-0004	AP	05/06	ME	ME North Coast (Phase III)		44.68	-67.338	ME	Holmes Bay	Maine Coast (Other)
ME05-0005	AP	05/06	ME	ME North Coast (Phase III)		44.149	-68.56	ME	Jericho Bay	Blue Hill Bay
ME05-0006	AP	05/06	ME	ME North Coast (Phase III)		44.261	-68.582	ME	Eggemoggin Reach	Blue Hill Bay
ME05-0007	AP	05/06	ME	ME North Coast (Phase III)		44.355	-68.468	ME	Blue Hill Bay	Blue Hill Bay
ME05-0008	AP	05/06	ME	ME North Coast (Phase III)		44.526	-67.753	ME	Pleasant Bay	Maine Coast (Other)
ME05-0009	AP	05/06	ME	ME North Coast (Phase III)		44.11	-68.633	ME	Merchant Row	Blue Hill Bay
ME05-0010	AP	05/06	ME	ME North Coast (Phase III)		44.28	-68.768	ME	East Penobscot Bay	Penobscot Bay
ME05-0011	AP	05/06	ME	ME North Coast (Phase III)		44.266	-68.289	ME	Southwest Bay	Maine Coast (Other)
ME05-0012	AP	05/06	ME	ME North Coast (Phase III)		44.89	-67.059	ME	South Bay	Cobscook Bay
ME05-0013	AP	05/06	ME	ME North Coast (Phase III)		44.384	-68.128	ME	Frenchman Bay	Maine Coast (Other)
ME05-0014	AP	05/06	ME	ME North Coast (Phase III)		44.243	-68.777	ME	East Penobscot Bay	Penobscot Bay
ME05-0015	AP	05/06	ME	ME North Coast (Phase III)		44.218	-68.523	ME	Jericho Bay	Blue Hill Bay

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
ME05-0016	AP	05/06	ME	ME North Coast (Phase III)		44.593	-67.541	ME	Englishman Bay	Maine Coast (Other)
ME05-0017	AP	05/06	ME	ME North Coast (Phase III)		44.161	-68.807	ME	East Penobscot Bay	Penobscot Bay
ME05-0018	AP	05/06	ME	ME North Coast (Phase III)		44.169	-68.59	ME	Fox Islands Thorofare	Blue Hill Bay
ME05-0019	AP	05/06	ME	ME North Coast (Phase III)		44.389	-68.431	ME	Blue Hill Bay	Blue Hill Bay
ME05-0020	AP	05/06	ME	ME North Coast (Phase III)		44.946	-67.046	ME	Bar Harbor	Cobscook Bay
ME05-0021	AP	05/06	ME	ME North Coast (Phase III)		44.416	-68.184	ME	Frenchman Bay	Maine Coast (Other)
ME05-0022	AP	05/06	ME	ME North Coast (Phase III)		44.128	-68.772	ME	East Penobscot Bay	Penobscot Bay
ME05-0023	AP	05/06	ME	ME North Coast (Phase III)		44.176	-68.359	ME	Blue Hill Bay	Blue Hill Bay
ME05-0024	AP	05/06	ME	ME North Coast (Phase III)		44.494	-67.824	ME	Narraguagus Bay	Maine Coast (Other)
ME05-0025	AP	05/06	ME	ME North Coast (Phase III)		44.156	-68.507	ME	Jericho Bay	Blue Hill Bay
ME06-0001	AP	05/06	ME	ME South Coast (Phase III)		43.825	-69.991	ME	Middle Bay - ME	Casco Bay
ME06-0002	AP	05/06	ME	ME South Coast (Phase III)		43.945	-69.401	ME	Muscongus Bay	Maine Coast (Other)
ME06-0003	AP	05/06	ME	ME South Coast (Phase III)		43.748	-69.904	ME	Casco Bay	Casco Bay
ME06-0004	AP	05/06	ME	ME South Coast (Phase III)		44.225	-68.991	ME	West Penobscot Bay	Penobscot Bay
ME06-0005	AP	05/06	ME	ME South Coast (Phase III)		43.687	-69.931	ME	Casco Bay	Casco Bay
ME06-0006	AP	05/06	ME	ME South Coast (Phase III)		44.413	-68.867	ME	West Penobscot Bay	Penobscot Bay
ME06-0007	AP	05/06	ME	ME South Coast (Phase III)		43.962	-69.874	ME	Merrymeeting Bay	Maine Coast (Other)
ME06-0008	AP	05/06	ME	ME South Coast (Phase III)		44.191	-68.933	ME	West Penobscot Bay	Penobscot Bay
ME06-0009	AP	05/06	ME	ME South Coast (Phase III)		43.589	-70.167	ME	Casco Bay	Casco Bay
ME06-0010	AP	05/06	ME	ME South Coast (Phase III)		43.523	-70.292	ME	Saco Bay	Maine Coast (Other)
ME06-0011	AP	05/06	ME	ME South Coast (Phase III)		43.783	-69.697	ME	Sheepscoot Bay	Maine Coast (Other)
ME06-0012	AP	05/06	ME	ME South Coast (Phase III)		44.149	-68.946	ME	West Penobscot Bay	Penobscot Bay
ME06-0013	AP	05/06	ME	ME South Coast (Phase III)		43.691	-69.982	ME	Casco Bay	Casco Bay
ME06-0014	AP	05/06	ME	ME South Coast (Phase III)		44.298	-68.863	ME	West Penobscot Bay	Penobscot Bay
ME06-0015	AP	05/06	ME	ME South Coast (Phase III)		43.973	-69.415	ME	Hockomock Channel	Maine Coast (Other)
ME06-0016	AP	05/06	ME	ME South Coast (Phase III)		44.505	-68.789	ME	Penobscot River	Penobscot Bay
ME06-0017	AP	05/06	ME	ME South Coast (Phase III)		43.815	-70.104	ME	Harraseeket River	Casco Bay
ME06-0018	AP	05/06	ME	ME South Coast (Phase III)		43.303	-70.512	ME	Wells Embayment	Maine Coast (Other)
ME06-0019	AP	05/06	ME	ME South Coast (Phase III)		43.759	-69.884	ME	Kennebec River	Casco Bay
ME06-0020	AP	05/06	ME	ME South Coast (Phase III)		44.188	-68.857	ME	West Penobscot Bay	Penobscot Bay
ME06-0021	AP	05/06	ME	ME South Coast (Phase III)		43.759	-70.081	ME	Broad Sound - ME	Casco Bay
ME06-0022	AP	05/06	ME	ME South Coast (Phase III)		44.428	-68.865	ME	West Penobscot Bay	Penobscot Bay
ME06-0023	AP	05/06	ME	ME South Coast (Phase III)		43.895	-69.755	ME	Hockomock Bay	Maine Coast (Other)
ME06-0024	AP	05/06	ME	ME South Coast (Phase III)		44.215	-69.017	ME	West Penobscot Bay	Penobscot Bay
ME06-0025	AP	05/06	ME	ME South Coast (Phase III)		43.652	-70.106	ME	Casco Bay	Casco Bay
NH03-0201	AP	03	NH	New Hampshire (Phase II)		42.8723	-70.8255	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH03-0203	AP	03	NH	New Hampshire (Phase II)		42.8865	-70.8275	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH03-0205	AP	03	NH	New Hampshire (Phase II)		42.8972	-70.8333	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH03-0207	AP	03	NH	New Hampshire (Phase II)		42.9192	-70.8404	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH03-0209	AP	03	NH	New Hampshire (Phase II)		42.9885	-70.9489	NH	Squamscott River	Great Bay Region
NH03-0212	AP	03	NH	New Hampshire (Phase II)		43.0022	-70.7494	NH	Rye Harbor	Great Bay Region
NH03-0214	AP	03	NH	New Hampshire (Phase II)		43.0349	-70.9331	NH	Great Bay - NH	Great Bay Region
NH03-0216	AP	03	NH	New Hampshire (Phase II)		43.0549	-70.9151	NH	Great Bay - NH	Great Bay Region
NH03-0218	AP	03	NH	New Hampshire (Phase II)		43.059	-70.8746	NH	Great Bay - NH	Great Bay Region
NH03-0220	AP	03	NH	New Hampshire (Phase II)		43.0532	-70.8344	NH	Great Bay - NH	Great Bay Region
NH03-0222	AP	03	NH	New Hampshire (Phase II)		43.0557	-70.7298	NH	Little Harbor	Great Bay Region
NH03-0224	AP	03	NH	New Hampshire (Phase II)		43.0769	-70.9347	NH	Great Bay - NH	Great Bay Region
NH03-0226	AP	03	NH	New Hampshire (Phase II)		43.0634	-70.8812	NH	Great Bay - NH	Great Bay Region
NH03-0227	AP	03	NH	New Hampshire (Phase II)		43.0645	-70.8538	NH	Great Bay - NH	Great Bay Region
NH03-0229	AP	03	NH	New Hampshire (Phase II)		43.0689	-70.7429	NH	Little Harbor	Great Bay Region
NH03-0231	AP	03	NH	New Hampshire (Phase II)		43.06	-70.7094	NH	Portsmouth Harbor	Great Bay Region
NH03-0232	AP	03	NH	New Hampshire (Phase II)		43.0804	-70.9335	NH	Great Bay - NH	Great Bay Region
NH03-0234	AP	03	NH	New Hampshire (Phase II)		43.0857	-70.8721	NH	Great Bay - NH	Great Bay Region
NH03-0236	AP	03	NH	New Hampshire (Phase II)		43.0756	-70.7709	NH	South Mill Pond	Great Bay Region
NH03-0238	AP	03	NH	New Hampshire (Phase II)		43.077	-70.7454	NH	Portsmouth Harbor	Great Bay Region
NH03-0241	AP	03	NH	New Hampshire (Phase II)		43.0938	-70.8657	NH	Little Bay	Great Bay Region
NH03-0243	AP	03	NH	New Hampshire (Phase II)		43.1022	-70.7921	NH	Piscataqua River	Great Bay Region
NH03-0244	AP	03	NH	New Hampshire (Phase II)		43.1182	-70.8684	NH	Little Bay	Great Bay Region
NH03-0246	AP	03	NH	New Hampshire (Phase II)		43.1214	-70.8252	NH	Piscataqua River	Great Bay Region

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NH03-0248	AP	03	NH	New Hampshire (Phase II)		43.1326	-70.9143	NH	Piscataqua River	Great Bay Region
NH03-0250	AP	03	NH	New Hampshire (Phase II)		43.1236	-70.8646	NH	Piscataqua River	Great Bay Region
NH03-0253	AP	03	NH	New Hampshire (Phase II)		43.1454	-70.8466	NH	Piscataqua River	Great Bay Region
NH03-0255	AP	03	NH	New Hampshire (Phase II)		43.1636	-70.8588	NH	Piscataqua River	Great Bay Region
NH03-0258	AP	03	NH	New Hampshire (Phase II)		43.1769	-70.8261	NH	Piscataqua River	Great Bay Region
NH03-0260	AP	03	NH	New Hampshire (Phase II)		43.1916	-70.8493	NH	Piscataqua River	Great Bay Region
NH03-0263	AP	03	NH	New Hampshire (Phase II)		43.1995	-70.8213	NH	Piscataqua River	Great Bay Region
NH03-0265	AP	03	NH	New Hampshire (Phase II)		43.2266	-70.8114	NH	Piscataqua River	Great Bay Region
NH04-0200	AP	04	NH	New Hampshire (Phase II)		42.8768	-70.8321	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH04-0202	AP	04	NH	New Hampshire (Phase II)		42.8867	-70.843	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH04-0206	AP	04	NH	New Hampshire (Phase II)		42.8952	-70.8251	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH04-0208	AP	04	NH	New Hampshire (Phase II)		42.9177	-70.8253	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH04-0210	AP	04	NH	New Hampshire (Phase II)		42.9944	-70.9438	NH	Squamscott River	Great Bay Region
NH04-0211	AP	04	NH	New Hampshire (Phase II)		43.0137	-70.9382	NH	Great Bay - NH	Great Bay Region
NH04-0213	AP	04	NH	New Hampshire (Phase II)		43.0296	-70.936	NH	Great Bay - NH	Great Bay Region
NH04-0215	AP	04	NH	New Hampshire (Phase II)		43.0495	-70.9156	NH	Great Bay - NH	Great Bay Region
NH04-0217	AP	04	NH	New Hampshire (Phase II)		43.0614	-70.9063	NH	Great Bay - NH	Great Bay Region
NH04-0219	AP	04	NH	New Hampshire (Phase II)		43.0603	-70.8501	NH	Great Bay - NH	Great Bay Region
NH04-0221	AP	04	NH	New Hampshire (Phase II)		43.0519	-70.76	NH	Little Harbor	Great Bay Region
NH04-0223	AP	04	NH	New Hampshire (Phase II)		43.0547	-70.7204	NH	Little Harbor	Great Bay Region
NH04-0225	AP	04	NH	New Hampshire (Phase II)		43.0646	-70.918	NH	Great Bay - NH	Great Bay Region
NH04-0228	AP	04	NH	New Hampshire (Phase II)		43.0732	-70.771	NH	South Mill Pond	Great Bay Region
NH04-0230	AP	04	NH	New Hampshire (Phase II)		43.056	-70.7276	NH	Little Harbor	Great Bay Region
NH04-0233	AP	04	NH	New Hampshire (Phase II)		43.0797	-70.8984	NH	Great Bay - NH	Great Bay Region
NH04-0235	AP	04	NH	New Hampshire (Phase II)		43.0823	-70.8637	NH	Great Bay - NH	Great Bay Region
NH04-0237	AP	04	NH	New Hampshire (Phase II)		43.081	-70.7621	NH	South Mill Pond	Great Bay Region
NH04-0239	AP	04	NH	New Hampshire (Phase II)		43.0727	-70.7101	NH	Portsmouth Harbor	Great Bay Region
NH04-0240	AP	04	NH	New Hampshire (Phase II)		43.0969	-70.8809	NH	Great Bay - NH	Great Bay Region
NH04-0242	AP	04	NH	New Hampshire (Phase II)		43.0945	-70.8521	NH	Little Bay	Great Bay Region
NH04-0245	AP	04	NH	New Hampshire (Phase II)		43.1126	-70.8624	NH	Little Bay	Great Bay Region
NH04-0247	AP	04	NH	New Hampshire (Phase II)		43.1115	-70.8071	NH	Piscataqua River	Great Bay Region
NH04-0249	AP	04	NH	New Hampshire (Phase II)		43.1292	-70.8761	NH	Piscataqua River	Great Bay Region
NH04-0252	AP	04	NH	New Hampshire (Phase II)		43.1365	-70.8997	NH	Piscataqua River	Great Bay Region
NH04-0254	AP	04	NH	New Hampshire (Phase II)		43.1373	-70.8324	NH	Piscataqua River	Great Bay Region
NH04-0256	AP	04	NH	New Hampshire (Phase II)		43.1533	-70.832	NH	Piscataqua River	Great Bay Region
NH04-0257	AP	04	NH	New Hampshire (Phase II)		43.1726	-70.8659	NH	Piscataqua River	Great Bay Region
NH04-0259	AP	04	NH	New Hampshire (Phase II)		43.1946	-70.8705	NH	Piscataqua River	Great Bay Region
NH04-0261	AP	04	NH	New Hampshire (Phase II)		43.188	-70.8302	NH	Piscataqua River	Great Bay Region
NH04-0264	AP	04	NH	New Hampshire (Phase II)		43.2168	-70.8137	ME	Piscataqua River	Great Bay Region
NH05-0201	AP	05/06	NH	New Hampshire (Phase II)		42.8723	-70.8255	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH05-0203	AP	05/06	NH	New Hampshire (Phase II)		42.8865	-70.8275	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH05-0205	AP	05/06	NH	New Hampshire (Phase II)		42.8972	-70.8333	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH05-0207	AP	05/06	NH	New Hampshire (Phase II)		42.9192	-70.8404	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH05-0209	AP	05/06	NH	New Hampshire (Phase II)		42.9885	-70.9489	NH	Squamscott River	Great Bay Region
NH05-0212	AP	05/06	NH	New Hampshire (Phase II)		43.0022	-70.7494	NH	Rye Harbor	Great Bay Region
NH05-0214	AP	05/06	NH	New Hampshire (Phase II)		43.0349	-70.9331	NH	Great Bay - NH	Great Bay Region
NH05-0216	AP	05/06	NH	New Hampshire (Phase II)		43.0549	-70.9151	NH	Great Bay - NH	Great Bay Region
NH05-0218	AP	05/06	NH	New Hampshire (Phase II)		43.0626	-70.8778	NH	Great Bay - NH	Great Bay Region
NH05-0220	AP	05/06	NH	New Hampshire (Phase II)		43.0532	-70.8344	NH	Great Bay - NH	Great Bay Region
NH05-0222	AP	05/06	NH	New Hampshire (Phase II)		43.0557	-70.7298	NH	Little Harbor	Great Bay Region
NH05-0224	AP	05/06	NH	New Hampshire (Phase II)		43.0769	-70.9347	NH	Great Bay - NH	Great Bay Region
NH05-0226	AP	05/06	NH	New Hampshire (Phase II)		43.0634	-70.8812	NH	Great Bay - NH	Great Bay Region
NH05-0229	AP	05/06	NH	New Hampshire (Phase II)		43.0689	-70.7429	NH	Little Harbor	Great Bay Region
NH05-0231	AP	05/06	NH	New Hampshire (Phase II)		43.06	-70.7094	NH	Portsmouth Harbor	Great Bay Region
NH05-0232	AP	05/06	NH	New Hampshire (Phase II)		43.0804	-70.9335	NH	Great Bay - NH	Great Bay Region
NH05-0234	AP	05/06	NH	New Hampshire (Phase II)		43.0886	-70.879	NH	Great Bay - NH	Great Bay Region
NH05-0236	AP	05/06	NH	New Hampshire (Phase II)		43.0756	-70.7709	NH	South Mill Pond	Great Bay Region
NH05-0238	AP	05/06	NH	New Hampshire (Phase II)		43.077	-70.7454	NH	Portsmouth Harbor	Great Bay Region
NH05-0241	AP	05/06	NH	New Hampshire (Phase II)		43.0938	-70.8657	NH	Little Bay	Great Bay Region

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NH05-0243	AP	05/06	NH	New Hampshire (Phase II)		43.1022	-70.7921	NH	Piscataqua River	Great Bay Region
NH05-0244	AP	05/06	NH	New Hampshire (Phase II)		43.1182	-70.8684	NH	Little Bay	Great Bay Region
NH05-0246	AP	05/06	NH	New Hampshire (Phase II)		43.1214	-70.8252	NH	Piscataqua River	Great Bay Region
NH05-0248	AP	05/06	NH	New Hampshire (Phase II)		43.1326	-70.9143	NH	Piscataqua River	Great Bay Region
NH05-0250	AP	05/06	NH	New Hampshire (Phase II)		43.1236	-70.8646	NH	Piscataqua River	Great Bay Region
NH05-0251	AP	05/06	NH	New Hampshire (Phase II)		43.1198	-70.8146	NH	Piscataqua River	Great Bay Region
NH05-0253	AP	05/06	NH	New Hampshire (Phase II)		43.1347	-70.8521	NH	Piscataqua River	Great Bay Region
NH05-0255	AP	05/06	NH	New Hampshire (Phase II)		43.1636	-70.8588	NH	Piscataqua River	Great Bay Region
NH05-0258	AP	05/06	NH	New Hampshire (Phase II)		43.1769	-70.8261	NH	Piscataqua River	Great Bay Region
NH05-0260	AP	05/06	NH	New Hampshire (Phase II)		43.1956	-70.8622	NH	Piscataqua River	Great Bay Region
NH05-0262	AP	05/06	NH	New Hampshire (Phase II)		43.192	-70.82	ME	Piscataqua River	Great Bay Region
NH05-0263	AP	05/06	NH	New Hampshire (Phase II)		43.1995	-70.8213	NH	Piscataqua River	Great Bay Region
NH05-0265	AP	05/06	NH	New Hampshire (Phase II)		43.2266	-70.8114	NH	Piscataqua River	Great Bay Region
NH05-0275	AP	05/06	NH	New Hampshire (Phase II)		43.0766	-70.6959	ME	Portsmouth Harbor	Great Bay Region
NH05-0276	AP	05/06	NH	New Hampshire (Phase II)		43.0919	-70.7569	ME	Piscataqua River	Great Bay Region
NH05-0277	AP	05/06	NH	New Hampshire (Phase II)		43.0853	-70.7047	ME	Portsmouth Harbor	Great Bay Region
NH05-0278	AP	05/06	NH	New Hampshire (Phase II)		43.1043	-70.771	ME	Spinney Creek	Great Bay Region
NH05-0279	AP	05/06	NH	New Hampshire (Phase II)		43.1163	-70.726	ME	Portsmouth Harbor	Great Bay Region
NH05-0280	AP	05/06	NH	New Hampshire (Phase II)		43.1534	-70.8127	ME	Piscataqua River	Great Bay Region
NH06-0026	AP	05/06	NH	New Hampshire (Phase III)		43.204	-70.82	NH	Piscataqua River	Great Bay Region
NH06-0027	AP	05/06	NH	New Hampshire (Phase III)		43.096	-70.776	ME	Piscataqua River	Great Bay Region
NH06-0028	AP	05/06	NH	New Hampshire (Phase III)		43.085	-70.875	NH	Great Bay - NH	Great Bay Region
NH06-0029	AP	05/06	NH	New Hampshire (Phase III)		43.067	-70.845	NH	Great Bay - NH	Great Bay Region
NH06-0030	AP	05/06	NH	New Hampshire (Phase III)		43.047	-70.916	NH	Great Bay - NH	Great Bay Region
NH06-0031	AP	05/06	NH	New Hampshire (Phase III)		43.084	-70.724	ME	Portsmouth Harbor	Great Bay Region
NH06-0032	AP	05/06	NH	New Hampshire (Phase III)		43.062	-70.909	NH	Great Bay - NH	Great Bay Region
NH06-0033	AP	05/06	NH	New Hampshire (Phase III)		43.128	-70.83	NH	Piscataqua River	Great Bay Region
NH06-0034	AP	05/06	NH	New Hampshire (Phase III)		43.181	-70.827	NH	Piscataqua River	Great Bay Region
NH06-0035	AP	05/06	NH	New Hampshire (Phase III)		43.055	-70.843	NH	Great Bay - NH	Great Bay Region
NH06-0036	AP	05/06	NH	New Hampshire (Phase III)		43.095	-70.856	NH	Little Bay	Great Bay Region
NH06-0037	AP	05/06	NH	New Hampshire (Phase III)		42.904	-70.818	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH06-0038	AP	05/06	NH	New Hampshire (Phase III)		43.078	-70.879	NH	Great Bay - NH	Great Bay Region
NH06-0039	AP	05/06	NH	New Hampshire (Phase III)		43.05	-70.763	NH	Little Harbor	Great Bay Region
NH06-0040	AP	05/06	NH	New Hampshire (Phase III)		43.069	-70.702	ME	Portsmouth Harbor	Great Bay Region
NH06-0041	AP	05/06	NH	New Hampshire (Phase III)		43.147	-70.834	NH	Piscataqua River	Great Bay Region
NH06-0042	AP	05/06	NH	New Hampshire (Phase III)		43.128	-70.878	NH	Piscataqua River	Great Bay Region
NH06-0043	AP	05/06	NH	New Hampshire (Phase III)		43.076	-70.746	NH	Portsmouth Harbor	Great Bay Region
NH06-0044	AP	05/06	NH	New Hampshire (Phase III)		43.061	-70.879	NH	Great Bay - NH	Great Bay Region
NH06-0045	AP	05/06	NH	New Hampshire (Phase III)		43.079	-70.701	ME	Portsmouth Harbor	Great Bay Region
NH06-0046	AP	05/06	NH	New Hampshire (Phase III)		43.099	-70.863	NH	Little Bay	Great Bay Region
NH06-0047	AP	05/06	NH	New Hampshire (Phase III)		43.068	-70.857	NH	Great Bay - NH	Great Bay Region
NH06-0048	AP	05/06	NH	New Hampshire (Phase III)		43.121	-70.825	NH	Piscataqua River	Great Bay Region
NH06-0049	AP	05/06	NH	New Hampshire (Phase III)		42.898	-70.828	NH	Hampton River/Hampton Harbor	MA (North) & NH Coast
NH06-0050	AP	05/06	NH	New Hampshire (Phase III)		43.125	-70.861	NH	Piscataqua River	Great Bay Region
NY03-0072	VP	03	CT	Long Island Sound (Phase II)		40.9504	-73.4249	NY	Long Island Sound	Long Island Sound
NY03-0074	VP	03	CT	Long Island Sound (Phase II)		40.9916	-73.2184	NY	Long Island Sound	Long Island Sound
NY03-0075	VP	03	CT	Long Island Sound (Phase II)		41.0554	-73.0804	NY	Long Island Sound	Long Island Sound
NY03-0084	VP	03	CT	Long Island Sound (Phase II)		40.9184	-73.6424	NY	Long Island Sound	Long Island Sound
NY03-0088	VP	03	CT	Long Island Sound (Phase II)		41.1376	-72.6545	NY	Long Island Sound	Long Island Sound
NY03-0089	VP	03	CT	Long Island Sound (Phase II)		41.1821	-72.4572	NY	Long Island Sound	Long Island Sound
NY04-0070	VP	04	CT	Long Island Sound (Phase II)		40.9379	-73.5189	NY	Long Island Sound	Long Island Sound
NY04-0072	VP	04	CT	Long Island Sound (Phase II)		40.95	-73.425	NY	Long Island Sound	Long Island Sound
NY04-0075	VP	04	CT	Long Island Sound (Phase II)		41.055	-73.08	NY	Long Island Sound	Long Island Sound
NY04-0080	VP	04	CT	Long Island Sound (Phase II)		41.0039	-72.6507	NY	Long Island Sound	Long Island Sound
NY04-0082	VP	04	CT	Long Island Sound (Phase II)		40.931	-73.221	NY	Long Island Sound	Long Island Sound
NY04-0083	VP	04	CT	Long Island Sound (Phase II)		40.8726	-73.7338	NY	Long Island Sound	Long Island Sound
NY04-0087	VP	04	CT	Long Island Sound (Phase II)		41.026	-72.913	NY	Long Island Sound	Long Island Sound
RI03-0301	VP	03	RI	RI Deep Water (Phase II)		41.449	-71.373	RI	Narragansett Bay	Narragansett Bay
RI03-0302	VP	03	RI	RI Deep Water (Phase II)		41.496	-71.414	RI	Narragansett Bay	Narragansett Bay

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RI03-0306	VP	03	RI	RI Deep Water (Phase II)		41.558	-71.408	RI	Narragansett Bay	Narragansett Bay
RI03-0308	VP	03	RI	RI Deep Water (Phase II)		41.561	-71.231	RI	Sakonnet River	Narragansett Bay
RI03-0311	VP	03	RI	RI Deep Water (Phase II)		41.605	-71.291	RI	Narragansett Bay	Narragansett Bay
RI03-0313	VP	03	RI	RI Deep Water (Phase II)		41.626	-71.372	RI	Narragansett Bay	Narragansett Bay
RI03-0316	VP	03	RI	RI Deep Water (Phase II)		41.691	-71.348	RI	Narragansett Bay	Narragansett Bay
RI03-0319	VP	03	RI	RI Deep Water (Phase II)		41.812	-71.4	RI	Providence River	Narragansett Bay
RI03-0321	VP	03	RI	RI Mid-Depth (Phase II)		41.463	-71.388	RI	Narragansett Bay	Narragansett Bay
RI03-0327	VP	03	RI	RI Mid-Depth (Phase II)		41.579	-71.23	RI	Sakonnet River	Narragansett Bay
RI03-0329	VP	03	RI	RI Mid-Depth (Phase II)		41.658	-71.39	RI	Greenwich Bay	Narragansett Bay
RI03-0333	VP	03	RI	RI Mid-Depth (Phase II)		41.72	-71.365	RI	Conimicut Point	Narragansett Bay
RI03-0334	VP	03	RI	RI Mid-Depth (Phase II)		41.685	-71.217	RI	Mt. Hope Bay	Narragansett Bay
RI03-0335	VP	03	RI	RI Mid-Depth (Phase II)		41.703	-71.2	MA	Mt. Hope Bay	Narragansett Bay
RI03-0337	VP	03	RI	RI Mid-Depth (Phase II)		41.843	-71.372	RI	Providence River	Narragansett Bay
RI03-0338	VP	03	RI	RI Ponds (Phase II)		41.325	-71.871	CT	Fishers Sound	Long Island Sound
RI04-0304	VP	04	RI	RI Deep Water (Phase II)		41.498	-71.325	RI	Narragansett Bay	Narragansett Bay
RI04-0307	VP	04	RI	RI Deep Water (Phase II)		41.566	-71.344	RI	Narragansett Bay	Narragansett Bay
RI04-0314	VP	04	RI	RI Deep Water (Phase II)		41.641	-71.3	RI	Narragansett Bay	Narragansett Bay
RI04-0317	VP	04	RI	RI Deep Water (Phase II)		41.7	-71.314	RI	Narragansett Bay	Narragansett Bay
RI04-0320	VP	04	RI	RI Deep Water (Phase II)		41.817	-71.393	RI	Providence River	Narragansett Bay
RI04-0322	VP	04	RI	RI Mid-Depth (Phase II)		41.467	-71.429	RI	Narragansett Bay	Narragansett Bay
RI04-0324	VP	04	RI	RI Mid-Depth (Phase II)		41.488	-71.243	RI	Sakonnet River	Narragansett Bay
RI04-0326	VP	04	RI	RI Mid-Depth (Phase II)		41.572	-71.431	RI	Narragansett Bay	Narragansett Bay
RI04-0328	VP	04	RI	RI Mid-Depth (Phase II)		41.578	-71.209	RI	Sakonnet River	Narragansett Bay
RI04-0329	VP	04	RI	RI Mid-Depth (Phase II)		41.658	-71.39	RI	Greenwich Bay	Narragansett Bay
RI04-0330	VP	04	RI	RI Mid-Depth (Phase II)		41.647	-71.37	RI	Narragansett Bay	Narragansett Bay
RI04-0332	VP	04	RI	RI Mid-Depth (Phase II)		41.685	-71.448	RI	Greenwich Bay	Narragansett Bay
RI04-0333	VP	04	RI	RI Mid-Depth (Phase II)		41.72	-71.365	RI	Conimicut Point	Narragansett Bay
RI04-0335	VP	04	RI	RI Mid-Depth (Phase II)		41.703	-71.2	MA	Mt. Hope Bay	Narragansett Bay
RI04-0336	VP	04	RI	RI Mid-Depth (Phase II)		41.76	-71.305	RI	Warren River	Narragansett Bay
RI04-0339	VP	04	RI	RI Ponds (Phase II)		41.356	-71.671	RI	Ninigret Pond	Block Island Sound
RI05-0001	VP	05/06	RI	RI: Deep Water (Phase III)		41.604	-71.294	RI	Narragansett Bay	Narragansett Bay
RI05-0002	VP	05/06	RI	RI: Shallow (Phase III)		41.606	-71.235	RI	Sakonnet River	Narragansett Bay
RI05-0003	VP	05/06	RI	RI: Shallow (Phase III)		41.703	-71.2	MA	Mt. Hope Bay	Narragansett Bay
RI05-0004	VP	05/06	RI	RI: Deep Water (Phase III)		41.525	-71.326	RI	Narragansett Bay	Narragansett Bay
RI05-0005	VP	05/06	RI	RI: Shallow (Phase III)		41.622	-71.413	RI	Narragansett Bay	Narragansett Bay
RI05-0006	VP	05/06	RI	RI: Deep Water (Phase III)		41.483	-71.341	RI	Narragansett Bay	Narragansett Bay
RI05-0007	VP	05/06	RI	RI: Deep Water (Phase III)		41.655	-71.307	RI	Narragansett Bay	Narragansett Bay
RI05-0008	VP	05/06	RI	RI: Deep Water (Phase III)		41.484	-71.228	RI	Sakonnet River	Narragansett Bay
RI05-0009	VP	05/06	RI	RI: Shallow (Phase III)		41.52	-71.224	RI	Sakonnet River	Narragansett Bay
RI05-0010	VP	05/06	RI	RI: Shallow (Phase III)		41.519	-71.363	RI	Narragansett Bay	Narragansett Bay
RI05-0011	VP	05/06	RI	RI: Shallow (Phase III)		41.687	-71.298	RI	Narragansett Bay	Narragansett Bay
RI05-0012	VP	05/06	RI	RI: Deep Water (Phase III)		41.62	-71.36	RI	Narragansett Bay	Narragansett Bay
RI05-0013	VP	05/06	RI	RI: Shallow (Phase III)		41.658	-71.39	RI	Narragansett Bay	Narragansett Bay
RI05-0014	VP	05/06	RI	RI: Deep Water (Phase III)		41.478	-71.363	RI	Narragansett Bay	Narragansett Bay
RI05-0015	VP	05/06	RI	RI: Deep Water (Phase III)		41.627	-71.286	RI	Narragansett Bay	Narragansett Bay
RI05-0016	VP	05/06	RI	RI: Shallow (Phase III)		41.328	-71.79	RI	Winnipaug Pond	Block Island Sound
RI05-0017	VP	05/06	RI	RI: Shallow (Phase III)		41.801	-71.393	RI	Providence River	Narragansett Bay
RI05-0018	VP	05/06	RI	RI: Shallow (Phase III)		41.387	-71.513	RI	Point Judith Pond	Block Island Sound
RI05-0019	VP	05/06	RI	RI: Shallow (Phase III)		41.72	-71.365	RI	Providence River	Narragansett Bay
RI05-0020	VP	05/06	RI	RI: Deep Water (Phase III)		41.452	-71.411	RI	Narragansett Bay	Narragansett Bay
RI05-0021	VP	05/06	RI	RI: Deep Water (Phase III)		41.636	-71.269	RI	Narragansett Bay	Narragansett Bay
RI05-0022	VP	05/06	RI	RI: Deep Water (Phase III)		41.54	-71.352	RI	Narragansett Bay	Narragansett Bay
RI05-0023	VP	05/06	RI	RI: Shallow (Phase III)		41.719	-71.29	RI	Warren River	Narragansett Bay
RI05-0024	VP	05/06	RI	RI: Deep Water (Phase III)		41.578	-71.341	RI	Narragansett Bay	Narragansett Bay
RI05-0025	VP	05/06	RI	RI: Deep Water (Phase III)		41.709	-71.165	MA	Taunton River	Narragansett Bay
RI06-0026	VP	05/06	RI	RI: Shallow (Phase III)		41.846	-71.37	RI	Providence River	Narragansett Bay
RI06-0027	VP	05/06	RI	RI: Shallow (Phase III)		41.643	-71.343	RI	Narragansett Bay	Narragansett Bay
RI06-0028	VP	05/06	RI	RI: Shallow (Phase III)		41.72	-71.365	RI	Providence River	Narragansett Bay
RI06-0029	VP	05/06	RI	RI: Deep Water (Phase III)		41.463	-71.413	RI	Narragansett Bay	Narragansett Bay

STATION	Province	STAT_ALT	ST_COOP	strata	HUC 8	STA_LAT	STA_LNG	STATE	ESTUARY	SYSTEM
RI06-0030	VP	05/06	RI	RI: Shallow (Phase III)		41.658	-71.253	RI	Mt. Hope Bay	Narragansett Bay
RI06-0031	VP	05/06	RI	RI: Shallow (Phase III)		41.577	-71.421	RI	Narragansett Bay	Narragansett Bay
RI06-0032	VP	05/06	RI	RI: Deep Water (Phase III)		41.698	-71.324	RI	Narragansett Bay	Narragansett Bay
RI06-0033	VP	05/06	RI	RI: Shallow (Phase III)		41.611	-71.41	RI	Narragansett Bay	Narragansett Bay
RI06-0034	VP	05/06	RI	RI: Shallow (Phase III)		41.76	-71.308	RI	Warren River	Narragansett Bay
RI06-0035	VP	05/06	RI	RI: Shallow (Phase III)		41.367	-71.645	RI	Ninigret Pond	Block Island Sound
RI06-0036	VP	05/06	RI	RI: Shallow (Phase III)		41.625	-71.337	RI	Narragansett Bay	Narragansett Bay
RI06-0037	VP	05/06	RI	RI: Deep Water (Phase III)		41.469	-71.228	RI	Sakonnet River	Narragansett Bay
RI06-0038	VP	05/06	RI	RI: Shallow (Phase III)		41.631	-71.234	RI	Sakonnet River	Narragansett Bay
RI06-0039	VP	05/06	RI	RI: Deep Water (Phase III)		41.546	-71.32	RI	Narragansett Bay	Narragansett Bay
RI06-0040	VP	05/06	RI	RI: Shallow (Phase III)		41.575	-71.227	RI	Sakonnet River	Narragansett Bay
RI06-0041	VP	05/06	RI	RI: Deep Water (Phase III)		41.578	-71.379	RI	Narragansett Bay	Narragansett Bay
RI06-0042	VP	05/06	RI	RI: Deep Water (Phase III)		41.58	-71.307	RI	Narragansett Bay	Narragansett Bay
RI06-0043	VP	05/06	RI	RI: Deep Water (Phase III)		41.555	-71.393	RI	Narragansett Bay	Narragansett Bay
RI06-0044	VP	05/06	RI	RI: Shallow (Phase III)		41.703	-71.2	MA	Mt. Hope Bay	Narragansett Bay
RI06-0045	VP	05/06	RI	RI: Deep Water (Phase III)		41.528	-71.345	RI	Narragansett Bay	Narragansett Bay
RI06-0046	VP	05/06	RI	RI: Shallow (Phase III)		41.658	-71.39	RI	Narragansett Bay	Narragansett Bay
RI06-0047	VP	05/06	RI	RI: Shallow (Phase III)		41.508	-71.385	RI	Narragansett Bay	Narragansett Bay
RI06-0048	VP	05/06	RI	RI: Shallow (Phase III)		41.621	-71.305	RI	Narragansett Bay	Narragansett Bay
RI06-0049	VP	05/06	RI	RI: Deep Water (Phase III)		41.478	-71.201	RI	Sakonnet River	Narragansett Bay
RI06-0050	VP	05/06	RI	RI: Shallow (Phase III)		41.538	-71.235	RI	Sakonnet River	Narragansett Bay

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
CT02-0200	1.13	84.4	6.07	.	.	.	0.372693	Good	missing	Good	missing	missing	missing
CT02-0202	3.26	84.4	8.78	.	.	.	0.246597	Good	missing	Good	missing	missing	missing
CT02-0203	23.8	84.4	7.88	.	.	.	0.498576	Good	missing	Good	missing	missing	missing
CT02-0205	0.171	84.4	4.47	.	.	.	0.311403	Good	missing	Fair	missing	missing	missing
CT02-0206	0.333	84.4	2.45	.	.	.	0.246597	Good	missing	Fair	missing	missing	missing
CT02-0207	5.11	84.4	4.87	.	.	.	0.272532	Good	missing	Fair	missing	missing	missing
CT02-0208	15.9	84.4	8.14	.	.	.	.	missing	missing	Good	missing	missing	missing
CT02-0210	3.17	84.4	7.09	.	.	.	0.572925	Good	missing	Good	missing	missing	missing
CT02-0212	6.36	84.4	6.84	.	.	.	0.311403	Good	missing	Good	missing	missing	missing
CT02-0213	1.65	84.4	9.1	.	.	.	0.246597	Good	missing	Good	missing	missing	missing
CT02-0215	7.06	84.4	6.12	.	.	.	0.494109	Good	missing	Good	missing	missing	missing
CT02-0217	5.23	84.4	4.93	.	.	.	0.264477	Good	missing	Fair	missing	missing	missing
CT02-0219	1.19	84.4	1.85	.	.	.	0.549361	Good	missing	Poor	missing	missing	Fair
CT03-0021	71.6	3130	1.11	7.1	0.036	0.009	0.593926	Good	Good	Poor	Fair	Fair	Fair
CT03-0034	94.2	3130	4.43	7.5	0.054	0.075	0.393372	Good	Good	Fair	Poor	Fair	Fair
CT03-0035	82	3130	3.19	8.2	0.042	0.016	0.534192	Good	Good	Fair	Fair	Fair	Fair
CT03-0039	214	3130	6.58	4.9	0.032	0.073	0.360595	Good	Good	Good	Fair	Good	Good
CT04-0023	60.8	3130	3.16	7.05	0.065	0.012	0.604109	Good	Good	Fair	Poor	Fair	Fair
CT04-0027	84.6	3130	3.16	5.6	0.025	0.011	0.612014	Good	Good	Fair	Fair	Fair	Fair
CT04-0029	93	3130	5.96	6.74	0.059	0.038	0.497082	Good	Good	Good	Poor	Fair	Fair
CT04-0030	116.6	3130	3.44	3.69	0.039	0.027	0.67368	Good	Good	Fair	Fair	Good	Fair
CT04-0032	133.8	3130	5.95	11.8	0.017	0.008	0.578683	Good	Good	Good	Fair	Fair	Fair
CT04-0040	85.6	3130	1.93	3.73	0.057	0.013	0.752014	Good	Good	Poor	Poor	Good	Poor
CT04-0044	77.2	3130	3.45	5.19	0.042	0.013	0.604714	Good	Good	Fair	Fair	Fair	Fair
CT04-0049	330	3130	6.95	4.68	0.019	0.024	0.75352	Good	Good	Good	Fair	Good	Good
CT04-0309	5.32	157.8	.	.	0.122	0.362	.	missing	Fair	missing	Poor	missing	Fair
CT04-0312	2.93	157.8	.	3	0.031	0.031	.	missing	Good	missing	Fair	Good	missing
CT04-0313	4.87	157.8	.	5	0.028	0.018	.	missing	Good	missing	Fair	Good	missing
CT04-0316	10.4	157.8	.	7.9	0.036	0.388	.	missing	Fair	missing	Fair	Fair	Fair
CT04-0317	2.08	157.8	.	11.2	0.032	0.059	.	missing	Good	missing	Fair	Fair	Fair
CT05-0001	27.938	111.9986	5.33	16.1	0.1	0.36	0.353455	Good	Fair	Good	Poor	Fair	Fair
CT05-0003	57.9	3129.449	4.15	5.1	0.05	0.01	0.738599	Good	Good	Fair	Fair	Fair	Fair
CT05-0004	42.3	3129.449	3	0.378	0	.	0.645649	Good	missing	Fair	Good	Good	Good
CT05-0008	107	3129.449	6.93	11.3	0.05	0.03	0.453845	Good	Good	Good	Fair	Fair	Fair
CT05-0011	46.7927	111.9986	.	0.3	0.1	0.91	0.417697	Good	Poor	missing	Poor	Good	Poor
CT05-0012	42.8	3129.449	3.9	14	0.07	0.04	0.75352	Good	Good	Fair	Poor	Fair	Fair
CT05-0013	19	3129.449	6.77	10.1	0.07	0.03	0.552667	Good	Good	Good	Poor	Fair	Fair
CT05-0015	32.8	3129.449	5.58	12.6	0.07	0.05	0.460704	Good	Good	Good	Poor	Fair	Fair
CT05-0017	46.7927	111.9986	7.54	11.7	0.02	0.03	0.482391	Good	Good	Good	Fair	Fair	Fair
CT05-0018	44.8	3129.449	4	1.099	0	.	0.67781	Good	missing	Fair	Good	Good	Good
CT05-0019	14.7	3129.449	3.26	36.6	0.07	0.01	0.608353	Good	Good	Fair	Poor	Poor	Poor
CT05-0021	82.2	3129.449	2.12	15.9	0.13	0.33	0.629393	Good	Fair	Fair	Poor	Fair	Fair
CT05-0023	193	3129.449	6.76	5.4	0.01	0.04	0.653116	Good	Good	Good	Good	Fair	Good
CT05-0024	52.7	3129.449	3.94	6.8	0.05	0.01	0.697676	Good	Good	Fair	Fair	Fair	Fair
CT05-0025	38.6	3129.449	4.18	11.4	0.06	0	0.565525	Good	Good	Fair	Poor	Fair	Fair
CT06-0002	102	3129.449	5.5	4.7	0.0526	0.033	0.636601	Good	Good	Good	Poor	Good	Fair
CT06-0003	57.9	3129.449	3.67	5.63	0.03	0.02	0.723974	Good	Good	Fair	Fair	Fair	Fair
CT06-0005	176	3129.449	7.67	4.11	0.01	0.02	0.767206	Good	Good	Good	Good	Good	Good
CT06-0006	99.6	3129.449	.	3.44	0.03	0.08	.	missing	Good	missing	Fair	Good	missing
CT06-0007	122	3129.449	3.48	4.08	0.02	0.01	0.583915	Good	Good	Fair	Fair	Good	Fair
CT06-0009	46.5	3129.449	6.2	3.79	0.0712	0.1108	0.496585	Good	Fair	Good	Poor	Good	Fair
CT06-0010	52.9	3129.449	.	3.07	0.0675	0.1044	0.571209	Good	Fair	missing	Poor	Good	Fair
CT06-0014	68.3	3129.449	3.38	5.81	0.02	0.02	0.723974	Good	Good	Fair	Fair	Fair	Fair
CT06-0016	50	3129.449	6.23	4.99	0.04	0.03	0.599296	Good	Good	Good	Fair	Good	Good
CT06-0020	34.9	3129.449	5.9	4.83	0.0601	0.0571	0.595402	Good	Good	Good	Poor	Good	Fair
CT06-0022	41.6	3129.449	4.7	3.9	0.07	0.0895	0.246597	Good	Good	Fair	Poor	Good	Fair
CT06-0026	46.7927	111.9986	.	11.14	0.04	0.45	.	missing	Fair	missing	Fair	Fair	Fair
CT06-0027	103	3129.449	5.12	5.05	0.03	0.01	0.683178	Good	Good	Good	Fair	Fair	Fair
CT06-0028	19.2	3129.449	.	9.6	0.03	0.03	0.478623	Good	Good	missing	Fair	Fair	Fair

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
CT06-0029	38.5	3129.449	3.02	4.41	0.03	0.02	0.632547	Good	Good	Fair	Fair	Good	Fair
CT06-0030	18.8	3129.449	2.81	6.38	0.03	0.01	0.675704	Good	Good	Fair	Fair	Good	Fair
CT06-0031	52.2	3129.449	5.15	3.54	0.03	0.02	0.706805	Good	Good	Good	Fair	Good	Good
CT06-0032	46.7927	111.9986	.	10.02	0.06	0.49	.	missing	Fair	missing	Poor	Fair	Fair
CT06-0033	69.1	3129.449	3.63	2.78	0.08	0.02	0.661001	Good	Good	Fair	Poor	Good	Fair
CT06-0034	59.8	3129.449	5.9	5.36	0.0622	0.0394	0.311403	Good	Good	Good	Poor	Fair	Fair
CT06-0035	58.3	3129.449	4.39	3.99	0.03	0.02	0.667644	Good	Good	Fair	Fair	Good	Fair
CT06-0036	85.4	3129.449	4.8	3.68	0.0291	0.027	0.513417	Good	Good	Fair	Fair	Good	Fair
CT06-0037	35.8	3129.449	.	10.42	0.03	0.02	.	missing	Good	missing	Fair	Fair	Fair
CT06-0038	46.7927	111.9986	.	10.24	0.04	0.11	.	missing	Fair	missing	Fair	Fair	Fair
CT06-0039	54.8	3129.449	6	6.71	0.0526	0.0462	0.496585	Good	Good	Good	Poor	Fair	Fair
CT06-0040	41	3129.449	6.3	3.62	0.0331	0.0074	0.496585	Good	Good	Good	Fair	Good	Good
CT06-0041	46.7927	111.9986	.	14.12	0.05	0.02	.	missing	Good	missing	Fair	Fair	Fair
CT06-0042	47.1	3129.449	6.5	2.66	0.0492	0.0596	0.478623	Good	Good	Good	Fair	Good	Good
CT06-0043	21.9	3129.449	5.9	8.82	0.0412	0.0235	0.54406	Good	Good	Good	Fair	Fair	Fair
CT06-0045	127	3129.449	6.35	3.69	0.03	0.02	0.526239	Good	Good	Good	Fair	Good	Good
CT06-0047	58.8	3129.449	3.82	3.95	0.04	0.01	0.640184	Good	Good	Fair	Fair	Good	Fair
CT06-0048	48.3	3129.449	.	12.27	0.0514	0.0223	0.496585	Good	Good	missing	Poor	Fair	Fair
CT06-0049	73.3	3129.449	.	3.86	0.03	0.05	.	missing	Good	missing	Fair	Good	missing
CT06-0050	30.4	3129.449	.	6.13	0.05	0.03	.	missing	Good	missing	Fair	Fair	Fair
MA03-0011	17.55	2246.5	9.57	0.49	0.014	0	0.788991	Good	Good	Good	Fair	Good	Good
MA03-0051	24.9	2246.5	8.1	0.41	0.016	0	0.592147	Good	Good	Good	Fair	Good	Good
MA03-0100	3.435	2246.5	7.46	2.94	0.012	0.0025	0.039164	Poor	Good	Good	Fair	Good	Fair
MA03-0103	22.65	2246.5	7.46	1.93	0.011	0	0.759572	Good	Good	Good	Fair	Good	Good
MA03-0106	18.3	2246.5	7.46	2.88	0.03	0.0413	0.433874	Good	Good	Good	Fair	Good	Good
MA03-0109	96.9	2246.5	6.14	0.86	0.024	0	0.808965	Good	Good	Good	Fair	Good	Good
MA03-0112	192	2246.5	6.05	1.2	0.017	0	0.817095	Good	Good	Good	Fair	Good	Good
MA03-0115	1.161	2246.5	.	20.7	.	.	.	missing	missing	missing	missing	Poor	Fair
MA03-0118	31.5	2246.5	8.67	0.87	0.012	0	0.827787	Good	Good	Good	Fair	Good	Good
MA03-0121	7.08	2246.5	8.51	1.36	0.024	0.036	0.762616	Good	Good	Good	Fair	Good	Good
MA03-0124	174	2246.5	8.13	0.72	0.013	0	0.750512	Good	Good	Good	Fair	Good	Good
MA03-0127	94.95	2246.5	8.99	0.53	0.017	0	0.816278	Good	Good	Good	Fair	Good	Good
MA03-0130	0.78	2246.5	.	1.41	.	.	.	missing	missing	missing	missing	Good	missing
MA03-0133	196.5	2246.5	8	0.41	0.01	0	0.847894	Good	Good	Good	Good	Good	Good
MA03-0136	4.635	2246.5	.	0.4	0.008	0.0226	.	missing	Good	missing	Good	Good	missing
MA03-0139	54.9	2246.5	7.3	1.02	0.004	0	1	Good	Good	Good	Good	Good	Good
MA03-0142	3.525	2246.5	6.82	12.8	0.007	0.232	.	missing	Fair	Good	Good	Fair	Fair
MA03-0145	4.575	2246.5	10.85	0.84	0.011	0.0035	0.747516	Good	Good	Good	Fair	Good	Good
MA03-0148	7.35	2246.5	10.27	0.25	0.006	0.012	0.699772	Good	Good	Good	Good	Good	Good
MA03-0301	1.45	190.3	4.1	9.24	0.082	0.2007	0.280067	Good	Fair	Fair	Poor	Fair	Fair
MA03-0306	0.063	176.7	6.4	1.96	0.068	1.397	0.173774	Fair	Poor	Good	Poor	Good	Poor
MA04-0002	57.6	2246.5	9.8	1.54	0.001	0.0018	0.67032	Good	Good	Good	Good	Good	Good
MA04-0021	232.5	2246.5	7.91	0.04	0.004	0.0022	0.848143	Good	Good	Good	Good	Good	Good
MA04-0028	232.5	2246.5	8.28	0.08	0.004	0	0.806231	Good	Good	Good	Good	Good	Good
MA04-0040	50.7	2246.5	5.01	5.19	0.071	0.0087	0.393241	Good	Good	Good	Poor	Fair	Fair
MA04-0101	15	2246.5	6.6	.	0.024	0.005	0.418952	Good	Good	Good	Fair	missing	Good
MA04-0104	3.075	2246.5	7.61	.	0.019	0.0142	0.496585	Good	Good	Good	Fair	missing	Good
MA04-0107	28.95	2246.5	6.27	.	0.019	0.0223	0.311403	Good	Good	Good	Fair	missing	Good
MA04-0110	6.12	2246.5	6.27	.	0.012	0.0047	0.459426	Good	Good	Good	Fair	missing	Good
MA04-0113	105.3	2246.5	6.12	0.55	0.008	0.0011	0.797873	Good	Good	Good	Good	Good	Good
MA04-0116	126	2246.5	7.07	0.85	0.007	0.0017	0.704688	Good	Good	Good	Good	Good	Good
MA04-0119	25.5	2246.5	.	4.62	0.018	0.0462	.	missing	Good	missing	Fair	Good	missing
MA04-0122	178.5	2246.5	9.06	0.08	0.004	0	0.806231	Good	Good	Good	Good	Good	Good
MA04-0125	67.2	2246.5	.	1.46	0.037	0.0292	.	missing	Good	missing	Fair	Good	missing
MA04-0128	232.5	2246.5	8.68	0.09	0.005	0.0089	0.848143	Good	Good	Good	Good	Good	Good
MA04-0131	3.96	2246.5	8.36	2.43	0.011	0.0017	0.367879	Good	Good	Good	Fair	Good	Good
MA04-0134	186	2246.5	8.48	0.16	0.007	0.0011	0.763967	Good	Good	Good	Good	Good	Good
MA04-0137	17.25	2246.5	8.61	0.11	0	0.0022	0.425283	Good	Good	Good	Good	Good	Good
MA04-0140	0.366	2246.5	6.23	1.9	0.009	0.0937	0.54406	Good	Good	Good	Good	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
MA04-0143	46.5	2246.5	9.72	0.85	0.005	0.0028	0.806231	Good	Good	Good	Good	Good	Good
MA04-0146	0.2055	2246.5	8.64	0.98	0.018	0.202	0.606531	Good	Fair	Good	Good	Good	Fair
MA04-0149	4.245	2246.5	9.61	1.28	0	0.0007	0.818731	Good	Good	Good	Good	Good	Good
MA04-0300	3	190.3	5.3	7.07	0.045	0.0189	0.416862	Good	Good	Good	Fair	Fair	Fair
MA04-0304	4.26	176.7	4.7	6.39	0.076	0.1188	0.311403	Good	Fair	Fair	Poor	Fair	Fair
MA05-0001	43.7904	2189.52	4.31	1.78	0.0096	0.0067	0.571209	Good	Good	Fair	Good	Good	Good
MA05-0002	43.7904	2189.52	5.86	1.1	0.0102	0.0126	0.704688	Good	Good	Good	Fair	Good	Good
MA05-0003	43.7904	2189.52	6.5	1.39	0.0099	0.0151	0.755784	Good	Good	Good	Good	Good	Good
MA05-0004	43.7904	2189.52	7.54	0.74	0.0084	0.0036	0.732632	Good	Good	Good	Good	Good	Good
MA05-0005	43.7904	2189.52	6.35	0.73	0.017	0.0327	0.755784	Good	Good	Good	Fair	Good	Good
MA05-0006	43.7904	2189.52	6.53	3.04	0.0223	0.0917	0.496585	Good	Good	Good	Fair	Good	Good
MA05-0007	43.7904	2189.52	7.58	4.55	0.0567	0.0052	0.496585	Good	Good	Good	Poor	Good	Fair
MA05-0008	43.7904	2189.52	6.63	4.26	0.013	0.0535	0.627089	Good	Good	Good	Fair	Good	Good
MA05-0009	43.7904	2189.52	6.44	4.93	0.0133	0.0113	0.496585	Good	Good	Good	Fair	Good	Good
MA05-0010	43.7904	2189.52	6.23	0.54	0.0087	0.017	0.755784	Good	Good	Good	Good	Good	Good
MA05-0011	43.7904	2189.52	6.39	1.32	0.0099	0.0142	0.627089	Good	Good	Good	Good	Good	Good
MA05-0012	43.7904	2189.52	7.94	0.52	0.009	0.0132	0.79189	Good	Good	Good	Good	Good	Good
MA05-0013	43.7904	2189.52	5.15	1.76	0.017	0.0114	0.627089	Good	Good	Good	Fair	Good	Good
MA05-0015	43.7904	2189.52	7.31	5.81	0.0173	0.0366	1	Good	Good	Good	Fair	Fair	Fair
MA05-0016	43.7904	2189.52	6.69	1.13	0.0096	0.0133	0.806231	Good	Good	Good	Good	Good	Good
MA05-0018	43.7904	2189.52	6.54	0.6	0.0077	0.0196	0.67032	Good	Good	Good	Good	Good	Good
MA05-0019	43.7904	2189.52	5.95	1.53	0.0226	0.0055	0.496585	Good	Good	Good	Fair	Good	Good
MA05-0020	43.7904	2189.52	6.34	1.23	0.0192	0.0203	0.755784	Good	Good	Good	Fair	Good	Good
MA05-0021	43.7904	2189.52	.	2.01	0.0139	0.016	.	missing	Good	missing	Fair	Good	missing
MA05-0022	43.7904	2189.52	7.35	0.7	0.0093	0.0116	0.704688	Good	Good	Good	Good	Good	Good
MA05-0023	43.7904	2189.52	6.34	1.24	0.0133	0.0179	0.704688	Good	Good	Good	Fair	Good	Good
MA05-0024	43.7904	2189.52	7.89	0.94	0.0096	0.0133	0.704688	Good	Good	Good	Good	Good	Good
MA05-0025	43.7904	2189.52	7.91	0.59	0.0099	0.0064	0.742396	Good	Good	Good	Good	Good	Good
MA06-0026	43.7904	2189.52	7.1	5.1	0.0192	0.0141	0.54406	Good	Good	Good	Fair	Fair	Fair
MA06-0027	43.7904	2189.52	6.37	0.13	0.0081	0.0088	0.839457	Good	Good	Good	Good	Good	Good
MA06-0028	43.7904	2189.52	5.75	0.78	0.03	0.0106	0.654265	Good	Good	Good	Fair	Good	Good
MA06-0029	43.7904	2189.52	5.88	0.42	0.0192	0.0049	0.79189	Good	Good	Good	Fair	Good	Good
MA06-0030	43.7904	2189.52	7.6	0.21	0.0102	0.0031	0.806231	Good	Good	Good	Fair	Good	Good
MA06-0031	43.7904	2189.52	6.53	0.28	0.009	0.0029	0.839457	Good	Good	Good	Good	Good	Good
MA06-0032	43.7904	2189.52	6.26	0.38	0.0105	0.0116	0.85594	Good	Good	Good	Fair	Good	Good
MA06-0033	43.7904	2189.52	6.58	0.33	0.0087	0.0008	0.831761	Good	Good	Good	Good	Good	Good
MA06-0034	43.7904	2189.52	7.25	0.57	0.0127	0.0091	0.732632	Good	Good	Good	Fair	Good	Good
MA06-0035	43.7904	2189.52	.	3.02	0.0214	0.0252	.	missing	Good	missing	Fair	Good	missing
MA06-0036	43.7904	2189.52	6.07	1.06	0.0251	0	0.627089	Good	Good	Good	Fair	Good	Good
MA06-0037	43.7904	2189.52	.	3.05	0.0087	0.0232	0.704688	Good	Good	missing	Good	Good	Good
MA06-0038	43.7904	2189.52	6.41	0.2	0.0087	0.0116	0.839457	Good	Good	Good	Good	Good	Good
MA06-0039	43.7904	2189.52	6.06	0.11	0.009	0.0105	0.82972	Good	Good	Good	Good	Good	Good
MA06-0040	43.7904	2189.52	6.42	0.5	0.0102	0.0028	0.806231	Good	Good	Good	Fair	Good	Good
MA06-0041	43.7904	2189.52	7.09	0.36	0.0093	0.0067	0.82972	Good	Good	Good	Good	Good	Good
MA06-0042	43.7904	2189.52	5.08	0.76	0.0251	0.0064	0.79189	Good	Good	Good	Fair	Good	Good
MA06-0043	43.7904	2189.52	6.08	1.24	0.0087	0.0042	0.82972	Good	Good	Good	Good	Good	Good
MA06-0044	43.7904	2189.52	3.02	0.39	0.0096	0.01	0.818731	Good	Good	Fair	Good	Good	Good
MA06-0045	43.7904	2189.52	8.03	0.29	0.0102	0.0084	0.806231	Good	Good	Good	Fair	Good	Good
MA06-0046	43.7904	2189.52	4.97	1.13	0.0322	0.005	0.67032	Good	Good	Fair	Fair	Good	Fair
MA06-0047	43.7904	2189.52	6.41	1.94	0.0883	0.0385	0.43888	Good	Good	Good	Poor	Good	Fair
MA06-0048	43.7904	2189.52	.	3.71	0.0189	0.0422	.	missing	Good	missing	Fair	Good	missing
MA06-0049	43.7904	2189.52	7.92	1.6	0.0093	0.0392	0.704688	Good	Good	Good	Good	Good	Good
MA06-0050	43.7904	2189.52	6.15	0.44	0.0158	0	0.79189	Good	Good	Good	Fair	Good	Good
ME02-0200	28.1	377	9.72	0.7	0.013	0	0.732632	Good	Good	Good	Fair	Good	Good
ME02-0201	3.31	377	9.61	1.4	0.01	0	0.691826	Good	Good	Good	Good	Good	Good
ME02-0202	5.39	377	8.62	2.3	0.015	0	0.684971	Good	Good	Good	Fair	Good	Good
ME02-0203	80.5	377	9.3	1.3	0.018	0.009	0.763967	Good	Good	Good	Fair	Good	Good
ME02-0204	14.7	377	9.24	1.8	0.02	0.016	0.722107	Good	Good	Good	Fair	Good	Good
ME02-0205	75.9	377	8.76	1.4	0.018	0.008	0.710729	Good	Good	Good	Fair	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
ME02-0206	25.9	377	9.42	2.3	0.017	0.008	0.737604	Good	Good	Good	Fair	Good	Good
ME02-0207	33.7	377	7.83	1.5	0.011	0	0.716531	Good	Good	Good	Fair	Good	Good
ME02-0208	60.5	377	8.33	3.3	0.018	0.005	0.704688	Good	Good	Good	Fair	Good	Good
ME02-0209	36.2	377	5.78	2.6	0.003	0	0.571209	Good	Good	Good	Good	Good	Good
ME02-0210	8.96	377	6.9	1.32	0.014	0.009	0.43888	Good	Good	Good	Fair	Good	Good
ME02-0211	3.08	377	7.4	0.81	0.007	0.019	0.416862	Good	Good	Good	Good	Good	Good
ME02-0213	10.6	97.8	8.5	1.58	0.016	0.038	0.43888	Good	Good	Good	Fair	Good	Good
ME02-0214	3.23	97.8	9.05	2.48	0.025	0.032	0.393241	Good	Good	Good	Fair	Good	Good
ME02-0215	15.2	97.8	7.84	4.02	0.019	0.043	0.416862	Good	Good	Good	Fair	Good	Good
ME02-0216	42.3	97.8	8.23	2.74	0.018	0.063	0.583645	Good	Good	Good	Fair	Good	Good
ME02-0217	7.15	97.8	8.51	0.15	0.023	0.117	0.716531	Good	Fair	Good	Fair	Good	Fair
ME02-0219	10.8	97.8	8.54	0.81	0.019	0.078	0.645649	Good	Good	Good	Fair	Good	Good
ME02-0220	8.42	97.8	8.28	1.48	0.027	0.074	0.67781	Good	Good	Good	Fair	Good	Good
ME02-0221	39	609	9.25	2.6	0.019	0	0.684971	Good	Good	Good	Fair	Good	Good
ME02-0222	14	609	7.76	2.5	0.008	0	0.727471	Good	Good	Good	Good	Good	Good
ME02-0223	9.06	609	7.71	4	0.025	0.005	0.583645	Good	Good	Good	Fair	Good	Good
ME02-0224	196	609	9.22	7.1	0.013	0	0.496585	Good	Good	Good	Fair	Fair	Fair
ME02-0225	102	609	7.66	1.2	0.014	0	0.654265	Good	Good	Good	Fair	Good	Good
ME02-0228	80.4	609	7.51	3.1	0.009	0	0.393241	Good	Good	Good	Good	Good	Good
ME02-0229	67.7	609	9.02	0.83	0.008	0	0.583645	Good	Good	Good	Good	Good	Good
ME02-0232	4.71	609	8.44	0.73	0.021	0.102	0.704688	Good	Fair	Good	Fair	Good	Fair
ME02-0233	32.8	609	8.52	0.99	.	.	0.658362	Good	missing	Good	missing	Good	missing
ME02-0234	23	609	7.79	1.29	0.021	0.078	0.645649	Good	Good	Good	Fair	Good	Good
ME03-0255	0.3005	57.3	8.42	0.51	.	.	0.532592	Good	missing	Good	missing	Good	missing
ME03-0257	0.0075	57.3	8.43	.	0.039	0.0676	0.417279	Good	Good	Good	Fair	missing	Good
ME03-0259	0.0305	57.3	8.32	0.86	0.033	0.0661	0.289384	Good	Good	Good	Fair	Good	Good
ME03-0262	0.177	57.3	4.34	5.23	0.063	0.1018	1	Good	Fair	Fair	Poor	Fair	Fair
ME03-0264	0.565	57.3	7.71	3.69	0.042	0.053	1	Good	Good	Good	Fair	Good	Good
ME03-0266	0.001	57.3	7.37	6.25	0.037	0.0664	0.173774	Fair	Good	Good	Fair	Fair	Fair
ME03-0269	0.041	57.3	6.28	.	.	.	.	missing	missing	Good	missing	missing	missing
ME03-0272	0.0535	57.3	6.52	5.01	0.021	0.193	1	Good	Fair	Good	Fair	Fair	Fair
ME03-0300	7.38	1477.6	8.6	1.01	0.022	0.0653	0.617079	Good	Good	Good	Fair	Good	Good
ME03-0301	22.9	1477.6	7.62	0.24	0.012	0.0223	0.737604	Good	Good	Good	Fair	Good	Good
ME03-0302	48	1477.6	6.72	1.88	.	.	0.280067	Good	missing	Good	missing	Good	missing
ME03-0303	56.8	1477.6	7.37	0.74	0.012	0.0253	0.751477	Good	Good	Good	Fair	Good	Good
ME03-0304	10.4	1477.6	6.62	5.96	0.011	0.0686	0.246597	Good	Good	Good	Fair	Fair	Fair
ME03-0305	31.9	1477.6	7.5	0.53	0.028	0.0795	0.513417	Good	Good	Good	Fair	Good	Good
ME03-0306	29.9	1477.6	9.37	0.53	0.019	0.0256	0.571209	Good	Good	Good	Fair	Good	Good
ME03-0307	46	1477.6	7.9	0.81	0.01	0.0239	0.716531	Good	Good	Good	Good	Good	Good
ME03-0308	7.81	1477.6	8.87	1.24	0.021	0.0342	0.755784	Good	Good	Good	Fair	Good	Good
ME03-0309	10.1	1477.6	6.18	0.95	0.044	0.0693	.	missing	Good	Good	Fair	Good	Good
ME03-0310	28.1	1477.6	8.48	1.48	0.016	0.0252	0.496585	Good	Good	Good	Fair	Good	Good
ME03-0311	21.6	1477.6	7.65	1.43	0.027	0.0617	0.496585	Good	Good	Good	Fair	Good	Good
ME03-0312	9.02	1477.6	8.99	0.64	0.027	0.0607	0.367879	Good	Good	Good	Fair	Good	Good
ME03-0313	5.74	1477.6	7.42	1.32	0.024	0.0625	0.583645	Good	Good	Good	Fair	Good	Good
ME03-0314	53.1	1477.6	8.77	0.91	0.016	0.0294	0.79189	Good	Good	Good	Fair	Good	Good
ME03-0316	18.9	1477.6	8.34	1.03	0.012	0.0266	0.617079	Good	Good	Good	Fair	Good	Good
ME03-0317	107	1477.6	8.71	0.22	0.01	0.0264	0.800737	Good	Good	Good	Good	Good	Good
ME03-0318	93.8	1477.6	9.45	0.63	0.014	0.0311	0.698392	Good	Good	Good	Fair	Good	Good
ME03-0319	118	1477.6	10.33	0.84	0.017	0.0277	0.54406	Good	Good	Good	Fair	Good	Good
ME03-0320	14.8	1477.6	10.76	1.07	0.015	0.0274	0.704688	Good	Good	Good	Fair	Good	Good
ME03-0321	60.7	1477.6	8.51	0.27	0.01	0.025	0.732632	Good	Good	Good	Good	Good	Good
ME03-0322	139	1477.6	9.19	0.89	0.015	0.0256	0.767858	Good	Good	Good	Fair	Good	Good
ME03-0323	92.9	1477.6	7.81	0.31	0.021	0.038	0.684971	Good	Good	Good	Fair	Good	Good
ME03-0324	78	1477.6	10.18	0.62	0.016	0.0406	0.583645	Good	Good	Good	Fair	Good	Good
ME03-0325	68.7	1477.6	9.51	0.28	0.011	0.025	0.66248	Good	Good	Good	Fair	Good	Good
ME03-0326	105	1477.6	8.84	0.53	0.014	0.0244	0.751477	Good	Good	Good	Fair	Good	Good
ME03-0327	24.5	1477.6	9.55	0.38	0.012	0.0258	0.654265	Good	Good	Good	Fair	Good	Good
ME03-0328	12.4	1477.6	9.35	0.81	0.015	0.0258	0.571209	Good	Good	Good	Fair	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
ME03-0329	97.8	1477.6	8.47	1.34	0.016	0.0273	0.571209	Good	Good	Good	Fair	Good	Good
ME03-0330	17.3	1477.6	7.91	0.91	0.027	0.0478	0.43888	Good	Good	Good	Fair	Good	Good
ME03-0332	24.5	1477.6	8.1	2.67	0.014	0.0637	.	missing	Good	Good	Fair	Good	Good
ME03-0333	14.3	1477.6	8.06	1.75	0.01	0.0654	0.372321	Good	Good	Good	Good	Good	Good
ME04-0251	0.0005	57.3	11.09	0.96	0.012	0.006	.	missing	Good	Good	Fair	Good	Good
ME04-0258	0.67	57.3	8.57	1.07	0.007	0.057	0.416862	Good	Good	Good	Good	Good	Good
ME04-0260	0.0465	57.3	9.36	0.8	0.038	0.068	0.459426	Good	Good	Good	Fair	Good	Good
ME04-0263	0.325	57.3	8.65	1.12	0.029	0.06	0.43888	Good	Good	Good	Fair	Good	Good
ME04-0265	0.0075	57.3	9.74	11.9	0.034	0.005	.	missing	Good	Good	Fair	Fair	Fair
ME04-0400	0.426	640.5	8.3	2.56	0.025	0.0059	0.311403	Good	Good	Good	Fair	Good	Good
ME04-0401	0.464	640.5	8	2.23	0.027	0.0657	0.340642	Good	Good	Good	Fair	Good	Good
ME04-0402	17	640.5	7.9	1.43	0.013	0.0044	0.43888	Good	Good	Good	Fair	Good	Good
ME04-0403	12.6	640.5	.	1.5	0.019	0.0071	0.529213	Good	Good	missing	Fair	Good	Good
ME04-0404	0.14	640.5	8.7	2.91	0.013	0.0036	0.529213	Good	Good	Good	Fair	Good	Good
ME04-0405	8.21	640.5	8.3	0.73	0.013	0.0112	0.617079	Good	Good	Good	Fair	Good	Good
ME04-0406	48	640.5	6.6	1.31	0.017	0.0055	0.606531	Good	Good	Good	Fair	Good	Good
ME04-0407	32.5	640.5	8.3	1.27	0.013	0.0025	0.571209	Good	Good	Good	Fair	Good	Good
ME04-0408	19.3	640.5	.	2.13	0.019	0.0078	0.617079	Good	Good	missing	Fair	Good	Good
ME04-0409	14.5	640.5	8.4	0.5	0.013	0.0024	0.627089	Good	Good	Good	Fair	Good	Good
ME04-0410	45.4	640.5	8.6	1.5	0.02	0.0068	0.691826	Good	Good	Good	Fair	Good	Good
ME04-0411	54.1	640.5	9.4	0.61	0.009	0.0025	0.750512	Good	Good	Good	Good	Good	Good
ME04-0412	58	640.5	7.3	1.03	0.012	0.0094	0.645649	Good	Good	Good	Fair	Good	Good
ME04-0413	1.95	640.5	9.2	0.67	0.015	0.0091	0.722107	Good	Good	Good	Fair	Good	Good
ME04-0414	3.58	640.5	8.7	0.46	0.028	0.0411	0.627089	Good	Good	Good	Fair	Good	Good
ME04-0415	50.7	640.5	9.1	1.16	0.027	0.0234	0.496585	Good	Good	Good	Fair	Good	Good
ME04-0416	61.7	640.5	9.3	0.38	0.013	0.0035	0.763967	Good	Good	Good	Fair	Good	Good
ME04-0417	26.9	640.5	9.7	0.33	0.01	0.0024	0.831761	Good	Good	Good	Good	Good	Good
ME04-0418	0.095	640.5	8	2.11	0.015	0.0075	0.738599	Good	Good	Good	Fair	Good	Good
ME04-0419	9.08	640.5	8.4	1.44	0.021	0.0061	0.742396	Good	Good	Good	Fair	Good	Good
ME04-0420	34	640.5	8.5	0.95	0.014	0.0046	0.732632	Good	Good	Good	Fair	Good	Good
ME04-0421	2.68	640.5	7.7	0.77	0.019	0.0062	0.737604	Good	Good	Good	Fair	Good	Good
ME04-0422	40	640.5	9.4	0.93	0.018	0.0115	0.691826	Good	Good	Good	Fair	Good	Good
ME04-0423	2.79	640.5	9	0.77	0.017	0.0048	1	Good	Good	Good	Fair	Good	Good
ME04-0424	0.366	640.5	9.8	0.65	0.003	0.0646	0.513417	Good	Good	Good	Good	Good	Good
ME04-0425	28.4	640.5	8.5	0.79	0.016	0.0032	0.742396	Good	Good	Good	Fair	Good	Good
ME04-0426	0.321	640.5	8.6	1.19	0.016	0.0041	0.751477	Good	Good	Good	Fair	Good	Good
ME04-0427	1.57	640.5	8.5	0.78	0.02	0.0099	.	missing	Good	Good	Fair	Good	Good
ME04-0428	4.79	640.5	7.6	0.93	0.012	0.0088	0.654265	Good	Good	Good	Fair	Good	Good
ME04-0429	16.9	640.5	8.6	0.72	0.014	0.003	0.704688	Good	Good	Good	Fair	Good	Good
ME04-0430	0.144	640.5	8.6	0.56	0.014	0.0109	.	missing	Good	Good	Fair	Good	Good
ME04-0431	31.8	640.5	8.6	0.34	0.016	0.0059	0.775269	Good	Good	Good	Fair	Good	Good
ME04-0432	3.84	640.5	9.1	0.58	0.012	0.005	0.52782	Good	Good	Good	Fair	Good	Good
ME04-0433	0.121	640.5	7.6	1.02	0.022	0.0987	0.496585	Good	Good	Good	Fair	Good	Good
ME04-0434	1.16	640.5	9.3	0.34	0.017	0.0118	0.732632	Good	Good	Good	Fair	Good	Good
ME05-0001	65.694	1639.85	9	1.61	0.0186	0.0055	0.775269	Good	Good	Good	Fair	Good	Good
ME05-0002	65.694	1639.85	9.6	1.83	0.0173	0.0028	.	missing	Good	Good	Fair	Good	Good
ME05-0003	65.694	1639.85	8.8	2.31	0.018	0.0039	.	missing	Good	Good	Fair	Good	Good
ME05-0004	65.694	1639.85	.	.	0.0257	0.0423	.	missing	Good	missing	Fair	missing	missing
ME05-0005	65.694	1639.85	9.7	1.12	0.0177	0.0055	0.778801	Good	Good	Good	Fair	Good	Good
ME05-0006	65.694	1639.85	9.2	1.21	0.0214	0.0357	.	missing	Good	Good	Fair	Good	Good
ME05-0007	65.694	1639.85	9	0.62	0.0149	0.0051	0.767858	Good	Good	Good	Fair	Good	Good
ME05-0008	65.694	1639.85	11.1	0.69	0.0164	0.0022	0.67032	Good	Good	Good	Fair	Good	Good
ME05-0009	65.694	1639.85	8.4	1.08	0.018	0.0113	0.794924	Good	Good	Good	Fair	Good	Good
ME05-0010	65.694	1639.85	8.7	0.67	0.013	0.0167	0.67032	Good	Good	Good	Fair	Good	Good
ME05-0011	65.694	1639.85	9.7	1.93	0.0223	0.0115	0.636601	Good	Good	Good	Fair	Good	Good
ME05-0012	65.694	1639.85	9.9	0.4	0.018	0.0138	0.710729	Good	Good	Good	Fair	Good	Good
ME05-0013	65.694	1639.85	10.2	2.31	0.0211	0.0122	.	missing	Good	Good	Fair	Good	Good
ME05-0014	65.694	1639.85	8.8	1.14	0.0139	0.0039	0.732632	Good	Good	Good	Fair	Good	Good
ME05-0015	65.694	1639.85	9.1	3.38	0.0201	0.0058	0.67781	Good	Good	Good	Fair	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
ME05-0016	65.694	1639.85	10.9	1.5	0.0195	0.0067	0.66248	Good	Good	Good	Fair	Good	Good
ME05-0017	65.694	1639.85	9.1	2.26	0.0201	0.0174	0.716531	Good	Good	Good	Fair	Good	Good
ME05-0018	65.694	1639.85	9.1	1.09	0.0152	0.0072	0.763967	Good	Good	Good	Fair	Good	Good
ME05-0019	65.694	1639.85	8.7	0.85	0.0155	0.0055	0.698392	Good	Good	Good	Fair	Good	Good
ME05-0020	65.694	1639.85	6.9	.	0.0254	0.0399	0.571209	Good	Good	Good	Fair	missing	Good
ME05-0021	65.694	1639.85	8.6	1.5	0.017	0.0039	.	missing	Good	Good	Fair	Good	Good
ME05-0022	65.694	1639.85	8.9	1.07	0.0195	0.0163	0.767858	Good	Good	Good	Fair	Good	Good
ME05-0023	65.694	1639.85	9.6	2.53	0.0189	0.0064	0.747018	Good	Good	Good	Fair	Good	Good
ME05-0024	65.694	1639.85	10.7	0.28	0.0155	0.003	0.785544	Good	Good	Good	Fair	Good	Good
ME05-0025	65.694	1639.85	9.9	1.81	0.0177	0.0041	0.816361	Good	Good	Good	Fair	Good	Good
ME06-0001	64.9288	1623.22	7.9	0.44	0.0099	0.0084	0.606531	Good	Good	Good	Good	Good	Good
ME06-0002	64.9288	1623.22	6.7	3.14	0.0161	0.0064	0.645649	Good	Good	Good	Fair	Good	Good
ME06-0003	64.9288	1623.22	8.4	1.61	0.0111	0.0088	0.698392	Good	Good	Good	Fair	Good	Good
ME06-0004	64.9288	1623.22	7.5	0.63	0.0077	0.0049	0.571209	Good	Good	Good	Good	Good	Good
ME06-0005	64.9288	1623.22	7.9	0.76	0.0108	0.0064	0.583645	Good	Good	Good	Fair	Good	Good
ME06-0006	64.9288	1623.22	7	1.77	0.0229	0.0657	0.606531	Good	Good	Good	Fair	Good	Good
ME06-0007	64.9288	1623.22	9.1	9.52	0.0071	0.0146	.	missing	Good	Good	Good	Fair	Good
ME06-0008	64.9288	1623.22	8.1	1.4	0.0081	0.0332	0.393241	Good	Good	Good	Good	Good	Good
ME06-0009	64.9288	1623.22	8.7	1.59	0.0108	0.001	0.67032	Good	Good	Good	Fair	Good	Good
ME06-0010	64.9288	1623.22	7.8	0.56	0.0136	0.003	0.66248	Good	Good	Good	Fair	Good	Good
ME06-0011	64.9288	1623.22	7	3.15	0.0167	0.0034	0.558035	Good	Good	Good	Fair	Good	Good
ME06-0012	64.9288	1623.22	.	1.28	0.0068	0.0022	.	missing	Good	missing	Good	Good	missing
ME06-0013	64.9288	1623.22	8.2	0.34	0.0087	0.0015	0.722107	Good	Good	Good	Good	Good	Good
ME06-0014	64.9288	1623.22	7.7	1.13	0.0068	0.0019	0.513417	Good	Good	Good	Good	Good	Good
ME06-0015	64.9288	1623.22	7.1	3.39	0.0251	0.0029	0.529213	Good	Good	Good	Fair	Good	Good
ME06-0016	64.9288	1623.22	7.5	1.43	0.0254	0.0871	0.311403	Good	Good	Good	Fair	Good	Good
ME06-0017	64.9288	1623.22	7.8	1.35	0.0177	0.0056	0.393241	Good	Good	Good	Fair	Good	Good
ME06-0018	64.9288	1623.22	7.1	0.64	0.0177	0.0003	0.751477	Good	Good	Good	Fair	Good	Good
ME06-0019	64.9288	1623.22	7.5	0.84	0.0161	0.0022	0.636601	Good	Good	Good	Fair	Good	Good
ME06-0020	64.9288	1623.22	7.9	0.57	0.0077	0.0029	0.684971	Good	Good	Good	Good	Good	Good
ME06-0021	64.9288	1623.22	8	1.24	0.0149	0.0011	0.529213	Good	Good	Good	Fair	Good	Good
ME06-0022	64.9288	1623.22	6.8	2.09	0.0201	0.0118	0.529213	Good	Good	Good	Fair	Good	Good
ME06-0023	64.9288	1623.22	7.6	1.62	0.026	0.0714	0.513417	Good	Good	Good	Fair	Good	Good
ME06-0024	64.9288	1623.22	7.5	1.09	0.0081	0.0006	0.617079	Good	Good	Good	Good	Good	Good
ME06-0025	64.9288	1623.22	8.1	0.29	0.0099	0.0014	0.737604	Good	Good	Good	Good	Good	Good
NH03-0201	0.0565	57.3	8.31	3.41	0.025	0.0299	0.188247	Fair	Good	Good	Fair	Good	Fair
NH03-0203	0.575	57.3	8.62	2.4	0.022	0.0279	0.730519	Good	Good	Good	Fair	Good	Good
NH03-0205	0.106	57.3	8.69	2.04	0.02	0.0138	0.561019	Good	Good	Good	Fair	Good	Good
NH03-0207	0.0825	57.3	7.56	3.09	0.02	0.0428	0.62313	Good	Good	Good	Fair	Good	Good
NH03-0209	0.054	57.3	7.55	49.9	0.108	0.458	0.004796	Poor	Fair	Good	Poor	Poor	Poor
NH03-0212	0.0945	57.3	9.03	2.14	0.028	0.0516	0.012277	Poor	Good	Good	Fair	Good	Fair
NH03-0214	0.068	57.3	4.8	13.9	0.113	0.45	0.030197	Poor	Fair	Fair	Poor	Fair	Poor
NH03-0216	0.0445	57.3	7.98	.	0.157	0.1661	0.246597	Good	Fair	Good	Poor	missing	Fair
NH03-0218	0.333	57.3	8.63	3.11	0.026	0.0165	0.367879	Good	Good	Good	Fair	Good	Good
NH03-0220	0.314	57.3	7.76	24.7	0.036	0.0318	0.000912	Poor	Good	Good	Fair	Poor	Poor
NH03-0222	0.3555	57.3	9.11	0.53	0.031	0.0903	2.06E-08	Poor	Good	Good	Fair	Good	Fair
NH03-0224	0.0655	57.3	7.62	9.08	0.029	0.1027	0.246597	Good	Fair	Good	Fair	Fair	Fair
NH03-0226	1.61	57.3	7.03	3.68	0.041	0.0853	0.003735	Poor	Good	Good	Fair	Good	Fair
NH03-0227	0.98	57.3	7.44	1.8	0.023	0.0694	0.311403	Good	Good	Good	Fair	Good	Good
NH03-0229	0.515	57.3	7.68	1.51	0.032	0.0862	0.515303	Good	Good	Good	Fair	Good	Good
NH03-0231	0.97	57.3	9.27	0.53	0.029	0.0513	0.839457	Good	Good	Good	Fair	Good	Good
NH03-0232	0.002	57.3	6.8	16.9	0.034	0.1339	0.311403	Good	Fair	Good	Fair	Good	Fair
NH03-0234	1.25	57.3	7.05	1.73	0.033	0.0562	0.537944	Good	Good	Good	Fair	Good	Good
NH03-0236	0.0035	57.3	.	1.54	0.033	0.0489	.	missing	Good	missing	Fair	Good	missing
NH03-0238	0.79	57.3	8.06	1.86	0.035	0.0692	0.691826	Good	Good	Good	Fair	Good	Good
NH03-0241	1.125	57.3	7.61	3.07	0.027	0.0669	0.045502	Poor	Good	Good	Fair	Good	Fair
NH03-0243	0.287	57.3	7.92	2.08	0.042	0.1023	1	Good	Fair	Good	Fair	Good	Fair
NH03-0244	0.452	57.3	7.97	2.84	0.043	0.0641	1	Good	Good	Good	Fair	Good	Good
NH03-0246	0.4675	57.3	7.61	5.91	0.048	0.0528	0.571209	Good	Good	Good	Fair	Fair	Fair

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
NH03-0248	0.1585	57.3	7.51	9.2	0.046	0.0911	0.340642	Good	Good	Good	Fair	Fair	Fair
NH03-0250	0.825	57.3	7.14	4.18	0.586	0.1395	0.529213	Good	Fair	Good	Poor	Good	Fair
NH03-0253	0.377	57.3	6.76	3.38	0.045	0.054	3.16E-19	Poor	Good	Good	Fair	Good	Fair
NH03-0255	0.1645	57.3	6.75	12.8	0.075	0.0292	1	Good	Good	Good	Poor	Fair	Fair
NH03-0258	0.3895	57.3	7.29	7.62	0.02	0.165	1	Good	Fair	Good	Fair	Fair	Fair
NH03-0260	0.0785	57.3	11.69	1.7	0.035	0.0836	0.173774	Fair	Good	Good	Fair	Good	Fair
NH03-0263	0.28	57.3	10.11	3.46	0.047	0.017	0.246597	Good	Good	Good	Fair	Good	Good
NH03-0265	0.004	57.3	9.41	10	0.007	0.35	0.311403	Good	Fair	Good	Good	Fair	Fair
NH04-0200	0.012	57.3	9.39	1.4	0.01	0.1	0.340642	Good	Good	Good	Good	Good	Good
NH04-0202	0.0095	57.3	8.81	2.14	0.027	0.012	.	missing	Good	Good	Fair	Good	Good
NH04-0206	0.675	57.3	9.66	1.12	0.014	0.006	.	missing	Good	Good	Fair	Good	Good
NH04-0208	0.306	57.3	9.3	0.64	0.013	0.029	.	missing	Good	Good	Fair	Good	Good
NH04-0210	0.056	57.3	6.91	6.14	0.032	0.175	0.06081	Poor	Fair	Good	Fair	Fair	Fair
NH04-0211	0.1005	57.3	6.85	7.21	0.063	0.427	0.030197	Poor	Fair	Good	Poor	Fair	Poor
NH04-0213	0.0685	57.3	8.72	2.67	0.029	0.338	0.06081	Poor	Fair	Good	Fair	Good	Fair
NH04-0215	0.1945	57.3	6.76	0	0.041	0.068	0.173774	Fair	Good	Good	Fair	Good	Fair
NH04-0217	0.855	57.3	6.43	1.8	0.038	0.089	0.211072	Good	Good	Good	Fair	Good	Good
NH04-0219	0.69	57.3	7.55	1.8	0.036	0.123	0.478623	Good	Fair	Good	Fair	Good	Fair
NH04-0221	0.2025	57.3	7.57	0.71	0.029	0.08	0.441313	Good	Good	Good	Fair	Good	Good
NH04-0223	0.1465	57.3	9.92	.	0.022	0.022	0.627089	Good	Good	Good	Fair	missing	Good
NH04-0225	0.52	57.3	8.24	5.34	0.034	0.111	0.246597	Good	Fair	Good	Fair	Fair	Fair
NH04-0228	0.0165	57.3	7.55	1.6	0.042	0.142	.	missing	Fair	Good	Fair	Good	Fair
NH04-0230	0.67	57.3	9.8	1.28	0.012	0.065	.	missing	Good	Good	Fair	Good	Good
NH04-0233	0.19	57.3	6.86	0	0.004	0.017	0.135335	Fair	Good	Good	Good	Good	Good
NH04-0235	0.2995	57.3	7.51	1.74	0.063	.	0.367879	Good	missing	Good	Poor	Good	Fair
NH04-0237	0.675	57.3	7.58	1.12	0.012	0.115	.	missing	Fair	Good	Fair	Good	Fair
NH04-0239	1.165	57.3	.	0.48	0.029	0.1	0.732632	Good	Good	missing	Fair	Good	Good
NH04-0240	0.0605	57.3	7.15	8.61	0.06	0.005	.	missing	Good	Good	Poor	Fair	Fair
NH04-0242	0.01	57.3	8.16	4.54	0.036	0.006	.	missing	Good	Good	Fair	Good	Good
NH04-0245	0.935	57.3	7.28	0	0.041	0.089	0.340642	Good	Good	Good	Fair	Good	Good
NH04-0247	0.74	57.3	7.69	0	0.026	0.068	0.478623	Good	Good	Good	Fair	Good	Good
NH04-0249	0.3795	57.3	8.85	2.24	0.062	0.198	.	missing	Fair	Good	Poor	Good	Fair
NH04-0252	0.0015	57.3	7.19	3	0.051	0.037	.	missing	Good	Good	Poor	Good	Fair
NH04-0254	0.347	57.3	6.99	0	0.035	0.146	0.211072	Good	Fair	Good	Fair	Good	Fair
NH04-0256	0.4315	57.3	6.93	4.01	0.022	0.106	0.280067	Good	Fair	Good	Fair	Good	Fair
NH04-0257	0.0465	57.3	7.2	4.01	0.002	0.231	0.211072	Good	Fair	Good	Good	Good	Good
NH04-0259	0.0175	57.3	9.71	1.2	0.022	0.635	0.280067	Good	Poor	Good	Fair	Good	Fair
NH04-0261	0.455	57.3	6.97	4.81	0.038	0.181	0.211072	Good	Fair	Good	Fair	Good	Fair
NH04-0264	0.1965	57.3	9.3	2	0.016	0.212	0.211072	Good	Fair	Good	Fair	Good	Fair
NH05-0201	0.0565	57.3	6.2	3.47	0.006	0.051	.	missing	Good	Good	Good	Good	Good
NH05-0203	0.575	57.3	8.5	2.67	0.014	0.032	0.635083	Good	Good	Good	Fair	Good	Good
NH05-0205	0.106	57.3	8.94	0.8	0.005	0.01	.	missing	Good	Good	Good	Good	Good
NH05-0207	0.0825	57.3	6.9	2.67	0.022	0.01	.	missing	Good	Good	Fair	Good	Good
NH05-0209	0.054	57.3	5.7	26.03	0.005	0.186	0.009404	Poor	Fair	Good	Good	Poor	Poor
NH05-0212	0.0945	57.3	6.8	2.4	0.021	0.091	.	missing	Good	Good	Fair	Good	Good
NH05-0214	0.068	57.3	7	18.42	0.034	0.199	0.030197	Poor	Fair	Good	Fair	Fair	Fair
NH05-0216	0.0445	57.3	7.2	5.87	0.045	0.066	0.173774	Fair	Good	Good	Fair	Fair	Fair
NH05-0218	0.333	57.3	9.9	2.7	0.034	0.013	0.476637	Good	Good	Good	Fair	Good	Good
NH05-0220	0.314	57.3	8.8	4.68	0.074	0.012	.	missing	Good	Good	Poor	Good	Fair
NH05-0222	0.3555	57.3	9.2	2.4	0.016	0.11	0.030197	Poor	Fair	Good	Fair	Good	Fair
NH05-0224	0.0655	57.3	10.2	0.8	0.007	0.18	0.393241	Good	Fair	Good	Good	Good	Good
NH05-0226	1.61	57.3	9.3	5.87	0.006	0.073	0.246597	Good	Good	Good	Good	Fair	Good
NH05-0229	0.515	57.3	9.8	2	0.014	0.066	.	missing	Good	Good	Fair	Good	Good
NH05-0231	0.97	57.3	9.3	0.32	0.016	0.056	0.67032	Good	Good	Good	Fair	Good	Good
NH05-0232	0.002	57.3	8.6	2.67	0.005	0.223	.	missing	Fair	Good	Good	Good	Good
NH05-0234	1.25	57.3	7.6	1.6	0.025	0.014	.	missing	Good	Good	Fair	Good	Good
NH05-0236	0.0035	57.3	11.9	0.2	0.005	0.478	.	missing	Fair	Good	Good	Good	Good
NH05-0238	0.79	57.3	8.8	0.48	0.012	0.066	.	missing	Good	Good	Fair	Good	Good
NH05-0241	1.125	57.3	7.8	1.04	0.017	0.139	.	missing	Fair	Good	Fair	Good	Fair

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
NH05-0243	0.287	57.3	9	0.8	0.042	0.044	.	missing	Good	Good	Fair	Good	Good
NH05-0244	0.452	57.3	8.2	2.94	0.028	0.031	.	missing	Good	Good	Fair	Good	Good
NH05-0246	0.4675	57.3	10.9	0.32	0.005	0.033	0.211072	Good	Good	Good	Good	Good	Good
NH05-0248	0.1585	57.3	6.5	0.8	0.007	0.234	0.135335	Fair	Fair	Good	Good	Good	Fair
NH05-0250	0.825	57.3	8.6	1.07	0.023	0.165	0.459426	Good	Fair	Good	Fair	Good	Fair
NH05-0251	0.565	57.3	8.8	1.6	0.06	0.04	0.752014	Good	Good	Good	Poor	Good	Fair
NH05-0253	0.377	57.3	8.8	1.2	0.013	0.113	.	missing	Fair	Good	Fair	Good	Fair
NH05-0255	0.1645	57.3	7.5	.	0.022	0.049	.	missing	Good	Good	Fair	missing	missing
NH05-0258	0.3895	57.3	6.4	2.14	0.011	0.343	0.340642	Good	Fair	Good	Fair	Good	Fair
NH05-0260	0.0785	57.3	7.6	23.23	0.008	0.966	.	missing	Poor	Good	Good	Poor	Poor
NH05-0262	0.0535	57.3	9.2	1.07	0.008	0.229	0.311403	Good	Fair	Good	Good	Good	Good
NH05-0263	0.28	57.3	6.3	13.89	0.005	0.169	0.311403	Good	Fair	Good	Good	Fair	Fair
NH05-0265	0.004	57.3	10	0.8	0.005	0.198	0.416862	Good	Fair	Good	Good	Good	Good
NH05-0275	0.3005	57.3	6.6	0.2	0.013	0.083	0.272532	Good	Good	Good	Fair	Good	Good
NH05-0276	0.0075	57.3	8.4	2	0.027	0.035	.	missing	Good	Good	Fair	Good	Good
NH05-0277	0.0305	57.3	6.8	.	.	.	.	missing	missing	Good	missing	missing	missing
NH05-0278	0.177	57.3	9.3	3.74	0.005	0.012	0.393241	Good	Good	Good	Good	Good	Good
NH05-0279	0.001	57.3	9.4	7.41	0.039	0.023	0.030197	Poor	Good	Good	Fair	Fair	Fair
NH05-0280	0.041	57.3	9.7	25.63	0.024	0.033	.	missing	Good	Good	Fair	Poor	Fair
NH06-0026	2.2735	56.83675	8.1	4.4	0.013	0.01	.	missing	Good	Good	Fair	Good	Good
NH06-0027	2.2735	56.83675	7.17	0.8	0.023	.	0.71677	Good	missing	Good	Fair	Good	Good
NH06-0028	2.2735	56.83675	6.71	5.6	0.014	0.155	0.246597	Good	Fair	Good	Fair	Fair	Fair
NH06-0029	2.2735	56.83675	8.81	6	0.038	0.061	0.173774	Fair	Good	Good	Fair	Fair	Fair
NH06-0030	2.2735	56.83675	7.9	7.2	0.011	0.089	0.135335	Fair	Good	Good	Fair	Fair	Fair
NH06-0031	2.2735	56.83675	8.22	0.8	0.02	0.239	0.606531	Good	Fair	Good	Fair	Good	Fair
NH06-0032	2.2735	56.83675	7.3	10.4	0.016	0.069	0.246597	Good	Good	Good	Fair	Fair	Fair
NH06-0033	2.2735	56.83675	8.17	3.6	0.015	0.045	0.246597	Good	Good	Good	Fair	Good	Good
NH06-0034	2.2735	56.83675	7.43	4	0.02	0.144	0.06081	Poor	Fair	Good	Fair	Good	Fair
NH06-0035	2.2735	56.83675	7.34	4.8	0.006	0.212	.	missing	Fair	Good	Good	Good	Good
NH06-0036	2.2735	56.83675	.	4.8	0.012	0.08	0.246597	Good	Good	missing	Fair	Good	Good
NH06-0037	2.2735	56.83675	9.5	1.3	0.017	0.011	0.625002	Good	Good	Good	Fair	Good	Good
NH06-0038	2.2735	56.83675	8.8	6.4	0.019	0.072	0.280067	Good	Good	Good	Fair	Fair	Fair
NH06-0039	2.2735	56.83675	8	0.8	0.013	0.095	.	missing	Good	Good	Fair	Good	Good
NH06-0040	2.2735	56.83675	9	1.2	0.032	0.066	0.416862	Good	Good	Good	Fair	Good	Good
NH06-0041	2.2735	56.83675	9.25	0.5	0.005	0.13	0.173774	Fair	Fair	Good	Good	Good	Fair
NH06-0042	2.2735	56.83675	8.97	0.8	0.021	0.228	0.096972	Poor	Fair	Good	Fair	Good	Fair
NH06-0043	2.2735	56.83675	9.68	0.8	0.028	0.142	.	missing	Fair	Good	Fair	Good	Fair
NH06-0044	2.2735	56.83675	7.72	2.8	0.031	0.092	0.280067	Good	Good	Good	Fair	Good	Good
NH06-0045	2.2735	56.83675	9.1	0.4	0.016	0.118	0.50409	Good	Fair	Good	Fair	Good	Fair
NH06-0046	2.2735	56.83675	7.75	8	0.015	0.045	0.199888	Fair	Good	Good	Fair	Fair	Fair
NH06-0047	2.2735	56.83675	8.16	2.8	0.016	0.193	0.246597	Good	Fair	Good	Fair	Good	Fair
NH06-0048	2.2735	56.83675	.	0.8	0.022	0.047	.	missing	Good	missing	Fair	Good	missing
NH06-0049	2.2735	56.83675	9.45	0.6	0.014	0.014	.	missing	Good	Good	Fair	Good	Good
NH06-0050	2.2735	56.83675	6.14	3.2	0.013	0.085	0.416862	Good	Good	Good	Fair	Good	Good
NY03-0072	43.8	3130	2.54	6.3	0.035	0.01	0.574072	Good	Good	Fair	Fair	Fair	Fair
NY03-0074	104.8	3130	1.95	4.9	0.024	0.006	0.64856	Good	Good	Poor	Fair	Good	Fair
NY03-0075	89.6	3130	5.18	7	0.02	0.031	0.655079	Good	Good	Good	Fair	Fair	Fair
NY03-0084	99.6	3130	2.82	18.3	0.038	0.039	0.595115	Good	Good	Fair	Fair	Fair	Fair
NY03-0088	386	3130	5.13	5.3	0.007	0.029	0.640184	Good	Good	Good	Good	Fair	Good
NY03-0089	292	3130	6.98	4.1	0.026	0.034	0.702577	Good	Good	Good	Fair	Good	Good
NY04-0070	48.4	3130	3.1	11.7	0.075	0.02	0.523614	Good	Good	Fair	Poor	Fair	Fair
NY04-0072	43.8	3130	2.54	7.4	0.056	0.006	0.592147	Good	Good	Fair	Poor	Fair	Fair
NY04-0075	89.6	3130	5.18	4.35	0.05	0.212	0.628764	Good	Fair	Good	Fair	Good	Fair
NY04-0080	244	3130	5.21	8.98	0.019	0.017	0.670991	Good	Good	Good	Fair	Fair	Fair
NY04-0082	122.4	3130	4.02	7.73	0.023	0.018	0.613239	Good	Good	Fair	Fair	Fair	Fair
NY04-0083	164.4	3130	3.1	35.6	0.042	0.036	0.701173	Good	Good	Fair	Fair	Poor	Fair
NY04-0087	136.6	3130	3.46	2.8	0.015	0.007	0.729789	Good	Good	Fair	Fair	Good	Fair
RI03-0301	1.03	190.3	6.6	4.7	0.033	0.0217	0.704688	Good	Good	Good	Fair	Good	Good
RI03-0302	1.72	190.3	6.3	4.31	0.044	0.0163	0.496585	Good	Good	Good	Fair	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
RI03-0306	12.9	190.3	5.3	0.19	0.026	0.0143	0.513417	Good	Good	Good	Fair	Good	Good
RI03-0308	5.42	190.3	4.7	4.75	0.09	0.0242	0.513417	Good	Good	Fair	Poor	Good	Fair
RI03-0311	12.5	190.3	5.4	4.66	0.051	0.0153	0.54406	Good	Good	Good	Poor	Good	Fair
RI03-0313	7.07	190.3	4.4	9.46	0.059	0.0133	0.416862	Good	Good	Fair	Poor	Fair	Fair
RI03-0316	8.47	190.3	3.3	42.3	0.068	0.0262	0.135335	Fair	Good	Fair	Poor	Poor	Poor
RI03-0319	0.447	190.3	2.3	6.74	0.147	0.838	0.478623	Good	Poor	Fair	Poor	Fair	Poor
RI03-0321	0.905	176.7	6.4	4.19	0.026	0.0173	0.595402	Good	Good	Good	Fair	Good	Good
RI03-0327	11.6	176.7	4.9	5.61	0.067	0.0139	0.496585	Good	Good	Fair	Poor	Fair	Fair
RI03-0329	18.9	176.7	6.6	13	0.07	0.012	0.393241	Good	Good	Good	Poor	Fair	Fair
RI03-0333	28.1	176.7	5.2	12.8	0.082	0.096	0.311403	Good	Good	Good	Poor	Fair	Fair
RI03-0334	23.1	176.7	5.8	39.5	0.063	0.0381	0.173774	Fair	Good	Good	Poor	Poor	Poor
RI03-0335	6.13	176.7	1.1	40.8	0.056	0.0208	0.211072	Good	Good	Poor	Poor	Poor	Poor
RI03-0337	2.48	176.7	2	13.1	0.189	1.089	0.280067	Good	Poor	Poor	Poor	Fair	Poor
RI03-0338	5.98	24.8	8.2	3.86	0.019	0.0168	0.459426	Good	Good	Good	Fair	Good	Good
RI04-0304	1.36	190.3	7.8	2.12	0.011	0.0145	0.513417	Good	Good	Good	Fair	Good	Good
RI04-0307	24.1	190.3	5.3	1.84	0.014	0.004	0.583645	Good	Good	Good	Fair	Good	Good
RI04-0314	19	190.3	6.3	5.65	0.041	0.0055	0.478623	Good	Good	Good	Fair	Fair	Fair
RI04-0317	3.13	190.3	5.4	12.8	0.05	0.004	0.367879	Good	Good	Good	Fair	Fair	Fair
RI04-0320	1.64	190.3	2	2.01	0.169	0.794	0.513417	Good	Poor	Poor	Poor	Good	Poor
RI04-0322	6.15	176.7	6.9	1.49	0.038	0.0416	0.459426	Good	Good	Good	Fair	Good	Good
RI04-0324	6.34	176.7	10.6	0.96	0.027	0.003	0.54406	Good	Good	Good	Fair	Good	Good
RI04-0326	11.4	176.7	6.3	4.89	0.035	0.0041	0.459426	Good	Good	Good	Fair	Good	Good
RI04-0328	1.22	176.7	6.5	2.23	0.048	0.0056	0.601698	Good	Good	Good	Fair	Good	Good
RI04-0329	18.9	176.7	5.9	4.38	0.039	0.0041	0.416862	Good	Good	Good	Fair	Good	Good
RI04-0330	17.3	176.7	6.5	3.28	0.038	0.004	0.529213	Good	Good	Good	Fair	Good	Good
RI04-0332	1.25	176.7	4.6	5.43	0.08	0.0305	0.529213	Good	Good	Fair	Poor	Fair	Fair
RI04-0333	28.1	176.7	9.4	4.61	0.06	0.0023	0.478623	Good	Good	Good	Poor	Good	Fair
RI04-0335	6.13	176.7	4.7	8.35	0.067	0.0067	0.43888	Good	Good	Fair	missing	Fair	Fair
RI04-0336	4.41	176.7	5.5	9.01	0.116	0.0053	.	missing	Good	Good	Poor	Fair	Fair
RI04-0339	11	24.8	8.5	2.56	0.005	0.0024	.	missing	Good	Good	Good	Good	Good
RI05-0001	14.7069	169.13	5.2	3.6	0.0663	0.0347	0.459426	Good	Good	Good	Poor	Good	Fair
RI05-0002	16.1727	218.33	5.6	6.63	0.0592	0.0094	0.43888	Good	Good	Good	Poor	Fair	Fair
RI05-0003	16.1727	218.33	3.8	5.64	0.0248	0.0058	0.367879	Good	Good	Fair	Fair	Fair	Fair
RI05-0004	14.7069	169.13	5.7	4.29	0.0304	0.0064	0.558035	Good	Good	Good	Fair	Good	Good
RI05-0005	16.1727	218.33	5.4	5.61	0.0489	0.0095	0.393241	Good	Good	Good	Fair	Fair	Fair
RI05-0006	14.7069	169.13	6.6	1.49	0.0173	0.0069	0.698392	Good	Good	Good	Fair	Good	Good
RI05-0007	14.7069	169.13	4.6	5.95	0.0248	0.0059	0.43888	Good	Good	Fair	Fair	Fair	Fair
RI05-0008	14.7069	169.13	6	1.01	0.0297	0.0106	0.66248	Good	Good	Good	Fair	Good	Good
RI05-0009	16.1727	218.33	6.7	2.92	0.0331	0.0115	0.513417	Good	Good	Good	Fair	Good	Good
RI05-0010	16.1727	218.33	8.4	1.93	0.0189	0.0066	0.644036	Good	Good	Good	Fair	Good	Good
RI05-0011	16.1727	218.33	4.8	3.13	0.0297	0.0092	0.367879	Good	Good	Fair	Fair	Good	Fair
RI05-0012	14.7069	169.13	3.4	4.46	0.0229	0.0089	0.43888	Good	Good	Fair	Fair	Good	Fair
RI05-0013	16.1727	218.33	6.4	8.14	0.0229	0.0091	0.280067	Good	Good	Good	Fair	Fair	Fair
RI05-0014	14.7069	169.13	7	0.67	0.0223	0.0216	0.704688	Good	Good	Good	Fair	Good	Good
RI05-0015	14.7069	169.13	6.8	3.62	0.0347	0.1077	0.393241	Good	Fair	Good	Fair	Good	Fair
RI05-0016	16.1727	218.33	6.8	5.54	0.0065	.	.	missing	missing	Good	Good	Fair	missing
RI05-0017	16.1727	218.33	5	2.58	0.1425	0.3298	0.416862	Good	Fair	Fair	Poor	Good	Fair
RI05-0018	16.1727	218.33	7.7	2.21	0.0133	.	1	Good	missing	Good	Fair	Good	Good
RI05-0019	16.1727	218.33	8.7	6.96	0.0291	0.0114	0.340642	Good	Good	Good	Fair	Fair	Fair
RI05-0020	14.7069	169.13	6.7	1.04	0.0192	0.0073	0.645649	Good	Good	Good	Fair	Good	Good
RI05-0021	14.7069	169.13	6	2.05	0.0214	0.0201	0.558035	Good	Good	Good	Fair	Good	Good
RI05-0022	14.7069	169.13	6.2	2.34	0.0331	0.016	0.54406	Good	Good	Good	Fair	Good	Good
RI05-0023	16.1727	218.33	5.1	1.16	0.0684	0.0275	0.393241	Good	Good	Good	Poor	Good	Fair
RI05-0024	14.7069	169.13	5.1	2.94	0.0146	0.0091	0.571209	Good	Good	Good	Fair	Good	Good
RI05-0025	14.7069	169.13	5.5	7.21	0.0344	.	0.311403	Good	missing	Good	Fair	Fair	Fair
RI06-0026	16.1727	218.33	3.9	1.02	0.2366	0.4872	0.173774	Fair	Fair	Fair	Poor	Good	Fair
RI06-0027	16.1727	218.33	8.3	2.5	0.0046	0.0133	0.216536	Good	Good	Good	Good	Good	Good
RI06-0028	16.1727	218.33	5.1	1.57	0.0923	0.0383	0.393241	Good	Good	Good	Poor	Good	Fair
RI06-0029	14.7069	169.13	7	1.27	0.022	0.0169	0.496585	Good	Good	Good	Fair	Good	Good

STATION	AREA	ST_AREA	BL_OXY	S_CHLA	S_PO4F	S_DIN	trans	tran_cat	dincat	oxycat	dipcat	chlcat	eutro2
RI06-0030	16.1727	218.33	5.5	5.25	0.0387	0.0111	0.367879	Good	Good	Good	Fair	Fair	Fair
RI06-0031	16.1727	218.33	2	1.65	0.0214	0.0071	0.478623	Good	Good	Poor	Fair	Good	Fair
RI06-0032	14.7069	169.13	2.5	6.83	0.0279	0.0107	0.340642	Good	Good	Fair	Fair	Fair	Fair
RI06-0033	16.1727	218.33	4.8	1.8	0.0288	0.009	0.459426	Good	Good	Fair	Fair	Good	Fair
RI06-0034	16.1727	218.33	6.4	7.19	0.0715	0.0172	0.173774	Fair	Good	Good	Poor	Fair	Fair
RI06-0035	16.1727	218.33	6.3	0.79	0.0211	0.0175	1	Good	Good	Good	Fair	Good	Good
RI06-0036	16.1727	218.33	7.1	3.97	0.0353	0.0143	0.416862	Good	Good	Good	Fair	Good	Good
RI06-0037	14.7069	169.13	6.8	1.05	0.0087	0.0138	0.478623	Good	Good	Good	Good	Good	Good
RI06-0038	16.1727	218.33	.	2.77	0.0573	0.0216	.	missing	Good	missing	Poor	Good	Fair
RI06-0039	14.7069	169.13	6.1	1.37	0.0245	0.0088	0.571209	Good	Good	Good	Fair	Good	Good
RI06-0040	16.1727	218.33	3.7	3.22	0.0248	0.023	0.393241	Good	Good	Fair	Fair	Good	Fair
RI06-0041	14.7069	169.13	5.4	3.45	0.0251	0.0076	0.416862	Good	Good	Good	Fair	Good	Good
RI06-0042	14.7069	169.13	5.1	0.69	0.0257	0.0068	0.54406	Good	Good	Good	Fair	Good	Good
RI06-0043	14.7069	169.13	6.3	0.86	0.03	0.0394	0.459426	Good	Good	Good	Fair	Good	Good
RI06-0044	16.1727	218.33	3.9	20.12	0.0037	0.015	0.173774	Fair	Good	Fair	Good	Poor	Fair
RI06-0045	14.7069	169.13	7.1	2.08	0.0198	0.0047	0.54406	Good	Good	Good	Fair	Good	Good
RI06-0046	16.1727	218.33	5.6	3.87	0.0149	0.0083	0.43888	Good	Good	Good	Fair	Good	Good
RI06-0047	16.1727	218.33	6.5	2.05	0.0263	0.0082	0.496585	Good	Good	Good	Fair	Good	Good
RI06-0048	16.1727	218.33	5.7	5.06	0.0034	0.0124	0.340642	Good	Good	Good	Good	Fair	Good
RI06-0049	14.7069	169.13	5.6	0.58	0.0192	0.0133	0.732632	Good	Good	Good	Fair	Good	Good
RI06-0050	16.1727	218.33	7.9	1.89	0.0217	0.0088	0.008312	Poor	Good	Good	Fair	Good	Fair

Appendix 6. USGS Public Supply Wells

Report data was supplied by Patricia Toccalino (USGS, 6000 J Street, Placer Hall, Sacramento, CA 95819, 916-278-3090, ptocca@usgs.gov).

9/18/2012 Updated with HUC data on 10/3/2012

To Christy Foran, USACE from Patty Toccalino, USGS

Columns B and C contain the data used to create Figure 48 Parts A and B from Scientific Investigations Report 2010-5024: <http://pubs.usgs.gov/sir/2010/50/>

As requested, data from 5 northeastern states are provided (ME, NH, RI, CT, and MA). None of the samples were from VT.

32 of the 383 wells in Figure 48 are from these 5 states. One untreated source-water sample was collected per well.

I've included a variety of ancillary information for each of the 32 sites. Metadata explaining the ancillary information is on the next worksheet.

MODE rank	MODE contamin ants with BQ>0.1 or radon activities >300 pCi/L	Huc	Huc Place Name	state_postal_ code
2.5	1	01040001	UPPER ANDROSCOGGIN	NH
2.5	1	01060003	PISCATAQUA-SALMON FALLS	ME
2.5	1	01090002	CAPE COD	MA
2.5	1	01090004	NARRAGANSETT	MA
8	2	01030003	LOWER KENNEBEC	ME
8	2	01060001	PRESUMPCOT	ME
8	2	01070002	MERRIMACK	NH
8	2	01070003	CONTOOCOOK	NH
8	2	01070004	NASHUA	MA
8	2	01070005	CONCORD	MA
8	2	01090003	BLACKSTONE	RI
13.5	3	01040002	LOWER ANDROSCOGGIN	ME
13.5	3	01090001	CHARLES	MA
13.5	3	01090005	PAWCATUCK-WOOD	RI
13.5	3	01100005	HOUSATONIC	CT

Appendix 7. USGS Long Term Groundwater Levels

These data were captured from the USGS long-term groundwater monitoring. They are a comparison of the current year's groundwater level relative to historic levels (20-year minimum).

WELL CODE	TOWN NAME (if available)	ST	HUC8 CODE	HUC8 NAME	PERCENTILE CLASS
ME-ARW890	FORT KENT	ME	01010001	Upper St. John	Normal
ME-ARW891	CLAYTON LAKE	ME	01010002	Allagash	Normal
ME-PEW 594	MILLINOCKET	ME	01020001	West Branch Penobscot	Above Normal
ME-WW796	CALAIS	ME	01050001	St. Croix	Normal
ME-WW797	TOWNSHIP T24MD BPP (HAC	ME	01050002	Maine Coastal	Above Normal
ME-HW1A	AMHERST	ME	01050002	Maine Coastal	Above Normal
ME-PEW456	KENDUSKEAG	ME	01020005	Lower Penobscot	Above Normal
ME-OW 400A	MIDDLE DAM	ME	01040001	Upper Androscoggin	Normal
ME-OW1214	OXFORD	ME	01040002	Lower Androscoggin	Above Normal
ME-KW766	LITCHFIELD	ME	01030003	Lower Kennebec	Above Normal
ME-KW872A	LITCHFIELD	ME	01030003	Lower Kennebec	Normal
ME-CW26	BRUNSWICK	ME	01060001	Presumpscot	Much Above Normal
ME-YW807	SANFORD	ME	01060003	Piscataqua-Salmon Falls	Normal
NH-CTW 73		NH	01080101	Upper Connecticut	Normal
NH-ETW 1		NH	01040001	Upper Androscoggin	Normal
NH-LCW 1		NH	01080101	Upper Connecticut	Normal
NH-SJW 2		NH	01040001	Upper Androscoggin	Normal
NH-LLW 19		NH	01080103	Waits	Normal
NH-CBW 34		NH	01070001	Pemigewasset	Normal
NH-ADW 14		NH	01060002	Saco	Above Normal
NH-ADW 15		NH	01060002	Saco	Above Normal
NH-OW 38		NH	01060002	Saco	Normal
NH-NPW 3		NH	01080106	Black-Ottauquechee	Below Normal
NH-NPW 6		NH	01080106	Black-Ottauquechee	Below Normal
NH-NLW 1		NH	01070003	Contoocook	Normal
NH-GSW 75		NH	01070003	Contoocook	Normal
NH-KEW 2		NH	01080201	Middle Connecticut	Above Normal
NH-NFW 53		NH	01070002	Winnepesaukee	Normal
NH-LIW 1		NH	01060003	Piscataqua-Salmon Falls	Above Normal
NH-DDW 46		NH	01060003	Piscataqua-Salmon Falls	Below Normal
NH-FKW 1		NH	01070006	Merrimack	Normal
NH-BAW 10		NH	01070006	Merrimack	Normal
NH-NAW 218		NH	01070006	Merrimack	Normal
NH-CVW 2		NH	01070006	Merrimack	Above Normal
NH-HTW 5		NH	01070006	Merrimack	Below Normal
VT-WBW 14		VT	01080102	Passumpsic	Not Ranked
VT-WBW 15		VT	01080102	Passumpsic	Above Normal
VT-WBW 12		VT	01080102	Passumpsic	Above Normal
VT-WBW 11		VT	01080102	Passumpsic	Above Normal
VT-WBW 10		VT	01080102	Passumpsic	Above Normal
VT-WBW 9		VT	01080102	Passumpsic	Above Normal
VT-WBW 19		VT	01080102	Passumpsic	Above Normal
VT-WBW 21		VT	01080102	Passumpsic	Above Normal
VT-WBW 8		VT	01080102	Passumpsic	Above Normal
VT-WBW 7		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 23		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 24		VT	01080102	Passumpsic	Above Normal
VT-WBW 25		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 22		VT	01080102	Passumpsic	Not Ranked
VT-WBW 38		VT	01080102	Passumpsic	Above Normal
VT-WBW 37		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 36		VT	01080102	Passumpsic	Below Normal
VT-WBW 34		VT	01080102	Passumpsic	Not Ranked
VT-WBW 39		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 40A		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 27		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 40		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 45 T2		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 45 T1		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 26		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 32		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 29		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 5		VT	01080102	Passumpsic	Above Normal
VT-WBW 4		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 6		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 46 T4		VT	01080102	Passumpsic	Above Normal
VT-WBW 46 T5		VT	01080102	Passumpsic	Above Normal

WELL CODE	TOWN NAME (if available)	ST	HUC8 CODE	HUC8 NAME	PERCENTILE CLASS
VT-WBW 46 T6		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 3		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 2		VT	01080102	Passumpsic	Much Above Normal
VT-WBW 1		VT	01080102	Passumpsic	Much Above Normal
VT-BIW 1		VT	01110000	St. Francois	Normal
VT-GLW 1		VT	01110000	St. Francois	Below Normal
VT-BKW 1		VT	02010007	Missiquoi	Low
VT-MPW 1		VT	02010005	Lamoille	Low
VT-MJW 3		VT	02010005	Lamoille	Normal
VT-WAW 2		VT	02010003	Winooski	Normal
VT-WOW 1		VT	01080104	Upper Connecticut-Mascoma	Normal
VT-RJW 1		VT	01080105	White	Much Below Normal
VT-MGW 11		VT	02010002	Otter	Normal
VT-PFW 8		VT	02010002	Otter	Normal
VT-HLW 54		VT	01080106	Black-Ottawaquechee	Much Below Normal
VT-CKW 1		VT	01080106	Black-Ottawaquechee	Normal
CT-NOC 7		CT	01100005	Housatonic	Normal
CT-SY 24		CT	01100005	Housatonic	Below Normal
CT-SY 15		CT	01100005	Housatonic	Below Normal
CT-SY 23		CT	01100005	Housatonic	Normal
CT-BD 8		CT	01100005	Housatonic	Below Normal
CT-WY 1		CT	01100005	Housatonic	Much Below Normal
CT-WB 93		CT	01100005	Housatonic	Much Below Normal
CT-WB 198		CT	01100005	Housatonic	Below Normal
CT-NT 15		CT	01100005	Housatonic	Normal
CT-SB 39		CT	01100005	Housatonic	Above Normal
CT-SB 30		CT	01100005	Housatonic	Normal
CT-SB 41		CT	01100005	Housatonic	Normal
CT-SB 42		CT	01100005	Housatonic	Normal
CT-GR 330	SOUTHBURY	CT	01080207	Farmington	Normal
CT-GR 329		CT	01080207	Farmington	Normal
CT-GR 328		CT	01080207	Farmington	Much Below Normal
CT-BU 143		CT	01080207	Farmington	Low
CT-BU 144		CT	01080207	Farmington	Below Normal
CT-BU 2		CT	01080207	Farmington	Below Normal
CT-HM 446		CT	01100004	Quinnipiac	Normal
CT-HM 447		CT	01100004	Quinnipiac	Normal
CT-HM 448		CT	01100004	Quinnipiac	Normal
CT-HM 445		CT	01100004	Quinnipiac	Normal
CT-HM 450		CT	01100004	Quinnipiac	Normal
CT-HM 449		CT	01100004	Quinnipiac	Normal
CT-NHV 201		CT	01100004	Quinnipiac	Normal
CT-CL 223		CT	01100004	Quinnipiac	Normal
CT-CL 224		CT	01100004	Quinnipiac	Normal
CT-CL 225		CT	01100004	Quinnipiac	Above Normal
CT-MF 1		CT	01080205	Lower Connecticut	Normal
CT-D 116		CT	01080205	Lower Connecticut	Normal
CT-D 117		CT	01080205	Lower Connecticut	Normal
CT-MT 261		CT	01080205	Lower Connecticut	Normal
CT-MB 35		CT	01080205	Lower Connecticut	Normal
CT-MB 36		CT	01080205	Lower Connecticut	Normal
CT-MB 32		CT	01080205	Lower Connecticut	Normal
CT-CO 335	MARLBOROUGH	CT	01080205	Lower Connecticut	Normal
CT-SM 7		CT	01080205	Lower Connecticut	Normal
CT-SW 64		CT	01080205	Lower Connecticut	Normal
CT-EW 133		CT	01080205	Lower Connecticut	Normal
CT-EW 134		CT	01080205	Lower Connecticut	Much Below Normal
CT-EL 82		CT	01080205	Lower Connecticut	Normal
CT-EL 140		CT	01080205	Lower Connecticut	Normal
CT-EL 139		CT	01080205	Lower Connecticut	Below Normal
CT-GT 19		CT	01100003	Thames	Normal
CT-NSN 78		CT	01090005	Pawcatuck-Wood	Normal
CT-NSN 77		CT	01090005	Pawcatuck-Wood	Normal
CT-PL 1		CT	01100001	Quinebaug	Normal
CT-SC 19		CT	01100002	Shetucket	Normal
CT-SC 20		CT	01100002	Shetucket	Normal
CT-SC 22		CT	01100002	Shetucket	Normal

WELL CODE	TOWN NAME (if available)	ST	HUC8 CODE	HUC8 NAME	PERCENTILE CLASS
CT-SC 21	MANSFIELD	CT	01100002	Shetucket	Below Normal
CT-SC 23		CT	01100002	Shetucket	Much Below Normal
CT-MS 19		CT	01100002	Shetucket	Above Normal
CT-MS 44		CT	01100002	Shetucket	Normal
CT-MS 76		CT	01100002	Shetucket	Below Normal
CT-MS 75		CT	01100002	Shetucket	Below Normal
CT-MS 46		CT	01100002	Shetucket	Below Normal
CT-MS 45		CT	01100002	Shetucket	Normal
CT-CV 51		CT	01100002	Shetucket	Normal
CT-MS 77		CT	01100002	Shetucket	Normal
CT-MS 74		CT	01100002	Shetucket	Normal
RI-LIW 84		RI	01090003	Blackstone	Normal
RI-CUW 265		RI	01090003	Blackstone	Normal
RI-NSW 21		RI	01090003	Blackstone	Normal
RI-BUW 187		RI	01090003	Blackstone	Below Normal
RI-COW 342		RI	01100001	Quinebaug	Normal
RI-BUW 397		RI	01100001	Quinebaug	Normal
RI-BUW 398		RI	01100001	Quinebaug	Normal
RI-BUW 395		RI	01100001	Quinebaug	Normal
RI-BUW 396		RI	01100001	Quinebaug	Below Normal
RI-FOW 40		RI	01090004	Narragansett	Normal
RI-FOW 290		RI	01090004	Narragansett	Normal
RI-COW 466		RI	01090004	Narragansett	Normal
RI-CRW 439		RI	01090004	Narragansett	Normal
RI-COW 411		RI	01090004	Narragansett	Normal
RI-WCW 59		RI	01090004	Narragansett	Normal
RI-POW 551		RI	01090004	Narragansett	Normal
RI-LTW 142		RI	01090004	Narragansett	Normal
RI-PRW 48		RI	01090004	Narragansett	Much Above Normal
RI-NKW 255		RI	01090004	Narragansett	Below Normal
RI-WGW 181		RI	01090005	Pawcatuck-Wood	Normal
RI-WGW 206	EXETER	RI	01090005	Pawcatuck-Wood	Normal
RI-EXW 158		RI	01090005	Pawcatuck-Wood	Normal
RI-EXW 554		RI	01090005	Pawcatuck-Wood	Normal
RI-EXW 278	SOUTH KINGSTOWN	RI	01090005	Pawcatuck-Wood	Normal
RI-SNW 6		RI	01090005	Pawcatuck-Wood	Normal
RI-SNW 1198		RI	01090005	Pawcatuck-Wood	Normal
RI-RIW 417	RICHMOND	RI	01090005	Pawcatuck-Wood	Normal
RI-HOW 67		RI	01090005	Pawcatuck-Wood	Normal
RI-RIW 600	RICHMOND	RI	01090005	Pawcatuck-Wood	Normal
RI-RIW 785		RI	01090005	Pawcatuck-Wood	Normal
RI-CHW 586		RI	01090005	Pawcatuck-Wood	Normal
RI-CHW 587	WESTERLY	RI	01090005	Pawcatuck-Wood	Normal
RI-WEW 522		RI	01090005	Pawcatuck-Wood	Normal
RI-CHW 18		RI	01090005	Pawcatuck-Wood	Normal
RI-EXW 238		RI	01090005	Pawcatuck-Wood	Above Normal
RI-EXW 6		RI	01090005	Pawcatuck-Wood	Below Normal
RI-EXW 475		RI	01090005	Pawcatuck-Wood	Below Normal
MA-CJW 2	CHESHIRE	MA	02020003	Hudson-Hoosic	Below Normal
MA-PTW 51	PITTSFIELD	MA	01100005	Housatonic	Below Normal
MA-SJW 58	SHEFFIELD	MA	01100005	Housatonic	Below Normal
MA-GMW 2	GREAT BARRINGTON	MA	01100005	Housatonic	Normal
MA-CSW 8	COLRAIN	MA	01080203	Deerfield	Normal
MA-DFW 44	DEERFIELD	MA	01080203	Deerfield	Much Below Normal
MA-HMW 8	HAWLEY	MA	01080206	Westfield	Below Normal
MA-CYW 13	CUMMINGTON	MA	01080206	Westfield	Below Normal
MA-A3W 12	BECKET	MA	01080206	Westfield	Normal
MA-M7W 19	MONTGOMERY	MA	01080206	Westfield	Normal
MA-GLW 5	GRANVILLE	MA	01080206	Westfield	Normal
MA-BEW 9	BLANDFORD	MA	01080206	Westfield	Much Below Normal
MA-WVW 152	WESTFIELD	MA	01080206	Westfield	Above Normal
MA-WVW 62	WESTFIELD	MA	01080206	Westfield	Below Normal
MA-WXW 20	WESTHAMPTON	MA	01080201	Middle Connecticut	Normal
MA-S6W 7	SUNDERLAND	MA	01080201	Middle Connecticut	Normal
MA-GKW 68	GRANBY	MA	01080201	Middle Connecticut	Normal
MA-S6W 68	SUNDERLAND	MA	01080201	Middle Connecticut	Below Normal
MA-XNW 13	WINCHENDON	MA	01080202	Miller	Below Normal

WELL CODE	TOWN NAME (if available)	ST	HUC8 CODE	HUC8 NAME	PERCENTILE CLASS
MA-ORW 63	ORANGE	MA	01080202	Miller	Below Normal
MA-TMW 3	TEMPLETON	MA	01080202	Miller	Much Below Normal
MA-CMW 95	CHICOPEE	MA	01080204	Chicopee	Normal
MA-WEW 43	WARE	MA	01080204	Chicopee	Normal
MA-WUW 2	WEST BROOKFIELD	MA	01080204	Chicopee	Normal
MA-PHW 16	PETERSHAM	MA	01080204	Chicopee	Normal
MA-HHW 1	HARDWICK	MA	01080204	Chicopee	Below Normal
MA-XJW 55	WILBRAHAM	MA	01080204	Chicopee	Below Normal
MA-PDW 24	PELHAM	MA	01080204	Chicopee	Below Normal
MA-PDW 23	PELHAM	MA	01080204	Chicopee	Much Below Normal
MA-WLW 1	WEBSTER	MA	01100001	Quinebaug	Normal
MA-NXW 54	NORTHBRIDGE	MA	01090003	Blackstone	Normal
MA-TRW 13	TOWNSEND	MA	01070004	Nashua	Normal
MA-WSW 26	WEST BOYLSTON	MA	01070004	Nashua	Normal
MA-SYW 177	STERLING	MA	01070004	Nashua	Normal
MA-SYW 1	STERLING	MA	01070004	Nashua	Below Normal
MA-ACW 158	ACTON	MA	01070005	Concord	Normal
MA-CTW 165	CONCORD	MA	01070005	Concord	Normal
MA-SSW 12	SOUTHBOROUGH	MA	01070005	Concord	Normal
MA-WKW 2	WAYLAND	MA	01070005	Concord	Normal
MA-CTW 167	CONCORD	MA	01070005	Concord	Much Below Normal
MA-HLW 23	HAVERHILL	MA	01070006	Merrimack	Much Below Normal
MA-AJW 462	ANDOVER	MA	01070006	Merrimack	Below Normal
MA-NIW 27	NEWBURY	MA	01090001	Charles	Normal
MA-TQW 1	TOPSFIELD	MA	01090001	Charles	Normal
MA-WPW 76	WENHAM	MA	01090001	Charles	Normal
MA-XMW 78	WILMINGTON	MA	01090001	Charles	Normal
MA-XOW 14	WINCHESTER	MA	01090001	Charles	Normal
MA-DVW 10	DOVER	MA	01090001	Charles	Normal
MA-NNW 27	NORFOLK	MA	01090001	Charles	Normal
MA-XGW 3	WEYMOUTH	MA	01090001	Charles	Normal
MA-XGW 2	WEYMOUTH	MA	01090001	Charles	Normal
MA-GCW 168	GEORGETOWN	MA	01090001	Charles	Below Normal
MA-LTW 104	LEXINGTON	MA	01090001	Charles	Below Normal
MA-DDW 231	DEDHAM	MA	01090001	Charles	Below Normal
MA-XGW 4	WEYMOUTH	MA	01090001	Charles	Above Normal
MA-WAW 38	WAKEFIELD	MA	01090001	Charles	Above Normal
MA-F3W 23	FREETOWN	MA	01090004	Narragansett	Normal
MA-LKW 14	LAKEVILLE	MA	01090004	Narragansett	Normal
MA-MTW 82	MIDDLEBORO	MA	01090004	Narragansett	Normal
MA-N4W 37	NORTON	MA	01090004	Narragansett	Normal
MA-ATW 83	ATTLEBORO	MA	01090004	Narragansett	Normal
MA-EBW 30	EAST BRIDGEWATER	MA	01090004	Narragansett	Below Normal
MA-TAW 337	TAUNTON	MA	01090004	Narragansett	Below Normal
MA-SHW 275	SEEKONK	MA	01090004	Narragansett	Above Normal
MA-HGW 76	HANSON	MA	01090002	Cape Cod	Normal
MA-D4W 80	DUXBURY	MA	01090002	Cape Cod	Normal
MA-D4W 79	DUXBURY	MA	01090002	Cape Cod	Above Normal
MA-PWW 22	PLYMOUTH	MA	01090002	Cape Cod	Below Normal
MA-NGW 116	NEW BEDFORD	MA	01090002	Cape Cod	Below Normal
MA-WFW 51	WAREHAM	MA	01090002	Cape Cod	Below Normal
MA-PWW 494	PLYMOUTH	MA	01090002	Cape Cod	Normal
MA-TOW 18	TISBURY	MA	01090002	Cape Cod	Normal
MA-OBW 36	OAK BLUFFS	MA	01090002	Cape Cod	Normal
MA-XEW 39	WEST TISBURY	MA	01090002	Cape Cod	Normal
MA-CNW 36	CHILMARK	MA	01090002	Cape Cod	Normal
MA-ENW 52	EDGARTOWN	MA	01090002	Cape Cod	Normal
MA-XEW 38	WEST TISBURY	MA	01090002	Cape Cod	Below Normal
MA-ENW 60	EDGARTOWN	MA	01090002	Cape Cod	Below Normal
MA-ENW 81	EDGARTOWN	MA	01090002	Cape Cod	Much Below Normal
MA-NBW 46	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 302	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 39	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 193	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 198	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 228	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 313	NANTUCKET	MA	01090002	Cape Cod	Below Normal

WELL CODE	TOWN NAME (if available)	ST	HUC8 CODE	HUC8 NAME	PERCENTILE CLASS
MA-NBW 107	NANTUCKET	MA	01090002	Cape Cod	Below Normal
MA-NBW 44	NANTUCKET	MA	01090002	Cape Cod	Above Normal
MA-NBW 28	NANTUCKET	MA	01090002	Cape Cod	Much Below Normal
MA-PZW 78		MA	01090002	Cape Cod	Not Ranked
MA-TSW 92		MA	01090002	Cape Cod	Normal
MA-TSW 89	TRURO	MA	01090002	Cape Cod	Normal
MA-TSW 203		MA	01090002	Cape Cod	Below Normal
MA-WNW 108		MA	01090002	Cape Cod	Below Normal
MA-WNW 34		MA	01090002	Cape Cod	Much Below Normal
MA-WNW 17	WELLFLEET	MA	01090002	Cape Cod	Much Below Normal
MA-EGW 36		MA	01090002	Cape Cod	Normal
MA-OSW 22		MA	01090002	Cape Cod	Not Ranked
MA-BMW 22	BREWSTER	MA	01090002	Cape Cod	Normal
MA-OSW 24		MA	01090002	Cape Cod	Normal
MA-BMW 21	BREWSTER	MA	01090002	Cape Cod	Normal
MA-CGW 138	CHATHAM	MA	01090002	Cape Cod	Much Below Normal
MA-BMW 44		MA	01090002	Cape Cod	Not Ranked
MA-DGW 123		MA	01090002	Cape Cod	Normal
MA-DGW 158		MA	01090002	Cape Cod	Not Ranked
MA-YAW 89		MA	01090002	Cape Cod	Below Normal
MA-YAW 93		MA	01090002	Cape Cod	Much Below Normal
MA-YAW 85		MA	01090002	Cape Cod	Normal
MA-A1W 247	BARNSTABLE	MA	01090002	Cape Cod	Normal
MA-A1W 294		MA	01090002	Cape Cod	Normal
MA-A1W 306		MA	01090002	Cape Cod	Below Normal
MA-A1W 254		MA	01090002	Cape Cod	Normal
MA-A1W 307		MA	01090002	Cape Cod	Not Ranked
MA-SDW 252	SANDWICH	MA	01090002	Cape Cod	Normal
MA-SDW 253	SANDWICH	MA	01090002	Cape Cod	Normal
MA-SDW 258-0084		MA	01090002	Cape Cod	Normal
MA-MIW 29	MASHPEE	MA	01090002	Cape Cod	Below Normal
MA-MIW 26		MA	01090002	Cape Cod	Much Below Normal
MA-SDW 260		MA	01090002	Cape Cod	Not Ranked
MA-SDW 261-0160		MA	01090002	Cape Cod	Normal
MA-SDW 263-0111		MA	01090002	Cape Cod	Normal
MA-BHW 215-0083		MA	01090002	Cape Cod	Not Ranked
MA-BHW 212		MA	01090002	Cape Cod	Not Ranked
MA-BHW 198	BOURNE	MA	01090002	Cape Cod	Normal
MA-FSW 172		MA	01090002	Cape Cod	Normal
MA-FSW 173-0069		MA	01090002	Cape Cod	Normal
MA-FSW 167-0055		MA	01090002	Cape Cod	Normal
MA-SDW 439-0054 (CS17/MW4)		MA	01090002	Cape Cod	Not Ranked
MA-SDW 395-0028 (34MW0007)		MA	01090002	Cape Cod	Not Ranked
MA-FSW 343-0036		MA	01090002	Cape Cod	Above Normal
MA-FSW 382-0032		MA	01090002	Cape Cod	Above Normal
MA-FSW 414-0036		MA	01090002	Cape Cod	Above Normal

Appendix 8. Existing Conditions Assessment

These data were compiled according to the assessment procedure described in Section 2.2.4 Existing Conditions Assessment. The initial score representing the existing conditions for each HUC8 watershed, as well as the components for water quality, water quantity and habitat value are included.

Alternative Name	Total Score	Water Qual Score	Water Quant Score	Habitat Value Score
Allagash	0.78205	0.31250	0.26729	0.20226
Aroostook	0.73716	0.31219	0.25885	0.16612
Becaguimec Stream - St. John River	0.70502	0.31176	0.24753	0.14573
Big Black River - St. John River	0.74705	0.31176	0.24753	0.18776
Black - Ottauquechee	0.69062	0.31184	0.23626	0.14252
Blackstone	0.72672	0.31119	0.30048	0.11505
Bronx	0.69018	0.31176	0.24753	0.13089
Cape Cod	0.83865	0.33229	0.32306	0.18330
Charles	0.66631	0.33184	0.23027	0.10421
Chaudiere River	0.71847	0.31176	0.24753	0.15918
Chicopee	0.65965	0.31143	0.19895	0.14927
Concord	0.66249	0.31119	0.22182	0.12949
Contoocook	0.64848	0.31083	0.19144	0.14621
Dead	0.73975	0.31250	0.24472	0.18253
Deerfield	0.76448	0.31200	0.29204	0.16044
East Branch Penobscot	0.75016	0.31250	0.24690	0.19076
Farmington	0.74580	0.31167	0.28613	0.14800
Fish	0.75892	0.31207	0.26281	0.18404
Headwaters St. John River	0.74949	0.31176	0.24753	0.19020
Housatonic	0.68294	0.31174	0.26797	0.10323
Hudson-Hoosic	0.74016	0.31168	0.28674	0.14174
Keswick River - St. John River	0.73144	0.31176	0.24753	0.17215
Lake Champlain	0.67885	0.31177	0.22144	0.14565
Lamoille River	0.76243	0.31192	0.29797	0.15253
Little River - St. John River	0.73356	0.31176	0.24753	0.17427
Long Island Sound	0.76696	0.24926	0.24753	0.27017
Lower Androscoggin	0.70205	0.33283	0.21390	0.15533
Lower Connecticut	0.67078	0.24901	0.27265	0.14912
Lower Hudson	0.45893	0.31119	0.00000	0.14773
Lower Kennebec	0.65726	0.31171	0.22864	0.11691
Lower Penobscot	0.76096	0.33290	0.26743	0.16063
Maine Coastal	0.73661	0.33333	0.23830	0.16499
Mattawamkeag	0.75953	0.31250	0.24386	0.20317
Meduxnekeag	0.73847	0.31143	0.25518	0.17185
Merrimack River	0.59538	0.31083	0.17268	0.11187
Mettawee River	0.70352	0.31187	0.24753	0.14412
Middle Connecticut	0.70472	0.31103	0.22705	0.16664
Middle Hudson	0.68364	0.31167	0.19284	0.17914
Miller	0.70291	0.31124	0.23382	0.15786
Missiquoi River	0.75264	0.31149	0.28861	0.15254
Narragansett	0.67321	0.24911	0.29637	0.12773

Alternative Name	Total Score	Water Qual Score	Water Quant Score	Habitat Value Score
Nashua	0.67416	0.31126	0.22954	0.13337
Otter Creek	0.71637	0.31192	0.27667	0.12778
Passamaquoddy Bay - Bay of Fundy	0.74778	0.31176	0.24753	0.18849
Passumpsic	0.72093	0.31202	0.26445	0.14447
Pawcatuck - Wood	0.80061	0.31189	0.30658	0.18214
Pemigewasset	0.69818	0.31083	0.22149	0.16586
Piscataqua - Salmon Falls	0.70994	0.33174	0.17211	0.20609
Piscataquis	0.73488	0.31248	0.24657	0.17583
Presumpscot	0.67997	0.33319	0.12618	0.22060
Quinebaug	0.77497	0.31162	0.31989	0.14346
Quinnipiac	0.71177	0.31150	0.28076	0.11950
Richelieu River	0.77416	0.31176	0.24753	0.21487
Saco	0.76603	0.33237	0.21671	0.21694
Saugatuck	0.75816	0.31134	0.33333	0.11348
Shetucket	0.75352	0.31219	0.29533	0.14600
St. Croix	0.80670	0.31250	0.30177	0.19243
St. Francis River - St. John River	0.77564	0.31176	0.28170	0.18218
St. Francois River	0.70413	0.31146	0.24753	0.14514
St. George - Sheepscot	0.70450	0.33328	0.16905	0.20218
Thames	0.81200	0.31175	0.32000	0.18025
Upper Androscoggin	0.74917	0.31114	0.25806	0.17997
Upper Connecticut	0.75485	0.31123	0.27722	0.16640
Upper Connecticut - Mascoma	0.66049	0.31185	0.20404	0.14460
Upper Kennebec	0.73198	0.31250	0.23614	0.18334
Upper St. John	0.71628	0.31249	0.24753	0.15625
Waits	0.69900	0.31185	0.23122	0.15592
West	0.73103	0.31182	0.28190	0.13732
West Branch Penobscot	0.71905	0.31250	0.22271	0.18383
Westfield	0.76793	0.31212	0.31058	0.14522
White	0.66824	0.31176	0.20494	0.15155
Winooski River	0.67861	0.31171	0.24943	0.11747

Appendix 9. State of Massachusetts Assessment

A cumulative effects (CEA) analysis was conducted on ecological resources within HUC 8 watersheds for evaluating the effectiveness of the State of Massachusetts General Permit (MA GP). We have developed a CEA approach in the context of evaluating New England watersheds for the purposes of identifying areas where the current ecological resource quality has the potential to be adversely impacted by activities authorized under a specific state's general permit. In this analysis, cumulative impacts were assessed in terms of its overall condition i.e., water quality, water quantity and habitat value. The vulnerability of Massachusetts watersheds was estimated from the number, type, and location of activities permitted under the MA GP over a five-year period, October 1, 2007 to October 23, 2012. The existing condition of a watershed was measured as a function of the assessed resources' condition. The relationship between the vulnerability and the existing condition of a watershed was then used to project the future condition and to identify those watersheds that warrant further scrutiny under the GP program.

Based on the projected change in conditions anticipated under the current pattern of authorized activities, five watersheds were identified for further scrutiny: Charles River, Lower Connecticut River, Merrimack River, Narragansett Bay, and Piscataqua – Salmon Falls. Each of these watersheds was identified for different reasons. For instance, the Merrimack River and Piscataqua – Salmon Falls watersheds have a relatively high number of authorized activities (1,309 and 843, respective; $\tilde{x} = 96.5$) among the 20 Massachusetts basins evaluated. However, the existing conditions for each of these five watersheds also contributed to its increased vulnerability. Since the existing conditions assessment has three components (e.g., water quality, water quantity and habitat value), the value of each offers some insight into the current and anticipated impairments. The assessed *water quality* value of the Narragansett Bay and Lower Connecticut River watersheds were below the median values (0.249, 0.333; $\tilde{x} = 0.446$); these values reflect their “fair” coastal water quality ratings. Merrimack River and Piscataqua – Salmon Falls had a low *water quantity value*; these watersheds had recent surface flows (last 5 years) exceeding 140% of the historic 50-year average. The mean surface flow value for all watersheds was 131% of the historic average. All of the identified watersheds have diminished assessment for *habitat value*, based on evaluations of stream discontinuity and land use. The number of potential stream crossings greatly exceeded the median ($\tilde{x} = 1,730$) by nearly double

for all five watersheds identified (Piscataqua-Salmon Falls: 4,116; Lower Connecticut: 5,390; Charles: 5,962; Narragansett: 6,454; Merrimack: 7,251). The median percentage of developed land was 15.3% across all 20 watersheds; the amount of development was noticeably higher in the Lower Connecticut (40%), Narragansett (43%), and Charles (54%) watersheds.

This cumulative effects analysis supports the conclusion that there is a relationship between authorized activities and degradation of aquatic habitat. However, there is no evidence that specific activities authorized under the GP have led to the degradation of these watersheds. Our analysis does suggest that the extent of permitted activities is spatially associated to both regulated and non-regulated activities that may result in the (potential) future degradation of aquatic resources. More specifically, the overall number of authorized activities is dependent upon the level of land use development in watersheds – in both aquatic and terrestrial environments. Thus, those watersheds with highest levels of activities over the last five years may warrant further scrutiny and evaluation. Further evaluation of these watersheds, with the appropriate state agencies and stakeholders, may result in additional future guidance and more stringent activity thresholds.

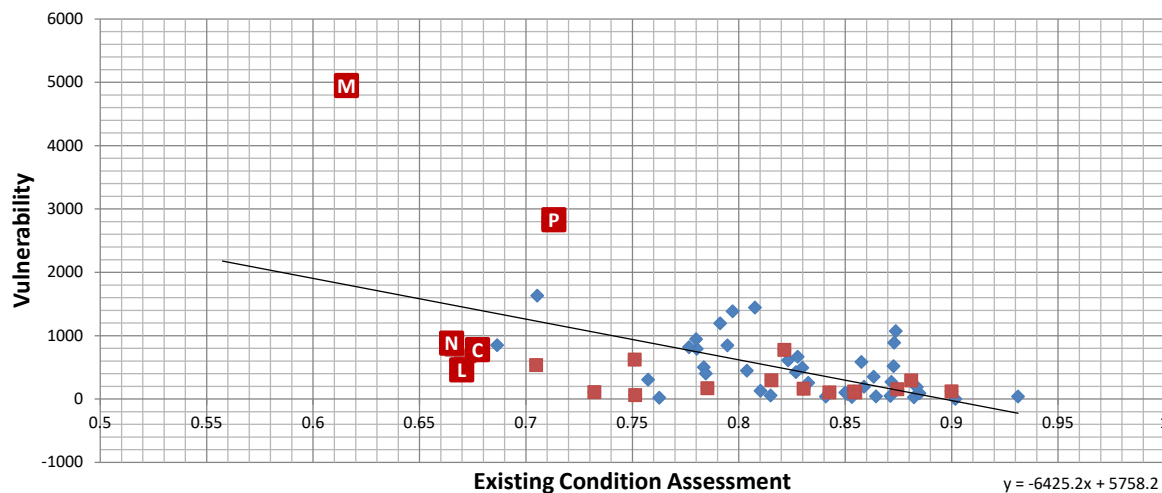


Figure 1. The five “vulnerable” Massachusetts watersheds are shown in relation to the rest of New England’s watersheds (C- Charles, L – Lower Connecticut, M- Merrimack River, N- Narragansett, P – Piscataqua – Salmon Falls). Each watershed is characterized by an assessment of the existing conditions (0-1), combining measures of water quality, water quantity and habitat value, and a measure of the relative vulnerability, calculated based on the number, type and location of GP-authorized activities.

Appendix 10. State of Maine Assessment

A cumulative effects analysis (CEA) was developed for the purposes of evaluating New England watersheds, in this case the State of Maine. Specifically, this analysis seeks to identify the watersheds (HUC 8 basins) where the current ecological resource quality has the potential to be adversely impacted by activities authorized under the State of Maine's general permit (Maine GP). This analysis was conducted on ecological resources within watersheds for evaluating the effectiveness of the Maine GP. The general approach considered cumulative impacts in terms of their overall condition (e.g., water quality, water quantity and habitat value), and the vulnerability of these watersheds was estimated from the number, type, and location of activities permitted under Maine's GPs over a 5-year period from October 1, 2007 to October 23, 2012. The existing condition of watersheds was then calculated as a function of the assessed resources' condition, and the relationship between the vulnerability and the existing condition of a watershed to identify those watersheds in need of further scrutiny under the GP program.

The assessment of current conditions relative to the potential vulnerability of Maine's watersheds identified three HUC 8 basins for further scrutiny: Lower Kennebec, Piscataqua-Salmon Falls, and Presumpscot (Figure 1). Each of these watersheds had a similar score for their assessed current conditions, but differed widely in the level of vulnerability estimated based on the GP-authorized activities. For instance, Piscataqua-Salmon Falls and Presumpscot both have a relatively higher number of authorized activities (843 and 554, respectively; $\bar{x} = 158$) while Lower Kennebec was closer to the average of 160. The assessment of existing conditions also contributed to the identification of these watersheds. The value of each component of existing conditions (e.g., water quality, water quantity, and habitat value) offers some insight into the current and anticipated impairments to aquatic resources. The assessed *water quality* value of the Piscataqua-Salmon Falls watershed includes a high proportion of waters, more than 93% of river miles and lake acres, classified as "impaired" according to the US Environmental Protection Agency (EPA). A *water quantity value* was calculated considering surface flow at gauged stream stations collected by the US Geological Survey, where the percent of historic flow is calculated as the current average divided by the historic average. All values for the current percentage were greater than 100% indicating an increase in surface flow, and potential decline of groundwater recharge, over the last 50 years across New England. The increase in surface flow in New England has been analyzed and reported in other literature (Collins 2009, and

references therein). Both Presumpscot and Piscataqua – Salmon Falls have had recent surface flows (last 5 years) exceeding 148% of the historic 50-year average (mean 133%). Habitat value was the final condition assessed. This assessment was based on land use and on the number of stream crossings (e.g., culverts) found along tributaries. The Lower Kennebec watershed had a relatively lower *habitat value* in comparison to the other Maine watersheds based on the evaluation of stream discontinuity. The number of potential stream crossings was more than five times the median for the state (7,545 vs. 1,416).

In summary, this analysis supports the conclusion that there is a relationship between authorized activities under the Maine GP and the degradation of aquatic habitats. However, there is no evidence that specific activities authorized under the Maine GP have led to the degradation of these watersheds. Our analysis does suggest that the extent of permitted activities is spatially associated to both regulated and non-regulated activities that may result in the potential future degradation of aquatic resources. The number of authorized activities across New England watersheds is dependent upon the level of land use development in a specific area – in both aquatic and terrestrial environments. Thus, those watersheds with highest levels of activities over the last five years (Figure 1) may warrant further scrutiny and evaluation for activities authorized under the 2016 General Permit for the State of Maine. Further evaluation of these watersheds, with the appropriate state agencies and stakeholders, may result in additional future guidance and more stringent activity thresholds in future GP re-authorizations.

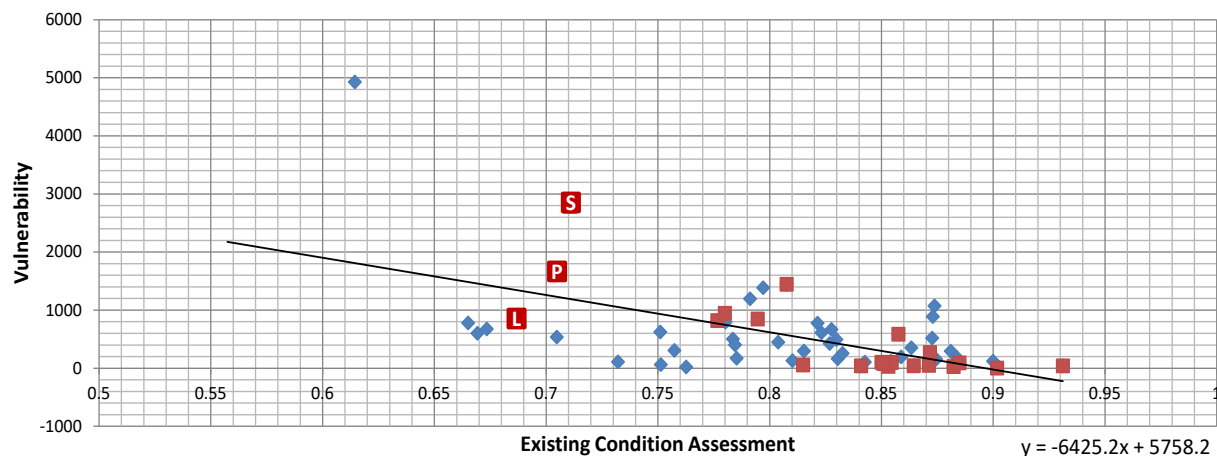


Figure 1. “Vulnerable” Maine watersheds are shown in relation to the rest of New England’s watersheds (P – Presumpscot, S – Piscataqua – Salmon Falls, L – Lower Kennebec). Each watershed is characterized by an assessment of the existing conditions (0-1), combining measures of water quality, water quantity and habitat value, and a measure of the relative vulnerability, calculated based on the number, type and location of GP-authorized activities.

Appendix 11. State of Connecticut Assessment

A cumulative effects analysis (CEA) was developed for the purposes of evaluating watersheds in the State of Connecticut. Specifically, this analysis seeks to identify the watersheds by hydrologic unit code (HUC) 12 basins where the current aquatic resource quality has the potential to be adversely impacted by the activities authorized under the State of Connecticut's general permit (CT GP). This analysis was conducted on ecological resources within watersheds for evaluating the effectiveness of the CT GP at minimizing adverse impacts to the aquatic environment. The approach considered cumulative impacts in terms of their overall condition (e.g., water quality, water quantity and habitat value) calculated as a function of the assessed resources' condition. The vulnerability of watersheds was estimated from the total impacted area of activities permitted under the CT GP over two, 5-year time periods: 2006-11 and 2011-16.

The assessed existing conditions vulnerability (i.e., filled resource area and associated secondary impacts) and the relationship between them was used to identify basins in need of further scrutiny under this program. The watersheds with the lowest relative scores for existing condition were identified in Figure 1. Some watersheds identified in this analysis had authorized permitted areas in excess of 5 acres for one or both time periods (e.g., 2006-11 or 2011-16). Five acres was chosen because it captured watersheds with the highest levels of development as reflected in total impact areas as authorized under the GP (5 acres identifies approximately 10% of watersheds). Two of the metrics included in the conditions assessment showed high levels of variability between the two 5-year time periods. Also identified were the watersheds with the most extreme increase between the two timeframes in the percentage of impaired river miles or in the current surface flow. The names and hydrologic unit code (HUC) of all these watersheds are included in Table 1. The shading indicates those watersheds which were noted under two (tan) or more (red) categories.

Each of the watersheds identified through this approach was identified for specific features. However, all of the watersheds highlighted under at least two categories were highly vulnerable, as indicated by the amount of impacts authorized under the GP (Figure 2). The majority of these also had poor assessment of existing conditions in the most recent timeframe: Milford Harbor – Frontal Long Island Sound (FLIS), Housatonic River – FLIS, Rooster River – FLIS, and Five Mile River. Each of these watershed scored in the lowest 6% of the 181

watersheds for the assessed current conditions. Other watersheds were noted for their sharp increase in the percent of impaired river and stream miles between 2010 and 2014, specifically Milford Harbor – FLIS which increased from 48% to 98%. The same river reaches were assessed for both time periods. In 2010, 5.0 miles of the Wepaqua River, 5.80 miles of Race Brook, and 1.6 miles of Silver Brook were impaired. In 2014, 11.4 miles of the Wepaqua River, 5.8 miles of Race Brook, 3.3 miles of Indian River, and 4.7 miles of Silver Brook were impaired. Two of the highlighted watersheds had high surface flow. One of these, Eightmile River, recorded an increase in surface flow from 100% to 117% of historic levels between the two analyzed time frames of 2004/2005- to 2008/2009 and 2008/2009 to 2013/2014. Another, Rooster River – FLIS, and Five Mile River, reported more than 120% of historic surface flow for both timeframes. These increases in surface flow may have been associated with increasingly extreme weather in recent years; however, the increase was more extreme in comparison to other watersheds.

This analysis supports the conclusion that there is a spatial relationship between the number of authorized activities and the degradation of aquatic habitats (Figure 1; Spearman Rank Correlation, $r = -0.39$, $p < 0.01$). However, there is no evidence that specific activities authorized under the CT GP program have led to the degradation of these watersheds. Our analysis does suggest that the extent of permitted activities is spatially associated to both regulated and non-regulated activities, which also include non-jurisdictional resources (e.g., upland “buffer” habitat) that may result in the potential future degradation of aquatic resources. The number of authorized activities across New England watersheds is dependent upon the level of land use development in a specific area – in both aquatic and terrestrial environments. Further evaluation of these watersheds, with the appropriate state agencies and stakeholders, may result in additional future guidance and more stringent activity thresholds in GP re-authorizations.

Figure 1A. Watersheds of interest for potential cumulative effects.

Watershed Name	HUC 12 Code	Poor Condition	Higher Impacted Area	Impaired River Miles	Surface Flow
Lower Scantic River	010802050203			X	
Piper Brook-Park River	010802050303	X			
Lower Hockanum River	010802050402		X		
Deep River-Connecticut River	010802050901		X		
Eightmile River	010802050903		X		X
Joshua Creek-Connecticut River	010802050905		X		
Still River	010802070103			X	
Little River	011000020302				X
Furnace Brook	011000020103			X	
Thames River-Frontal New London Harbor	011000030203		X		
Stony Brook-Frontal Fishers Island Sound	011000030303		X		
Pattagansett River-Frontal Long Island Sound	011000030306		X		
Headwaters Quinnipiac River	011000040103	X			
Outlet Quinnipiac River	011000040105	X			
Menunketesuck River	011000040201		X		
Hammonasset River-Frontal Clinton Harbor	011000040202		X		
Farm River	011000040206		X		
Indian River-Frontal Long Island Sound	011000040208		X		
West River	011000040302		X		
Milford Harbor-Frontal Long Island Sound	011000040303		X	X	
Cove River-Frontal Long Island Sound	011000040304	X	X		
Northfield Brook-Naugatuck River	011000051105	X			
Housatonic River-Frontal Long Island Sound	011000051302	X	X		
Norwalk River-Frontal Norwalk Harbor	011000060202		X		
Pequonnock River-Frontal Long Island Sound	011000060301	X			
Mill River-Frontal Long Island Sound	011000060302	X	X		X
Rooster River-Frontal Long Island Sound	011000060303	X	X		
Rippowam River	011000060401		X		
Mianus River	011000060402		X		
Fivemile River	011000060404	X	X		
Blind Brook-Horseneck Brook	011000060405		X		
Long Island Sound Deep	020302030000		X	X	

Figure 1B. A map of the watersheds as highlighted in Table 1. Yellow shading indicates that the watershed was identified as having either relatively poor assessed current conditions, higher areas impacted by current CT GP authorizations, or large changes in river miles reported impaired or rates of surface flow. Tan shading indicates the watershed was identified in two of these categories, Red shading indicates the watershed was identified in three categories.

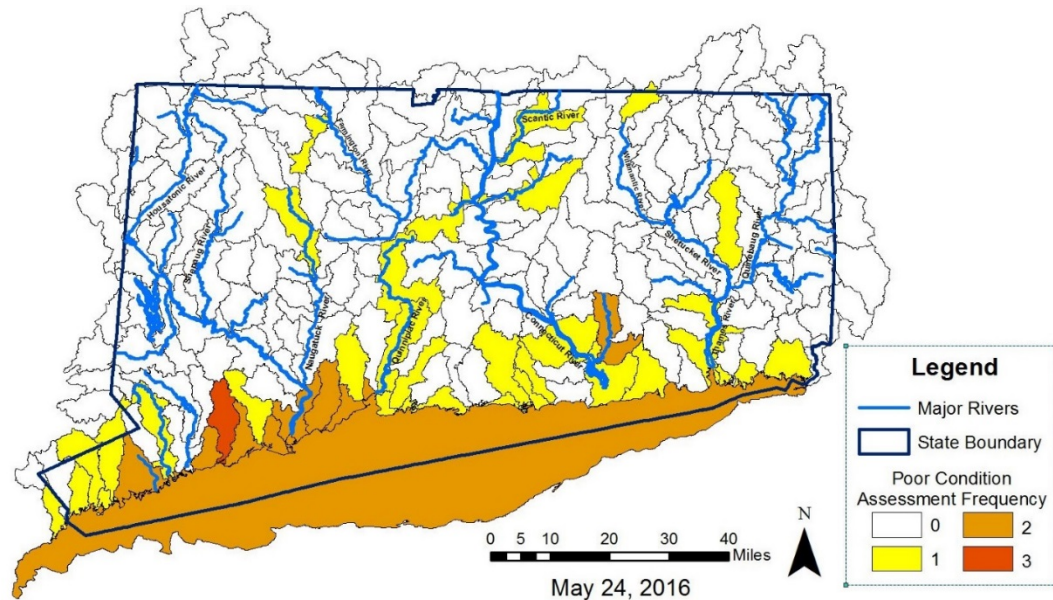
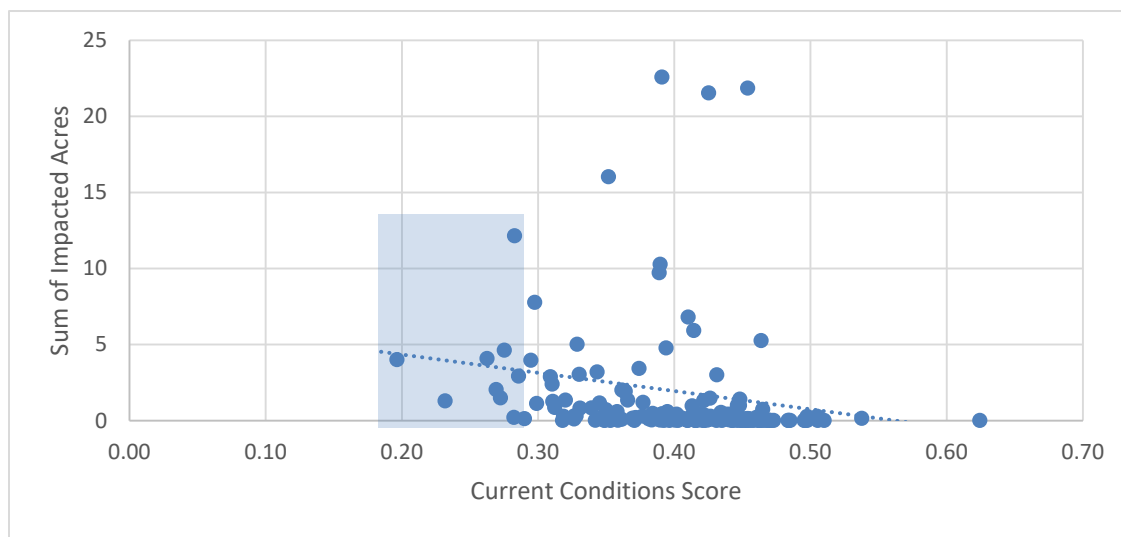


Figure 2. The significant relationship between the total impacted acres from GP-authorized activities and the assessment of current conditions is shown for Connecticut watersheds (Spearman Rank Correlation, $r = -0.39$, $p < 0.01$). The moderate inverse relationship between Current Condition Score and Sum of Impacted Area indicates a relationship between authorized activities under the GP and the degradation of aquatic habitats.



Appendix 12. State of Rhode Island Assessment

This cumulative effects analysis (CEA) was developed to evaluate watersheds in the State of Rhode Island. The analysis seeks to identify those watersheds (HUC 12 basins) where the current aquatic resource quality has the potential to be adversely impacted by the activities authorized under the State of Rhode Island's General Permit (RI GP). This analysis was conducted on ecological resources within watersheds for evaluating the effectiveness of the RI GP at minimizing adverse impacts to the aquatic environment. The approach considered cumulative impacts in terms of their overall condition (e.g., water quality, water quantity, and habitat value) calculated as a function of the assessed resources' condition. The vulnerability of watersheds was estimated from the types and location of activities permitted under the RI GP over two consecutive five-year time intervals, 2007-2011 and 2011-2016.

The assessed existing conditions as well as the assessed vulnerability related to authorized actions (i.e., type of activity and impacted resource), and the relationship between them, was used to identify basins in need of further scrutiny under this program. The existing conditions assessment combined collected performance on RI's impaired waters for water quality, surface flow compared to historical flow data, and habitat value as indicated by the percent developed land area and the number of culverted stream crossings. The watersheds with the lowest relative scores for existing condition were identified in Table 1. The relative vulnerability of HUC 12 watersheds was estimated as a relative value based on the different types of permitted activities and the wetland types impacted. The watershed with the highest vulnerability scores for each time period are listed in Table 1.

Each of the watersheds identified through this approach was identified for specific features. Mill River, Greenwich Bay, Ten Mile River, Lower East Passage, Palmer River, Woonasquatucket River, Aquidneck Island-Frontal Atlantic Ocean, and Upper Narragansett Bay watersheds each had poor conditions assessment values. The low index score for current conditions was generally driven by high percentages of water quality being classified as "impaired." However, Woonasquatucket River also had the highest surface flow of water compared to historical conditions. Pawtuxet River, Peters River-Blackstone River, Greenwich Bay, Woonasquatucket River, Seekonk River-Providence River, and Lower West Passage were identified for having higher potential vulnerability due to their relatively high GP-authorized activities. For these, the number and location of activities indicated that they may impact habitat conditions, although several also had higher potential for water quantity impacts. The watersheds

highlighted under two categories were considered more likely to be impacted by cumulative effects resulting from multiple stressors. The Greenwich Bay and Woonasquatucket River watersheds were highlighted as having both a low current conditions assessment and high vulnerability for GP-authorized activities. A map of the identified watersheds is shown in Figure 1.

This analysis does not support the conclusion that there is a spatial relationship between relative vulnerability from authorized activities and the lower conditions score of aquatic resources (Figure 2; Spearmann Rank Correlation, $r = -0.208$, $p = 0.15$). Because the analysis is a correlation, it does not provide evidence that specific activities authorized under the RI GP program have led to the degradation of these watersheds. Since there is no correlation we can only infer where there are numerous authorized activities in these watersheds that are collectively risky or where there is low resource value (non-permit related) in a particular watershed.. The number, type and aquatic resources impacted from authorized activities across New England watersheds is also dependent upon terrestrial land use development and climate change. Evaluation of the watersheds identified using this approach, with the appropriate resource agencies, may result in additional future guidance and more stringent activity thresholds in GP re-authorizations.

Table 1. Watersheds of interest for potential cumulative effects.

Watershed Name	HUC 12 Code	Poor Condition	Higher Impacted Area	Impaired River Miles - Increase
Mill River	10900030205	X		
Peters River-Blackstone River	10900030208		X	
Ten Mile River	10900040401	X		
Woonasquatucket River	10900040502	X	X	
Pawtuxet River	10900040609		X	
Palmer River	10900040701	X		
Seekonk River-Providence River	10900040901		X	
Upper Narragansett Bay	10900040902	X		
Greenwich Bay	10900040903	X	X	
Lower West Passage	10900040908		X	
Lower East Passage	10900040909	X		
Aquidneck Island-Frontal Atlantic Ocean	10900040911	X		
Chipuxet River-Pawcatuck River	10900050201			X

Figure 1. A map of Rhode Island watersheds showing those that were identified as vulnerable in the current analysis.

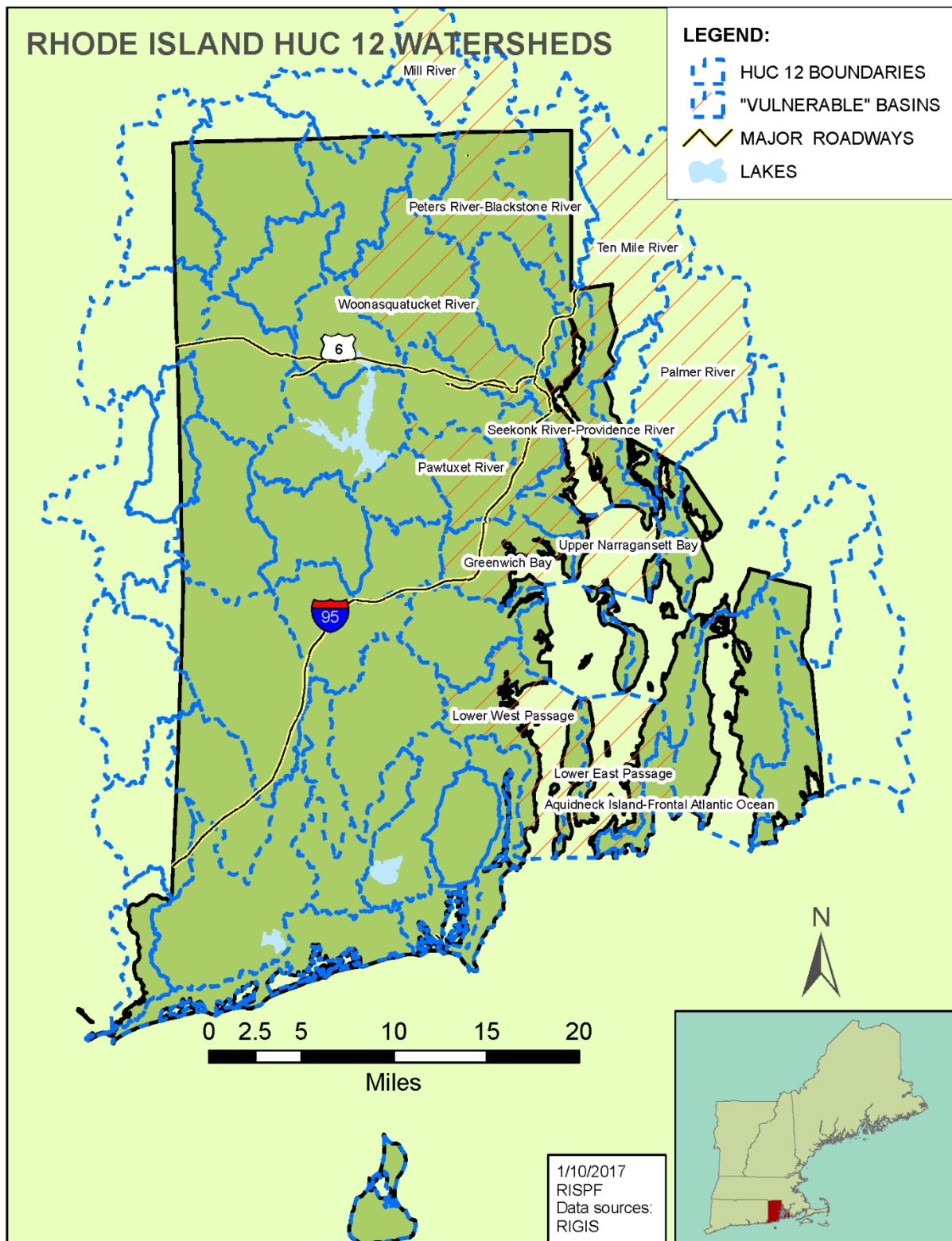
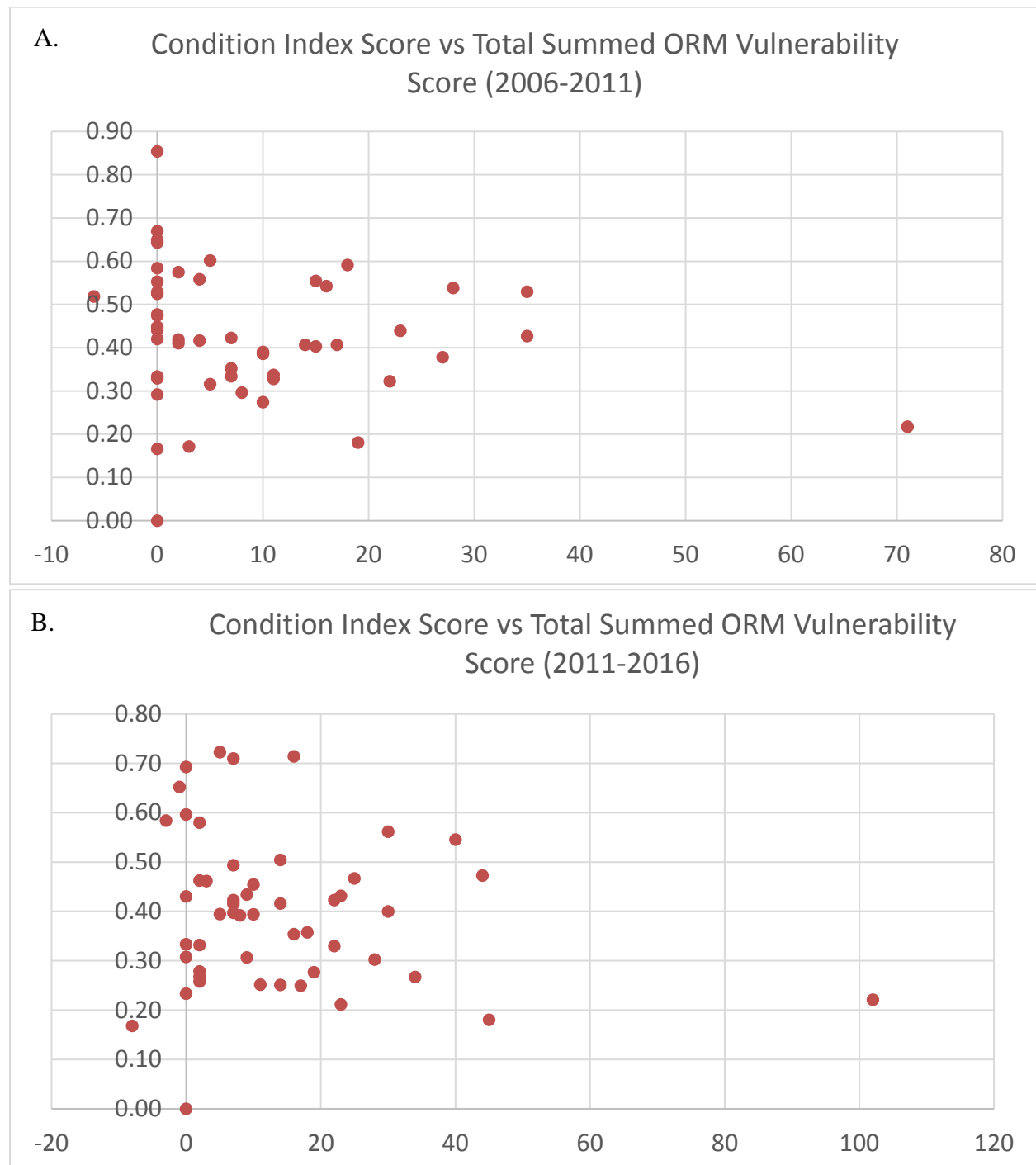


Figure 2. The relationship between the relative vulnerability from GP-authorized activities and the assessment of current conditions is shown for Rhode Island watersheds for the (A) historic timeframe (2007-2011) and (B) the present (2011-2016). No significant relationship was detected in either timeframe (early - Spearman Rank Correlation, $r = -0.208$, $p = 0.15$; late - Spearman Rank Correlation, $r = -0.112$, $p = 0.44$). An inverse relationship between Current Conditions Index and Vulnerability was expected if there is a relationship between authorized activities under the GP and the degradation of aquatic habitats.



Appendix 13. State of New Hampshire Assessment

This cumulative effects analysis (CEA) was developed to evaluate watersheds in the State of New Hampshire. The analysis sought to identify watersheds by hydrologic unit code (HUC) 12 basins where the current aquatic resource quality has the potential to be adversely impacted by the activities authorized under the State of New Hampshire's General Permit (NH GP). This analysis was conducted on ecological resources within watersheds for evaluating the effectiveness of the NH GP at minimizing adverse impacts to the aquatic environment. The approach considered cumulative impacts in terms of their overall condition (e.g., water quality, water quantity, and habitat value) calculated as a function of the assessed resources' condition. The vulnerability of watersheds was estimated from the types and location of activities permitted under the NH GP over two consecutive 5-year time intervals, 2007-2012 and 2012-2016.

The assessed existing conditions' vulnerability as related to authorized actions (i.e., type of activity and impacted resource) and the relationship between them was used to identify basins in need of further scrutiny under this program. The existing conditions assessment combined collected performance on NH's impaired waters for water quality, surface flow compared to historic levels for water quantity, and habitat value as indicated by the percent developed land area and the number of culverted stream crossings. The watersheds with the lowest relative scores for existing condition were identified in Table 1. The relative vulnerability of HUC 12 watersheds was estimated as a relative value based on the different types of permitted activities and the wetland type impacted. The watershed with the highest vulnerability scores for each time period are listed in Table 1.

Each of the watersheds identified through this approach was identified for specific features. Lower Cocheco River, Bowman Brook-Merrimack River, Salmon Brook, Upper Beaver Brook, Zealand River-Ammonoosuc River, and Baker Brook-Ammonoosuc River each had poor conditions assessment values. The low index score for current conditions was generally driven by high percentages of the assessed water being classified as impaired; many of them 100% of the assessed waters. Lower Cocheco had high level of impaired waters and low scores for habitat conditions because of development and stream crossings. Oyster River, Piscataqua River-Frontal Portsmouth Harbor, Wolfeboro Bay-Frontal Lake Winnepesaukee, Winnisquam Lake, Bow Bog Brook-Merrimack River, Browns Brook-Merrimack River, Spicket River, and Mascoma River were identified for having higher potential vulnerability due to GP-authorized activities. For these, the number and location of activities indicated that they may impact habitat

conditions, although several also had higher potential for water quantity impacts. Pequawket Brook, Squam River, and Bog Brook watersheds were also highlighted as having the greatest increase in the percentage of impaired waters between the two assessed time periods. The identified watersheds are mapped in Figure 1.

This analysis does not support the conclusion that there is a spatial relationship between relative vulnerability from authorized activities and the lower aquatic resource conditions (Figure 2; Spearman Rank Correlation, $r = -0.39$, $p = 0.51$). Because the assessment is based on a correlation, it does not provide evidence that specific activities authorized under the NH GP program have led to the degradation of these watersheds. Since there is no correlation we can only infer where there are numerous authorized activities in these watersheds that are collectively risky or where there is low resource value (non-permit related) in a particular watershed.. The number, type and aquatic resources impacted from authorized activities across New England watersheds is also dependent upon terrestrial land use development and climate change. Evaluation of the watersheds identified using this approach, with the appropriate resource agencies, may result in additional future guidance and more stringent activity thresholds in GP re-authorizations.

Table 1. Watersheds of interest for potential cumulative effects.

Watershed Name	HUC 12 Code	Poor Condition	Higher Impacted Area	Impaired River Miles Increase
Pequawket Brook	10600020203			X
Lower Cocheco River	10600030608	X		
Oyster River	10600030902		X	
Piscataqua River-Frontal Portsmouth Harbor	10600031001		X	
Squam River	10700010502			X
Bog Brook	10700010602			X
Wolfeboro Bay-Frontal Lake Winnepesaukee	10700020101		X	
Winnisquam Lake	10700020201		X	
Bow Bog Brook-Merrimack River	10700060302		X	
Browns Brook-Merrimack River	10700060802		X	
Bowman Brook-Merrimack River	10700060803	X		
Spicket River	10700061102		X	
Salmon Brook	10700061201	X		
Upper Beaver Brook	10700061203	X		
Zealand River-Ammonoosuc River	10801030402	X		
Baker Brook-Ammonoosuc River	10801030403	X		
Mascoma River	10801060106		X	

Figure 1. The watersheds identified in the current analysis are highlighted in the map of New Hampshire.

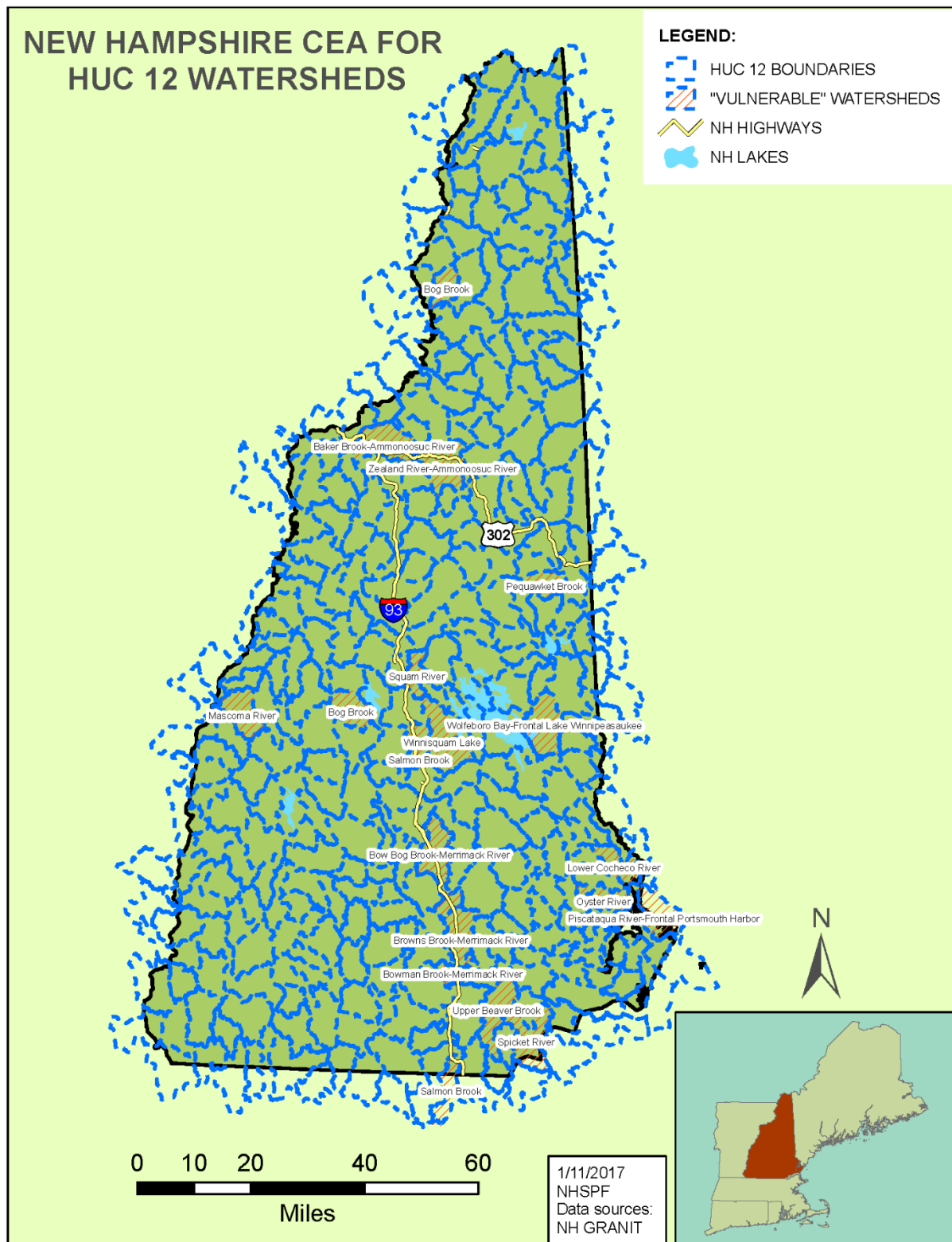
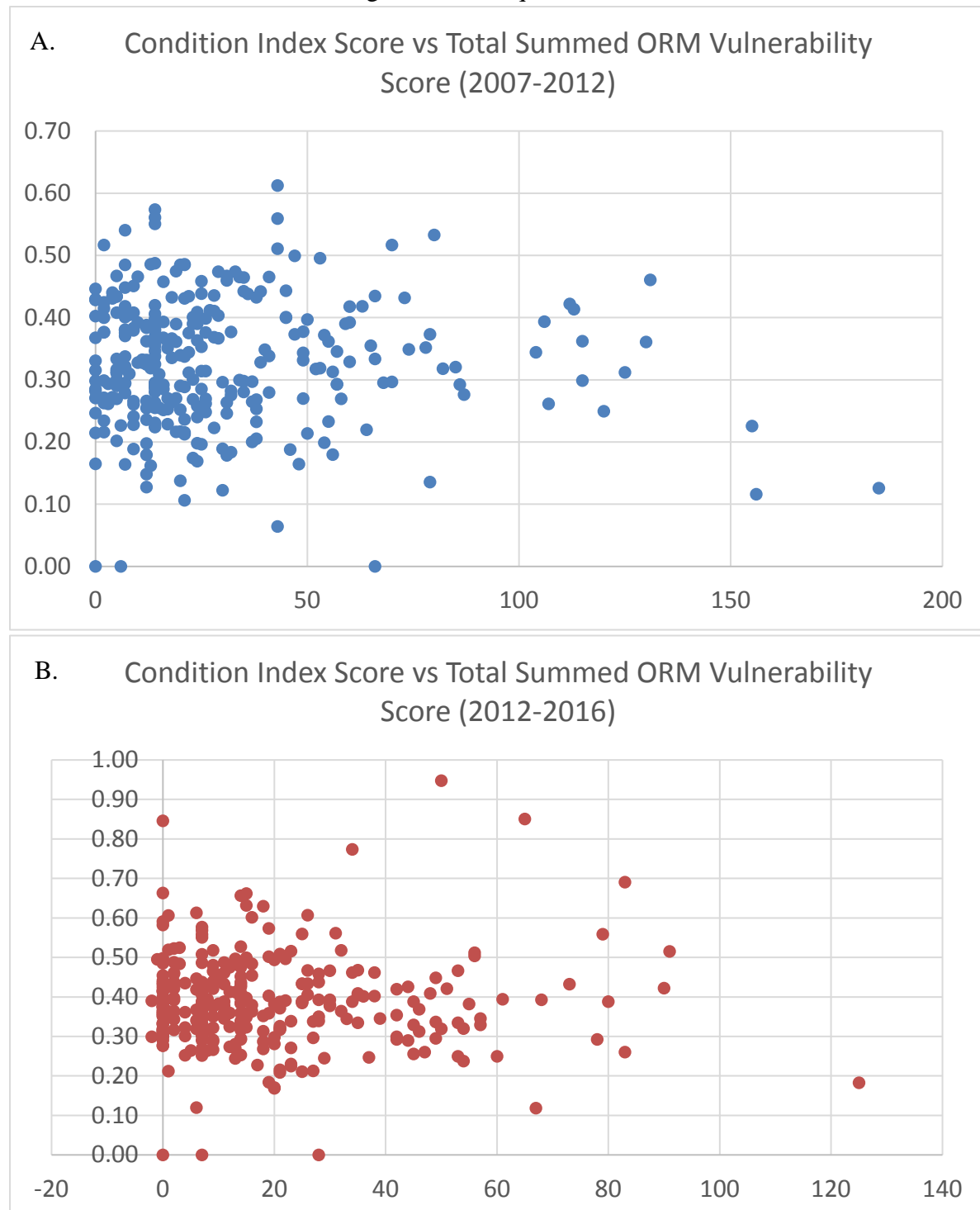


Figure 2. The relationship between the relative vulnerability from GP-authorized activities and the assessment of current conditions is shown for New Hampshire watersheds for (A) the historic timeframe (2007-2012) and (B) present (2012-2016). No significant relationship was detected in either timeframe (historic - Spearman Rank Correlation, $r = 0.005$, $p = 0.92$; present - Spearman Rank Correlation, $r = -0.039$, $p = 0.51$). An inverse relationship between Current Conditions Index and Vulnerability was expected if there is a relationship between authorized activities under the GP and the degradation of aquatic habitats.



Appendix 14. State of Vermont Assessment

This cumulative effects analysis (CEA) was developed to evaluate watersheds in the State of Vermont. The analysis sought to identify watersheds (HUC 12 basins) where the current aquatic resource quality has the potential to be adversely impacted by the activities authorized under the State of Vermont's General Permit (VT GP). This analysis was conducted on ecological resources within watersheds for evaluating the effectiveness of the VT GP at minimizing adverse impacts to the aquatic environment. The approach considered cumulative impacts in terms of their overall condition (e.g., water quality, water quantity and habitat value) calculated as a function of the assessed resources' condition. The vulnerability of watersheds was estimated from the types and location of activities permitted under the VT GP over two consecutive five-year time intervals, 2007-2012 and 2012-2016.

The assessed existing conditions vulnerability, as related to authorized actions (i.e., type of activity and impacted resource) and the relationship between them, was used to identify basins in need of further scrutiny under this program. The existing conditions assessment combined collected performance on VT's impaired waters for water quality, surface flow compared to historical levels for water quantity, and habitat value as indicated by the percent developed land area and the number of culverted stream crossings. The "priority waters" in VT are classified as Parts A, B, and D; Parts A through F are collectively the assessed waters (VT Department of Environmental Protection, personal communication). The watersheds with the lowest relative scores for existing condition were identified in Table 1. The relative vulnerability of HUC 12 watersheds was estimated as a relative value based on the different types of permitted activities and the type of wetlands impacted. The watershed with the highest vulnerability scores for each time period are listed in Table 1.

Each of the watersheds identified through this approach was identified for specific features. Dead Creek, Snipe Island Brook-Winooski River, Tyler Branch, McGowan Brook-Missisquoi River, and Jewett Brook each had poor conditions assessment values. The low index score for current conditions was generally driven by high percentages of the assessed water being classified as "priority." Dead Creek watershed had high percentage of impaired waters and low scores for habitat conditions due to development and a large number of stream crossings. Tweed River, Stony Brook-White River, Twentymile Stream-Black River, Middle Branch Williams River, North Branch Deerfield River, Winooski River, La Platte River, and Munroe Brook-Shelburne Bay were identified for having higher potential vulnerability due to GP-authorized

activities. For these, the number and location of activities indicated that they may impact habitat conditions and water quantity. Pleasant Brook-Otter Creek and Headwaters Little River watersheds were also highlighted as having an increase in the percentage of “priority” waters between the two assessed time periods of greater than 90%. The identified watersheds are mapped in Figure 1.

This analysis does not support the conclusion that there is a spatial relationship between relative vulnerability from authorized activities and the lower aquatic resource conditions (Figure 2; Spearman Rank Correlation, $r = -0.103$, $p = 0.11$). Because this is an analysis of correlations, it does not provide evidence that specific activities authorized under the VT GP program have led to the degradation of these watersheds. Since there is no correlation we can only infer where there are numerous authorized activities in these watersheds that are collectively risky or where there is low resource value (non-permit related) in a particular watershed.. The number, type and aquatic resources impacted from authorized activities across New England watersheds is also dependent upon terrestrial land use development and climate change. Evaluation of the watersheds identified using this approach, with the appropriate resource agencies, may result in additional future guidance and more stringent activity thresholds in GP re-authorizations.

Table 1. Watersheds of interest for potential cumulative effects.

Watershed Name	HUC 12 Code	Poor Condition	Higher Impacted Area	Impaired River Miles - Increase
Tweed River	10801050104		X	
Stony Brook-White River	10801050106		X	
Twentymile Stream-Black River	10801060503		X	
Middle Branch Williams River	10801060602		X	
North Branch Deerfield River	10802030103		X	
Pleasant Brook-Otter Creek	41504020307			X
Dead Creek	41504020501	X		
Headwaters Little River	41504030602			X
Snipe Island Brook-Winooski River	41504030702	X		
Winooski River	41504030704		X	
Tyler Branch	41504070401	X		
McGowan Brook-Missisquoi River	41504070601	X		
La Platte River	41504080801		X	
Munroe Brook-Shelburne Bay	41504080802		X	
Jewett Brook	41504081201	X		

Figure 1. The watershed identified in the current assessment are highlighted on the map of Vermont.

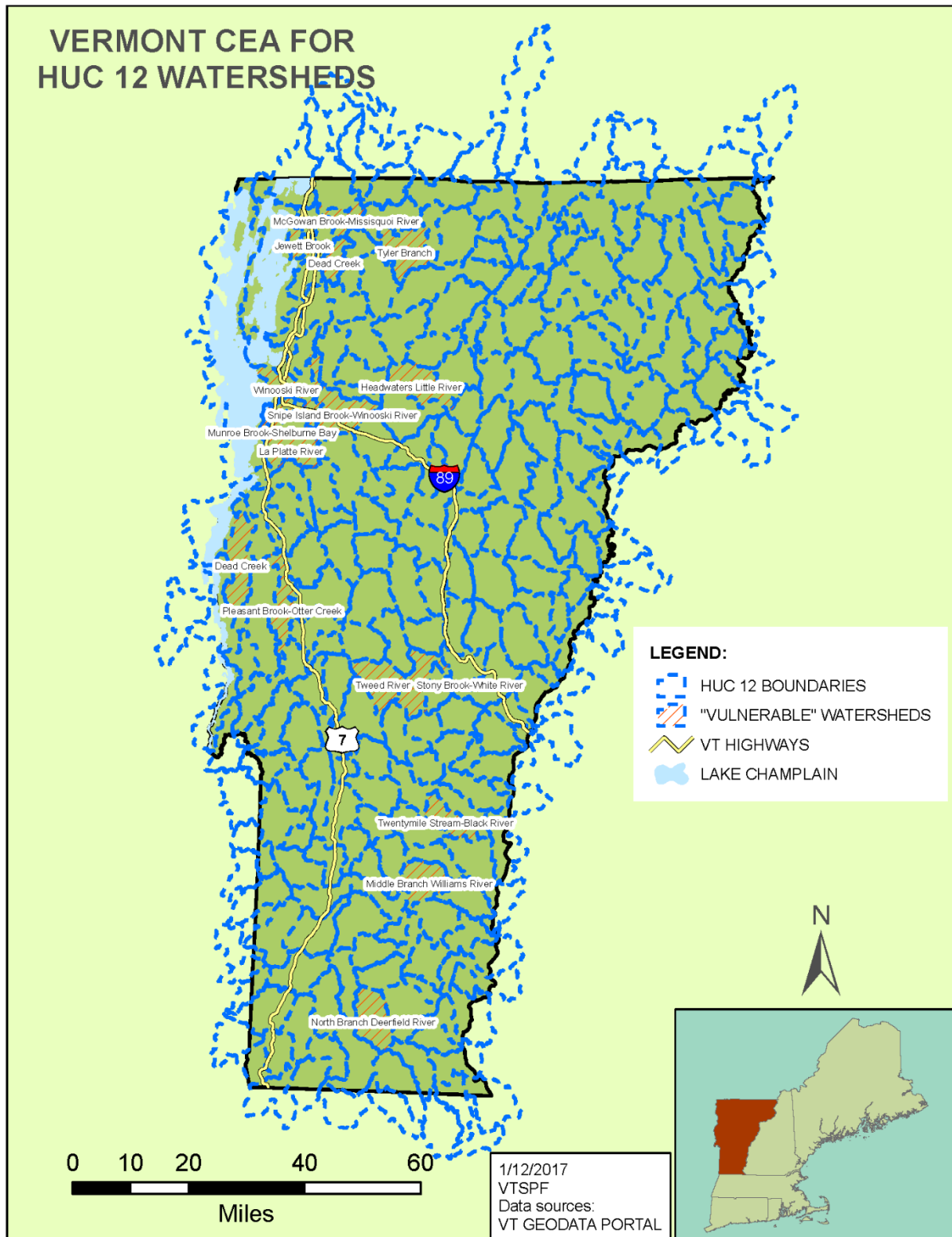
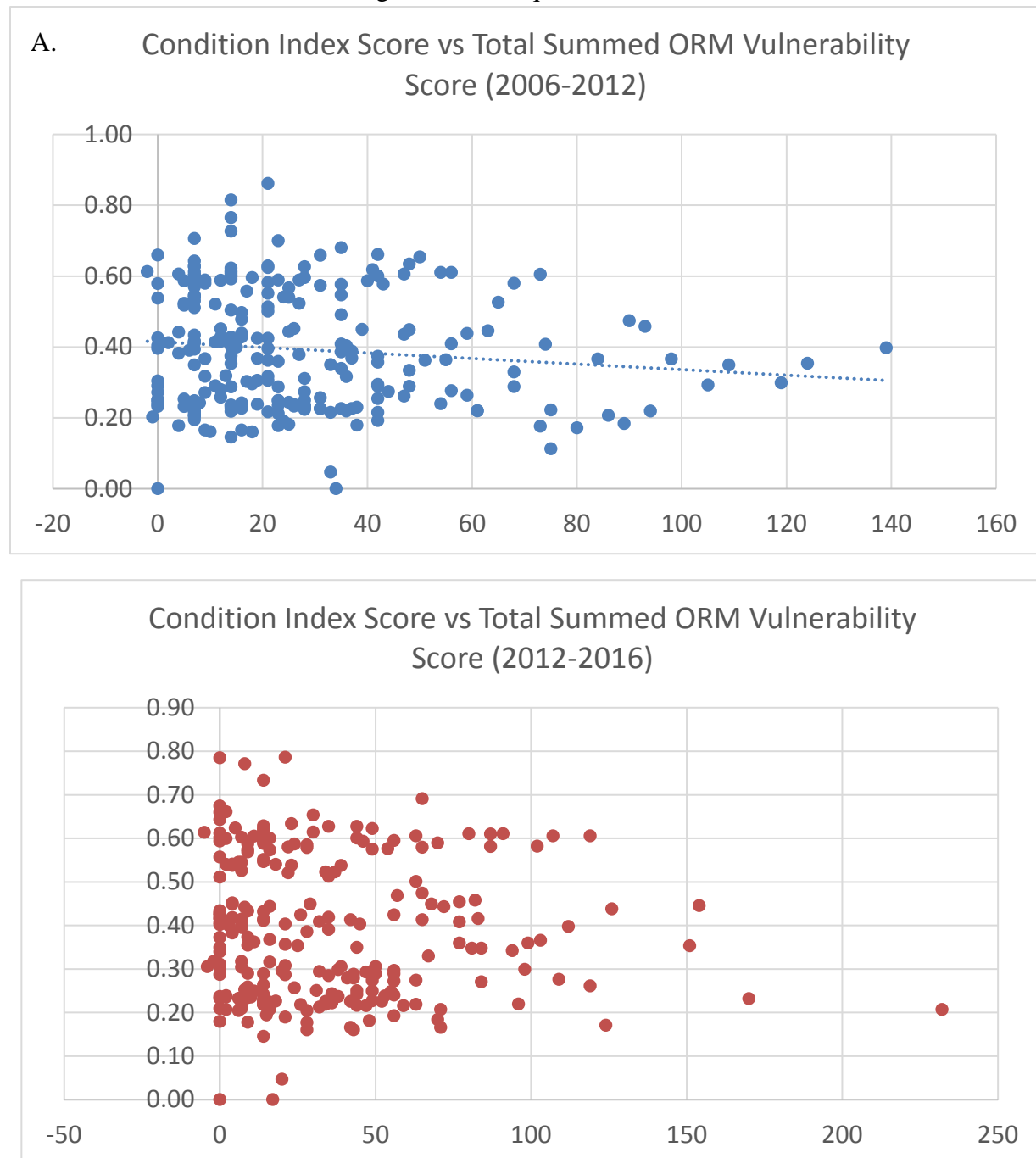


Figure 2. The relationship between the relative vulnerability from GP-authorized activities and the assessment of current conditions is shown for Vermont watersheds for the (A) historic timeframe (2007-2012) and (B) the present (2012-2016). No significant relationship was detected in either timeframe (historic - Spearman Rank Correlation, $r = -0.103$, $p = 0.11$; present - Spearman Rank Correlation, $r = -0.097$, $p = 0.14$). An inverse relationship between Current Conditions Index and Vulnerability was expected if there is a relationship between authorized activities under the GP and the degradation of aquatic habitats.



Appendix 15. State of Massachusetts Assessment

This cumulative effects analysis (CEA) was developed to evaluate watersheds in the State of Massachusetts for reissuance of the general permits (GP). The analysis seeks to identify those watersheds (HUC 12 basins) where the current aquatic resource quality has the potential to be adversely impacted by the activities authorized under the Commonwealth of Massachusetts' General Permits (MA GPs). The approach considered cumulative impacts by comparing the current conditions of resources in watershed with the potential impacts from the GP-authorized activities. A relationship between current conditions and potential impacts would indicate that where there are numerous authorized activities in a watershed there is associated a lower resource value for that watershed. Because the assessment is based on a correlation, it does not provide evidence that specific activities authorized under the MA GP program have led to the degradation of these watersheds. The assessed existing conditions as well as the assessed vulnerability related to authorized actions (i.e., type of activity and impacted resource), and the relationship between them, was used to identify basins in need of further scrutiny under this program.

The current conditions of the watershed were assessed in terms of their water quality, and habitat value. The existing conditions assessment combined collected performance on MA's impaired waters assessment for water quality and habitat value as indicated by the percent developed land area and the number of culverted stream crossings. The watersheds with the lowest relative scores for existing condition are identified in Figure 1.

The vulnerability of watersheds was estimated from the types and location of activities permitted under the MA GP over a three year time interval, 2015 - 2018. The relative vulnerability of HUC 12 watersheds was estimated as a relative value based on the different types of permitted activities and the wetland types impacted. That estimated vulnerability was compared to the sum of the reported impacted area (in acres) from the collected activities authorized under the GP in each watershed. This sum of impacted area includes the acres of fill added, structures added and dredged material removed. This sum of impacted area shows the same pattern of watersheds as the vulnerability assessment. Therefore, the impacted area was used in for the CEA. The watersheds with the highest acres of impact from GP-authorized activities are shown in Figure 1.

This analysis did support the conclusion that there is a spatial relationship between the impacted area from authorized activities and the lower conditions score of aquatic resources

(Figure 2; Spearmann Rank Correlation, $r = -0.186$, $p < 0.01$). Because the analysis is a correlation, it does not provide evidence that specific activities authorized under the MA GP program have led to the degradation of these watersheds. We can infer, however, that in watershed with higher, or larger GP-authorized activities, other development outside the scope of the GP are also ongoing. The number, type and aquatic resources impacted from authorized activities across New England watersheds is also dependent upon terrestrial land use development and climate change. More collective development and impacts in a watershed are likely to be reflected in the reduced water quality and habitat, and this relationship is supported in the current analysis. Identification and further scrutiny of specific watershed highlighted by this analysis where there are numerous authorized activities or where there is low resource value (non-permit related) may reveal specific features that should be protected by requiring applications for individual permits. Evaluation of the watersheds identified using this approach, with the appropriate resource agencies, may result in additional future guidance and more stringent activity thresholds in GP re-authorizations.

Figure 1. A map of Massachusetts watersheds showing those that were identified as having the lowest relative conditions assessment and the highest vulnerability as reflected in the acres impacted under the existing MA GP.

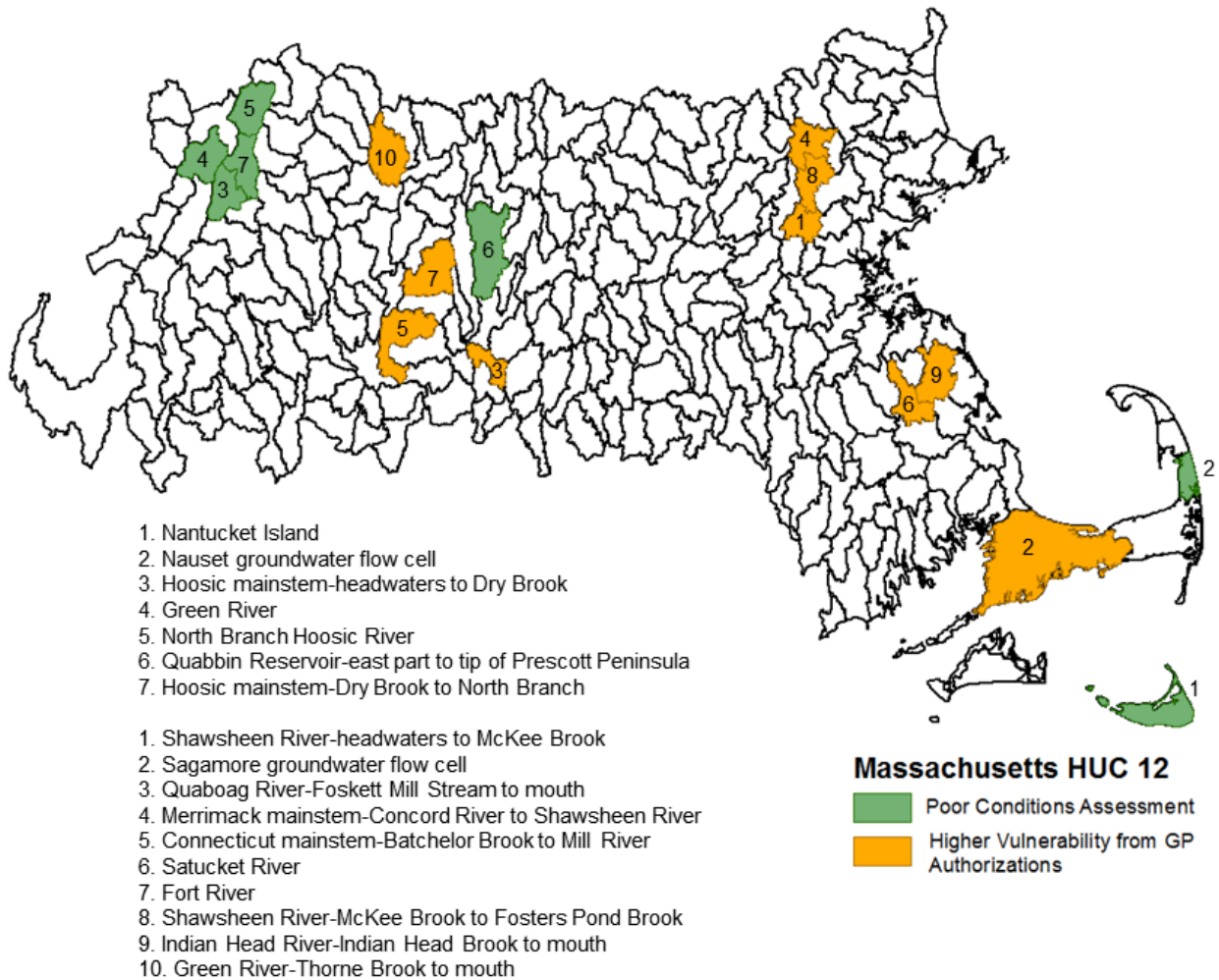
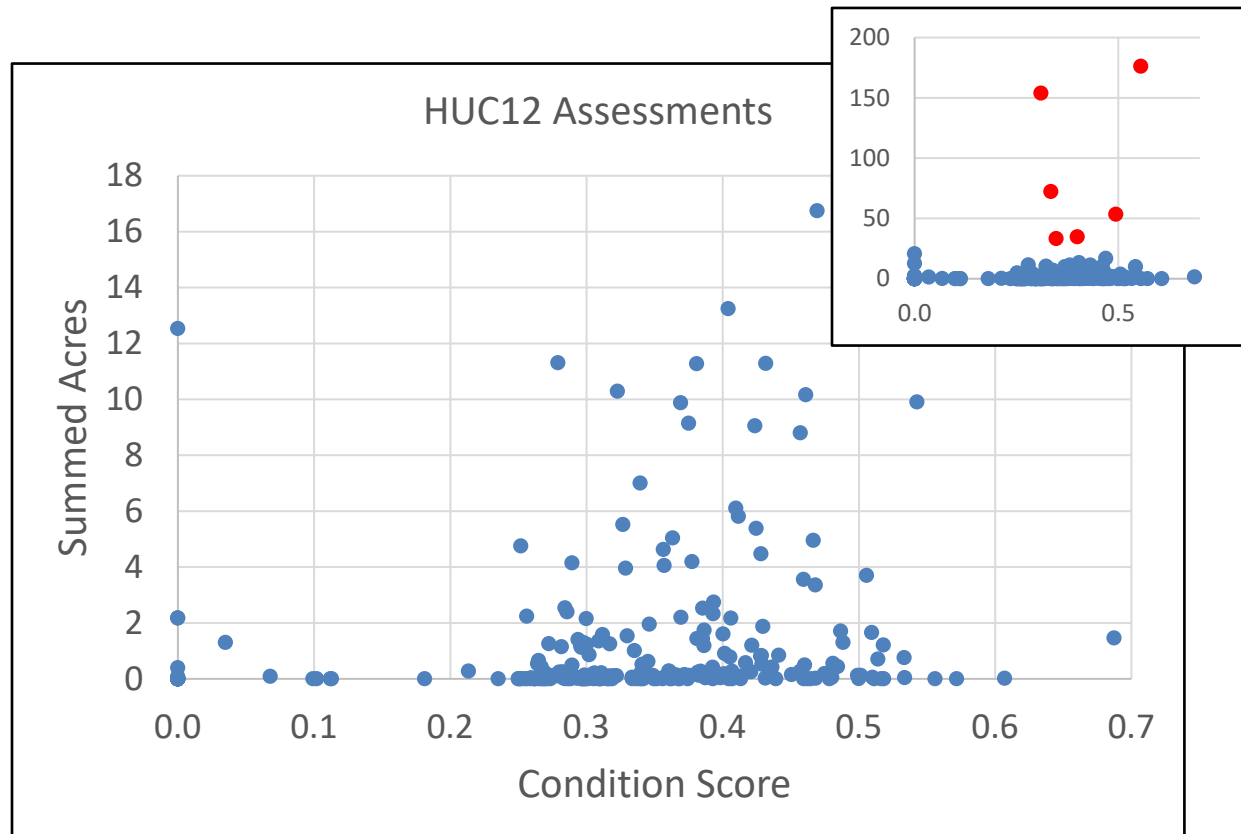


Figure 2. The relationship between the size of the impacted area from GP-authorized activities (summed acres) and the current conditions assessment for HUC12 watersheds in Massachusetts. Note the inset graph shows the few watersheds with higher acres of impact (red). An inverse relationship was detected between the assessment of current conditions and the area of impact from authorized activities (Spearman Rank Correlation, $r = -0.186$, $p < 0.01$). This correlation was expected if there is a relationship between authorized activities under the GP and the degradation of aquatic habitats.





THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

April 5, 2018

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of U.S. Army Corps of Engineers General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the proposed reissuance of the U.S. Army Corps of Engineers Massachusetts General Permits. This permit is proposed for the period from present to April, 2023.

Based upon our review of applicable information, we concur with your certification and find that the activity as proposed is consistent with the CZM enforceable program policies.

If the above-referenced project is modified in any manner, including any changes resulting from permit, license or certification revisions, including those ensuing from an appeal, or the project is noted to be having effects on coastal resources or uses that are different than originally proposed, it is incumbent upon the proponent to notify CZM, submit an explanation of the nature of the change pursuant to 15 CFR 930, and submit any modified state permits, licenses, or certifications. CZM will use this information to determine if further federal consistency review is required.

Thank you for your cooperation with CZM.

Sincerely,

Bruce K. Carlisle,
Director

CZM#17478

cc: Greg Penta, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP





Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

April 5, 2018

Colonel William M. Conde
Commander, New England District
U.S. Army Corps of Engineers New England District
696 Virginia Road Concord, Massachusetts 01742-2751

Re: **401 WATER QUALITY CERTIFICATION**
Department of the Army
General Permits for Massachusetts
Effective: **April 5, 2018**
Expires: **April 5, 2023**

Dear Colonel Conde,

The Massachusetts Department of Environmental Protection (the Department) has reviewed your request for the Commonwealth of Massachusetts to issue a 401 Water Quality Certification (WQC) of the Department of the Army General Permits for Massachusetts (MA GPs). In accordance with the provisions of Section 401 of the Federal Clean Water Act, 33 U.S.C. §1344, the Massachusetts Clean Waters Act, M.G.L. c.21, §§ 26-53, and the 401 Water Quality Certification regulations at 314 CMR 9.00, the Department has determined there is reasonable assurance the activities covered by the MA GPs that are certified herein will be conducted in a manner which will not violate the Massachusetts Surface Water Quality Standards (314 CMR 4.00) and other applicable requirements of state law, if carried out in accordance with this WQC and the provisions of the MA GPs.

The MA GPs regulate 23 categories of activity in Massachusetts. Each General Permit establishes specific conditions and limitations. Activities not authorized by the MA GPs require an Individual Permit in accordance with Section I (4) of the MA GPs. Section III of the MA GPs identifies the activities eligible for coverage as follows:

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

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General Permits

1. Repair, Replacement and Maintenance of Authorized Structures and Fills
2. Moorings
3. Pile-Supported Structures, Floats and Lifts
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal, and Relocation
6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial and Institutional Developments, and Recreation Facilities
9. Utility Line Activities
10. Linear Transportation Projects Including Stream Crossings
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Temporary Construction, Access, and Dewatering
15. Reshaping Existing Drainage Ditches and Mosquito Management
16. Oil Spill and hazardous Material Cleanup
17. Cleanup of Hazardous and Toxic Waste
18. Scientific Measurement Devices
19. Survey Activities
20. Agricultural Activities
21. Fish and Wildlife Harvesting and Attraction Devices and Activities
22. Habitat Restoration, Establishment and Enhancement Activities
23. Previously Authorized Activities

The MA GPSs also contain 44 General Conditions (GCs), with which all prospective permittees must comply, as applicable. Prospective permittees must calculate the cumulative impacts to jurisdictional resources from all activities encompassed by their proposed project. Each MA GPS includes resource impact thresholds for review (based on both temporary and permanent resource impacts). Depending on the individual threshold impacts, activities will be eligible for either Self-Verification (SV) or Pre-Construction Notice (PCN). Resource impacts beyond those qualifying for SV or PCN are not eligible for certification under the MA GPSs and require an Individual Permit (IP).

401 Water Quality Certification

Department of the Army General Permits for the Commonwealth of Massachusetts

In general, activities associated with the discharge of dredged or fill material in Massachusetts (e.g. MA GPs 1, 8-14, 16-20, and 23) are subject to the following area thresholds:

Resource	SV Eligible	PCN Required	IP Required
Non-tidal Waters of the U.S.	0-5,000 SF	>5,000 SF to 1 Acre	>1 acre
Tidal waters of the U.S.	not eligible	all discharges \leq 1/2 acre	>1/2 acre
SAS ¹ in Tidal Waters of the U.S. excluding vegetated shallows	not eligible	all discharges \leq 1,000 SF	>1,000 SF
SAS in Tidal Waters of the U.S. consisting of only vegetated shallows only	not eligible	all discharges \leq 100 SF (compensatory mitigation is required)	> 100SF

Public Notice: The Massachusetts Department of Environmental Protection's Public Notice to issue this 401 Water Quality Certification to the Department of the Army for the General Permits for Massachusetts was published concurrently with the Public Notice by the Department of the Army on September 7, 2017 and published in the MEPA Environmental Monitor on October 10, 2017.

Therefore, based on information currently in the record, the Department grants a 401 Water Quality Certification for the Massachusetts General Permits subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. The Department further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the projects or activities will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, the Department has determined that upon satisfying the conditions and mitigation requirements of this WQC, the Massachusetts General Permits maintain and protect water quality to the level necessary to protect existing uses and High Quality Waters. Accordingly, the Department finds that the General Permits as implemented satisfy the Surface Water Quality Standards at 314 CMR 4.00.

A. Applicability

This WQC applies to all activities in MA GPs (1 – 23) eligible for Self-Verification, subject to the limitations enumerated in (a)-(m) below. This WQC also applies to the activities covered by MA GPs 20 and 22 (agricultural and aquacultural) which require a PCN. Other than MA GPs 20 and 22, this WQC is not applicable to any other MA GPs activities that require a PCN or an IP.

This WQC is subject to the following additional requirements:

¹ Special Aquatic Sites (SAS) consists of wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes as defined at 40 CFR 230 Part E.

- a) The permittee has a valid Final Order of Conditions or Emergency Certification under the Wetlands Protection Act, M.G.L. Ch. 131 sec. 40 and its regulations at 310 CMR 10.00, or was authorized by an Emergency Declaration, and, if applicable, a license or permit under the Public Waterways Act, M.G.L. Ch.91, prior to the commencement of activities subject to this WQC and MA GPs;
- b) If the activity subject to this WQC and the MA GPs occurs in an area subject to 310 CMR 10.00: *Wetlands Protection* and 33 U.S.C. 1251, *et seq.*, it will not result in the temporary and/or permanent loss of more than 5000 square feet cumulatively of bordering and isolated vegetated wetlands and land under water; (Bordering Vegetated Wetlands are defined in 310 CMR 10.55(2) and 314 CMR 9.02, Isolated Vegetated Wetlands are defined in 314 CMR 9.02 and Land under the Ocean is defined in 310 CMR 10.25(2));
- c) The activity is not in an Outstanding Resource Water as identified in 314 CMR 4.00 and 314 CMR 9.00;
- d) The activity is not associated with a Real Estate Subdivision, as defined at 314 CMR 9.04(3), unless there is a valid, unexpired Final Order of Conditions, a Certificate of Compliance, and a recorded deed restriction providing notice to subsequent purchasers limiting the amount of fill for the single and complete project to less than 5000 square feet cumulatively of bordering and/or isolated vegetated wetlands and land under water, and the discharge is not to an Outstanding Resource Water;
- e) With the exception of activities covered by 314 CMR 9.03(4) (agricultural and aquacultural), the activity is not exempt under M.G.L. c. 131, § 40;
- f) If the activity consists of routine maintenance of existing channels, such as mosquito control projects or road drainage maintenance, it will not result in the temporary and/or permanent annual loss of more than 5000 square feet cumulatively of bordering and isolated vegetated wetland and land under water;
- g) If the activity is in an area not subject to jurisdiction of M.G.L. c. 131, § 40, but is subject to 33 U.S.C. 1251 (*i.e.*, isolated vegetated wetlands), it will not result in the temporary and/or permanent loss of more than 5000 square feet cumulatively of bordering and isolated vegetated wetlands and land under water;
- h) The activity will not result in the discharge of dredged or fill material to an isolated vegetated wetland that has been identified as Rare Species Habitat by the Massachusetts Natural Heritage and Endangered Species Program;
- i) The activity will not result in the discharge of dredged or fill material in any salt marsh as defined in 314 CMR 9.02 and 310 CMR 10.32(2);

- j) Dredging or dredged material re-use or disposal activities are limited to less than 100 cubic yards and the work is not subject to an individual 404 permit by the Corps of Engineers. Dredged sediment generated from such activities shall be managed in accordance with the provisions of 314 CMR 9.07(9) through (11) and may be used for beach nourishment activities or reuse within the shoreline under a Final Order of Conditions issued under M.G.L. c. 131, § 40;
- k) All fill or discharges to bordering vegetated wetlands shall include a minimum of 1:1 restoration or replication under 310 CMR 10.55(4)(b) unless the activity constitutes an Ecological Restoration Project for the maintenance or repair (but not replacement, reconstruction, or substantial enlargement) of existing and lawfully located dams and is eligible for a Restoration Order of Conditions under 310 CMR 10.13;
- l) If applicable, the activity conforms to the stream crossing provisions of 310 CMR 10.24(10) and 10.53(8); and
- m) The proposed work does not require an application pursuant to 314 CMR 9.04.

B. General Permit Specific Criteria and Conditions

1. This WQC conditionally certifies MA GPs 1, 8 -14, 16-20, and GP 23 provided:
 - a) This WQC applies to activities that meet the SV thresholds if a permittee complies with the SV eligible requirements stated within the activity-specific MA GP and meets the Applicability requirements (a – m) above; and
 - b) This WQC is not applicable to projects or activities that are subject to the PCN or IP thresholds.
- 2) This WQC certifies the following MA GPs as conditioned below:

MA GP 2: Moorings

- a) This WQC applies to those MA GP 2 Mooring Activities which meet the SV eligible requirements; and
- b) the mooring activity is authorized by a valid Annual Permit for Moorings, Floats and Rafts Section 10A permit issued by the municipal harbormaster or other municipal official in accordance with 310 CMR 9.07(2) of the Waterways, Chapter 91 Regulations; and

MA GP 3: Pile-Supported Structures, Floats and Lifts

Any structure, such as an elevated walkway or other such structure, that is located over a salt marsh and/or submerged aquatic vegetation shall have no adverse effects on the salt marsh and/or submerged aquatic vegetation other than blocking sunlight from the underlying vegetation for a portion of each day and will not result in the loss of any portion of the underlying vegetation from said sunlight blocking.

MA GP 5: Dredging, Disposal of Dredge, Beach Nourishment, Rock Removal, and Rock Relocation

- a) Disposal does not involve beach nourishment, nearshore, open water, ocean, or confined aquatic disposal;
- b) The activity is limited to the reach of the Merrimack River between the Essex Dam and the mouth of the river as identified on the MADEP Mouth of River maps at:

<http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-maps-mouth-of-coastal-river.html>

- (c) Dredging activities must comply with the authorization requirements of 310 CMR 9.05, the notice requirements of 310 CMR 9.13(1)(c)(5), and the standards for dredging and dredged material disposal at 310 CMR 9.40.

MA GP 7: Bank and Shoreline Stabilization

- a) The Activity must not:
 - i) Impair the water carrying capacity of the existing channel within the Bank in accordance with 310 CMR 10.54(4)(a)(2); or
 - ii.) Reduce the water capacity within the defined channel in accordance with 310 CMR 10.56(4)(a)(1).
- b) Activities on Coastal Banks (as defined at 310 CMR 10.30(2)) shall:
 - i) Comply with the requirements of 310 CMR 10.30(3) and (4) when said bank is significant to storm damage prevention and flood control because it supplies sediment to Coastal Beaches, Coastal Dunes or Barrier Beaches; and
 - ii) Comply with the requirements of 310 CMR 10.30(6) and (7) when said bank is significant to storm damage prevention and flood control because it is a vertical buffer to storm waters.

MA GP 14: Temporary Construction, Access, and Dewatering

Temporary construction, access, including construction mats, and/or dewatering associated with an activity exempt under M.G.L. c. 131, § 40 is not certified by this WQC and shall file an individual WQC pursuant to 314 CMR 9.00.

MA GP 19: Survey Activities

The mouth of the Merrimack River is located identified by the MADEP Mouth of River maps at: <http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-maps-mouth-of-coastal-river.html>

MA GP 20: Agricultural Activities

This WQC certifies the Agricultural Activities under the SV and PCN thresholds subject to the following conditions:

- a) The activity complies with 314 CMR 9.03(4) - Activities not requiring an application, and constitutes normal maintenance or improvement of Land in Agricultural or Aquacultural Use, exempt from M.G.L. c. 131, § 40 Wetlands Protection Act, as defined in 310 CMR 10.04;
- b) The activity is not subject to 314 CMR 9.04 (10) - Agricultural Limited Projects not exempt under M.G.L. c. 131 § 40; and
- c) The activity is not eligible for SV, and does not require an IP, for any work in the Connecticut River from the MA/CT border to the Turners Falls Dam, the Merrimac River to the Essex Dam, or the Taunton River

MA GP 22: Aquaculture

This WQC certifies the MA GP for Aquaculture activities under the SV and PCN thresholds, if a permittee meets the criteria stated within this activity-specific MA GP and meets the following conditions:

- a) The activity complies with 314 CMR 9.03(4) - Activities not requiring an application, and constitutes normal maintenance or improvement of Land in Agricultural or Aquacultural Use, exempt from M.G.L. c. 131, § 40 Wetlands Protection Act, as defined in 310 CMR 10.04; and
- b) The activity is not subject to 314 CMR 9.04 (10) - Agricultural Limited Projects not exempt under M.G.L. c. 131 § 40.

MA GP 23: Habitat Restoration, Establishment and Enhancement

- 1. The activity meets the definition of an Ecological Restoration Project at 314 CMR 9.02 and complies with the provisions of 314 CMR 9.03(8).
- 2. This WQC is only applicable to activities that meet the SV threshold for this MA GP if the activity is not subject to 314 CMR 9.04(12) - Dredging 100 Cubic Yards or More.

C. General Terms and Conditions

The activities authorized by this WQC are subject to the following terms and conditions:

- 1. This WQC shall be valid until such time as the Department of the Army, General Permits for Massachusetts expire or are modified, suspended, revoked or reissued.
- 2. The Commonwealth of Massachusetts reserves the right to amend, modify, suspend, revoke or reissue this WQC if the MA GPs are amended, modified, suspended, revoked or reissued.

3. The activities authorized by this WQC shall be conducted in a manner that assures compliance with the anti-degradation provisions of the Massachusetts Surface Water Quality Standards at 314 CMR 4.00.
4. This WQC does not derogate from any present or future property rights or other rights or powers of the Commonwealth of Massachusetts, and does not convey property rights in real estate or material, or any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws and regulations pertinent to the property or activity affected hereby.
5. In accordance with 314 CMR 9.04(11), the Department may invoke discretionary authority to require an application for an individual WQC based on cumulative effects of multi-phased activities, cumulative effects of dredging, or from the discharge of dredged or fill material to bordering or isolated vegetated wetlands or land under water, or other impacts which may jeopardize water quality. The Department will issue a written notice of and statement of reasons for its determination to invoke this discretionary authority not later than ten business days after its receipt of a valid Order of Conditions issued pursuant to 310 CMR 10.00.
6. MassDEP reserves the right to inspect any project or activity conducted, permitted or otherwise authorized by this WQC and their impacts on Surface Waters, including wetlands, as defined at 314 CMR 4.02, at any time to monitor compliance with the Massachusetts Surface Water Quality Standards.
7. The permittee is responsible for compliance with the terms and conditions of this Certification. Failure to comply with the terms and conditions of this WQC is grounds for enforcement by MassDEP including, without limitation, the assessment of civil, administrative, or criminal penalties pursuant to M.G.L. c. 21, §§ 42 and 44, M.G.L. c. 21, §16A, 310 CMR 5.00, M.G.L. c. 131, § 40, 310 CMR 10.08, and 314 CMR 9.11 or other possible actions/penalties as authorized by the General Laws of the Commonwealth.
8. Stormwater discharges to Surface Waters including wetlands during the construction period must comply with the Commonwealth of Massachusetts Surface Water Quality Standards established for each of the affected areas in 314 CMR 4.00. If applicable, and prior to land disturbance of one acre or more, the permittee shall file a Stormwater Pollution Prevention Plan (SWPPP) required by the EPA National Pollution Discharge Elimination System (NPDES) Construction General Permit (CGP) and provide MassDEP a copy of the filed SWPPP.
9. Any activity authorized by this WQC shall not result in any increase in turbidity to Surface Waters including wetlands either during normal or significant rainfall events. Excessive turbidity in wetlands or flowing water within, or in the vicinity of the Project site shall be presumed to have unacceptable adverse impacts on Surface Waters including wetlands.

10. Refueling, washing, or other maintenance of vehicles and construction equipment, and storage of hazardous materials shall not take place within Surface Waters including wetlands.
11. Any fill used in Surface Waters including wetlands shall comply with all provisions of the Wetlands Protection Act (M.G.L. Ch. 131 sec. 40), Wetlands Protection Regulations (310 CMR 10.00), M.G.L. c. 21 E, and the regulations promulgated pursuant thereto at 310 CMR 40.0000. Without limitation, fill shall not contain any trash, refuse, rubbish or debris, including, but not limited to lumber, plaster, construction materials, wire, lath, paper, cardboard, pipe, tires, ashes, metal, plastic, motor vehicles, or parts of any of the foregoing, hazardous waste, hazardous materials, or oil.
12. The activities authorized herein shall not commence until the permittee has obtained final approval pursuant to Section 404 of the Federal Clean Water Act from the Army Corps of Engineers, as applicable.
13. Upon final stabilization of disturbed surfaces, all temporary erosion controls shall be removed and disposed of in a legal manner, and shall not be disposed of in Surface Waters including wetlands.
14. This WQC does not relax, vary or waive requirements under the Surface Water Discharge/NPDES Municipal Separate Storm Sewer System (MS4) General Permit and EPA issued NPDES Construction General Permit. In the event of a conflict between requirements of this WQC and the referenced general permits, the permittee shall follow the more stringent requirement.
15. This WQC does not relieve the permittee of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the permittee's project or activity as described in the permittee's previous submittals will require further notification to the Department.
16. The permittee shall obtain, if applicable, Federal Consistency Concurrence from the Massachusetts Office of Coastal Zone Management prior to the start of work and shall comply with the conditions stated therein.
17. The permittee shall comply with GCs 1-44 in Section IV of the MA GPs.

D. Notification of Appeal Rights

314 CMR 9.10(1) provides that the following persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required under 314 CMR 9.04:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;

- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; and
- d. any governmental body or private organization with a mandate to protect the environment, which has submitted written comments during the public comment period.

This WQC does not certify any activity that requires an application pursuant to 314 CMR 9.04.

Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10 and 310 CMR 1.01, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.06, along with a DEP Fee Transmittal Form, within twenty-one (21) days from the date of the Certification, and addressed to:

Case Administrator
Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, MA 02108.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection
One Winter Street, 5th Floor
Boston, MA 02108

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01 (6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- a. the 401 Certification Transmittal Number and DEP Wetland Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request and, if represented by counselor or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to the Certification, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Certification Regulations, 314 CMR 9.00,

- and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner, (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the Certification concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the Certification concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

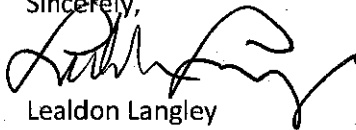
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
P.O. Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

If you have questions on this decision, please contact me at 617-574-6882 or Michael Stroman at 617-292-5526.

Sincerely,



Lealdon Langley
Director
Wetlands and Wastewater

Cc: Robert J DeSista, ACOE, Acting Chief, Regulatory Division
Barbara Newman, ACOE, Chief, Permits & Enforcement Branch (MA)
Gregory R. Penta, ACOE, Regulatory Division
Bruce Carlisle and Robert Boeri, Mass Office of Coastal Zone Management
MassDEP, BWR, WQC David Wong and Derek Standish
MassDEP, BWR, Wetland Program Staff
MassDEP, BWSC, Albe Simenas
MassDEP, OGC, Deidre Desmond
Jacqueline LeClair, Edward Reiner, Mark Kern, EPA



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

CENAE-R

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2718

SUBJECT: Revocation of the February 2015 General Permits for Massachusetts; Statement of Findings

1. PROPOSAL: The Corps New England District Regulatory Program proposes to revoke the February 4, 2015 General Permits (GPs) for Massachusetts before their February 4, 2020 expiration date and replace them with new Massachusetts GPs. The new GPs will be issued for five years with a start date in April 2018 and an expiration date five years later in 2023.
2. AUTHORITY: Title 33 CFR Part 325.7(e) provides the issuing official, in this case the District Engineer, with the authority to revoke regional permits for individual activities, categories of activities, or geographic areas.
3. EVALUATION: The Regulatory Division desires to improve the existing 2015 GPs for Massachusetts by making them more user-friendly and result in less Regulatory burden for the regulated public and the Corps while maintaining the same level of protection for the aquatic environment and the public interest. This could be accomplished by modifying the GPs, or revoking them and reissuing new GPs. Revoking the GPs and replacing them with updated and improved GPs, instead of modifying them, will result in less regulatory burden as it will give the public more time to commence activities or have activities under contract to commence before the GPs expire, which will be five years after their issuance date (GPs may not be issued for a period of more than five years). It will also allow the Corps and the public to use the GPs for five years before a decision is made to reissue new GPs, which involves a lengthy public notice, evaluation and issuance process.

The new GPs will retain the function and utility of the existing GPs and will not result in significant substantive changes to how activities in waters of the U.S. are regulated in Massachusetts. The GPs have been successful for the last 25 years and have the support of the regulated public.

On June 7, 2016 and September 15, 2017, the Regulatory Division published public notices announcing the proposed replacement of the 2015 GPs. These public notices gave opportunity for comment and to request a public hearing, and allowed the Corps to consider fully the views of affected parties. The Regulatory Division will issue a final

public notice to notify the public upon approval of this revocation action and issuance of the new GPs.

4. COMMENTS RECEIVED: The Regulatory Division received comments in response to the two public notices. The commenters either: a) generally supported the changes as they appeared to benefit permittees with language that condenses the verbiage, improves clarity and streamlines the document; or b) requested changes to improve the document. The comments were addressed and the GPs were modified as appropriate. There were no objections to replacing the 2015 GPs with revised GPs.

5. SUMMARY: I hereby use my authority provided at 33 CFR Part 325.7(e) to revoke the February 4, 2015 GPs for Massachusetts. Robert DeSista, Deputy Chief, Regulatory Division, has completed his review of the new April 2018 GPs and will sign the GPs after the 2015 GPs are revoked.

6. POC is Mr. Greg Penta, Regulatory Division, at (978) 318-8862.



WILLIAM M. CONDE
COL, EN
Commanding



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

March 16, 2018

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing the proposed reissuance of the Massachusetts General Permits to ensure consistency with CZM enforceable program policies. CZM received your completed federal consistency certification package on September 19, 2017 and a consistency determination would ordinarily be issued no later than November 19, 2017.

CZM's federal consistency review is ongoing. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. Our records indicate that the applications for the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certificate for the proposed reissuance has been filed, and that MassDEP's review has not been completed.

As discussed, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. In order for CZM to coordinate with MassDEP on the review and issuance of the 401 Water Quality Certificate to ensure that the proposed activity is consistent with the CZM's enforceable policies and to allow time for the Corps to produce a final draft, we propose an extension of the review period until March 23, 2018. CZM will need the requested information prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than March 23, 2018, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Boeri". The signature is fluid and cursive, with the first name "Robert" being more prominent.

Robert Boeri
Project Review Coordinator

RLB
CZM#17478

Agreed to by Applicant _____

cc: Greg Penta, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

January 30, 2018

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing the proposed reissuance of the Massachusetts General Permits to ensure consistency with CZM enforceable program policies. CZM received your completed federal consistency certification package on September 19, 2017 and a consistency determination would ordinarily be issued no later than November 19, 2017.

CZM's federal consistency review is ongoing. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. Our records indicate that the applications for the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certificate for the proposed reissuance has been filed, and that MassDEP's review has not been completed.

As discussed, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. CZM and the Corps previously agreed to an extension of the review until January 31, 2018. In order for CZM to coordinate with MassDEP on the review and issuance of the 401 Water Quality Certificate to ensure that the proposed activity is consistent with the CZM's enforceable policies and to allow time for the Corps to produce a final draft, we propose a fourth extension of the review period until February 14, 2018. CZM will need the requested information prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than February 14, 2018, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Boeri". The signature is fluid and cursive, with the first name "Robert" and last name "Boeri" clearly distinguishable.

Robert Boeri
Project Review Coordinator

RLB
CZM#17478

Agreed to by Applicant _____

cc: Greg Penta, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

January 19, 2018

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing the proposed reissuance of the Massachusetts General Permits to ensure consistency with CZM enforceable program policies. CZM received your completed federal consistency certification package on September 19, 2017 and a consistency determination would ordinarily be issued no later than November 19, 2017.

CZM's federal consistency review is ongoing. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. Our records indicate that the applications for the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certificate for the proposed reissuance has been filed, and that MassDEP's review has not been completed.

As discussed, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. CZM and the Corps previously agreed to an extension of the review until January 19, 2018. In order for CZM to coordinate with MassDEP on the review and issuance of the 401 Water Quality Certificate to ensure that the proposed activity is consistent with the CZM's enforceable policies and to allow time for the Corps to produce a final draft, we propose a third extension of the review period until January 31, 2018. CZM will need the requested information prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than January 31, 2018, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Boeri". The signature is fluid and cursive, with the first name "Robert" being more prominent.

Robert Boeri
Project Review Coordinator

RLB
CZM#17478

Agreed to by Applicant _____

cc: Greg Penta, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

December 8, 2017

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing the proposed reissuance of the Massachusetts General Permits to ensure consistency with CZM enforceable program policies. CZM received your completed federal consistency certification package on September 19, 2017 and a consistency determination would ordinarily be issued no later than November 19, 2017.

CZM's federal consistency review is ongoing. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. Our records indicate that the applications for the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certificate for the proposed reissuance has been filed, and that MassDEP's review has not been completed. In addition, CZM has not received the final draft of the proposed permit that contains changes based on comments received by the Corps.

As discussed, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. CZM and the Corps previously agreed to an extension of the review until December 19, 2017. In order for CZM to coordinate with MassDEP on the review and issuance of the 401 Water Quality Certificate to ensure that the proposed activity is consistent with the CZM's enforceable policies and to allow time for the Corps to produce a final draft, we propose a second extension of the review period until January 19, 2018. CZM will need the requested information prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than January 19, 2018, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Boeri". The signature is fluid and cursive, with the first name "Robert" and last name "Boeri" clearly distinguishable.

Robert Boeri
Project Review Coordinator

RLB
CZM#17478

Agreed to by Applicant _____

cc: Greg Penta Newman, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

November 15, 2017

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) is currently reviewing the proposed reissuance of the Massachusetts General Permits to ensure consistency with CZM enforceable program policies. CZM received your completed federal consistency certification package on September 19, 2017 and a consistency determination would ordinarily be issued no later than November 19, 2017.

CZM's federal consistency review is ongoing. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. Our records indicate that the applications for the Massachusetts Department of Environmental Protection (MassDEP) 401 Water Quality Certificate for the proposed reissuance has been filed, and that MassDEP's review has not been completed.

As discussed, the Coastal Zone Management Act Federal Consistency Regulations at 15 CFR 930.41(b) allow for an extension in the 60 day review period, if mutually agreed upon by both the federal agency and the state agency. In order for CZM to coordinate with MassDEP on the review and issuance of the 401 Water Quality Certificate to ensure that the proposed activity is consistent with the CZM's enforceable policies, we propose an extension of the review period until December 19, 2017. CZM will need the requested information prior to the expiration of the extension period. If the additional information necessary for CZM to issue a determination is provided to us earlier than December 19, 2017, CZM may issue the determination prior to the end date of the extension. In the event that all the necessary information has not been received within the review schedule noted above, CZM may contact you to issue an additional extension with dates to be determined. Please indicate your agreement to this schedule by signing below and returning this letter to my attention.


CHARLES D. BAKER GOVERNOR **KARYN E. POLITO** LIEUTENANT GOVERNOR **MATTHEW A. BEATON** SECRETARY **BRUCE K. CARLISLE** DIRECTOR

www.mass.gov/czm



If you have questions about the federal consistency review process, please contact me at the above address or (617) 626-1050.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert L. Boeri". The signature is fluid and cursive, with the first name "Robert" being more prominent.

Robert Boeri
Project Review Coordinator

RLB
CZM#17478

Agreed to by Applicant _____

cc: Greg Penta Newman, USACE
Lealdon Langley, MassDEP
Mike Stroman, MassDEP



THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

OFFICE OF COASTAL ZONE MANAGEMENT

251 Causeway Street, Suite 800, Boston, MA 02114-2136

(617) 626-1200 FAX: (617) 626-1240

September 26, 2017

Barbara Newman
Department of the Army
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Re: CZM Federal Consistency Review of General Permits for the Commonwealth of Massachusetts; Statewide.

Dear Ms. Newman:

The Massachusetts Office of Coastal Zone Management (CZM) received your consistency certification and required necessary data and information for the proposed reissuance of the Massachusetts General Permits. The purpose of this letter is to provide you with public notice, scheduling, and other procedural requirements pursuant to National Oceanic and Atmospheric Administration's (NOAA) Coastal Zone Management Act (CZMA) regulations (15 CFR 923 *et seq.*), NOAA's Federal Consistency Regulations (15 CFR 930 *et seq.*), and CZM's Coastal Zone Management Program regulations (301 CMR 20 *et seq.*).

CZM will publish a notice that this proposed project is undergoing federal consistency review in the next edition of the *Environmental Monitor*, October 10, 2017. The publication date of that issue of the *Monitor* will commence a 21-day public comment period. Enclosed please find a copy of the schedule that we will follow during our review. CZM must issue our consistency decision within sixty (60) days (extendable with your concurrence) of commencement of our review, and we will make every effort to ensure our review is as expeditious as possible. As a networked program, the authorities and expertise of other state agencies are integrated and coordinated in CZM's review of projects to ensure compliance with the policies of our approved coastal program. Because consistency with CZM's enforceable policies cannot be achieved without compliance with their underlying state authorities, CZM will generally not issue a consistency decision until our networked agencies have completed their reviews of license and permits applications identified as necessary data and information. To keep our review timely, we recommend that you forward copies of licenses, permits, or other authorizations to CZM as you receive them.

Pursuant to the CZMA and NOAA's regulations, a federal agency action cannot commence unless the federal permitting agency receives a consistency concurrence letter from CZM for the proposed project, or, if CZM objects and the project proponent appeals CZM's objection to the U.S. Secretary of Commerce and the Secretary overrides CZM's objection.



Further communications with this Office regarding the technical aspects of the above-referenced project should be directed to Bob Boeri at 617-626-1050 who will be conducting the federal consistency review of this project for CZM.

Sincerely,



Robert L. Boeri
Project Review Coordinator

RLB/pb
Enclosure
CZM#17478

CZM Federal Consistency Review Schedule
For a Federal Agency Activity*

Review Steps

1. *Document Receipt*
 - (a) Received consistency certification on September 19, 2017

2. *Public Notice*
 - (a) Notice of the initiation of this federal consistency review will appear in the next edition of the MEPA *Monitor* which will appear on or about October 10, 2017
 - (b) Publication in the *Monitor* begins a 21-day public comment period which will close on or about October 31, 2017

3. CZM must issue its consistency decision within 60 days of commencement of our review unless granted an extension by the federal project proponent. The review period closes and a consistency decision will be issued no later than November 19, 2017



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

September 15, 2017

Regulatory Division
File No. NAE-2016-00599

Mr. Robert L. Boeri
MA Office of Coastal Zone Management
251 Causeway St.
Suite 800
Boston, Massachusetts 02114-2136

Dear Mr. Boeri:

This letter is in reference to the proposed reissuance of the Massachusetts General Permits (MA GPs). As you're aware, we've been working together to reissue these GPs and we appreciate your time and effort in this endeavor.

The existing MA GPs, which were issued on February 4, 2015, expire on February 4, 2020. Although they expire in 2020, we're proposing to reissue the MA GPs for five years with a new start date in 2017 and an expiration date five years later in 2022. We previously published a public notice and draft MA GPs on June 7, 2016, but we've made changes since then and we're again seeking comments. The public notices and the accompanying draft of the MA GPs are located at <http://www.nae.usace.army.mil/Missions/Regulatory/PublicNotices>.

We believe that the proposed MA GPs comply with and will be conducted in a manner that is consistent with the approved Massachusetts Coastal Zone Management (CZM) Program. Therefore, we request that your agency concur with this determination in accordance with Section 307 (c) of the Coastal Zone Management Act for projects regulated by the Massachusetts Office of Coastal Zone Management.

Our plan is to continue working on the MA GPs with our stakeholders and the public to ensure that it's user-friendly, compatible with the state program, and protective of resources while maintaining efficiency. At some point, we will provide the final draft document to your department so that you can make your preliminary determination. We will then submit the final document for you to make your official determination in writing. Shortly after that we will issue our final determination on the MA GPs.

Please contact Mr. Greg Penta at (978) 318-8862 with any questions. Thank you for your assistance in this matter.

Sincerely,

A handwritten signature in cursive script, reading "Barbara Newman", is written over a horizontal line.

Barbara Newman
Chief, Permits and Enforcement Branch
Regulatory Division



**US Army Corps
of Engineers**®
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

Comment Period Begins: September 15, 2017
Comment Period Ends: October 16, 2017
File Number: NAE-2016-00599
In Reply Refer To: Greg Penta
Phone: (978) 318-8862
E-mail: gregory.r.penta@usace.army.mil

30-DAY PUBLIC NOTICE

PROPOSED REPLACEMENT AND REVISION OF THE DEPARTMENT OF THE ARMY GENERAL PERMITS FOR THE COMMONWEALTH OF MASSACHUSETTS

The New England District, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751, proposes to replace the state-wide General Permits for the Commonwealth of Massachusetts (MA GPs) pursuant to 33 CFR Part 325.5(c)(1) with revised MA GPs. The revised MA GPs would continue to authorize activities subject to the Corps jurisdiction in waters of the U.S. within the boundaries of, and off the coast of the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands. The revised MA GPs would continue the expedited review process for activities in the Corps jurisdiction pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research and Sanctuaries Act. This public notice is being issued in accordance with 33 CFR 325.3(b) to coordinate reissuance of the GPs with Federal and State agencies and the public. The revised DRAFT MA GPs on which we are seeking comments are attached to this public notice.

The existing MA GPs, which were issued on February 4, 2015, expire on February 4, 2020. Although they expire in 2020, we are proposing to reissue the MA GPs for five years with a new start date in 2017 and an expiration date five years later in 2022. We previously published a public notice and draft MA GPs on June 7, 2016, but we have made changes since then and we are again seeking comments.

The existing MA GPs and their procedures will remain in effect until the effective date of the new MA GPs. Authorizations issued by the Corps under the existing MA GPs, prior to the effective date of the new MA GPs, will remain authorized until the original expiration date (February 4, 2020). Permittees who received written authorization under the existing MA GPs would not be required to re-apply under the new MA GPs before February 4, 2020 unless the project proposal is modified to alter the authorized impacts to waters of the United States.

Noteworthy proposed changes since the February 4, 2015 MA GPs

1. Format: The existing MA GPs were derived from the formerly proposed New England GPs. The New England GPs placed the GPs and general conditions at the front of the document, and state-specific terms and conditions in an appendix. The proposed MA GPs place terms and conditions unique to Massachusetts with the GPs and general conditions where appropriate.

2. Non-tidal SAS. Thresholds now exist in several GPs that require a preconstruction notification (PCN) or individual permit for impacts to non-tidal SAS (consisting of riffle and pool complexes or vegetated shallows).
3. Temporary fill. Several GPs now allow temporary fill, including unlimited fill for construction mats, provided that impacts are avoided and minimized. Time limits for temporary fill were moved from GP 14 to General Condition 14(a).
4. Endangered species. Several GPs now limit work in critical habitat for endangered species, specifically Atlantic sturgeon, shortnose sturgeon and right whales. Also, per General Condition 10(b), Endangered Species, project proponents must check the provided USFWS website and submit a PCN if any listed species or critical habitat may be impacted. However, General Condition 10(b) now proposes self-verification eligibility for certain activities affecting northern long-eared bats, roseate terns, piping plovers and red knots.
5. General Permit 2, Moorings. New or relocated moorings placed within or impacting tidal vegetated shallows are no longer eligible for self-verification (i.e., require a PCN). However, existing, authorized moorings converted from traditional moorings to low impact mooring technology and/or helical anchors are eligible for self-verification. Moorings in all Federal navigation projects (anchorage, channels and turning basins) now require at least a PCN.
6. General Permit 3, Structures. In order to be self-verification eligible in the current and draft GP 3, piers must currently be ≤ 4 feet wide and ≥ 4 feet above the substrate to reduce salt marsh impacts. However, in light of a 2017 study titled, “An Experimental Evaluation of Dock Shading Impacts on Salt Marsh Vegetation in a New England Estuary”, we’re considering a minimum 1.5:1 height to width ratio in order for piers to be self-verification eligible. This is not discussed in the GP 3 draft. In addition, this is not in the GP 3 draft, but we’re requesting comments on a proposal to allow self-verification eligibility for reconfiguration of existing structures: a) at existing authorized boating facilities; or b) that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc. To be self-verification eligible, the structures would not be able to extend beyond the existing perimeter of the facility or encroach into special aquatic sites.
7. General Permit 5, Dredging. The proposed changes include a PCN requirement for dredging in right whale critical habitat, new limits for improvement dredging, and new time of year restrictions. Also, the MA GPs currently require an individual permit for “Maintenance dredging with $> \frac{1}{2}$ acre of impacts to tidal SAS or intertidal areas”, but we’re proposing to increase this limit to “Maintenance or improvement dredging and/or disposal with > 1 acre of impacts to SAS”.
8. Stream crossings. These are now eligible for authorization under GPs 8 – 10 instead of being limited to GP 10. Conditions for stream crossings are found throughout the General Conditions section and there is now a general condition titled, “19. Stream and Wetland Crossings”. This is not in the MA GPs draft, but to be self-verification eligible we’re considering a requirement that new or replacement of stream crossings in non-tidal streams consist of spans. Spans are strongly preferred as they avoid or minimize disruption to the streambed, and avoid entire streambed reconstruction and maintenance inside of culverts or pipe arches, which may be difficult in smaller structures. The proposed GPs already require a PCN for stream crossings in tidal streams.
9. General Permit 22, Aquaculture. Several aquaculture activities now require a PCN due to endangered species.

10. Previously Authorized Activities. We're proposing to delete the GP titled "Previously Authorized Activities".
11. General Condition 11, Pile Driving and Removal. We're proposing PCN requirements for certain pile driving activities to protect endangered species.
12. General Condition 16, Soil Erosion and Sediment Controls. We added time of year restrictions and conditions that will help to reduce turbidity and sedimentation, protect upstream fish passage and winter flounder spawning and rearing habitat.
13. General Condition 23, Vernal Pools. We modified this condition.
14. General Condition 24, Coral Reefs. We added this condition to protect coral reefs.
15. General Condition 28, Stormwater Treatment or Detention Systems. Stormwater treatment or detention systems in waters of the U.S are currently not authorized under GP 8. This proposed general condition would ensure that an individual permit is required for these systems for all GPs.
16. General Condition 29, Tide Gates. Currently there are terms for tide gate maintenance in GP 1 and they aren't authorized under GP 8. This proposed general condition would ensure that an individual permit is required for new tide gates conveying water between waters of the U.S.
17. Section V, Self-Verification Notification Form. This form contains changes, including a requirement for project plans drawn to scale and not larger than 11" x 17".

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires all federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency, that may adversely affect Essential Fish Habitat (EFH). The Corps has and continues to consult with NMFS on activities permitted under the GPs. For certain activities that will likely result in no more than minimal adverse effects to EFH individually and cumulatively, the Corps is seeking a statement of General Concurrence from NMFS in accordance with the requirements of 50 CFR 600.920(f).

National Historic Preservation Act

Based on his initial review, the District Engineer has determined that the proposed activities authorized under these GPs may impact properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. Additional review and consultation to fulfil requirements under Section 106 of the National Historic Preservation Act of 1966, as amended, will occur as part of the permit review process with the tribal historic preservation officer(s), State Historic Preservation Officer, and/or the Board of Underwater Archaeological Resources as applicable.

Endangered Species

The New England District, Army Corps of Engineers has reviewed the list of species protected under the Endangered Species Act of 1973, as amended, which occur throughout Massachusetts. It is our preliminary determination that the proposed activities that are eligible for self-verification under these GPs are not likely to adversely affect any Federally-listed endangered or threatened species or their designated critical habitat. We are consulting with the NMFS and U.S. Fish and Wildlife Service (USFWS) on this determination. The Corps will coordinate activities that require a preconstruction notification and are likely to adversely affect any Federally-listed endangered or threatened species or their designated critical habitat with the NMFS or the U.S. Fish and Wildlife Service.

Section 401 Water Quality Certification (WQC)

Section 401 of the Clean Water Act requires any applicant for a Federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification from the state in which the discharge originates that the discharge will comply with the applicable effluent limitations and water quality standards. The Corps is therefore requesting that the Massachusetts Department of Environmental Protection (MassDEP) determine whether to issue, condition, deny or waive Section 401 WQC for these GPs. The MassDEP DRAFT 401 Water Quality Certification for the Department of the Army General Permit for Massachusetts will be posted at: <http://www.mass.gov/eea/agencies/massdep/news/events/>. Please send comments regarding this WQC by the end of the comment period noted above to: Mr. Lealdon Langley, MassDEP, Bureau of Resource Protection, Wetlands Regulation Program, One Winter Street, Boston, MA 02108; or lealdon.langley@state.ma.us.

Coastal Zone Management (CZM) Consistency

Section 307(c) of the Coastal Zone Management Act of 1972, as amended, requires Federal agencies conducting activities, including development projects directly affecting a state's coastal zone, to comply to the maximum extent practicable with an approved state coastal zone management program. It also requires the Corps to provide a consistency determination and receive state concurrence prior to the issuance, reissuance, or expansion of activities authorized by a GP for activities within a state with a Federally-approved CZM Program when these activities will affect land or water uses or natural resources of the state's coastal zone.

Prior to the issuance of these MA GPs, the Corps will seek concurrence from the Massachusetts Office of CZM on our determination that self-verification eligible activities in the coastal zone are consistent to the maximum extent practicable with the enforceable policies of the Massachusetts CZM Program and do not require any additional MA CZM Federal consistency review. For PCN activities in the coastal zone, authorization under these GPs would become valid only after MA CZM determines that the activity is consistent with the MA CZM program. The Corps will typically coordinate review with MA CZM and then notify applicants if MA CZM determines that the activity is consistent with the MA CZM program or if an individual consistency concurrence is required.

The MA CZM will solicit comments from the public in a separate notice. Please send comments regarding CZM consistency to Mr. Bob Boeri, 251 Causeway Street, Suite 800, Boston, MA 02114-2136; or robert.boeri@state.ma.us.

Decision

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion; recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

Comments

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Greg Penta at (978) 318-8862.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.



Barbara Newman
Chief, Permits and Enforcement Branch
Regulatory Division

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____
ADDRESS: _____
PHONE: _____

DRAFT
Department of the Army
General Permits for the Commonwealth of Massachusetts

The New England District of the U.S. Army Corps of Engineers (Corps) hereby issues General Permits (GPs) for activities subject to Corps jurisdiction in waters of the U.S., including navigable waters, within the boundaries of, and off the coast of, the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands. These GPs are issued in accordance with Corps regulations at 33 CFR Parts 320-332 (see 33 CFR 325.2(e)(2)). The GPs will protect the aquatic environment and the public interest while effectively authorizing activities that have no more than minimal individual and cumulative adverse environmental effects.

This GP document contains the following sections:

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III. Eligible Activities	3
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I. GENERAL CRITERIA

1. See Section II to determine if the activity requires Corps authorization, and [Sections III](#) and [IV](#) to determine if the activity may be eligible for authorization under the GPs, specifically whether it is eligible for self-verification (SV) or a pre-construction notification (PCN) is required.
2. In order for activities to qualify for these GPs, they must comply with all applicable GP eligibility criteria and general conditions in [Section IV](#).
3. Project proponents are encouraged to contact the Corps with questions at any time. Pre-application meetings (see 33 CFR 325.1(b)) are encouraged to facilitate early review and help streamline the permit process by alerting the applicant to potential obstacles that may arise during the evaluation (e.g., historic properties general condition (GC) 7 and endangered species (GC 10)).
4. Regulated activities that are not authorized by these GPs require individual permits (IPs; see 33 CFR 325.5(b)) and proponents must submit an application directly to the Corps. (Projects that require an IP will also require an individual 401 Water Quality Certification from the MA Department of Environmental Protection and Coastal Zone Management individual consistency concurrence from the MA Office of Coastal Zone Management.) These GPs do not affect the Corps IP review process or activities exempt from Corps permit requirements. The Corps retains discretionary authority on a case-by-case basis to elevate a SV to PCN or IP, or a PCN to IP based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). Whenever the Corps notifies an applicant that a PCN or IP is required, no work in Corps jurisdiction may be conducted until the Corps issues the required authorization in writing indicating that work may proceed.

5. How to Obtain/Apply for Authorization

a. Self-verification (Self-Verification Notification Form (SVNF) required):

The project proponent may proceed with activities authorized under these GPs that are eligible for SV without submitting a PCN to the Corps provided the prospective permittee has:

i. Verified that the activity will comply with all applicable terms and conditions of the GPs and ensured that a PCN is not required. Consultation with the Corps and/or other relevant Federal and State agencies may be necessary to ensure compliance with the applicable GCs in [Section IV](#) and related Federal laws such as 33 U.S.C. 408 (GC 5), the National Historic Preservation Act (GC 7), the Endangered Species Act (GC 10) and the Wild and Scenic Rivers Act (GC 8). The Corps can confirm that SV eligible activities are authorized under the GPs upon request.

ii. Submitted the SVNF ([Section V](#)) to the Corps unless otherwise specified. By submitting the SVNF, you are self-verifying that your project meets the terms and conditions of the applicable GPs.

b. Pre-construction Notification (application required):

i. For activities that do not qualify for SV or when it is stated that a PCN is required, the permittee must submit a PCN to obtain written verification from the Corps before starting work in Corps jurisdiction. Applicants must include the information in [Section VI](#) to ensure the application is complete and to expedite project review. If the Corps determines that the PCN activity qualifies for authorization under these GPs, the Corps will send a verification letter to the applicant. If the Corps determines that the activity does not qualify for authorization under these GPs, or that additional information is required, the Corps will notify the applicant.

ii. Emergency Situations: Contact the Corps in the event of an emergency situation for information on the application and approval process. Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under the GPs; otherwise an IP is required. The Corps will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

II. JURISDICTION/AUTHORITIES TO ISSUE PERMITS

1. The following regulated activities require authorization under the [Corps Regulatory Program](#):

a. The construction of any structure in, over or under any navigable water of the United States (U.S.), the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The Corps regulates these activities under Section (§) 10 of the Rivers and Harbors Act of 1899. See 33 CFR 322;

b. The discharge of dredged or fill material into waters of the U.S. The Corps regulates these activities under §404 of the Clean Water Act (CWA). See 33 CFR 323; and

c. The transportation of dredged material for the purpose of disposal in the ocean. The Corps regulates these activities under §103 of the Marine Protection, Research and Sanctuaries Act. See 33 CFR 324.

2. [Related laws](#): 33 CFR 320.3 includes a list of related laws, including: §401 and §402 of the CWA, §307(c) of the Coastal Zone Management Act of 1972, the National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, the

Magnuson-Stevens Fishery Conservation and Management Act, and §7(a) of the Wild and Scenic Rivers Act.

III. ELIGIBLE ACTIVITIES

The terms “navigable waters of the U.S.,” “waters of the U.S.,” “non-tidal waters of the U.S.,” and “tidal waters of the U.S.” are used frequently throughout this document and it is important that the reader understand these terms, which are defined in [Section VII](#).

The area limits stated in GPs 1, 8-14, 16-20 and 23 apply when there is a discharge of dredged or fill material or a discharge associated with excavation in waters of the U.S. Unless otherwise stated, the total temporary and permanent impact area is used to determine if a single and complete project is eligible for SV or requires a PCN. An IP is required if the total permanent impact area exceeds the PCN limit.

Permanent impacts mean waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. Temporary impacts include, but are not limited to, waters of the U.S. that are temporarily filled, flooded, excavated, or drained because of the regulated activity. Temporary impacts are usually associated with construction activities and often involve the placement of cofferdams and construction mats. These fills are removed when construction is completed. Pilings and associated structures do not ordinarily constitute a discharge of fill material. Impacts resulting from activities eligible for exemptions under §404(f) of the CWA are not considered when calculating the impact area.

General Permits

1. Maintenance
2. Moorings
3. Structures in Navigable Waters of the U.S.
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. U.S. Coast Guard Approved Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects and Stream Crossings
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Temporary Construction, Access, and Dewatering
15. Reshaping Existing Drainage Ditches, New Ditches, and Mosquito Management
16. Response Operations for Oil and Hazardous Substances
17. Cleanup of Hazardous and Toxic Waste
18. Scientific Measurement Devices
19. Survey Activities
20. Agricultural Activities
21. Fish and Wildlife Harvesting and Attraction Devices and Activities
22. Aquaculture Activities
23. Aquatic Habitat Restoration, Establishment and Enhancement Activities

GP 1. Maintenance (Authorities: §§10 and 404) Authorized are: (a) The repair, rehabilitation, or replacement of any previously authorized, [currently serviceable](#) structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified in the original permit or the most recently authorized modification (see Note 1). Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are also eligible. This GP also authorizes the removal of previously authorized structures or fills. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project. This also authorizes the removal of accumulated sediment and debris within, and in the immediate vicinity of, the structure or fill (see Note 2). This also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided it is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, the Corps may waive the two-year limit in writing provided the permittee can demonstrate funding, contract, or other similar delays. (b) The removal of accumulated sediments and debris outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) (see Note 2); and (c) Temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the maintenance activity (see Note 2).

Not authorized under GP 1 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S.; >1/2 acre in tidal waters of the U.S.; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Stream crossing modifications (including sliplining), replacements or extensions (see GPs 8 - 10); (d) New stream channelization or stream relocation projects (e.g., those in response to storm or flood events); or (e) Maintenance dredging, beach nourishment or beach restoration (see GP 5).

Self-Verification Eligible ¹	PCN Required ¹
Activities that do not require a PCN or an IP.	<ol style="list-style-type: none"> 1. Minor deviations result in expansions (e.g., structures) or new permanent or temporary impacts (i.e., outside of the previously authorized footprint) in waters of the U.S. This includes bank or shoreline stabilization in front of existing structures; or 2. For authorized activity (b) above, the removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend >200 feet in any direction from the structure; and 3. Impacts occur in SAS other than non-tidal wetlands; or 4. Dam and flood control or levee repair, rehabilitation, or replacement involves: <ol style="list-style-type: none"> (a) Change in the flood elevation or permanent water surface elevation of the impoundment; or (b) Drawdown of impoundment for construction exceeding one growing season; or (c) Any modification that changes the character, scope, or size of the original fill design; or 5. The discharge of more than <i>de minimis</i> (i.e., inconsequential) quantities of accumulated bottom sediment occur from or through a dam into downstream waters (see Note 3); or 6. Work on tide gates without a Corps-approved operation and maintenance plan or changes affecting the hydraulic regime; or 7. Repair or replacement of currently-serviceable tide gates through the use of duckbill, flap gate or manual check valves unless installed on existing outfall discharge pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S.; or 8. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent

	or temporary impacts unless they are performed: (a) <5 feet waterward from the ordinary high water mark (OHW) or high tide line (HTL) and in the dry ; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 9. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.
<p>Notes:</p> <p>1. This authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2). Prior Corps permits may have included authorization to maintain the activity, in which case authorization under this GP is not necessary.</p> <p>2. GCs 15-18 are particularly relevant.</p> <p>3. See Corps Reg. Guidance Letter No. 05-04 for more info.</p>	

<p>GP 2. Moorings (Authority: §10) New moorings and mooring fields; the relocation of previously authorized¹ moorings; expansions, boundary reconfigurations or modifications of previously authorized mooring fields; and maintenance and replacement of moorings.</p> <p><u>Not authorized under GP 2 (IP required):</u> (a) Moorings or mooring fields converted to or associated with a new boating facility²; (b) Moorings in a Corps Federal anchorage that are classified as a boating facility³ except municipal mooring fields; or (c) Moorings in a Corps Federal channel.</p>	
Self-Verification Eligible	PCN Required
<p>1. New or relocated moorings that are:</p> <ul style="list-style-type: none"> a. Authorized by a local harbormaster/municipality under MGL Chapter 91 §10A; and b. Single boat, single-point and non-commercial; and c. Not associated with a boating facility³; and d. Neither placed within nor impacting tidal vegetated shallows (e.g., eelgrass); and e. Attached to boats that do not contact the substrate during any tidal cycle; and f. Not located within a Corps Federal navigation project or its buffer zone. <p>2. Existing, authorized moorings are converted from traditional moorings to low impact mooring technology (see note below) and/or helical anchors; and</p> <p>3. Maintenance and replacement of authorized² moorings.</p>	<p>1. New mooring fields; or expansions, boundary reconfigurations or modifications of existing, authorized mooring fields; or</p> <p>2. Moorings that are not SV eligible and do not require an IP.</p>
<p>Note: Low impact mooring technology prevents any part of the tackle from dragging on the bottom during the tidal cycle.</p>	

¹ For all GPs, “authorized” means authorized by the Corps, not a state or municipality, unless otherwise stated. A SVNf was not required before January 21, 2010.

² Boating facilities provide for a fee, rent or sell mooring or docking space, such as marinas, yacht clubs, boat clubs, boat yards, dockominiums, town facilities, land/home owners associations, etc. Not classified as boating facilities are piers shared between two abutting properties, or municipal moorings or municipal mooring fields that charge an equitable user fee based only on the actual costs incurred.

GP 3. Structures in Navigable Waters of the U.S. (Authority: §10) New, expansions, reconfigurations or modifications of structures in navigable waters of the U.S. including pile and pole-supported piers, floats, stairs, shore out hauls, and boat and float lifts.

Not authorized under GP 3 (IP required): (a) Structures associated with a new boating facility; (b) Structures in a Corps Federal anchorage or channel; (c) Discharges of dredged or fill material; or (d) Artificial reefs

Self-Verification Eligible	PCN Required
<p>1. Private, non-commercial piers, floats and lifts that meet the following:</p> <ul style="list-style-type: none"> a. Piers span ≤ 75 feet over salt marsh and are ≤ 4 feet wide and ≥ 4 feet above the substrate (the height is measured from the marsh substrate to the bottom of the lowest longitudinal support); and b. Floats in tidal waters and non-tidal navigable waters of the U.S. are ≥ 18 inches above the substrate at any time; and d. Piers and floats in: (i) Tidal waters of the U.S. total ≤ 600 SF combined; and (ii) Non-tidal navigable waters of the U.S. total ≤ 300 SF combined; and e. Piers, floats and lifts: (i) Are ≥ 25 feet from previously mapped or existing vegetated shallows, or riparian property line extensions; and (ii) Extend $\leq 25\%$ of the waterway width or ≤ 75 feet waterward from OHW in non-tidal navigable waters of the U.S. or mean high water (MHW). See Note 1; and <p>2. Fenders and similar structures.</p>	<p>1. Shore out hauls; or</p> <p>2. Expansions, modifications, or new reconfiguration zones at any authorized boating facility; or</p> <p>3. New, expansions, reconfigurations, reconfiguration zones, or modifications of structures that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc.; or</p> <p>4. Miscellaneous structures; or</p> <p>5. Structures that are not SV eligible and do not require an IP.</p>

Notes:

1. See <http://www.nae.usace.army.mil/missions/regulatory/useful-documents-forms-and-publications> >>

Structure Placement in Navigable Waterways.

2. GC 11, Pile Driving and Removal, is particularly relevant.

GP 4. Aids to Navigation and Temporary Recreational Structures (Authority: §10)

(a) The placement of aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR, chapter I, subchapter C, part 66; and (b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use. See GC 6.

Self-Verification Eligible	PCN Required
<p>1. Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG; and</p> <p>2. Temporary buoys, markers and similar structures that are: a) placed for recreational use during specific events and removed within 30 days after event; b) placed during winter events on ice and removed before spring thaw; c) authorized by the local harbormaster; and d) not located within a Corps Federal Navigation Project.</p>	<p>Activities that are not SV eligible.</p>

Note: A SVNf is not required for work authorized under SV #1 above.

GP 5. Dredging (Authority: §10; navigable waters of the U.S.), Disposal of Dredged Material (Authorities: §§10, 404 & 103; tidal waters of the U.S.), Beach Nourishment (Authorities: §§10 & 404; tidal and non-tidal waters of the U.S.), Rock Removal (Authority: §10, navigable waters of the U.S.) and Rock Relocation (Authorities: §§10 & 404; tidal and non-tidal waters of the U.S.) (a) New, maintenance and improvement dredging, including: (i) Return water from an upland contained dredged material disposal area; and (ii) Disposal of dredged material at an upland, confined aquatic disposal cell, beach nourishment, nearshore, designated open water or ocean water disposal site, provided the Corps finds the dredged material to be suitable for such disposal; and (b) Beach nourishment from upland sources.

Not authorized under GP 5 (IP required): (a) New dredging >½ acre; ≥10,000 CY; >1000 SF of impacts to intertidal areas, saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF of impacts to tidal vegetated shallows; (b) Maintenance or improvement dredging and/or disposal with >1 acre of impacts to SAS; (c) New dredging where the primary purpose is sand mining for beach nourishment; (d) Beach scraping; (e) Boulder removal and relocation for navigation >½ acre; or (f) Blasting.

Self-Verification Eligible	PCN Required
<p>1. Maintenance dredging of previously dredged areas, with upland disposal, provided:</p> <ul style="list-style-type: none"> a. Dredged area ≤½ acre; and b. Not located in right whale critical habitat (see Note 1), tidal waters of the U.S. from Mar 16 to Oct 31, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; and c. Not located in the Connecticut River from the MA/NH border to the Turners Falls Dam from Mar 15 to Nov 15, the Merrimack River from the MA/NH border to the Essex Dam from Mar 1 to Nov 15, the Charles River from the Watertown Dam to the Amelia Earhart Dam from Feb 15 to Nov 15, or tidal waters of the U.S. from Jan 15 to Oct 31. However, the TOY restriction(s) stated in Appendix B of the MA DMF Technical Report TR-47 (see Note 2) apply instead if they are provided for a specific waterbody and less restrictive. This is to protect EFH and other species; and d. No impacts to tidal SAS, intertidal areas, areas located within 100' of vegetated shallows, or areas containing shellfish (A PCN is required unless it is verified that minimal shellfish are present per the local shellfish constable or the MassGIS shellfish suitability maps (see Note 3); and e. No return water from upland disposal areas. <p>2. Boulder relocation ≤200 SF of impacts and no impacts to SAS.</p>	<p>1. Maintenance dredging where the primary purpose is sand mining for beach nourishment; or</p> <p>2. New dredging and associated disposal <1/2 acre or <10,000 cubic yards; or</p> <p>3. Improvement dredging; or</p> <p>4. Beach nourishment in waters of the U.S. not associated with dredging; or</p> <p>5. Activities that are not eligible for SV and do not require an IP.</p>

Notes:

1. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> right whale critical habitat. The approximate boundaries are from the MA/NH border to Chatham.
2. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> MA DMF Technical Report TR-47.
3. See www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> MassGIS shellfish suitability maps.
4. Compensatory mitigation is generally required for impacts to tidal SAS and intertidal areas resulting from new dredging.
5. Contact the Corps if a ten-year authorization to maintain an area is desired.

GP 6. U.S. Coast Guard Approved Bridges (Authorities: §404) Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under §9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a Surface Transportation and Uniform Relocation Assistance Act (STURRA) (144h) exemption do not constitute USCG authorization. See GC 5.

Not authorized under GP 6: Causeways and approach fills (see GP 10).

Self-Verification Eligible	PCN Required
Discharges of dredged or fill material incidental to the construction of bridges.	

GP 7. Bank and Shoreline Stabilization (Authorities: §§10 & 404) Bank and shoreline stabilization activities in waters of the U.S. necessary for erosion control or prevention, such as vegetative stabilization, sills, rip rap, revetment, gabion baskets, stream barbs, and bulkheads, or combinations of techniques (e.g., living shorelines), provided the activity meets all of the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.; and (c) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas).

Not authorized under GP 7 (IP required): (a) Bank stabilization >500 feet in total length including both stream banks unless the Corps waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse effects; (b) Stream channelization or relocation activities; or (c) Breakwaters, groins or jetties.

Self-Verification Eligible ¹	PCN Required ¹
<p>Activities in non-tidal waters involve:</p> <ul style="list-style-type: none"> a. ≤100 feet in length including both stream banks; or ≤100 feet in length on each side of the stream bank when necessary to protect transportation infrastructure; and b. ≤1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW; and c. The slope of the structure is more gradual than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams; and d. No impacts to SAS. 	<ul style="list-style-type: none"> 1. Activities in non-tidal waters involve: <ul style="list-style-type: none"> a. >100 feet to ≤500 feet in length including both stream banks; or >100 feet in total length on either side of the stream bank and ≤500 feet including both stream banks when necessary to protect transportation infrastructure; or b. >1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW; or c. The slope of the structure is steeper than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams; or d. Impacts to SAS; or 2. The activity is located in tidal waters; or 3. Bulkheads, seawalls or similar structures for maritime activities; or 4. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 5. Activities that are not eligible for SV and do not require an IP .

Note: See GP 1, PCN 1 for information on the replacement or maintenance of existing, currently serviceable structures.

GP 8. Residential, Commercial and Institutional Developments and Recreational Facilities

(Authorities: §404) Discharges of dredged or fill material into non-tidal waters of the U.S for the construction or expansion of: (a) Residences and residential subdivisions; (b) Residential, commercial and institutional building foundations and building pads and attendant features such as roads, parking lots, garages, yards, and utility lines; and (c) Recreational facilities.

Not authorized under GP 8 (IP required): (a) Permanent impacts in non-tidal waters of the U.S. that are >1 acre, or >1000 SF in riffle and pool complexes or vegetated shallows; (b) Work in tidal waters; or (c) Subsurface sewerage disposal systems in waters of the U.S. (see Note 1 below).

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. are: (a) >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. Stream and wetland crossings (see Note 2) that require a PCN per GC 19(b)-(e); or 3. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. Activities that are not SV eligible and do not require an IP.
Notes: 1. Stormwater conveyance components and non-porous, septic effluent pipes that transmit effluent to or between components may be eligible for authorization under GP 9. 2. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.	

GP 9. Utility Line Activities (Authorities: §§10 & 404) Activities required for: (a) The construction, maintenance, repair or removal of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines in tidal and non-tidal waters of the U.S.; (b) The construction, maintenance, or expansion of utility line substation facilities associated with a power line or utility line in non-tidal waters of the U.S.; and (c) The construction or maintenance of foundations for overhead utility line towers, poles, and anchors in tidal and non-tidal waters of the U.S. provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the U.S., provided the activity, in combination with all other activities included in one single and complete project, does not cause the permanent loss of greater than 1 acre of non-tidal waters of the U.S. Access roads used solely for construction of the utility line must be removed upon completion of the work (see GC 15).

Not authorized under GP 9 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters of the U.S.; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; or (c) New tide gates that do not meet SV 3 below.

Self-Verification Eligible ¹	PCN Required ¹
1. Cumulative permanent and temporary impacts for all single and complete projects associated with the overall project (see Note 2) in non-tidal waters of the U.S. total ≤5000 SF and are not located in vegetated shallows or riffle and pool complexes; and 2. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments. 3. New tide gates on outfall structures for pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S.	1. Cumulative permanent and temporary impacts for all single and complete projects associated with the overall project (see Note 2) in non-tidal waters of the U.S. that: (a) total >5000 SF; or (b) are located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal waters or in, over or under navigable waters of the U.S.; or 3. Access roads involving stream and wetland crossings (see Note 3) that require a PCN per GC 19(b)-(e); or 4. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 5. The utility line is placed within and runs parallel to or along a streambed; or 6. There is a permanent change in pre-construction contours in waters of the U.S.; or 7. Material resulting from trench excavation is temporarily sidecast into waters of the U.S. for >3 months (material must be placed such that it is not dispersed by currents or other forces); or 8. Activities that are not SV eligible and do not require an IP.

Notes:

1. A utility line is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, data, and telegraph messages, and radio and television communication. The term utility line does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
2. The PCN must describe the locations of the starting point, end point, and all proposed impacts to aquatic resources in between in order to assess the cumulative effects for the overall project.
3. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
4. Impacts resulting from mechanized pushing, dragging, or other similar activities that redeposit excavated soil material shall be figured into the area limit determination.

GP 10. Linear Transportation Projects and Stream Crossings (Authorities: §§10 & 404)

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways) and attendant features. Any stream channel modification is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. Access roads constructed above pre-construction contours and elevations in waters of the U.S. must be properly bridged or culverted to maintain surface flows.

Not authorized under GP 10 (IP required): (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters of the U.S.; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; (c) Non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars (see GP 8); or (d) Tide gates.

Self-Verification Eligible ¹	PCN Required ¹
Cumulative permanent and temporary impacts for all single and complete projects associated with the overall project (see Note 2) in non-tidal waters of the U.S. total ≤5000 SF and are not located in vegetated shallows or riffle and pool complexes.	<ol style="list-style-type: none"> 1. Cumulative permanent and temporary impacts in non-tidal waters of the U.S. for all single and complete projects associated with the overall project (see Note 2) that: (a) total >5000 SF; or (b) are located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal waters or in, over or under navigable waters of the U.S.; or 3. Stream and wetland crossings (see Note 3) that require a PCN per GC 19(b)-(e); or 4. Stream channelization, relocation, or loss of streambed (see Note 4) including impoundments, occur; or 5. Activities that are not eligible for SV and do not require an IP.

Notes:

1. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S. may be authorized under GP 6.
2. The PCN must describe the locations of the starting point, end point, and all proposed impacts to aquatic resources in between in order to assess the cumulative effects of the overall project.
3. Stream and wetland crossings include permanent and temporary crossings, including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
4. Loss of streambed does not require a PCN when: a) stream crossings are constructed in accordance with GC 19; or b) bridge piers or similar supports are used.

GP 11. Mining Activities (Authorities: §§10 and 404) Discharges of dredged or fill material into non-tidal waters of the U.S. for mining activities, except for coal mining and metallic mineral mining activities.

Not authorized under GP 11 (IP required): (a) Permanent impacts >1 acre in non-tidal waters of the U.S.; or (b) Activities in tidal waters of the U.S.

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes.	<ol style="list-style-type: none"> 1. Permanent and temporary impacts in non-tidal waters and wetlands that: (a) are >5000 SF; or (b) located in vegetated shallows or streams; or 2. The activity occurs in non-tidal navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundment, loss of streambed, or discharge of tailings into streams occurs; or 4. Activities that are not eligible for SV and do not require an IP.

GP 12. Boat Ramps and Marine Railways (Authorities: §§10 and 404) Activities required for the construction of boat ramps and marine railways.

Not authorized under GP 12 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters of the U.S.; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹; or

(c) dredging in navigable waters of the U.S. (see GP 5).

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes ¹ .	<ol style="list-style-type: none"> 1. Permanent and temporary impacts in non-tidal waters of the U.S. that: (a) are >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal or navigable waters of the U.S.; or 3. Boat ramps are located within 25 feet of property line extensions unless the properties are owned by the same owner. The Corps may require a letter of no objection from the abutter(s); or 4. Activities that are not eligible for SV and do not require an IP.

GP 13. Land and Water-Based Renewable Energy Generation Facilities (Authorities: §§10 and 404), and Hydropower Projects (Authority: §404) Structures and work in navigable waters of the U.S. and discharges of dredged or fill material into tidal and non-tidal waters of the U.S. for the construction, expansion, modification or removal of: (a) Land-based renewable energy production facilities, including attendant features; (b) Water-based wind or hydrokinetic renewable energy generation projects and their attendant features; and (c) Discharges of dredged or fill material associated with hydropower projects.

For (a) and (b) above, such facilities include water-based wind or hydrokinetic renewable energy generation projects and infrastructure to collect solar (concentrating solar power and photovoltaic), wind, biomass, or geothermal energy. Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable waters of the U.S.

Not authorized under GP 13 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters of the U.S.; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in vegetated shallows; or (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹.

Self-Verification Eligible ¹	PCN Required ¹
For land-based facilities, permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes.	<ol style="list-style-type: none"> 1. For land-based facilities, permanent and temporary impacts in non-tidal waters of the U.S. that : (a) are >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes¹; or 2. Water-based wind or hydrokinetic renewable energy generation projects, and hydropower projects; or 3. For all activities eligible for authorization under GP 13: a) The activity occurs in tidal waters or in, over or under navigable waters of the U.S.; or b) Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. Activities that are not eligible for SV and do not require an IP .

Note: Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 9.

GP 14. Temporary Construction, Access, and Dewatering (Authorities: §§10 and 404)

Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites that are not authorized under another GP activity.

Not authorized under GP 14 (IP required): (a) Permanent structures or impacts; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows (see exception in Note 2 below); (c) Use of cofferdams to dewater wetlands or other aquatic areas to change their use; (d) Temporary stream crossings (see GPs 8 - 10); (e) Structures or fill left in place after construction is completed.

Self-Verification Eligible	PCN Required
1. Impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes (see exception in Note 2); and 2. Impacts in tidal waters are ≤5000 SF but not in SAS (see Note 2); and 3. Structures in navigable waters with no impacts to tidal SAS and left in place ≤30 days.	1. Impacts in non-tidal waters of the U.S. that: (a) are >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes (see exception in Note 2); or 2. Impacts in tidal waters are >5000 SF or in SAS (see exception in Note 2); or 3. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry ; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 4. Activities not eligible for SV and do not require an IP.

Note:

1. Turbidity or sediment resuspension is generally not considered to occur when properly using management techniques to work in dry conditions. PCNs must include plans to demonstrate this.
2. Temporary construction mats of any area do not count towards the SV or PCN/GP area thresholds and are therefore SV eligible (see GCs 3(a), 13 and 14). This only applies to temporary construction mats, not other temporary fill.

GP 15. Reshaping Existing Drainage Ditches, Construction of New Ditches, and Mosquito Management (Authorities: §§10 and 404)

Discharges to modify the cross-sectional configuration of currently serviceable drainage ditches constructed in waters of the U.S., for the purpose of improving water quality by regrading the drainage ditch with gentler slopes, which can reduce erosion, increase growth of vegetation, and increase uptake of nutrients and other substances by vegetation. Also authorized are mosquito reduction activities.

Not authorized under GP 15 (IP required): Temporary impacts¹, stream channelization, relocation, impoundments, or loss of streambed.

Self-Verification Eligible ¹	PCN Required ¹
≤500 linear feet of drainage ditch will be reshaped provided excavated material is deposited in an upland area.	1. >500 linear feet of drainage ditch will be reshaped, excavated material is deposited in a water of the U.S., or the reshaping of the ditch increases the drainage capacity beyond the original as-built capacity or expands the area drained by the ditch as originally constructed (i.e., the capacity of the ditch is not the same as originally constructed or drains additional wetlands or other waters of the U.S.); or 2. New ditches or relocation of drainage ditches constructed in waters of the U.S. (i.e., the location of the centerline of the reshaped drainage ditch is not approximately the same as the location of the centerline of the original drainage ditch); or 3. Mosquito reduction activities in tidal waters, or those in non-tidal waters that are not SV eligible; or 4. Activities that are not eligible for SV and do not require an IP.

GP 16. Response Operations for Oil and Hazardous Substances (Authorities: §§10 and 404)

Eligible for authorization are the following activities in waters of the U.S.: (a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided that the activities are done under either: (i) The Spill Prevention, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-scene coordinator designated by 40 CFR 300; or (iii) Any approved existing State, regional or local contingency plan provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in waters of the U.S. from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and (d) The use of structures and fills for spill response training exercises. SAS should be restored in place at the same elevation.

Self-Verification Eligible ¹	PCN Required ¹
1. Activities are conducted in accordance with (a) or (b) above (see Note 1); and 2. Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and 3. Temporary impacts for spill response training exercises <5000 SF in non-tidal waters and <1000 SF in tidal waters of the U.S. with no impacts to SAS; and 4. Temporary structures in tidal waters of the U.S. with no impacts to SAS and in place ≤30 days.	1. Activities (a) or (b) above are planned or scheduled, not an emergency response; and 2. Activities that are not eligible for SV and do not require an IP.

Notes:

- For activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, Merrimack River from the Essex Dam to the mouth, and remaining tidal waters that are not rivers, the permittee must contact the Corps at (978) 318-8338 before or as soon as possible after the work authorized under GP 16(a) - (c) commences for the Corps to address the effects under the Federal Endangered Species Act.
- Permittees have until two weeks following commencement of the activities in GP 16 to submit the SVNF if applicable.
- The requirements in Notes 1 and 2 above do not apply to booms used for spill prevention, or properly contained and cleaned de minimus oil or hazardous substance discharges into navigable waters of the U.S.

GP 17. Cleanup of Hazardous and Toxic Waste (Authorities: §§10 and 404) Specific activities in waters of the U.S. to effect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority. SAS should be restored in place at the same elevation to the maximum extent practicable.

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. that: (a) are >5000 SF; or (b) located in vegetated shallows or riffle and pool complexes; or 2. The activity occurs in tidal or navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundment, or loss of streambed occurs; or 4. The activity involves establishing new disposal sites or expanding existing sites used for the disposal of hazardous or toxic waste; or 5. Activities that are not eligible for SV and do not require an IP.

Notes:

- Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under §404 of the CWA or §10 of the Rivers and Harbors Act.
- Permittees have until two weeks following commencement of the activities in GP 17 to submit the SVNF.

GP 18. Scientific Measurement Devices (Authorities: §§10 and 404) Scientific measurement devices in waters of the U.S. for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small weirs and flumes constructed primarily to record water elevation, flow and/or velocity. Upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to pre-construction elevations.

Not authorized under GP 18 (IP required): (a) Permanent impacts that are >5000 SF in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

Self-Verification Eligible ¹	PCN Required ¹
Temporary measuring devices and associated structures (e.g., anchors, buoys, etc.) in tidal and non-tidal waters of the U.S. provided that in non-tidal waters of the U.S. permanent impacts are ≤1000 SF and temporary impacts are ≤5000 SF.	1. Permanent impacts are >1000 SF and temporary impacts are >5000 SF in non-tidal waters of the U.S.; or any impacts occur in tidal waters of the U.S.; or 2. Biological sampling devices, weirs or flumes, or the activity restricts or concentrates movement of aquatic organisms; or 3. Devices that are not eligible for SV and do not require an IP.

GP 19. Survey Activities (Authorities: §§10 and 404) Survey activities in waters of the U.S. such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, sample plots or transects for wetland delineations, and historic resources surveys.

Not authorized under GP 19 (IP required): (a) Permanent impacts that are >1 acre in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, or riffle and pool complexes; or >100 SF in tidal vegetated shallows¹; or (b) Temporary impacts in tidal waters of the U.S. that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows¹.

Self-Verification Eligible ¹	PCN Required ¹
1. Permanent impacts are ≤1000 SF and temporary impacts are ≤5000 SF ¹ in non-tidal waters of the U.S. provided no work in SAS other than non-tidal wetlands; and 2. Soil borings, sampling (no biological sampling devices), core sampling and temporary structures in tidal waters of the U.S.; and 3. Temporary structures in navigable waters of the U.S.	1. Permanent impacts are >1000 SF and temporary impacts are >5000 SF in non-tidal waters of the U.S.; or any impacts occur in tidal waters of the U.S.; or 2. Exploratory trenching (see Note 2) occurs in waterways (e.g., streams, tidal waters); or 3. Activities associated with the recovery of historic resources, and the drilling and discharge of excavated material from test wells for oil and gas exploration; or 4. Seismic exploratory operations occur in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; or 5. Activities that are not eligible for SV and do not require an IP.

Notes:

1. A SVNFI is not required for wetland delineations, core sampling conducted for preliminary evaluation of dredge project analysis, and historic resource surveys.
2. For the purposes of GP 19, the term “exploratory trenching” means mechanical land or underwater clearing of the upper soil profile to expose bedrock or substrate for the purpose of mapping or sampling the exposed material.
3. The discharge of drilling mud and cuttings may require a permit under §402 of the CWA.

GP 20. Agricultural Activities (Authority: §404) Discharges of dredged or fill material in non-tidal waters of the U.S. for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) construction of farm ponds, excluding perennial streams, provided the farm pond is used solely for agricultural purposes; and (c) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in non-tidal streams.

Not authorized under GP 20 (IP required): (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S.; or >1000 SF in riffle and pool complexes, or non-tidal vegetated shallows; (b) Work in tidal waters of the U.S.; or (c) Construction of farm ponds in perennial streams.

Self-Verification Eligible ¹	PCN Required ¹
Permanent and temporary impacts in non-tidal waters of the U.S. are ≤5000 SF and are not located in vegetated shallows or riffle and pool complexes.	1. Permanent and temporary impacts in non-tidal waters of the U.S. are: (a) >5000 SF; or (b) located vegetated shallows or riffle and pool complexes; or 2. Activities occur in non-tidal navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundment, loss of streambed, or farm ponds in non-perennial streams occurs; or 4. Activities that are not eligible for SV and do not require an IP.

Note: This GP authorizes the construction of farm ponds that do not qualify for the CWA §404(f)(1)(C) exemption because of the recapture provision at §404(f)(2).

GP 21. Fish and Wildlife Harvesting and Attraction Devices and Activities (Authorities: §§10 and 404)

Fish and wildlife harvesting and attraction devices and activities in waters of the U.S. such as lobster pound nets, crab traps, shellfish dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, fish aggregating devices, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.).

Not authorized under GP 21 (IP required): Artificial reefs; or new, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area >½ acre.

Self-Verification Eligible ¹	PCN Required ¹
Fish and wildlife harvesting and attraction devices and activities that do not require a PCN.	1. Pound nets, impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre, fish aggregating devices, or small fish attraction devices; or 2. Devices and activities that are located in tidal SAS; or 3. Devices and activities that are not eligible for SV and do not require an IP.

Note: A SVNF is not required for work authorized under GP 21.

GP 22. Aquaculture (Authorities: §§10 and 404) (a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into waters of the U.S. necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects. The area and any elevated structures within it must be marked in conformance with 33 CFR 64, and the permittee must contact the USCG, First District, Aids to Navigation Branch (617) 223-8347 to coordinate the proper buoy markings for the activity. Buoys shall be deployed and maintained as appropriate. Any fill material imported to the project from offsite (this is limited to mineral growth medium used in culture trays) shall be clean and of comparable grain size to the native substrate.

Not authorized under GP 22 (IP required): (a) New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area $> \frac{1}{2}$ acre; (b) Cultivation of a nonindigenous species (see Note 1) unless that species has been previously cultivated in the waterbody; (c) Cultivation of an aquatic nuisance species (see Note 1); (d) Attendant features such as docks, piers, boat ramps, stockpiles, or staging areas, or the deposition of shell material back into waters of the U.S. as waste; (e) Areas > 10 acres or > 25 acres for municipalities; (f) Rafts and other floating equipment cover $> 10\%$ of the project area or 20,000 SF, whichever is greater. An area is considered covered with floating equipment if normal navigation through the area is precluded; (g) Activities, including any vehicular access, with more than minimal negative impacts on: (1) Avian resources such as, but not limited to, shore birds, wading birds, or members of the waterfowl group. This is meant to include migratory bird nesting, feeding or resting activities (see 50 CFR 10.13); or (2) Existing or naturally occurring beds or population of shellfish, marine worms or other invertebrates that could be used by humans, other mammals, birds, reptiles, or pred-atory fish; or (h) Activities, including vehicular access, that negatively impact coastal or freshwater wetlands.

Self-Verifi- cation Eligible ¹	PCN Required ¹
Devices and activities that do not require a PCN or an IP.	<ol style="list-style-type: none"> 1. Permanent and temporary impacts in non-tidal or tidal waters of the U.S. including cultch or spatted-shell; or 2. In-water lines, ropes, chains, netting or other structures such as cages, trays, racks or bags. However, structures are SV eligible provided a PCN is not required elsewhere in this document and they are: <ol style="list-style-type: none"> a. Located within the footprint of an existing authorized fixed or floating structure; comprised of floating upweller docks totaling ≤ 640 SF in area; or standalone structures (e.g., cages) with ≥ 2 feet of clearance above the ocean floor; and b. In water depths ≤ 10 feet MLLW and involve no lines, ropes or chains; or 3. Land-based hatchery intakes > 3 inches in diameter; or 4. Activities occur in the Connecticut River from the Turners Falls Dam to the MA/CT border or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species; or 5. Research, educational, commercial-viability or experimental aquaculture gear activities for indigenous species; or finfish aquaculture; or 6. New, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area $\leq \frac{1}{2}$ acre; or 7. Activities occur in SAS; or 8. Activities include a species not previously cultivated in the waterbody; or 9. Aquaculture facilities < 25 acres applied for by municipalities; or 10. Shellfish dredging, including mechanical or hydraulic in SAS; 11. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.

Notes: (1) The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 defines: (a) nonindigenous species as “any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another”; and (b) aquatic nuisance species as “a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.” (2) Aquaculture applicants do not need to notify the SHPO since these projects are unlikely to affect historic or archaeological resources, but must notify the BUAR and applicable tribes per GC 7(c).

GP 23. Aquatic Habitat Restoration, Enhancement, and Establishment Activities (Authorities: §§10 and 404) Activities in waters of the U.S. associated with the restoration, enhancement and establishment of non-tidal and tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters; the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site; the restoration and enhancement of shellfish, finfish and wildlife habitat; and the rehabilitation or enhancement of tidal streams, tidal wetlands and tidal open waters; provided those activities result in net increases in aquatic resource functions and services. To be authorized by this GP, the activity must be planned, designed, and implemented so that it results in aquatic habitat that resembles an ecological reference. An ecological reference may be based on the characteristics of an intact aquatic habitat or riparian area of the same type that exists in the region, or based on a conceptual model developed from regional ecological knowledge of the target aquatic habitat type or riparian area.

Activities authorized by this GP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or disking for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species may be planted at the site.

Not authorized under GP 23 (IP required): Stream channelization activities or artificial reefs.

Self-Verification Eligible ¹	PCN Required ¹
1. Permanent or temporary impacts in non-tidal waters of the U.S. are ≤5000 SF; and 2. SAS planting and transplanting ≤100 SF in tidal waters of the U.S.; and 3. The activity is authorized in writing by a local, State or non-Corps Federal environmental resource management agency.	1. Permanent or temporary impacts in non-tidal waters of the U.S. that are >5000 SF; or 2. Permanent or temporary impacts or structures are located in tidal waters of the U.S. including cultch placement; or 3. SAS planting and transplanting >100 SF in tidal waters; or 4. Permanent water impoundments, dam removal or fish ladders; or 5. Stream relocation, impoundment, or loss of streambed occurs; or 6. The conversion of: (a) a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa, wetland to pond, etc.) or uplands, (b) one wetland type to another (e.g., forested wetland to an emergent wetland). See Note 2; or 7. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed: (a) <5 feet waterward from OHW or HTL and in the dry ; or (b) from Sep. 1 to Oct. 14. This is to protect endangered species; or 8. Activities that are not eligible for SV and do not require an IP.
Notes: 1. GC 10 states a PCN is required for any activity that may affect listed species or habitat. This includes beneficial effects. 2. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type.	

IV. GENERAL CONDITIONS:

To qualify for GP authorization, the prospective permittee must comply with the following general conditions, as applicable.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)
4. Single and Complete Projects
5. Activities Affecting Structures or Works Built by the United States
6. Navigation
7. Historic Properties
8. Wild and Scenic Rivers
9. Essential Fish Habitat and Fish and Wildlife Resources
10. Federal Threatened and Endangered Species
11. Pile Driving and Removal
12. Utility Line Installation and Removal
13. Heavy Equipment in Waters and Wetlands
14. Temporary Fill
15. Removal of Temporary Fills and Restoration
16. Soil Erosion and Sediment Controls
17. Aquatic Life Movements
18. Management of Water Flows
19. Stream Work and Crossings and Wetland Crossings
20. Floodplains and Floodways
21. Storage of Seasonal Structures
22. Spawning, Breeding, and Migratory Areas
23. Vernal Pools
24. Coral reefs
25. Invasive and Other Unacceptable Species
26. Blasting
27. Suitable Material
28. Stormwater Treatment or Detention Systems
29. Tide gates
30. Water Quality Certification
31. Coastal Zone Management
32. Permit On Site
33. Self-Verification Notification Form
34. Inspections
35. Maintenance
36. Property Rights
37. Transfer of GP Verifications
38. Modification, Suspension, and Revocation
39. Special Conditions
40. False or Incomplete Information
41. Abandonment
42. Enforcement Cases
43. Previously Authorized Activities
44. Duration of Authorization

1. Other Permits. The permittee must obtain the following State approvals, when applicable, prior to the commencement of work in Corps jurisdiction in order for authorizations under these GPs to be valid: Water Quality Certification (see GC 30) and Coastal Zone Management Consistency Concurrence (see GC 31).

2. Federal Jurisdictional Boundaries

- a. Applicability of these GPs shall be evaluated with reference to Federal jurisdictional boundaries. Activities shall be evaluated with reference to “waters of the U.S.” under the Clean Water Act (33 CFR 328) and “navigable waters of the U.S.” under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Applicants are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice and procedures to be used in determining the extent of the Corps jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as that term is defined in 33 CFR 328.3(c).
- b. Applicants shall identify all aquatic resources on the project site. They are all presumed to be waters of the U.S. unless an approved jurisdictional determination has been obtained from the Corps that determines otherwise. Wetlands shall be delineated in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent Northcentral/Northeast Regional Supplement. Vegetated shallow survey guidance and maps are located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands.

3. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

- a. Activities must be designed and constructed to avoid and minimize direct, indirect, secondary and cumulative adverse effects, both permanent and temporary, to waters of the U.S. to the maximum extent practicable at the project site (i.e., on site). Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal.
- b. After avoidance and minimization, compensatory mitigation³ will generally be required for permanent impacts that require PCNs, and may be required for temporary impacts that require PCNs. Proactive restoration projects, or temporary impact work with no secondary effects, may generally be excluded from this requirement.
- c. Applicants shall consider riparian/forested buffer best management practices (BMPs) for stormwater management, and low impact development (LID) BMPs to reduce impervious cover and manage stormwater, to minimize impacts to the maximum extent practicable.⁴

4. Single and Complete Project

- a. The term “single and complete project” is defined as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. The GPs shall not be used for piecemeal work and shall be applied to single and complete projects.
- b. Proponents must quantify all permanent impacts associated with the single and complete project that have occurred since October 5, 1984 (the date of the original MA GP) and add that to any proposed permanent and temporary impacts to determine if the work is SV eligible or if a PCN is required. Provide that information in the PCN. For real estate subdivisions created or subdivided after October 5,

³ Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at www.nae.usace.army.mil/missions/regulatory >> Mitigation.

⁴ See the three documents at www.nae.usace.army.mil/missions/regulatory/state-general-permits/permit-resources >> Mitigation. LID BMPs include, but are not limited to: replacing curbs and gutters with swales; using an open space design for subdivisions; using permeable, pervious or porous pavements; constructing bio-retention systems; and/or adding a green roof or rain garden.

1984, a PCN is required for any discharge which would cause the aggregate total loss of waters of the U.S. for the entire subdivision to exceed 5,000 square feet.

c. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed, even if the other phases were not built, can be considered as separate single and complete projects with independent utility.

d. Unless the Corps determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project.

e. For linear projects such as power lines or pipelines with multiple crossings, a “single and complete project” is all crossings of a single water of the U.S. (i.e. single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a separate single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an individual permit review, then the entire/total linear project shall be reviewed as one project under PCN or the individual permit procedures.

5. Activities Affecting Structures or Works Built by the United States

a. If a GP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project, the prospective permittee must submit a PCN. The Regulatory Division will assist the proponent with contacting the appropriate Corps district office for work in the vicinity of Federal Navigation Projects, Corps properties and/or Corps-controlled easements, flood control projects, etc. An activity that requires §408 permission is not authorized by these GPs until the appropriate Corps district office issues the §408 permission to alter, occupy, or use the Corps project, and the Corps issues a written GP verification.

b. A PCN is required for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service.

6. Navigation

a. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters of the U.S. at or adjacent to the activity authorized herein.

b. Any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulations or otherwise, must be installed and maintained at the permittee’s expense on authorized facilities in navigable waters of the U.S.

c. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

d. A PCN and §408 permission (see GC 5) is required for all work in, over or under a Corps FNP or its buffer zone.

7. Historic Properties

- a. No undertaking shall cause effects (defined at 33 CFR 325 Appendix C) on properties listed in, determined to be eligible for listing in, or potentially eligible for listing in the National Register of Historic Places⁵, including previously unknown historic properties within the permit area, unless the Corps or another Federal action agency has satisfied the consultation requirements of §106 of the National Historic Preservation Act (NHPA). The State Historic Preservation Officer (SHPO), Board of Underwater Archaeological Resources (BUAR), Tribal Historic Preservation Officer(s) (THPO) and the National Register of Historic Places can assist with locating information on: (i) Previously identified historic properties; and (ii) Areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps, SHPO, BUAR and/or THPO(s).
- b. For SV eligible activities, proponents must ensure that the activity will not cause effects as stated in 7(a). Coordination with the SHPO, BUAR and applicable THPOs⁶ using the SHPO/MHC's "Project Notification Form" ([Section IX](#)) is recommended to demonstrate due diligence to identify historic properties. The SHPO, BUAR and THPOs are expected to provide comments to the Corps within 30 days of receipt if there are historic properties that need to be addressed. Proponents must submit a PCN if the authorized activity may cause effects as stated in GC 7(a) as soon as possible to ensure that the Corps is aware of any potential effects of the permitted activity on any historic property to ensure all §106 requirements are met.
- c. All PCNs shall:
 - i. Include a copy of the SHPO/MHC's "Project Notification Form" ([Section IX](#)) and the email or certified mail receipt that was used to send the form to the SHPO (does not accept email), BUAR and applicable THPOs for their identification of historic properties in their area of concern;
 - ii. State which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties; and
 - iii. Include any available documentation from the SHPO, BUAR and THPO(s) indicating that there are or are not historic properties affected. Starting consultation early in project planning can save proponents time and money. Notification is not required when the Corps has approved alternate procedures or designated another Federal agency as the lead. The SHPO, BUAR and THPO(s) will contact the Corps within 30 days of receiving the notification if there is any potential for an effect on a historic property and the Corps will begin consultation.
- d. Applicants shall coordinate with the Corps before conducting any onsite archaeological work (reconnaissance, surveys, recovery, etc.) requested by the SHPO, BUAR and THPOs, as the Corps will determine the permit area for the consideration of historic properties based on 33 CFR 325 Appendix C. This is to ensure that work is done in accordance with Corps requirements.
- e. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the Corps of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The Corps will initiate the Federal, State and tribal coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

⁵ The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO, BUAR and/or THPO(s).

⁶ [Section VIII](#) provides contact information and each tribe's "area of concern."

8. Wild and Scenic Rivers

- a. The following activities in designated river or study river segments in the National Wild and Scenic River (WSR) System require a PCN unless the National Park Service has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:
 - i. Activities that occur in WSR segments, in and 0.25 miles up or downstream of WSR segments, or in tributaries within 0.25 miles of WSR segments;
 - ii. Activities that occur in wetlands within 0.25 miles of WSR segments;
 - iii. Activities that have the potential to alter free-flowing characteristics in WSR segments.
- b. As of [INSERT DATE OF GP ISSUANCE], the Taunton River, Sudbury/Assabet/Concord Rivers, and Westfield River are designated rivers; and the Nashua River is a study river. The most up to date list and descriptions of the WSR segments are provided at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit >> Wild and Scenic Rivers.

9. Essential Fish Habitat and Fish and Wildlife Resources. A PCN is required for GPs 1, 6-20 and 23 when an activity may cause greater than minimal [sedimentation or turbidity](#) in streams or tidal waters of the U.S. The Corps may include specific time-of-year restrictions and/or specific construction techniques or activities. This is to protect Essential Fish Habitat and/or fish and wildlife resources.

10. Federal Threatened and Endangered Species

- a. No activity is authorized under any GP which:
 - i. Is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species (i.e., listed species) or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; or
 - ii. “May affect” a listed species or critical habitat unless consultation under §7 of the ESA addressing the effects of the proposed activity, has been completed.
- b. Project proponents must check <http://ecos.fws.gov/ipac> and submit a PCN if any listed species or critical habitat may be impacted. However, an activity is SV eligible (i.e., a PCN is only required if indicated elsewhere in this document) if the IPaC website indicates that only:
 - i. Northern long-eared bats (NLEB, *Myotis septentrionalis*) are present, but the activity:
 1. Will not remove trees ≥ 3 inches dbh;
 2. Is not within the “buffer” of a NLEB hibernacula or maternity roost tree shown on the map at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit/ >> NLEB Locations; and
 3. Does not involve work on existing dam riprap or bridges.
 - ii. The roseate tern (*Sterna dougallii*), piping plover (*Charadrius melodus*) or red knot (*Calidris canutus*) are present, but the activity and all disturbance will occur: i) >300 feet from the HTL; ii) entirely in a previously developed or urbanized area such as a paved parking lot or road, a harbor or marina with stabilized shoreline (docks, seawalls, etc.), a residential area (contains lawn, ornamental plants, etc.); or iii) between October 1 and April 15 and would cause only temporary alteration or disturbance to beaches, sand dunes, mud flats, sloughs, estuaries, or other tidally influenced areas. Contact the Corps with any questions.
- c. Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the Corps with the appropriate documentation to demonstrate compliance with those requirements. The Corps will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary. Unless it is required elsewhere in this document, a PCN is not required if another (lead)

federal agency or non-Federal representative designated by the Corps in writing has completed all required §7 consultation.

d. Verification under these GPs does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the USFWS or the NMFS, the ESA prohibits any person to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

11. Pile Driving and Removal

a. Derelict, degraded or abandoned piles and sheet piles in [navigable waters](#) of the U.S., except for those inside existing work footprints for piers, must be completely removed, cut and/or driven to 3 feet below the substrate to prevent interference with navigation, and existing creosote piles that are affected by project activities shall be completely removed if practicable. In areas of fine-grained substrates, piles must be removed by the direct, vibratory or clamshell pull method⁷ to minimize sedimentation and turbidity impacts and prevent interference with navigation from cut piles. Removed piles shall be disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats. Pile removal work is SV eligible under GP 1. See GC 16(d) for sheet pile removal.

b. A PCN is required for the installation of structures with jetting techniques.

c. A PCN is required for the installation of >12 inch-diameter piles or any size steel piles in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth, unless they are installed [in the dry](#). Installation of ≥12-inch-diameter piles or any size steel piles in tidal waters, or all piles in the aforementioned river segments, must use a soft start each day of pile driving, building up power slowly from a low energy start-up over a period of 20-40 minutes to provide adequate time for fish and marine mammals to leave the vicinity. The buildup of power should occur in uniform stages to provide a constant increase in output. Bubble curtains can be used to reduce sound pressure levels during vibratory or impact hammer pile driving. This is to protect endangered species.

12. Utility Line Installation and Removal

a. Subsurface utility lines shall remain subsurface.

b. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment. The bottom cover associated with the initial installation of utility lines under [navigable waters](#) of the U.S. and navigation channels shall be a minimum of 48 inches in soil or a minimum of 24 inches in competent rock unless otherwise specified in a written determination.

c. The permittee and their contractor shall have onsite and implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

⁷ **Direct Pull:** Each piling is wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the piling directly upward, removing the piling from the sediment. **Vibratory Pull:** The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The vibrating hammer loosens the piling while the crane pulls up. **Clamshell Pull:** This can remove intact, broken or damaged pilings. The clamshell bucket is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. The size of the clamshell bucket is minimized to reduce turbidity during piling removal.

- d. Abandoned or inactive utility lines must be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) must be removed or repaired. A written verification from the Corps is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.
- e. Utility lines shall not adversely alter existing hydrology, and trenches cannot be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). In wetland areas, structures such as ditch plugs, cut-off walls, clay blocks, bentonite, or other suitable material shall be used within utility trenches to ensure that the trench through which the utility line is installed does not drain waters of the U.S. including wetlands.

13. Heavy Equipment in Waters and Wetlands

- a. To the maximum extent practicable, operating heavy equipment within wetlands or mudflats shall be avoided or minimized, measures must be taken to minimize soil or substrate disturbance, and equipment other than fixed equipment (drill rigs, fixed cranes, etc.) shall not be stored, maintained or repaired in wetlands. Where construction requires heavy equipment operation in wetlands, the equipment shall: (i) Have low ground pressure (typically <3 psi); (ii) Be placed on swamp/construction/timber mats (herein referred to as “[construction mats](#)”) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or (iii) Be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written Corps authorization. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the Construction Mat BMPs at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
- b. Construction equipment such as barges in tidal waters of the U.S. shall provide clearance above the substrate to avoid impacts to SAS.

14. Temporary Fill

- a. Temporary fill, which includes construction mats and corduroy roads, shall be entirely removed as soon as it is no longer needed to construct the authorized work. Temporary fill shall be placed in its original location, or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S. A PCN is required for: (i) All temporary fill that is in place for >2 years; or (ii) construction mats and corduroy roads filling >5000 SF that are in place for: 1) >1 year when installed during the growing period; or 2) Any portion of more than one growing period when installed outside the growing period. The growing period is from May 1 to October 1 for the purposes of these GPs.
- b. A PCN is required for construction mats and corduroy roads that involve underlying fill.
- c. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable. Materials must be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of wetlands. Temporary fill shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade (construction mats are excluded from this requirement).

15. Removal of Temporary Fills and Restoration

- a. Temporary fills/excess materials must be removed in their entirety as soon as they are no longer needed to construct the authorized work. The affected areas must be restored to their pre-construction

conditions, functions and elevations, and revegetated as appropriate. Restoration shall typically commence no later than the completion of construction.

b. For excavated areas, “restored to pre-construction conditions, functions and elevations” means careful removal of existing soil and vegetation, separate topsoil and subsoil stockpiling, soil protection, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized. Plan for natural settling that will occur and ensure that topsoil is void of gravel and subsoil. A minimum of 4 inches of topsoil should be at the surface after the soil has settled. Wetland areas temporarily disturbed shall be stabilized (e.g., seeded or planted). See GC 25 for seed mix and vegetation requirements.

c. Limit compaction to the minimum needed to promote a successful seedbed. Test soils for compaction. Equipment refusal shall be considered a failure of restoration, in which case the soil should be restored and wetland hydrology must be maintained.

d. For (a) - (c) above, see the BMPs at <http://www.nae.usace.army.mil/missions/regulatory/state-general-permits/permit-resources> >> Restoration of Special Aquatic Sites.

e. In areas of authorized temporary disturbance, if trees are cut they shall be cut at or above ground level, and not uprooted, in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

f. Trenches shall be constructed or backfilled so that the trench does not drain waters of the U.S. (e.g., materials or methods that create a French drain effect).

16. Soil Erosion and Sediment Controls

a. Appropriate soil erosion, sediment and turbidity controls⁸ (hereinafter referred to as “controls”) must be used and maintained in effective operating condition during construction. Activities in streams (rivers, streams, brooks, etc.) and tidal waters of the U.S. that are capable of producing sedimentation or turbidity should be done during periods of low-flow or no-flow, when the stream or tide is waterward of the work, or when controls are used to obtain dry work conditions. A PCN is required for GPs 1, 6-20 and 23 when an activity causes [greater than minimal sedimentation or turbidity](#) in streams or tidal waters.

b. Controls should be installed and removed from July 1 to Feb. 28 in non-tidal streams when practicable. A PCN is required for controls that encroach >25% of the stream width measured from OHW in non-tidal streams from March 1 to June 30. This is to protect upstream fish passage. Proponents must also maintain safe, timely and effective downstream fish passage throughout the project.

c. Controls must be installed and removed from July 1 through Jan. 14 in tidal waters when placed waterward of MHW and may not encroach >50% of the stream width measured from MHW. Otherwise a PCN is required. This is to protect upstream fish passage and winter flounder spawning and rearing habitat.

d. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands where suspended solids shall be removed prior to discharge back into waters or wetlands. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.

e. Controls shall be removed upon completion of work, but not until all exposed soil and other fills, as well as any work waterward of OHW or the HTL, are permanently stabilized at the earliest practicable date. Sediment and debris collected by these devices shall be removed and placed at an upland location

⁸ Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable, and flows and aquatic life movements are not disrupted.

f. The material within sandbags shall not be released during their removal and trenches must be backfilled as soon as practicable to reduce turbidity impact duration.

17. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity's primary purpose is to impound water. Permanent water impoundments require a PCN. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be suitably culverted, spanned⁹, or otherwise designed and constructed to:

- i. Maintain low flows to sustain the movement of those aquatic species, which includes maintaining a continuous low flow channel/thalweg through the non-tidal structures;
- ii. Preserve hydraulic and ecological connectivity; and
- iii. Prevent bank erosion or streambed scour, both adjacent to and inside, the culvert or span by proper alignment and construction.

18. Management of Water Flows

- a. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows, in which case a PCN is required. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- b. Activities that temporarily or permanently impact upstream or downstream flood conditions, or permanently impact wetlands in excess of SV eligible thresholds, require a PCN. See the "Dam Removal and the Wetland Regulations" document at www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity for guidance to evaluate the impacts of culvert replacement, including the loss of upstream wetlands, which may be offset by the overall benefits of the river restoration.

19. Stream and Wetland Crossings

The following conditions apply to temporary and permanent stream and wetland crossings, including new crossings, and replacement, modifications and expansions/extensions of existing crossings, which are only authorized under GPs 8 - 10. Minor repairs may be SV eligible under GP 1.

- a. Stream crossings in tidal streams. A PCN is required for new or modifications to temporary and permanent crossings in tidal streams. The Corps may use the following criteria to evaluate the aforementioned crossings:
 - i. Match the velocity, depth, cross-sectional area, and substrate of the existing stream outside the crossing, if it exists, and size crossings such that they do not restrict tidal flow over the full natural tide range seaward of the crossing. The Corps will typically require an engineering study to ensure flooding is not a concern.
 - ii. Construct crossings in dry conditions.
- b. Modifications to existing, authorized permanent stream crossings in non-tidal streams. A PCN is not required for modifications to the aforementioned crossings for the purpose of improving passage and flow if they are authorized in writing by a local, State or non-Corps Federal environmental agency or

⁹ For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of BFW. The use of bridge piers or similar supports does not prevent a structure from being considered as a span.

they comply with 19(c) below. However, a PCN is required if stated elsewhere in this document or any activity:

- i. Involves sliplining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining;
- ii. Decreases the diameter of the crossing;
- iii. Decreases the friction coefficient; or
- iv. Increases velocity.

c. New, replacement, modifications and expansions/extensions of existing, permanent stream crossings in non-tidal streams. A PCN is not required for the aforementioned crossings provided the following conditions are met and a PCN is not required elsewhere in this document:

- i. Design and construct the crossing in accordance with the U.S. Forest Service manual titled, “Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings”¹⁰.
- ii. Span⁹ streams or size culverts or pipe arches such that they are at least 1.2 times bankfull width (BFW). Spans are strongly preferred as they avoid or minimize disruption to the streambed. Spans also avoid entire streambed reconstruction and maintenance inside culverts or pipe arches (see v, vi & viii below), which may be difficult in smaller structures. In many cases bankfull width is not necessarily interchangeable with the elevation of OHW.¹¹
- iii. Embed culverts or pipe arches below the grade of the streambed. This is not required when ledge/bedrock prevents embedment, in which case spans⁹ are required. The following depths are recommended to prevent streambed washout, and ensure compliance and long-term success:
 1. ≥ 2 feet for box culverts and pipe arches¹², or
 2. ≥ 2 feet and at least 25% for round pipe culverts¹².
- iv. Match the culvert gradient (slope) with the stream channel profile.
- v. Construct crossings with a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass substantial high flow events.
- vi. Construct crossings with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows at the time of construction and over time. In order to provide appropriate water depths and velocities at a variety of flows and especially low flows, it is usually necessary to reconstruct the streambed (sometimes including a low flow channel), or replicate or preserve the natural channel within the structure. Otherwise, the width of the structure needed to accommodate higher flows will create conditions that are too shallow at low flows. The grain and rock size, and arrangement of streambed materials within the structure should be in accordance with (v) above. Flows could go subsurface within the structure if only large material is used without smaller material filling the voids.

¹⁰ See www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity. Section 5.3.3 Headcutting Potential and 6.2 Design of the Stream-Simulation Channel Bed are particularly relevant. Sections 7.5.2.3 Construction Methods and 8.2.11 Stream-Simulation Bed Material Placement both show important steps in the project construction. Chapter 6.1 is relevant for proper alignment and construction to prevent bank erosion or streambed scour.

¹¹ BFW corresponds with “bankfull stage” and this should be field delineated in accordance with these U.S. Forest Service resources: a) [U.S. Forest Service stream simulation manual](#); b) [“Stream Channel Reference Sites: An Illustrated Guide to Field Technique”](#) (Harrelson, et al. 1994); and c) [“A Guide to Identification of Bankfull Stage in the Northeastern United States”](#). See www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity.

¹² Deeper embedment depths may be needed if there are elements of the constructed stream bed that are greater than 15 inches in diameter.

vii. *Openness* >0.82 feet (0.25 meters). Openness is the cross-sectional area of a structure opening divided by its crossing length when measured in consistent units (e.g. feet). For a box culvert, openness = (height x width)/ length. For crossing structures with multiple cells or barrels, openness is calculated separately for each cell or barrel. At least one cell or barrel must meet the appropriate openness standard. The embedded portion of a culvert is not included in the calculation of cross-sectional area for determining openness.¹³ Openness >0.82 feet is recommended to make the structure more likely to pass small, riverine wildlife such as turtles, mink, muskrat and otter that may tend to avoid structures that appear too constricted. This openness standard is too small to accommodate large wildlife such as deer, bear, and moose. Structures that meet this openness standard are much more likely than traditional culverts to pass flood flows and woody debris that would otherwise obstruct water passage. It is likely that most structures that meet all the other general standards will also meet this openness standard. However, for some very long structures it may be impractical or impossible to meet this standard.

viii. Construct banks on each side of the stream inside the crossing that match the horizontal profile of the existing stream and banks outside the crossing. To prevent failure, all constructed banks should have a height to width ratio of no greater than 1:1.5 (vertical:horizontal) unless the stream is naturally incised. Tie the banks into the up and downstream banks and configure them to be stable during expected high flows. Use materials that match the up and downstream banks (avoid the use of angular riprap and armored slopes).

d. Temporary crossings in non-tidal streams. The following conditions must be met for temporary crossings (e.g., spans, culverts, construction mats or fords) in non-tidal streams to be SV eligible:

i. All temporary crossings:

1. Avoid excavating the stream or embedding crossings.

2. Impacts to the streambed or banks require restoration to their original condition. See the U.S. Forest Service manual for stream simulation restoration methods¹⁰. Use geotextile fabric and bedding as appropriate to ensure restoration to the original grade.

ii. Culverts:

1. The water height should be no higher than the top of the culvert's inlet and the culvert is large enough to pass debris.

2. Install energy dissipating devices downstream if necessary to prevent scour.

iii. Stream fords: Equipment may ford streams when it is not feasible to construct a span or culvert (e.g., streams having no or low banks, emergency situations); the natural stream bed and banks consist of ledge, rock or sand that prevents disturbance and turbidity; and there is a stable, gradual approach.

iv. Spans: Anchor spans where practicable so they do not wash out during high water. A typical span method is provided at [>>www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity](http://www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity) Skidder Bridge Fact Sheet.

v. Construction mats: Build construction mat stream crossings in accordance with the Construction Mat BMPs, specifically the Wetland/Stream Channel Crossing section, located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/permit-resources.

e. Wetland Crossings. To assist in meeting the requirements in GCs 17 and 18, culverts or spans⁹ shall be placed at least every 50 feet with an opening at least 2-feet high and 3-feet wide at ground level where practicable. Closed bottom culverts shall be embedded at least 6 inches with a natural bottom. In the case of non-compliance, the permittee shall take necessary measures to correct wetland damage due to lack of hydraulic and ecological connectivity.

20. Floodplains and Floodways

a. Appropriate measures must be taken to minimize flooding to the maximum extent practicable.

¹³ The [Openness Ratio Spreadsheet](#) shows how to calculate the open area for embedded pipe culverts to meet the 0.82 standard for openness. See www.nae.usace.army.mil/missions/regulatory/stream-and-river-continuity.

b. Activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency (FEMA)-approved State and/or local floodplain management permitting requirements.

21. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, etc. that are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands or mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is waterward of MHW or OHW.

22. Spawning, Breeding, and Migratory Areas

a. Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

b. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for obtaining any “take” permits required under the USFWS’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such “take” permits are required for a particular activity.

23. Vernal Pools

a. On projects requiring a PCN, vernal pools must be identified on the plan showing aquatic resource delineations.

b. A PCN is required if a discharge of dredged or fill material is proposed in a vernal pool located within Federal jurisdictional boundaries.

c. Adverse impacts to vernal pools should be avoided and minimized to the maximum extent practicable.

24. Coral Reefs. Impacts to coral reefs are not authorized under these GPs. Coral reefs consist of the skeletal deposit, usually of calcareous or siliceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

25. Invasive and Other Unacceptable Species¹⁴

a. The introduction or spread of invasive or other unacceptable plant or animal species on the project site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive species or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by these GPs. Seed mixes and vegetation shall include only plant species native to New England and shall not include any species listed in Appendix D, “Invasive and Other Unacceptable Plant Species,” of the “New England District Compensatory Mitigation Guidance”. This list may be updated periodically.

¹⁴ See www.nae.usace.army.mil/missions/regulatory/mitigation. The June 2009 “Corps of Engineers Invasive Species Policy” provides policy, goals and objectives and is located at www.nae.usace.army.mil/missions/regulatory/invasive-species. Additional information can be found at: www.eddmaps.org/ipane.

26. Blasting. Blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc. is not authorized under these GPs.

27. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see §307 of the Clean Water Act).

28. Stormwater Treatment or Detention Systems. Stormwater treatment or detention systems in waters of the U.S. are not authorized under these GPs and require an IP. Stormwater conveyance components and non-porous, septic effluent pipes that transmit effluent to or between components may be SV eligible under GP 9.

29. Tide Gates. New tide gates conveying water between waters of the U.S. are not authorized under these GPs and require an IP. Tide gates on discharge pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S. may be authorized under GPs 1 and 9.

30. Water Quality Certification

- a. Any activity under these GPs that requires authorization under §404 of the Clean Water Act for the discharge of dredged or fill material into waters of the U.S. also requires applicants to obtain a §401 water quality certification (WQC) from the State (hereinafter referred to as “§401 WQC”) or an Order of Conditions from the town or city which serves as the WQC. In Massachusetts, the MassDEP has authority to issue or deny §401 WQC. Activities authorized under these GPs must comply with all conditions set forth in the [INSERT DATE OF WQC ISSUANCE] conditional WQC for these GPs (located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit/) or in an Individual §401 WQC. Authorization under the GPs is not valid and no work may commence in Corps jurisdiction until the MassDEP has issued or waived §401 WQC.
- b. If a §401 WQC is issued for work that is different from that in the Corps authorization, the Corps authorization is not valid and the permittee must contact the Corps to allow the Corps to resolve the discrepancy.

31. Coastal Zone Management

- a. Each activity under these GPs within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs. The Massachusetts Office of Coastal Zone Management (MA CZM) administers the [Massachusetts CZM program](#).
- b. For SV eligible activities, MA CZM has agreed with the Corps consistency determination and therefore these activities do not require any additional MA CZM Federal consistency review.
- c. For PCN activities in the coastal zone, authorization under these GPs becomes valid only after MA CZM determines that the activity is consistent with the MA CZM program. The Corps will typically coordinate review with MA CZM and then notify applicants if MA CZM determines that the activity is consistent with the MA CZM program or if an individual consistency concurrence is required. If the MA CZM consistency concurrence is for work different from that in the Corps authorization, the Corps authorization is not valid and the permittee must contact the Corps to allow the Corps to resolve the discrepancy.

32. Permit On Site. The permittee shall ensure that any contractor(s) and or workers executing the activities authorized by this GP(s) have knowledge of the terms and conditions of this authorization and

any modification(s), and that a copy of this GP document and any accompanying verification letter and attached plans are at the site of the authorized work throughout the period(s) of time the work is underway.

33. Self-Verification Notification Form. For those activities that do not require PCNs and are eligible for self-verification, permittees must complete and submit the [SVNF](#) to the Corps for work authorized by these GPs unless otherwise stated. See the SVNF for submittal requirements and timing.

34. Inspections. The permittee shall allow the Corps to inspect the authorized activities and mitigation parcels at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of the applicable GP(s) and any written verification from the Corps. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms:

- For Self-Verification: The SVNF. See GC 33.
- For PCN: The Work-Start Notification Form, Compliance Certification Form, and/or Mitigation Work-Start Notification Form whenever these forms are provided with a verification letter.

35. Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions and activity-specific special conditions provided in a written verification from the Corps. This does not include maintenance of dredging, related disposal, or beach nourishment projects unless specified in a written authorization from the Corps.

36. Property Rights. These GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor do they authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

37. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps to validate the transfer. A copy of the GP verification must be attached to the letter, the letter must contain the name, address and phone number of the transferee (new owner), include the following statement and signature, and be mailed to: Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751:

“When the structures or work authorized by these GPs are still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the new owner(s) of the property.

Transferee Printed Name

Transferee Signature

Date

38. Modification, Suspension, and Revocation. These GPs or any work authorized under these GPs by self-verification or PCN may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

39. Special Conditions. The permittee must comply with any special conditions added by the Corps to this GP. Failure to comply with all applicable terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or

administrative penalties and/or an ordered restoration, and/or the permit may be modified, suspended or revoked by the Corps.

40. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under these GPs and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid and modify, suspend or revoke the authorization. In such cases, the U.S. Government may institute legal proceedings.

41. Abandonment. If the permittee abandons or decides to abandon the activity authorized under these GPs, the work must be removed and the area restored to the maximum extent practicable unless a GP or IP specifically authorizes the abandonment.

42. Enforcement cases. These GPs do not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

43. Previously Authorized Activities

- a. Activities that were authorized and completed in accordance with previous GPs or nationwide permits are not affected by these GPs and continue to be authorized in accordance with the original terms and conditions of those authorizations, including their terms, general conditions, expiration date, and any special conditions provided in a written verification.
- b. Activities authorized pursuant to 33 CFR 330.3 (“Activities occurring before certain dates”) are not affected by this GP.

44. Duration of Authorization

- a. These GPs expire on [INSERT DATE OF GP ISSUANCE + 5 YEARS]. Activities authorized under GPs 1 - 23 that have either commenced (i.e., are under construction) or are under contract to commence before these GPs expire will have until [INSERT DATE OF GP ISSUANCE + 5 YEARS] to complete the activity under the terms and conditions of the current GPs. The permittee must be able to document to the Corps’ satisfaction that the project was under construction or under contract by the appropriate date. If work is not completed within the one year extended timeframe nor SV eligible under any subsequently issued GPs, the permittee must contact the Corps to discuss obtaining a separate Corps authorization to complete the work.
- b. Activities completed under these GPs will continue to be authorized unless special conditions require removal of the authorized work and restoration of the affected area after a specified time period.

DISTRICT ENGINEER

DATE



**US Army Corps
of Engineers®**
New England District

V: Self-Verification Notification Form

(for all tidal and non-tidal projects subject to Corps jurisdiction)

Complete **all** fields (write “none” if applicable) below or use the fillable form at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit. Before work within Corps jurisdiction commences, and unless otherwise specified, email **this form, a location map, and project plans** drawn to scale and not larger than 11” x 17”, to cenae-r@usace.army.mil, (978) 318-8303 (fax), or “Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751”. Please call (978) 318-8338 with questions.

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor (write none if same as permittee): _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Prior Corps File or Permit Numbers(s): _____
Project Location (provide detailed description if necessary): _____

Address, City, State & Zip: _____
Latitude/Longitude Coordinates (if address doesn’t exist): _____
Waterway Name: _____

Work will be done under the following activity(s) in Section III, Eligible Activities (check all that apply):

1_____	5_____	9_____	13_____	17_____	21_____
2_____	6_____	10_____	14_____	18_____	22_____
3_____	7_____	11_____	15_____	19_____	23_____
4_____	8_____	12_____	16_____	20_____	

Project Purpose: _____

Work Description: _____

(continued on next page)

Aggregate total wetland impact area: temporary_____SF permanent_____SF
Aggregate total waterway impact area: temporary_____SF permanent_____SF
Aggregate total area of structures temporary_____SF permanent_____SF
(e.g., floats, pile-supported structures)

Does your project include any indirect or secondary impacts? (See General Condition 3.)

Yes_____ No_____

If yes, describe here: _____

Proposed Work Dates: Start: _____ Finish: _____

Your name/signature below, as permittee, confirms that: a) your project meets the self-verification criteria; and b) you accept and agree to comply with the applicable terms and conditions in the General Permits for Massachusetts.

Permittee Printed Name: _____

Permittee Signature: _____ Date: _____

VI: Content of Pre-Construction Notification

Applicants may email applications to cenae-r@usace.army.mil. In addition to the following required information, the applicant must provide additional information as the Corps deems essential to make a public interest determination including, where applicable, a determination of compliance with the §404(b)(1) guidelines or ocean dumping criteria.

1. Information required for all projects:

- ☐ Any required information as stated throughout this GP document.
- ☐ Corps application form ([ENG Form 4345](#)). The MassDEP WQC, Chapter 91 application form and Notice of Intent are not acceptable.
- ☐ Project purpose.
- ☐ Drawings, sketches, or plans that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), to scale, and no larger than 11"x17". Numeric and graphic/bar scales must agree and plan details must be measurable using a standard engineer's scale on printed plans. Reduced plans are not acceptable. Wetland area impact sheets should have the highest resolution possible to show work within Corps jurisdiction. Provide a color locus map and a plan overview of the entire property with a key index to the individual impact sheets. The locus map on a section of color USGS topographic map, and digital submissions in PDF format, are encouraged.
- ☐ Include:
 - ☐ All anticipated direct, indirect and, secondary impacts, both permanent and temporary, to waters of the U.S. (in wetlands, and waterward of OHW in inland waters and the HTL in coastal waters) in square feet, acres, linear feet, or other appropriate unit of measure. Include the type and source of fill material. The New England District Compensatory Mitigation Guidance is a resource for assessing secondary impacts (see [>> Compensatory Mitigation Guidance](http://www.nae.usace.army.mil/missions/regulatory/mitigation)).
 - ☐ All structures and work waterward of the MHW line.
 - ☐ Any historic permanent fill previously authorized by the Corps and the date of authorization.
 - ☐ Cross-section views of all wetland and waterway fill areas and wetland replication areas.
 - ☐ Delineation of all wetlands, other special aquatic sites (vegetated shallows, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Use Federal delineation methods and include Corps wetland delineation data sheets (see GC 2). Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
 - ☐ The MLLW, MHW and HTL elevations in tidal waters, and OHW elevation in lakes and non-tidal streams.
 - ☐ Existing and proposed conditions.
 - ☐ Show all known vernal pools on the project site (see GC 23).
- ☐ For any activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps Federally authorized civil works project, the PCN must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps. See GC 5(a).
- ☐ Information on historic properties (see GC 7), including a copy of the SHPO/MHC's "Project Notification Form" ([Section IX](#)) and the email or certified mail receipt that was used to send the form to the SHPO, BUAR and applicable THPOs.
- ☐ Information on Federal threatened or endangered species (see GC 10).
- ☐ A restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions (see GC 15).

2. Information that may be required:

- ☐ Photographs of wetland/waterway to be impacted. Photos at low tide are preferred for work in tidal waters.
- ☐ For drawings, sketches, or plans:
 - ☐ The vertical datum for all coastal projects must be in U.S. survey feet and referenced to MLLW and current tidal epochs, with a reference chart showing conversion factor to NAVD88; do not use local datum. See www.nae.usace.army.mil/missions/regulatory/useful-documents-forms-and-publications >> Vertical Datum - FEMA.
 - ☐ The horizontal state plane coordinates in U.S. survey feet and based on the appropriate state plane coordinate system.
- ☐ For the construction of a filled area or pile or float-supported platform, the use of, and specific structures to be erected on, the fill or platform.
- ☐ For the discharge of dredged or fill material into waters of the U.S. or the transportation of dredged material for the purpose of disposing of it in ocean waters, the source of the material; the purpose of the discharge, a description of the type, composition and quantity of the material; the method of transportation and disposal of the material; and the location of the disposal site.
- ☐ For the discharge of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized. Include either a statement describing how impacts to waters of the U.S. are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.
- ☐ Limits and coordinates of any Federal Navigation Project in the vicinity of the project area.
- ☐ Limits and coordinates of any proposed mooring field, reconfiguration zone or aquaculture activity. Provide coordinates for all corners.
- ☐ Schedule of construction/activity.
- ☐ Location and dimensions of adjacent structures.
- ☐ Shellfish survey.
- ☐ Invasive Species Control Plan (see GC 25). For sample control plans, see www.nae.usace.army.mil/missions/regulatory/invasive-species.

3. Information that may be required for dredging projects:

- ☐ Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing. For projects proposing open water disposal, applicants should contact the Corps as early as possible regarding sampling and testing protocols. Sampling and testing of sediments without such contact should not occur and if done, would be at the applicant's risk.
- ☐ The area in square feet and volume of material to be dredged below mean high water.
- ☐ Existing and proposed water depths.
- ☐ Type of dredging equipment to be used.
- ☐ Nature of material (e.g., silty sand).
- ☐ Any existing sediment grain size and bulk sediment chemistry data for the proposed or nearby projects.
- ☐ Information on the location and nature of municipal or industrial discharges and occurrence of any contaminant spills in or near the project area.
- ☐ Shellfish survey.
- ☐ Location of the disposal site (include locus sheet).
- ☐ Identification and description of any potential impacts to Essential Fish Habitat.
- ☐ Delineation of submerged aquatic vegetation (e.g., eelgrass beds).

VII. Definitions and Acronyms

Definitions

Artificial or Living Reef: A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.

Attendant Features: Occurring with or as a result of; accompanying.

Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo-(bio)degradable plastics are not considered biodegradable under this GP.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, municipal facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or municipal mooring fields that charge an equitable user fee based on the actual costs incurred.

Brushing the Flats: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Buffer Zone: The buffer zone of a Corps FNP is equal to three times the authorized depth of the FNP.

Construction mats: Constructions, swamp and timber mats (herein referred to as “construction mats”) are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.

Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230.11(g).

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.

Dredging:

Improvement Dredging: For the purposes of these GPs, this is dredging deeper than previously authorized by the Corps and dredged.

Maintenance Dredging: For the purposes of these GPs, this is dredging from an area previously authorized by the Corps and dredged. The Corps may require proof of authorization and dredging. Maintenance dredging typically refers to the routine removal of accumulated sediment to maintain the design depths of serviceable navigation channels, harbors, marinas, boat launches and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.

New Dredging: For the purposes of these GPs, this is dredging of an area that has never been authorized

by the Corps and dredged.

Dredged material & discharge of dredged material: These are defined at 33 CFR 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Expansions: Work that increases the footprint of fill, structures or floats, or slip capacity.

Essential Fish Habitat (EFH): The Federal Magnuson-Stevens Fishery Management and Conservation Act broadly defines EFH to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. See www.greateratlantic.fisheries.noaa.gov/habitat for more information.

Fill material & discharge of fill material: These are defined at 33 CFR 323.2(e) and (f). The term fill material is defined as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.

Federal anchorages: See the definition of “Federal navigation projects.”

Federal channels: See the definition of “Federal navigation projects.”

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and comprised of Corps Federal anchorages, Federal channels and Federal turning basins. The buffer zone is equal to three times the authorized depth of a FNP. The following are FNPs in MA and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation >>

Navigation Projects:

Andrews River, Harwich, MA	Green Harbor	Pollock Rip Shoals, Nantucket
Aunt Lydia’s Cove	Hingham Harbor	Sound
Beverly Harbor	Hyannis Harbor	Provincetown Harbor
Boston Harbor	Ipswich River	Red Brook Harbor
Buttermilk Bay Channel	Island End River (Chelsea, MA)	Rockport Harbor
Canapitsit Channel	Kingston Harbor	Salem Harbor
Cape Cod Canal	Lagoon Pond	Sandy Bay Harbor of Refuge
Chatham Harbor	Little Harbor Woods Hole	Saugus River
Cohasset Harbor	Lynn Harbor	Scituate Harbor
Cross Rip Shoals, Nantucket	Malden River	Sesuit Harbor
Sound	Menemsha Creek	Taunton River
Cuttyhunk Harbor	Merrimack River	Vineyard Haven Harbor
Dorchester Bay and Neponset	Mystic River	Wareham Harbor
River	Nantucket Harbor of Refuge	Wellfleet Harbor
Duxbury Harbor	New Bedford and Fairhaven	Westport River and Harbor
Edgartown Harbor	Harbor	Weymouth Back River
Essex River	Newburyport Harbor	Weymouth Fore and Town
Fall River Harbor	Oak Bluffs Harbor	Rivers
Falmouth Harbor	Pigeon Cove Harbor	Winthrop Harbor
Gloucester Harbor and	Plymouth Harbor	Woods Hole Channel
Annisquam River		

Federal turning basin: See the definition of “Federal navigation projects.”

Flume: An open artificial water channel, in the form of a gravity chute, which leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

Frac out: During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface.

In the dry: Work that is done under dry conditions, e.g., work behind cofferdams or when the stream or tide is waterward of the work.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Individual permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Intertidal: The area in between mean low water and the high tide line.

Living Reef: See the definition of “artificial or living reef.”

Living Shoreline: Living shorelines stabilize banks and shores in coastal waters along shores with small fetch and gentle slopes that are subject to low-to mid-energy waves. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface, and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster or mussel reef structures.

Maintenance: Maintenance does not include any modification that changes the character, scope, or size of the original fill design.

Mechanized land clearing: As a general rule, mechanized land clearing is a regulated activity (see [Regulatory Guidance Letter 90-05](#)).

Metallic mineral: Any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. “Metallic mineral” does not include thorium or uranium.

Minor deviations: Deviations in the structure’s configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards.

Mouth: The river mouths referenced in this document can be determined using the maps located at: <http://www.mass.gov/eea/agencies/massdep/water/watersheds/wetlands-maps-mouth-of-coastal-river.html>.

Navigable waters or Navigable waters of the U.S.: See the definition of “waters of the U.S.” below.

Nearshore disposal: This is defined in the USACE Coastal Engineering Manual as “(1) In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone. (2) The zone which extends from the swash zone to the position marking the start of the offshore zone, typically at water depths of the order of 20m.” A nearshore berm is an artificial berm built in shallow water using dredged material. Often, the berm is intended to renourish the adjacent and downdrift shore over time under the influence of waves and currents.

Non-tidal wetlands: See the definition of “Waters of the U.S.” below.

Ordinary High Water Mark (OHW): A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).

Overall project: See the definition of “single and complete linear project.”

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.

Pre-construction notification (PCN): A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by these GPs. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized under these GPs.

Real estate subdivision: Includes circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or developing said parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof

Reconfiguration zone: A Corps-authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Secondary effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final §404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are: aquatic areas drained, flooded, fragmented; fluctuating water levels in an impoundment and downstream associated with the operation of a dam; septic tank leaching and surface runoff from residential or commercial developments on fill; and leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Sedimentation and turbidity: For the purposes of this document, “greater than minimal sedimentation and turbidity” is generally not considered to occur from the installation of sheet piles, removal of sheet piles when done in accordance with GC 16, the installation or removal of piles, dredging or excavating in predominantly sand and coarser material, and dredged material disposal in the upland (e.g., beach or parking lot) into properly constructed upland contained dredged material disposal area.

Shellfish dredging: Shellfish dredging typically consists of a net on a frame towed behind a boat to capture shellfish and leave the sediment behind. Dredges may skim the surface, utilize hydraulic jets, toothed rakes or suction apparatus.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of these GPs. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Overall project: The overall project, for purposes of these GPs, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see the definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in a GP authorization.

Special aquatic sites: These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.

Stream: The term “stream” in the document means rivers, streams, brooks, etc.

Streambed: The substrate of the stream channel between the OHW marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

Temporary impacts: Temporary impacts include, but are not limited to, waters of the U.S. that are temporarily filled, flooded, excavated, or drained because of the regulated activity.

Tidal wetlands: See the definition of “Waters of the U.S.” below.

Tide gates: Structures such as duckbills, flap gates, manual and self-regulating tide gates, etc. that regulate or prevent upstream tidal flows.

Turbidity: See the definition of “Sedimentation and turbidity” above.

Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term ‘utility line’ does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.

Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass (*Zostera marina*) and widgeon grass (*Rupia maritima*) in marine systems (does not include salt marsh) as well as a number of freshwater species in rivers and lakes. These are a type of SAS defined at 40 CFR 230.43. Vegetated shallows are commonly referred to as submerged aquatic vegetation or SAV. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.

Vernal pools (VPs): For the purposes of these GPs, VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, VPs support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

Water diversions: Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.

Waters of the United States (U.S.)

- **Navigable waters of the United States** are waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR 329 and identify waters where permits are required for work or structures pursuant to §§9 and 10 of the Rivers and Harbors Act of 1899. They are generally defined in 33 CFR 329.4 as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." These are waters that are navigable in the traditional sense where permits are required for certain work or structures pursuant to §§ 9 and 10 of the Rivers and Harbors Act of 1899. These waters include the following Federally- designated navigable waters in Massachusetts: Merrimack River, Connecticut River, and Charles River to the Watertown Dam. The jurisdictional limits are the MHW line in tidal waters and the OHW mark in non-tidal portions of the Federally-designated navigable waters. For any discharge of fill into navigable waters, see the Waters of the United States definition below for jurisdictional limits.
- **Waters of the United States** are defined in 33 CFR 328. These waters include more than navigable waters of the U.S. and are the waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the Clean Water Act. Waters of the U.S. include jurisdictional wetlands. The landward limits of jurisdiction in tidal waters extends to the HTL and in non-tidal waters extends to the OHW mark. When adjacent wetlands are present, the jurisdiction extends beyond the OHW mark to the limit of the adjacent wetlands. When the water of the U.S. consists only of wetlands the jurisdiction extends to the limit of the wetland.
- **Non-tidal waters** is an abbreviation for "non-tidal waters of the U.S."
- **Non-tidal wetland:** A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the HTL (*i.e.*, spring high tide line).
- **Tidal waters** is an abbreviation for "tidal waters of the U.S."
- **Tidal wetland:** A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be

practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the HTL.

- **Waterbody:** For purposes of these GPs, a waterbody is a jurisdictional water of the U.S. If a wetland is adjacent to a waterbody determined to be a water of the U.S., that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Acronyms

BMPs	Best Management Practices
BUAR	Board of Underwater Archaeological Resources
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EFH	Essential Fish Habitat
FNP	Federal Navigation Project
GC	General condition
GP	General permit
HTL	High Tide Line
IP	Individual permit
LID	Low impact development
MassDEP	Massachusetts Department of Environmental Protection
MA DMF	Massachusetts Division of Marine Fisheries
MA NHESP	Natural Heritage and Endangered Species Program
MHC	Massachusetts Historical Commission
MHHW	Mean Higher High Water
MHW	Mean High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHW	Ordinary High Water
PCN	Pre-construction notification
SAS	Special aquatic sites
SF	Square feet
SV	Self-verification
STURAA	Surface Transportation and Uniform Relocation Assistance Act
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
TOY	Time of year
USFWS	U.S. Fish and Wildlife Service
USCG	U.S. Coast Guard
USGS	U.S. Geological Service
VP	Vernal pool
WPA	Wetlands Protection Act
WQC	Water Quality Certification

VIII: Contacts and Tribal Areas of Concern

1. Federal

U.S. Army Corps of Engineers
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
(978) 318-8338 (phone); (978) 318-8303 (fax)
www.nae.usace.army.mil/missions/regulatory

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930
(978) 281-9300 (phone)
(*Federal endangered species & EFH*)

National Park Service
15 State Street
Boston, MA 02109
(617) 223-5191 (phone)
(*Wild and Scenic Rivers*)

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP05-2)
Boston, Massachusetts 02109-3912
(617) 918-1692 (phone)

U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
(603) 223-2541 (phone)
(*Federal endangered species*)

Commander (dpb)
First Coast Guard District
Battery Building
One South Street
New York, NY 10004-1466
(212) 514-4331 (phone); (212) 514-4337 (fax)
(*bridge permits*)

2. State of Massachusetts

Department of Environmental Protection (MassDEP)

DEP Division of Wetlands and Waterways
One Winter Street
Boston, MA 02108
(617) 292-5695

DEP Western Region
Wetlands Protection Program
436 Dwight Street
Springfield, MA 01103
(413) 784-1100

DEP Central Region
Wetlands Protection Program
8 New Bond Street
Worcester, MA 01606
(508) 792-7650

DEP Southeast Region
Wetlands Protection Program
20 Riverside Drive, Route 105
Lakeville, MA 02347
(508) 946-2800

DEP Northeast Region
Wetlands Protection Program
205B Lowell Street
Wilmington, MA 01887
(978) 694-3200

Massachusetts Office of Coastal Zone Management (CZM)

MA Office of Coastal Zone Management
251 Causeway Street, Suite 800
Boston, MA 02114
(617) 626-1200 (phone)

3. Historic Resources:

a. Massachusetts Historical Commission (MHC)

The Massachusetts Archives Bldg.

220 Morrissey Boulevard

Boston, MA 02125

(617) 727-8470 (phone); (617) 727-5128 (fax)

Area of concern: The entire Commonwealth of Massachusetts

b. Massachusetts Board of Underwater Archaeological Resources (BUAR)

251 Causeway Street, Suite 800

Boston, MA 02114

(617) 626-1141 (phone); (617) 626-1240 (fax); victor.mastone@state.ma.us

Area of concern: All Massachusetts lakes, ponds, rivers and navigable waters.

c. Tribal Historic Preservation Officers (THPOs)

Tribal Historic Preservation Officer

Wampanoag Tribe of Gay Head (Aquinnah)

20 Black Brook Road

Aquinnah, MA 02535

(508) 645-9265, x175 (phone); (508) 645-3790 (fax); bettina@wampanoagtribe.net

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Mashpee Wampanoag Tribe

483 Great Neck Road South

Mashpee, MA 02649

(508) 477-0208, x101 (phone); (508) 477-1218 (fax); rpeters@mwtribe.com

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Stockbridge-Munsee Mohican Tribal Historic Preservation, New York Office

65 1st Street

Troy, NY 12180

(518) 244-3164 (phone); bonney.hartley@mohican-nsn.gov

Area of concern: West of Connecticut River

Tribal Historic Preservation Officer

Narragansett Indian Longhouse

4425 South County Trail

Charlestown, RI 02813

(401) 491-9459 (phone); (401) 862-5106 (cell); (413) 325-7691 (cell); (401) 491-9458 (fax)

brwnjbb123@aol.com, dhnthpo@gmail.com

Area of concern: Boston and its surrounding neighborhoods; Lynn; Newton; these cities and towns in Plymouth County (Carver, Duxbury, Hingham, Kingston, Marshfield, Middleborough, Plymouth, Plympton, Scituate); these cities and towns in Norfolk County (Milton, Quincy, Braintree, Randolph, Canton, Sharon and Foxborough); the Blackstone River valley and the cities and towns west of Worcester (which are those including and west of Ashburnham, Westminster, Princeton, Holden, Paxton, Leicester, Oxford and Webster).

IX: SHPO PROJECT NOTIFICATION FORM

(see following page)

DRAFT

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION

220 MORRISSEY BOULEVARD

BOSTON, MASS. 02125

617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: _____

Location / Address: _____

City / Town: _____

Project Proponent

Name: _____

Address: _____

City/Town/Zip/Telephone: _____

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

Project Description (narrative):

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

What is the total acreage of the project area?

Woodland _____ acres
Wetland _____ acres
Floodplain _____ acres
Open space _____ acres
Developed _____ acres

Productive Resources:
Agriculture _____ acres
Forestry _____ acres
Mining/Extraction _____ acres
Total Project Acreage _____ acres

What is the acreage of the proposed new construction? _____ acres

What is the present land use of the project area?

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: _____

Address: _____

City/Town/Zip: _____

Telephone: _____

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

*Guidance for Completing MHC's **Project Notification Form** (950 CMR 71.00, Appendix A)*

- ❖ Please make sure you **type or print legibly** the Project Notification Form (PNF) and fill out **all** sections of the form.
- ❖ Please submit a PNF for **each** project separately. This will facilitate MHC's review of multiple project submissions.
- ❖ Please include the street and number in the address line of the project area. Please be sure to specify the town name.
- ❖ Please make sure you fill out *both* the **project address section** and the **project contact** section. Please note that these two addresses may be the same in some cases. It is important for MHC to have a contact person in order to facilitate review, should questions arise.
- ❖ The funding, licensing, and permitting section **must be completed** in order for MHC to review the PNF. Be sure to list *all* funding, licensing and permitting involved with the entire project; this includes **federally** funded, licensed, and permitted projects, as well as **state** funded, licensed, and permitted projects. Some examples of common funding, licensing, and permitting agencies and funding sources are: **Army Corps of Engineers; Federal Communications Commission; Community Development Block Grants; School Building Assistance from the Massachusetts Department of Education; Department of Housing and Community Development; Department of Environmental Protection (permits such as sewer connection, wetlands, or Chapter 91 permits); Massachusetts Highway Department (curb cut permits), etc. There are many others.**
- ❖ Please be sure to **describe** the proposed project in **detail**. Attach additional pages if necessary. If dates of construction on buildings or dates of alterations to a site are known, please be sure to include this information in your project description.
- ❖ Please include photographs of the proposed project site. If the project involves demolition or rehabilitation of a building(s), be sure to include photos of major elevations of the building(s). Please also be sure to label photographs. Attach the most current project plans and elevations if available.
- ❖ **Please be sure to include a photocopy of the pertinent section of the U.S.G.S. map with your submission.** The MHC cannot review a PNF without a U.S.G.S. section map. You can purchase U.S.G.S. maps at local camping, hiking, and sporting goods stores, or download U.S.G.S. maps from the World Wide Web at www.topozone.com; or make a photocopy of U.S.G.S. maps at libraries.
- ❖ Do not use other maps instead of the U.S.G.S. map. However, additional maps such as plot plans or assessors' maps may be included **in addition** to the U.S.G.S. section map.
- ❖ **Boundaries of the project area** should be specific. Do not circle a large plot of land on the U.S.G.S. map and indicate that the project falls within the circle.

This guidance document is offered to assist in compliance with M.G.L. Chapter 9, Section 26-27c, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00)

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Subject: U.S. Army Corps of Engineers: Public Notice for Proposed MA GPs Reissuance
Date: Friday, September 15, 2017 2:41:00 PM

The U.S. Army Corps of Engineers, New England District, Regulatory Division, has published a public notice for the proposed reissuance of the Massachusetts General Permits. You can access the public notice at <http://www.nae.usace.army.mil/Missions/PublicNotices.aspx> or <http://www.nae.usace.army.mil/Missions/Regulatory/PublicNotices>, or access it directly at: http://www.nae.usace.army.mil/portals/74/docs/regulatory/PublicNotices/NAE-2016-00599_MA_General_Permits.pdf.

Paper copies of this public notice were mailed to the state historical commission and Federally recognized Native American Indian tribes. For more information, please contact Greg Penta at gregory.r.penta@usace.army.mil or 978-318-8862.

If you wish to have your address changed or removed from this mailing list, please contact Ms. Tina Chaisson at (978) 318-8058 or bettina.m.chaisson@usace.army.mil.

Media Name	City	State	Address	Zip	Salutation
Athol Daily News	Athol	MA	P.O. Box 1000	01331-1000	
Berkshire Eagle	Pittsfield	MA	75 S. Church St.	01201-6166	
Cape Cod Times	Hyannis	MA	319 Main Street	02601-4037	
Daily Item	Lynn	MA	P.O. Box 951	01903-0951	
Daily Hampshire Gazette	Northampton	MA	P.O. Box 299	01061-0299	
Daily Times Chronicle	Woburn	MA	1 Arrow Drive	01801-2039	
Herald News	Fall River	MA	207 Pocasset Street	02721	
Malden Evening	Malden	MA	277 Commercial Street	02148-6708	
Milford Daily News	Milford	MA	197 Main St., Suite 1	01757-3255	
Patriot Ledger	Quincy	MA	P.O. Box 699159	02269-9159	
Sentinel & Enterprise	Fitchburg	MA	P.O. Box 730	01420-0730	
Taunton Gazette	Taunton	MA	5 Cohannet St.	02780-3903	
Boston Herald	Boston	MA	P.O. Box 55843	02205-5843	
The Christian Science	Boston	MA	1 Norway Street	02115-3105	
Daily News of Newburyport	Newburyport	MA	23 Liberty St.	01950	
Eagle-Tribune	North Andover	MA	100 Turnpike St.	01845	
Enterprise Publishing Co.	Brockton	MA	1324 Belmont St. STE 10	02301-4435	
Gardner News	Gardner	MA	P.O. Box 340	01440-0340	
MetroWest Daily News	Framingham	MA	33 New York Ave.	01701	
Daily News	Needham	MA	254 2nd Ave.	02494	
The Recorder	Greenfield	MA	P.O. Box 1367	01302-1367	
Southbridge Evening News	Southbridge	MA	P.O. Box 90	01550-0090	
Standard-Times	New Bedford	MA	25 Elm St.	02740	
The Sun	Lowell	MA	491 Dutton St., Suite 1	01854-4292	
Sun Chronicle	Attleboro	MA	34 Main St	02703	
The Telegram & Gazette	Worcester	MA	20 Franklin St.	01608	
Wakefield Daily Item	Wakefield	MA	26 Albion Street	01880-2803	
The Republican	Springfield	MA	1860 Main St. PO Box 1329	01102-1329	
Westfield News	Westfield	MA	62 School St.	01085	
Harvard Crimson Daily	Cambridge	MA	14 Plympton Street	02138-6606	
The New York Times	Boston	MA	2 Fanueil Hall Market Place,	02109	
The Wall Street Journal	Boston	MA	10 Post Office Square Ste	02109-4603	
USA Today	Boston	MA	640 Commonwealth Ave.	02215-2422	
Berkshire Record	Great Barrington	MA	21 Elm St.	01230	
Community Newspaper Co.	Marshfield	MA	165 Enterprise Drive	02050	
Action Unlimited	Concord	MA	100 Domino Dr #1	01742-2817	
Community Newspaper Co.	Needham	MA	P.O. Box 9113	02492	
Barre Gazette	Barre	MA	P.O. Box 448	01005-0448	
Community Newspaper Co.	Concord	MA	P.O. Box 9191	01742-9191	
Belchertown Sentinel	Belchertown	MA	P.O. Box 601	01007-0601	

Media Name	City	State	Address	Zip	Salutation
Community Newspaper Co.	Lexington	MA	9 Merian St.	02420	
Falmouth Publishing	Falmouth	MA	50 Depot Avenue	02540-2302	
Canton Citizen	Canton	MA	866 Washington St.	02021-2514	
Cape Cod Chronicle	Chatham	MA	60 Munson Meeting Way #C	02633-1992	
Carlisle Mosquito	Carlisle	MA	662 A Bedford Rd.	01741	
Country Journal	Huntington	MA	P.O. Box 429	01050-0429	
Dedham Times	Dedham	MA	395 Washington Street	02026-4456	
Duxbury Clipper	Duxbury	MA	P.O. Box 1656	02331-1656	
Everett Leader-Herald	Everett	MA	28 Church Street	02149-2719	
???????? Foxboro Reporter	Foxboro	MA	36 Mechanic St. Suite 107	02035-2073	
The Cape Codder	Orleans	MA	5 Namskaket Road	02653	
Bulletin Newspapers	Hyde Park	MA	695 Truman Hwy # B103	02136-3552	
Longmeadow News	Westfield	MA	62 School Street	01085	
????????? Weekly News	Peabody	MA	P.O. Box 6039	01961-6039	
Martha's Vineyard Times	Vineyard Haven	MA	P.O. Box 518	02568-0518	
????????? Sutton	Millbury	MA	117 Elm Street	01527	
Milton Times	Milton	MA	P.O. Box 444	02186-0444	
North Reading Transcript	North Reading	MA	P.O. Box 7	01864-0007	
Pittsfield Gazette	Pittsfield	MA	P.O. Box 2236	01202-2236	
Boston Post-Gazette	Boston	MA	5 Prince St.	02113	
Provincetown Banner	Provincetown	MA	P.O. Box 977	02657-0977	
Quincy Sun	Quincy	MA	1372 Hancock Street	02169-5190	
The Barnstable Patriot	Hyannis	MA	P.O. Box 1208	02601-1208	
Community Advocate	Westborough	MA	32 South St.	01581	
Community Newspaper Co.	Milford	MA	197 Main St., Suite 1	01757-2636	
????????? North Attleboro	North Attleboro	MA	31 N. Washington St. Unit 7	02760-1650	
Grafton News	North Grafton	MA	79 Worcester St. Suite 4	01536-1040	
Groton Herald	Groton	MA	P.O. Box 610	01450-0610	
Harvard Post	Concord	MA	150 Baker St. Ext Ste 105	01742-2198	
Inquirer and Mirror	Nantucket	MA	P.O. Box 1198	02554-1198	
The Landmark	Holden	MA	1161 Main Street	01520	
Turley Publications	Palmer	MA	24 Water St.	01069	
The Manchester Cricket	Manchester	MA	P.O. Box 357	01944-0357	
Middleboro Gazette	Middleboro	MA	P.O. Box 551	02346-0551	
Spencer New Leader	Southbridge	MA	25 Elm St.	01550	
The Otis Notice	Osterville	MA	P.O. Box 71	02655	
Webster Patriot	Webster	MA	168 Gore Rd.	01570-0814	
Reminder Publications	East Longmeadow	MA	280 North Main Street	01028-1814	
Dorchester Reporter	Dorchester	MA	150 Mount Venon St., Suite	02125	
Hathaway Pub., SouthCoast	New Bedford	MA	25 Elm St.	02740	

Media Name	City	State	Address	Zip	Salutation
The Wanderer	Mattapoissett	MA	P.O. Box 102	02739-0102	
Ware River News	Ware	MA	80 Main Street	01082	
Town Reminder Turley	Palmer	MA	24 Water Street	01069-1885	
Vineyard Gazette	Edgartown	MA	P.O. Box 66	02539-0066	
Walpole Times	Walpole	MA	7 West St.	02081-2856	
The Wellesley Townsman	Needham Heights	MA	254 2nd Ave., Suite Side	02494-2029	
West Springfield Record	West Springfield	MA	P.O. Box 357	01090-0357	
Community Newspaper Co.	Framingham	MA	33 New York Ave.	01701	
Weymouth News Gatehouse	Randolph	MA	15 Pacella Park Dr. Ste 120	02368-1700	
Winchendon Courier	Winchendon	MA	44 Central St.	01475-1608	
Business Wire	Boston	MA	2 Center Plaza, Suite 500	02108	
The Associated Press	Boston	MA	184 High Street, Floor 3	02110-3089	
WBSL-FM	Sheffield	MA	245 N. Undermountain Rd.	01257-9638	
WSMU-FM	North Dartmouth	MA	285 Old Westport Rd.	02747-2356	
WYAJ-FM	Sudbury	MA	390 Lincoln Rd.	01776-1409	
WXPL-FM	Fitchburg	MA	160 Pearl St.	01420-2631	
WICN-FM	Worcester	MA	50 Portland St.	01608-2013	
WOZQ-FM	Northampton	MA	Campus Center, Smith	01063	
WMWM-FM	Salem	MA	352 Lafayette St.	01970-5348	
WTCC-FM	Springfield	MA	1 Armory Square	01105-1204	
WMLN-FM	Milton	MA	1071 Blue Hill Ave.	02186-2302	
??????????? WBET-AM	Brockton	MA	250 Belmont St.	02301	
WUNR-AM	Boston	MA	60 Temple Pl. 2nd Floor	02111-1324	
WRBB-FM	Boston	MA	360 Huntington Ave.	02115	
WHDH-TV 7	Boston	MA	7 Bullfinch Place	02114	
WJJW-FM	North Adams	MA	375 Church St.	01247	
WSKB-FM	Westfield	MA	577 Western Ave.	01085	
WCIB-FM	Hyannis	MA	154 Barnstable Rd.	02601	
WOMR-FM	Provincetown	MA	P.O. Box 975	02657	
WNAW-AM	North Adams	MA	P.O. Box 707	01247	
WBRK-AM/FM	Pittsfield	MA	100 North Street	01201-5109	
WBSM-AM / WFHN-FM	Fairhaven	MA	22 Sconticut Neck Rd.	02719	
WXRV-FM	Haverhill	MA	30 How St.	01830	
WCCM-AM / WNNW-AM	Methuen	MA	462 Merrimack St.	01844-5804	
WCCH-FM	Holyoke	MA	303 Homestead Ave.	01040-1091	
WHYN-AM/FM	Springfield	MA	1331 Main St.	01103-1621	
WAIC-FM	Springfield	MA	1000 State St.	01109-3151	
WGBY-TV 57	Springfield	MA	44 Hampden Street	01103-1267	
WGGB-TV 40	Springfield	MA	1300 Liberty St.	01104	
WHRB-FM	Cambridge	MA	389 Harvard Street	02138-3930	

Media Name	City	State	Address	Zip	Salutation
WDJM-FM	Framingham	MA	100 State St. #512	01702-2460	
WCAP-AM	Lowell	MA	243 Central St.	01852	
WFXT-TV 25	Dedham	MA	25 Fox Drive	02027	
WCVB-TV 5	Needham	MA	5 TV Place	02194-2302	
WBUR-AM/FM	Boston	MA	890 Commonwealth Ave.	02215-1205	
WRKO-AM / WMKK-FM	Brighton	MA	20 Guest St., 3rd Floor	02135	
WBZ-AM	Boston	MA	1170 Soldiers Field Rd.	02134-1004	
WBZ-TV 4	Boston	MA	1170 Soldiers Field Road	02134-1004	
WSBK-TV 38	Boston	MA	1170 Soldiers Field	02134	
WEIM-AM	Fitchburg	MA	762 Water St.	01420-6481	
WCHC-FM	Worcester	MA	1 College Street	01610	
WMUA-FM	Amherst	MA	105 Campus Center	01003	
WMHC-FM	South Hadley	MA	Blanchard Student Center	01075	
WGFP-AM	Webster	MA	27 Douglas Rd.	01570-3203	
WWNH-AM	Worthington	MA	P. O. Box 84	01098-0084	
NECN - New England Cable	Newton	MA	160 Wells Avenue	02459-3302	
WKKL-FM	West Barnstable	MA	2240 Iyanough Rd.	02668-1532	
VOX Radio Group WUPE,	Pittsfield	MA	211 Jason St.	01201-5907	
WJFD-FM	New Bedford	MA	651 Orchard St. #300	02744-1008	
WSHL-FM	North Easton	MA	320 Washington St.	02357-7800	
WMVY-FM	Vineyard Haven	MA	P.O. Box 1148	02568	
WGAJ-FM	Deerfield	MA	Deerfield Academy	01342	
WAQY-FM	East Longmeadow	MA	45 Fisher Ave.	01028-1707	
WMBR-FM	Cambridge	MA	3 Ames St.	02142-1305	
WZLY-FM	Wellesley Hills	MA	106 Central Street	02181	
WPLM-AM/FM	Plymouth	MA	17 Columbus Rd.	02360	
WBCN-FM	Boston	MA	83 Leo Birmingham Pkwy.	02135-1157	
WBMX-FM	Boston	MA	83 Leo Birmingham Pkwy	02135	
WESO-AM	Southbridge	MA	100 Foster St.	01550-2537	
WAAF-FM	Brighton	MA	20 Guest St., 3rd Floor	02135-2017	
WCUW-FM	Worcester	MA	910 Main Street	01610-1433	
WFCR-FM	Amherst	MA	131 County Cir.	01003	
WPAA-FM	Andover	MA	180 Main St.	01810	
WBIM-FM	Bridgewater	MA	109 Campus Cir.	02325	
WSBS-AM	Great Barrington	MA	425 Stockbridge Rd.	01230-1287	
Cape Cod Broadcasting	Hyannis	MA	737 W. Main St.	02601	
WACM-AM / WSPR-AM	West Springfield	MA	34 Sylvan St.	01089-3444	
WEZE-AM / WROL-AM	North Quincy	MA	500 Victory Rd.	02171-3132	
WATD-FM	Marshfield	MA	130 Enterprise Dr.	02050	
WVNE-AM	Worcester	MA	70 James St. #201	01603-1038	

Media Name	City	State	Address	Zip	Salutation
WCEA-TV 19	Boston	MA	903 Albany St.	02119	
WDPX-TV 58	Boston	MA	1120 Soldiers Field Rd.	02134	
WMFP-TV 62	Boston	MA	1 Beacon St., 35th Flr	02108-3107	
WUTF-TV 66	Hudson	MA	71 Parmenter Rd.	01749-3213	
WNSH-AM	South Hamilton	MA	P.O. Box 242	01982	
WBOS-FM	Boston	MA	55 Morrissey Blvd.	02125	
WDIS and Discussion Radio,	Brockton	MA	226 Montello St.	02301-5305	
WARE-AM	Palmer	MA	3 Converse St., # 101	01069	
WCAI-FM	Woods Hole	MA	P.O. Box 82	02543-1023	
WORC-FM	Worcester	MA	250 Commercial St., # 530	01608-1726	
WVEI-AM	Worcester	MA	181 Moreland St.	01609	
Nashoba Publications	Ayer	MA	P.O. Box 362	01432-0362	
Coulter Press	Clinton	MA	156 Church St.	01510-2506	
????????Holyoke Sun	Chicopee	MA	333 Front St.	01013	
Revere Newspaper Group	Revere	MA	385 Broadway	02151	
Village Reporter	Middleton	MA	12 School Street	01949-1302	
Webster Times	Southbridge	MA	25 Elm St.	01550-2605	
Boston Globe	Boston	MA	135 Wm. T. Morrissey	02125-3338	
Bloomberg News	Boston	MA	100 Summer St., Suite 1402	02110	
WWLP-TV 22	Springfield	MA	P.O. Box 2210	01102-2210	
The Telegram & Gazette	Clinton	MA	156 Church St., 2nd Floor	01510-2500	
Hopkinton Independent	Hopkinton	MA	6 Fenton St.	01748	
WNTN-AM	Newton	MA	143 Rumford Ave.	02466-1311	
WEIB-FM	Northampton	MA	8 North King St.	01060-1139	
Salem News	Beverly	MA	32 Dunham Rd	01915-1895	
WHTB-AM / WSAR-AM	Somerset	MA	1 Home Street	02725-1002	
WCOD-FM / WPXC-FM	Hyannis	MA	154 Barnstable Rd.	02601-2930	
WORC-AM 1310	Worcester	MA	122 Green St. # 2R	01604-4138	
WNEB Radio	Worcester	MA	70 James St. # 201	01603-1045	
Boston Globe	Boston	MA	P.O. Box 55819	02205-5819	
????????????Nantucket	Yarmouth Port	MA	923 Route 6A Unit 1	02675-2159	
Metro Boston	Boston	MA	234 Congress St. 4th Floor	02210-2470	
World Journal - Boston	Boston	MA	216 Lincoln St.	02111	
Andover Townsman	North Andover	MA	100 Turnpike Street	01845-5033	
Beacon Hill Times	Boston	MA	12 Chestnut St. Apt. 2	02108-3625	
Haverhill Gazette	North Andover	MA	100 Turnpike St.	01845-5033	
WGBX-TV 44	Boston	MA	125 Western Avenue	02134-1008	
WPXG-TV 21	Boston	MA	1120 Soldiers Field	02134	
WBPX-TV 68	Boston	MA	1120 Soldiers Field Rd.	02134	
CN 8 New England	Norwell	MA	386 Washington St.	02061	

Media Name	City	State	Address	Zip	Salutation
WUMB-FM	Boston	MA	100 Morrissey Boulevard	02125-3300	
WROR-FM	Boston	MA	55 Morrissey Blvd.	02125-3315	
WTKK-FM	Boston	MA	55 Morrissey Blvd.	02125-3315	
WKLB-FM	Boston	MA	55 Morrissey Blvd.	02125-3315	
WMJX-FM	Boston	MA	55 Morrissey Blvd.	02125-3315	
WERS-FM	Boston	MA	120 Boylston Street	02116	
WEEI-AM	Brighton	MA	20 Guest Street, 3rd Floor	02135-2017	
WACE-AM	Chicopee	MA	326 Chicopee St.	01013-1744	
WHNP-AM	Northampton	MA	15 Hampton Ave.	01060	
WLZX-FM	East Longmeadow	MA	45 Fisher Ave.	01028-1707	
WSRO-AM	Framingham	MA	100 Mt. Wayte Ave.	01702-5705	
WHAI-FM / WHMQ-AM /	Greenfield	MA	81 Woodard Rd.	01301-2112	
WRZE-FM	Hyannis	MA	154 Barnstable Rd.	02601	
WXTK-FM	Hyannis	MA	154 Barnstable Rd.	02601	
WQRC-AM	Hyannis	MA	737 West Main St.	02601-3425	
KISS 108 FM (WXKS-	Medford	MA	10 Cabot Road, Suite 302	02155	
WKOX-AM	Medford	MA	99 Revere Beach Pkwy.	02155-5124	
WRSI-FM The River	Northampton	MA	15 Hampton Ave.	010603809	
WTAG-AM / WSRS-FM	Paxton	MA	96 Stereo Lane	01612-1376	
WNNZ-AM	Springfield	MA	1331 Main Street	01103-1621	
WNAN-FM	Woods Hole	MA	P.O. Box 82	02543-1023	
WXLO-FM	Worcester	MA	250 Commercial St., # 530	01608-1726	
WWFX-FM	Worcester	MA	250 Commercial St., #530	01608-1726	
Hanson Express	Hanson	MA	P.O. Box 60	02341	
Bolton Common	Concord	MA	150 Baker Ave. Ext Ste 105	01742-2198	
Chicopee Register	West Springfield	MA	380 Union St. Suite 52	01089-4105	
Tinytown Gazette	Cohasset	MA	172 S. Main St.	02025	
The Chronicle	New Bedford	MA	25 Elm St.	02740	
The Hull Times	Hull	MA	412 Nantasket Ave.	02045	
Leominster Champion	Leominster	MA	285 Central St. #202B	01453	
Dispatch News	Lowell	MA	491 Dutton St.	01854	
Hometown Weekly	Medfield	MA	120 N. Meadows Rd.	02052	
The Peabody Citizen	Peabody	MA	41 Emerson Street Ext.	01960-4215	
Raynham Call	Taunton	MA	5 Cohannet St.	02780-3903	
The Town Common	Rowley	MA	77 Wethersfield St.	01969	
Montague Reporter	Turner Falls	MA	177 Avenue A	01376-1307	
Town Crier	Upton	MA	48 Mechanic St.	01568	
WRSY-FM	Northampton	VT, MA	15 Hampton Ave.	01060	
WVFM-FM	Haverhill	VT, MA	30 How St.	01830	
WCEC-AM	Methuen	NH, MA	462 Merrimack St.	01844	

Media Name	City	State	Address	Zip	Salutation
WPKX-FM	Springfield	CT, MA	1331 Main St.	01103	
WAMH-FM	Amherst	MA	AC #1907 Campus Ctr.	01002	
WNYN-FM	Athol	MA	362 Green St.	01440	
WNBP-AM	Beverly	MA	8 Enron St.	01915	
Vulcan Sporting News	Quincy	MA	308 Victory Road Suite 8	02171-3129	
WODS-FM	Brighton	MA	83 Leo Birmingham Pkwy.	02135	
WZLX-FM	Brighton	MA	83 Leo Birmingham Pkwy.	02135	
WJIB-AM	Cambridge	MA	443 Concord Ave.	02142-1305	
WIBNW-AM	Needham	MA	144 Gould St. #155	02494	
WNRC-FM	Dudley	MA	Box 5000 Nichols College	01571	
WUML-FM	Lowell	MA	1 University Ave.	01854	
WMFO-FM	Medford	MA	P.O. Box 65	02155	
WMBH-AM	New Bedford	MA	888 Purchase St.	02740	
WJDF-FM	Orange	MA	P. O. Box 973	01364	
WJOE-AM	Gardner	MA	362 Green St.	01440	
WJDA-AM	Chelsea	MA	90 Everett Ave.	02150	
WESX-AM	Chelsea	MA	90 Everett Ave.	02150	
WNEK-FM	Springfield	MA	1215 Wilbraham Rd.	01119	
WSCB-FM	Springfield	MA	263 Alden St.	01109	
WBRS-FM	Waltham	MA	415 South Street	02453	
WRCA-AM	Cambridge	MA	552 Massachusetts Ave. #201	02139	
WCRN-AM	Worcester	MA	82 Franklin St., Fl 1	01608-1917	
Advocate Newspapers Inc.	Everett	MA	P.O. Box 490407	02149-0006	
?????????? Agawam	Feeding Hills	MA	23 Southwick St.	01030	
North Adams Transcript	Pittsfield	MA	P.O. Box 1171	01202-1171	
Town Crier	Woburn	MA	1 Arrow Drive	01801	
Amherst Bulletin	Northampton	MA	P.O. Box 299	01061	
Stonebridge Press	Southbridge	MA	P.O. Box 90	01550	
Bay Windows South End	South Boston	MA	P.O. Box E14	02127-0004	
Holyoke Sun	West Springfield	MA	380 Union St., Ste 52	01089-4105	
Times-Courier	Concord	MA	P.O. Box 9191	01742	
Community Newspaper Co.	Danvers	MA	75 Sylvan St Ste C105	01923-2765	
Spectator	New Bedford	MA	25 Elm St.	02740-6228	
Whitman-Express	Hanson	MA	P.O. Box 60	02341	
??????????Mission Hill	Jamaica Plain	MA	P.O. Box 301119	02130	
Medford Citizen	Danvers	MA	75 Sylvan St. Suite C105	01923-2765	
Shelburne Falls, West	Shelburne Falls	MA	95 State St,	01370	
Somerville News	Somerville	MA	699 Broadway	02144	
Stoneham Independent	Stoneham	MA	200F Main St #343	02180	
Westborough News	Framingham	MA	33 New York Ave.	01701	

Media Name	City	State	Address	Zip	Salutation
Blackstone Valley Tribune	Southbridge	MA	25 Elm Street	01550	
The Advocate	Pittsfield	MA	P.O. Box 1171	01202-1171	
Ipswich Chronicle	Danvers	MA	75 Sylvan St., C 105	01923	
Somerville Times	Somerville	MA	699 Broadway	02144	
Worcester Magazine	Worcester	MA	72 Shrewsbury St., Suite 6	01604	
The Boston Guardian	Boston	MA	P.O. Box 171558	02117	



**US Army Corps
of Engineers®**
New England District
696 Virginia Road
Concord, MA 01742-2751

PUBLIC NOTICE

Comment Period Begins: June 7, 2016

Comment Period Ends: August 8, 2016

File Number: NAE-2016-00599

In Reply Refer To: Alan R. Anacheke-Nasemann, PWS

Phone: (978) 318-8214

E-mail: alan.r.anacheke-nasemann@usace.army.mil

60-DAY PUBLIC NOTICE

PROPOSED REPLACEMENT AND REVISION OF THE DEPARTMENT OF THE ARMY GENERAL PERMITS FOR THE COMMONWEALTH OF MASSACHUSETTS

The New England District, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751 hereby proposes to replace and revise the state-wide General Permits for the Commonwealth of Massachusetts (GPs for MA), pursuant to 33 CFR Part 325.5(c)(1), with updated GPs. The revisions to the GPs are largely structural and procedural. There are few changes relative to impact thresholds or pre-construction notification (PCN) requirements. The revised GPs will continue to authorize activities subject to the Corps' jurisdiction in waters of the U.S. within the boundaries of, and off the coast of the Commonwealth of Massachusetts, excluding work within the boundaries of Indian tribal lands. The revised document adds a GP entitled "Aquaculture Activities" and deletes the GP entitled "Previously Authorized Activities". We are also revising the GP document to include information concerning projects that are proposed within the boundaries of or which otherwise impact federal projects, including (but not limited to) dikes, levees, flowage easements, anchorages and federal navigation projects. Activities within these areas require a separate authorization from the District Commander, known as a "408 Approval," pursuant to 33 U.S.C. Section 408. The 408 Approval must be in place prior to the issuance of a Corps Regulatory Division permit pursuant to the laws identified below. The period of comment is 60 days, to allow sufficient time for commenters to review the GPs and provide substantive feedback.

The existing MA GPs expire on February 4, 2020. However, we propose to reissue the GPs for five years with a new start date in 2016 or 2017 and an expiration date 5 years later (2021/2022). The revised GPs will continue the expedited review process for activities in the Corps' jurisdiction pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research and Sanctuaries Act. This public notice is being issued in accordance with 33 CFR 325.3(b) to coordinate reissuance of the GPs for MA with Federal resource agencies, state agencies and the public.

The existing GPs and their procedures will remain in effect until the effective date of the new GPs. Authorizations issued by the Corps under the existing GPs, prior to the effective date of the new GPs, will remain authorized until the original expiration date (February 4, 2020). Permittees who received written authorization under the existing GPs will not be required to re-apply under the new GPs before February 4, 2020 unless the project proposal is modified to alter the authorized impacts to waters of the United States.

The existing GPs for MA were originally proposed as part of omnibus New England GPs, as indicated in our Public Notice dated July 31, 2014. The New England GPs placed the general permits and their general terms in

one location and state-specific terms in another location. The revision places terms and conditions unique to the Commonwealth of Massachusetts with each GP. In addition, we are proposing to streamline the content of the GPs and their terms and conditions in order to make them more understandable and easier to follow. Finally, we are proposing to relieve permit applicants of the requirement to contact state and Tribal Historic Preservation Officers and the Massachusetts Board of Underwater Archaeological Resources. The Corps will be responsible for the coordination effort upon receipt of a complete application.

Similar to the existing GPs, the revised GPs organize eligible activities into twenty-three (23) activity-specific categories. This was intended to satisfy the requirements of Section 404(e) of the Clean Water Act, which allows the Corps to issue general permits for activities that are similar in nature and will cause only minimal individual and cumulative adverse environmental effects. Identifying specific activities allows the Corps to adequately assess cumulative impacts of permitted activities, as well as fully assess impacts on threatened and endangered species. The proposed GPs retain the function and utility of the existing GPs and are not expected to result in significant substantive changes to how activities in waters of the U.S. are regulated in the Commonwealth of Massachusetts.

All authorizations under the GPs would be subject to the applicability requirements, procedures, and conditions contained in the GP document and any additional written authorization. Project eligibility under these GPs will fall into two categories: Self-Verification (SV) or Pre-Construction Notification (PCN) required, as more fully described in the GP document. Individual authorizations under the GPs are not valid until all other required Federal authorizations and state certifications are obtained.

Projects with minimal individual and cumulative effects on the aquatic environment will be approved administratively under these GPs. Representatives of the Corps, state agencies and the Federal resource agencies (U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and National Marine Fisheries Service) will continue to review those activities requiring a Preconstruction Notification to the Corps as outlined within the GPs. Projects that do not meet the terms and conditions of the GPs, including those that have the potential for more than minimal effects, will require an Individual Permit. The Individual Permit review process is detailed in the Federal regulations at 33 CFR 325, Processing of Department of the Army Permits. Reissuance of the GPs will not alter the Individual Permit review procedures or Federal exemptions.

Essential Fish Habitat

In 1996, the Magnuson-Stevens Fishery Conservation and Management Act was amended to require the Federal fishery management councils (Councils) to designate Essential Fish Habitat (EFH) for all Federally-managed fish species. Essential Fish Habitat is broadly defined as those waters and substrates necessary to fish for spawning, feeding, breeding, and growth to maturity. Section 305 (b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act requires that Federal agencies proposing to authorize, fund, or to undertake actions which may adversely affect EFH consult with National Marine Fisheries Service (NMFS) regarding the action. Accordingly, the Corps has and continues to consult with NMFS regarding the actions permitted under the GP. For certain types of actions that will likely result in no more than minimal adverse effects to EFH individually and cumulatively, NMFS may issue a statement of General Concurrence in accordance with the requirements of 50 CFR 600.920(f).

Section 401 Water Quality Certification

Section 401 of the Clean Water Act requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification from the

state in which the discharge originates that the discharge will comply with the applicable effluent limitations and water quality standards. The Corps is requesting that the Massachusetts Department of Environmental Protection (MassDEP), determine whether to issue, deny or waive Section 401 WQC. Please send comments regarding WQC to: Mr. Lealdon Langley, MassDEP, Bureau of Resource Protection, Wetlands Regulation Program, One Winter Street, Boston, MA 02108; or Lealdon.Langley@Massmail.state.ma.us.

Coastal Zone Management (CZM) Consistency

Section 307(c) of the Coastal Zone Management Act of 1972, as amended, requires Federal agencies conducting activities, including development projects directly affecting a state's coastal zone, to comply to the maximum extent practicable with an approved state coastal zone management program. It also requires the Corps to provide a consistency determination and receive state concurrence prior to the issuance, reissuance, or expansion of activities authorized by a GP for activities within a state with a Federally-approved Coastal Management Program when those activities will affect land or water uses or natural resources of the state's coastal zone. The Corps is therefore requesting that the Massachusetts Office of Coastal Zone Management determine whether to issue, deny or waive CZM Consistency.

Comments

The Corps is soliciting comments from the public; Federal, state, and local agencies and officials; Indian tribes; and other interested parties in order to consider and evaluate the impacts of the revised GPs. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed below. Comments are used in the preparation of an Environmental Assessment pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. All comments will be considered a matter of public record. The current draft of the revised GPs is attached to this public notice and located at www.nae.usace.army.mil/missions/regulatory.aspx >> Public Notices.

Anyone wishing to comment is encouraged to do so in writing within the comment period specified in this notice. Comments should be submitted in writing by the above date to: Mr. Alan R. Anacheke-Nasemann, PWS, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, Massachusetts 01742-2751. If you have any questions or would like a paper copy of the proposed GPs, please contact Mr. Anacheke-Nasemann at (978) 318-8214 or alan.a.anacheke-nasemann@usace.army.mil.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this proposal. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining comments when, in the opinion of the Corps, a hearing is the best means for understanding a wide variety of concerns from a diverse segment of the public.

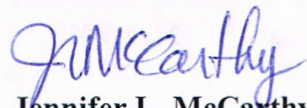
Decision

The decision whether to issue the revised GPs will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors that may be relevant to the proposal will be considered, including conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and

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FILE NO. NAE-2016-00599

accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.



Jennifer L. McCarthy
Chief, Regulatory Division

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here () and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____

ADDRESS: _____

PHONE: _____

Department of the Army
General Permits for Massachusetts

The New England District of the U.S. Army Corps of Engineers (Corps) hereby issues General Permits (GPs) for activities subject to Corps jurisdiction in waters of the U.S. (including navigable waters) within the boundaries of, and off the coast of, the Commonwealth of Massachusetts excluding work within the boundaries of Indian tribal lands. These GPs are issued in accordance with Corps regulations at Title 33 of the Code of Federal Regulations, Parts 320-332 (33 CFR 320–332; see 33 CFR 325.2(e)(2)). The GPs will protect the aquatic environment and the public interest while effectively authorizing activities that have no more than minimal individual and cumulative adverse environmental effects.

This GP document contains the following sections:	<u>Page</u>
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I. GENERAL CRITERIA

1. See Section II to determine if the activity requires Corps authorization, and Sections III and IV to determine if the activity may be eligible for authorization under the GPs, specifically whether it is eligible for self-verification (SV) or preconstruction notification (PCN) is required.
2. In order for activities to qualify for these GPs, they must comply with all applicable GP eligibility criteria and general conditions in Section IV.
3. Project proponents are encouraged to contact the Corps with questions at any time. Pre-application meetings (see 33 CFR 325.1(b)) are encouraged to facilitate early review and help streamline the permit process by alerting the applicant to potential obstacles that may arise during the evaluation (e.g., historic properties general condition (GC) 6 and endangered species (GC 8)).
4. Projects that are not authorized by these GPs require Individual Permits (IPs; 33 CFR 325.5(b)) and proponents must submit an application directly to the Corps. These GPs do not affect the Corps' IP review process or activities exempt from Corps permit requirements. The Corps retains discretionary authority on a case-by-case basis to elevate a SV to PCN or IP, or a PCN to IP based on concerns for the aquatic environment or for any other factor of the public interest (33 CFR 320.4(a)). Whenever the Corps notifies an applicant that a PCN or IP is required, no work in Corps jurisdiction may be conducted until the Corps issues the required authorization in writing indicating that work may proceed.

5. How to Obtain/Apply for Authorization

a. Self-Verification (Self-Verification Notification Form (SVNF) required):

The project proponent may proceed with activities authorized under these GPs that are eligible for SV without submitting a PCN to the Corps provided the prospective permittee has:

i. Verified that the activity will meet the terms and conditions of applicable GPs. Consultation with the Corps and/or other relevant Federal and State agencies may be necessary to ensure compliance with the applicable general conditions (GCs) in Section IV and related Federal laws such as the National Historic Preservation Act (GC 6), the Endangered Species Act (GC 8) and the Wild and Scenic Rivers Act (GC 9). The Corps can confirm that SV eligible activities are authorized under the GPs if the proponent submits a PCN to the Corps.

ii. Verified that any activities will not take place within or could impact a Federal project. See 33 U.S.C. 408. Also see Section IV (GC 7a), and Section XI (1), below.

iii. Submitted the SVNF (Section V) to the Corps. By submitting the SVNF, you are self-verifying that your project meets the terms and conditions of the applicable GPs. See GC 31 for more information, including when a SVNF is not required.

Permittees are encouraged to keep this entire GPs for MA document in their file.

b. Pre-Construction Notification (application and written verification required):

For activities that do not qualify for SV, the permittee must submit a PCN to obtain written verification from the Corps before starting work in Corps jurisdiction.

i. Applicants must include the applicable information in Section VI to ensure the application is complete, which will expedite project review.

ii. For all GP activities that require PCN the Corps will provide (via e-mail, facsimile transmission (fax), overnight mail, or other expeditious manner) a copy of the complete PCN to the U.S. Fish and Wildlife Service (FWS), the Environmental Protection Agency (EPA) MassDEP, and, if appropriate, the National Marine Fisheries Service (NMFS). These agencies will have 15 calendar days from the date the material is transmitted to provide substantive, site specific comments.

iii. In addition, the Corps will provide (via e-mail, fax, overnight mail, or other expeditious manner) the PCN and the SHPO/THPO Notification Form (see Section VII) or the SHPO/MHC's "Project Notification Form." to the State Historic Preservation Officer (SHPO), the Massachusetts Bureau of Underwater Archaeological Resources (BUAR), and the applicable Tribal Historic Preservation Officers (THPOs). These agencies will have 30 calendar days from the date the material is received to provide substantive site specific comments concerning properties that may be eligible for inclusion in the National Register of Historic Places. The SHPO, BUAR and THPOs will contact the Corps within 30 days if there is any potential for an effect on a historic property and the Corps will begin consultation. The Corps may request expedited review on particular projects, e.g., emergency situations. Notification is not required when alternate procedures exist or the Corps has designated another Federal agency as the lead in accordance with 36 CFR 800.2(a)(2).

iv. Applicants must apply as appropriate to the MassDEP or local conservation commission for water quality certification under §401 of the Clean Water Act prior to, or concurrent with, the Corps application.

v. Applicants may not proceed with work in Corps jurisdiction until written verification is received from the Corps. To be eligible and subsequently authorized, an activity must result in no more than minimal individual and cumulative environmental effects as determined by the Corps in accordance with the criteria listed within these GPs. This may require project modifications involving avoidance, minimization, or compensatory mitigation for unavoidable impacts to ensure that the net adverse effects of an activity are no more than minimal. If the Corps determines that the PCN activity qualifies for authorization under these GPs, the Corps will send an authorization letter directly to the applicant. If the Corps determines that the activity does not qualify for authorization under these GPs, or that additional information is required, the Corps will notify the applicant in writing.

vi. Emergency Situations: Contact the Corps in the event of an emergency situation for information on the application and approval process. Emergency situations are limited to sudden, unexpected occurrences that could potentially result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under the GPs; otherwise an IP is required. The Corps will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

II. JURISDICTION/AUTHORITIES TO ISSUE PERMITS

1. The following regulated activities require authorization under the Corps Regulatory Program:
 - a. The construction of any structure in, over or under any navigable water of the United States (U.S.), the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The Corps regulates these activities under Section (§) 10 of the Rivers and Harbors Act of 1899. See 33 CFR 322;
 - b. The discharge of dredged or fill material, and discharges associated with excavation, into waters of the U.S. The Corps regulates these activities under §404 of the Clean Water Act (CWA). See 33 CFR 323; and
 - c. The transportation of dredged material for the purpose of disposal in the ocean. The Corps regulates these activities under §103 of the Marine Protection, Research and Sanctuaries Act. See 33 CFR 324.
2. Related laws: 33 CFR 320.3 includes a list of related laws, including: §401 of the CWA, §402 of the CWA, §307(c) of the Coastal Zone Management Act of 1972, the National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, the Magnuson-Stevens Act, and §7(a) of the Wild and Scenic Rivers Act.

III. ELIGIBLE ACTIVITIES

1. Terms and Conditions
An activity is authorized under GPs 1-23 below only if that activity and the permittee satisfy all of the GP's terms and conditions. Activities that do not qualify for authorization under a GP still may be authorized by an IP.
2. Additional Information
"Navigable waters of the U.S." are defined in 33 CFR 329 and identify waters where permits are required for work or structures pursuant to §§9 and 10 of the Rivers and Harbors Act of 1899.
"Waters of the U.S." are defined in 33 CFR 328 and identify waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the Clean Water Act." For the purposes of this document, "non-tidal waters and wetlands" means non-tidal waters of the U.S. that are jurisdictional under §404 of the Clean Water Act (see 33 CFR 328).

Project proponents must read the text of each GP and the GCs to see if an activity is eligible for authorization. For each GP, read the SV Eligible column, PCN column, *and* the Notes to determine if a SVN (unless otherwise stated) or PCN is required.

The area limits stated in GPs 1, 8-14, 16-20 and 23 apply when there is a discharge of dredged or fill material or a discharge associated with excavation in waters of the U.S. Unless otherwise stated, the total temporary

and permanent impact area is used to determine if a single and complete project is eligible for SV or requires a PCN. An IP is required if the total permanent impact area exceeds the PCN limit.

Permanent impacts include, but are not limited to, waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity; and permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. Temporary impacts include, but are not limited to, waters of the U.S. that are temporarily filled, flooded, excavated, drained or cleared because of the regulated activity. Impacts resulting from activities eligible for exemptions under §404(f) of the CWA are not considered when calculating the impact area.

3. General Permits:

1. Maintenance
2. Moorings
3. Floats, Lifts and Pile-Supported Structures
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects and Stream Crossings
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Temporary Construction, Access, and Dewatering
15. Reshaping Existing Drainage Ditches, New Ditches, and Mosquito Management
16. Response Operations for Oil and Hazardous Substances
17. Cleanup of Hazardous and Toxic Waste
18. Scientific Measurement Devices
19. Survey Activities
20. Agricultural Activities
21. Fish and Wildlife Harvesting and Attraction Devices and Activities
22. Aquaculture Activities
23. Aquatic Habitat Restoration, Establishment and Enhancement Activities

GP 1. Maintenance (§§10 and 404; tidal and non-tidal waters of the U.S.) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified in the original permit or the most recently authorized modification.¹ Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are also eligible. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. Also eligible is the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, the Corps may waive the two-year limit in writing provided the permittee can demonstrate funding, contract, or other similar delays.

Not authorized under GP 1: (a) Permanent impacts >1 acre in non-tidal waterways and/or wetlands, >1/2 acre in tidal waters, >1000 SF in tidal Special Aquatic Sites (SAS) other than vegetated shallows, or >100 SF in tidal vegetated shallows; (b) Temporary impacts >1 acre in tidal waters, >5000 SF in tidal SAS other than vegetated shallows, or >1000 SF in vegetated shallows; (c) stream crossing modifications (including sliplining), replacements or extensions (see GP 10); (d) new stream channelization or stream relocation projects (e.g., those in response to storm or flood events); or (e) maintenance dredging, beach nourishment or beach restoration (see GP 5).

Self-Verification Eligible	PCN Required
Repair, replacement in-kind, or maintenance of existing, currently serviceable, authorized structures or fills. This includes, but it is not limited to the removal of accumulated sediments and debris in the vicinity of existing structures (limited to bridges, culverted road crossings, water intake structures and dams), provided: a) removal is the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built; b) removal extends no farther than 50 feet in any direction from the structure; and c) all dredged or excavated materials are deposited and retained in an upland area.	<ol style="list-style-type: none"> 1. Expansions (e.g., structures) or new permanent or temporary impacts (i.e., outside of the previously authorized footprint) occur in waters of the U.S.; or 2. Impacts occur in tidal SAS; or 3. Dam and flood control or levee repair, rehabilitation, or replacement involves: <ol style="list-style-type: none"> a. Change in the flood elevation or permanent water surface elevation of the impoundment; or b. Drawdown of impoundment for construction exceeding one growing season; or c. Work at the Holyoke or Turners Falls Dams; or 4. The discharge of more than <i>de minimis</i> (i.e., inconsequential) quantities of accumulated bottom sediment occur from or through a dam into downstream waters²; or 5. The activity causes turbidity or sediment resuspension: i) in the Connecticut River from the MA/CT border to the Turners Falls Dam, Merrimack River from the mouth to the Essex Dam, tidal portions of the Taunton River (mouth to the Three Mile River river kilometer (rkm) 19), and remaining tidal waters that are not rivers, between Mar 16 and Oct 31; or ii) during the TOY restriction specified in GC 18; or 6. Any work to previously approved tide gates without a Corps-approved operation and maintenance plan or changes affect the hydraulic regime. 7. Repair or replacement of currently-serviceable tide gates through the use of duckbill, flap gate or manual check valve tide gates unless installed on existing outfall structures for pipes conveying stormwater and/or industrial discharges that are not waters of the U.S.

¹ This authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2).

² See Corps Regulatory Guidance Letter No. 05-04 for more information.

GP 2. Moorings (§10; navigable waters of the U.S.) New moorings and mooring fields; the relocation of previously authorized³ moorings; expansions, boundary reconfigurations or modifications of previously authorized mooring fields; and maintenance and replacement of moorings.

Not authorized under GP 2: (a) Moorings or mooring fields classified as, converted to, or associated with a new boating facility⁴; (b) Moorings in a Corps Federal anchorage that are classified as a boating facility⁴ (see PCN Required paragraph 2 for an exception); or (c) Moorings in a Corps Federal channel.

Self-Verification Eligible	PCN Required
<p>1. New or relocated moorings that are:</p> <ul style="list-style-type: none"> a. Authorized by a local harbormaster/municipality under MGL Chapter 91 §10A; and b. Single boat and single-point; and c. Not associated with a boating facility⁴; and d. Not placed in nor impact tidal vegetated shallows (e.g., eelgrass). See GC 2(b); and e. Attached to boats that float at all times; and f. Not located within a Corps Federal navigation project or its buffer zone. <p>2. Existing, authorized moorings are converted from traditional moorings to low impact mooring technology and/or helical anchors.</p>	<p>1. New or relocated of moorings that are not eligible for self-verification.</p> <p>2. New mooring fields; or expansions, boundary reconfigurations or modifications of existing, authorized mooring fields.</p> <p>3. Municipal mooring fields are the only boating facility that may be established in a Corps Federal anchorage.</p>

³ For all GPs, “authorized” means authorized by the Corps, not a state or municipality, unless otherwise stated. A SVNf was not required before January 21, 2010.

⁴ Boating facilities provide for a fee, rent or sell mooring or docking space, such as marinas, yacht clubs, boat clubs, boat yards, dockominiums, town facilities, land/home owners associations, etc. Not classified as boating facilities are piers shared between two abutting properties, or municipal moorings or municipal mooring fields that charge an equitable user fee based only on the actual costs incurred.

GP 3. Floats, Lifts and Pile-Supported Structures (§10; navigable waters of the U.S.) New, expansions, reconfigurations or modifications of: (a) Poles, piles, pole-supported or pile-supported structures, or shore outhauls (hereinafter referred to as “structures”); (b) Floats; and (c) Boat and float lifts (hereinafter referred to as “lifts”).

Not authorized under GP 3: Any floats, lifts or pile-supported structures associated with a new boating facility.

Self-Verification Eligible	PCN Required
<ol style="list-style-type: none"> 1. Private, non-commercial structures; and 2. Structures with decking are ≤ 4 feet in total width, ≥ 4 feet above the substrate, span ≤ 75 feet over salt marsh, and the height of structures at all points is equal to or exceeds the width of the deck (the height shall be measured from the marsh substrate to the bottom of the lowest longitudinal support); and 3. Structures and floats in: (a) tidal navigable waters total ≤ 600 SF combined; and (b) non-tidal navigable waters total ≤ 300 SF combined; and 4. Floats in tidal waters are ≥ 18 inches above the substrate at any time. Skids can only be used in areas where piles are not practicable and on sandy or hard bottom substrates; and 5. Structures, floats or lifts are located ≥ 25 feet from areas that have been mapped or that currently contain vegetated shallows; and Structures, floats or lifts extend ≤ 75 feet waterward from` (a) Mean High Water (MHW), or (b) ordinary high water (OHW) in non-tidal navigable waters; and 6. Structures, floats or lifts extend $\leq 25\%$ of the waterway width at mean low water (MLW) or OHW or are located ≥ 25 feet from property line extensions. See note below; and 7. Construction activities related to structures, floats or lifts extend $\leq 25\%$ of the waterway width at OHW or MLW during the TOY restriction specified in GC 18; and 8. Fenders and similar structures; and 9. Pile removal. 	<ol style="list-style-type: none"> 1. Structures, floats and lifts that are not SV eligible; or 2. Floats that are located over SAS; or 3. Shore outhauls; or 4. Expansions, reconfigurations, reconfiguration zones, or modifications at any authorized boating facility; or 5. New, expansions, reconfigurations, reconfiguration zones, or modifications of structures, floats or lifts that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc.; or 6. Structures for purposes other than navigation or miscellaneous structures; or 7. Installation with jetting techniques; or 8. Installation of any piles > 12” or steel piles of any diameter

Note: See www.nae.usace.army.mil/missions/regulatory >> Forms and Publications >> Structure Placement in Navigable Waterways.

GP 4. Aids to Navigation and Temporary Recreational Structures (§10; navigable waters of the U.S.)

(a) Aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR 66, Chapter I, subchapter C; and (b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use. See GC 10.

Self-Verification Eligible	PCN Required
<ol style="list-style-type: none"> 1. Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG; and 2. Temporary buoys, markers and similar structures: a) placed for recreational use during specific events and removed within 30 days after event, b) placed during winter events on ice and removed before spring thaw, and c) authorized by the local harbormaster. 	<p>Aids to navigation or temporary recreational structures that are not SV eligible.</p>

GP 5. Dredging (§10; navigable waters of the U.S.), Disposal of Dredged Material (§§ 10, 404 & 103; tidal waters of the U.S.), Beach Nourishment (§§ 10 & 404; tidal and non-tidal waters of the U.S.); Rock Removal (§10, navigable waters of the U.S.) and Rock Relocation (§§ 10 & 404; tidal and non-tidal waters of the U.S.) (a) New dredging and maintenance dredging, including: (i) Return water from an upland contained dredged material disposal area; and (ii) Disposal of dredged material at a confined aquatic disposal cell, beach nourishment, nearshore, designated open water or ocean water disposal site, provided the Corps finds the dredged material to be suitable for such disposal; (b) Beach nourishment.

Not authorized under GP 5: (a) New dredging >½ acre or ≥10,000 CY; (b) New or maintenance dredging with >1000 SF of impacts to intertidal areas; (c) New or maintenance dredging and/or disposal (including beach nourishment not associated with dredging) with >1000 SF of impacts to tidal SAS other than vegetated shallows, or >100 SF of impacts to vegetated shallows; (d) Rock removal and relocation for navigation >½ acre; (e) Beach scraping; or (f) New dredging where the primary purpose is sand mining for beach nourishment.

Self-Verification Eligible	PCN Required
<p>1. Maintenance dredging of previously dredged areas, with upland disposal, provided:</p> <p>a. dredged area ≤ ½-acre; and</p> <p>b. not located in i) the Connecticut River from the MA/CT border to the Turners Falls Dam, the Merrimack River from the mouth to the Essex Dam, tidal portions of the Taunton River (mouth to the Three Mile River (rkm 19)); ii. other tidal waters between Feb 15 and Oct 31; and iii) all other navigable waters of the U.S. between October 1 and June 30;</p> <p>(c) no impacts to tidal SAS or intertidal areas, or located within 100' of vegetated shallows or shellfish areas.</p>	<p>1. New dredging and associated disposal; or</p> <p>2. Maintenance dredging located in waters or at time periods not eligible for self-verification; or</p> <p>3. Beach nourishment in waters of the U.S. not associated with dredging; or</p> <p>4. Maintenance dredging where the primary purpose is sand mining for beach nourishment.</p>

Note: Disposal types are: upland, beach nourishment, nearshore, open water, ocean, or confined aquatic disposal. Compensatory mitigation is generally required for impacts to tidal SAS and intertidal areas resulting from new dredging.

GP 6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges (§404; navigable waters of the U.S.) Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under §9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a STURRA (144h) exemption do not constitute USCG authorization. See GC 10.

Not authorized under GP 6: Causeways and approach fills (see GP 10).

Self-Verification Eligible	PCN Required
Discharges of dredged or fill material incidental to the construction of bridges.	The activity causes turbidity or sediment resuspension in navigable waters of the U.S. during TOY restriction provided in GC 18.

GP 7. Bank and Shoreline Stabilization (§§ 10 & 404, tidal and non-tidal waters of the U.S.)

Bank stabilization activities necessary for erosion protection along the banks of lakes, ponds, streams, estuarine and ocean waters, and any other open waters. Also eligible are non-structural shoreline stabilization activities. Activities must meet the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.; and (c) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored tree revetments may be used in low energy areas).

Not authorized under GP 7: (a) Bank stabilization >500 feet in total length including both stream banks unless the Corps waives this criterion by making a written determination concluding that the discharge will result in no more than minimal adverse effects; (b) Stream channelization or relocation activities; or (c) Breakwaters, groins, and jetties.

Self-Verification Eligible	PCN Required
<p>1. The bank and shoreline disturbance is:</p> <ul style="list-style-type: none">a. ≤ 100 feet in length including both stream banks; or ≤ 100 feet in length on each side of the stream bank when necessary to protect transportation infrastructure; andb. ≤ 1 cubic yard of fill per linear foot average along the bank waterward of the plane of ordinary high water (OHW) or high tide line (HTL); and <p>2. The slope of the structure is more gradual than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams and tidal waters and streams; and</p> <p>3. Non-structural shoreline stabilization activities (See Note 3) ≤ 100 feet in length.</p>	<p>1. The bank and shoreline disturbance is:</p> <ul style="list-style-type: none">a. > 100 feet to ≤ 500 feet in length including both stream banks; or > 100 feet in total length on either side of the stream bank and ≤ 500 feet including both stream banks when necessary to protect transportation infrastructure; orb. > 1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW or HTL; or <p>2. The slope of the structure is steeper than 1V:3H in lakes/ponds; and 1V:1H in non-tidal streams and tidal waters and streams; or</p> <p>3. Non-structural shoreline stabilization activities (see Note 3) > 100 feet in length; or</p> <p>4. Bulkheads, seawalls or similar structures for maritime activities; or</p> <p>5. Impacts to tidal SAS occur; or</p> <p>6. The activity causes turbidity or sediment resuspension during the TOY restriction in the streams or tidal waters specified in GC 18.</p>
<p>Notes:</p> <ul style="list-style-type: none">1. See GP 1 for the replacement of existing, currently serviceable structures.2. "Non-structural shoreline stabilization" means activities that provide substrate necessary to support wetland vegetation and are associated with existing tidal marsh improvements and/or new marsh creation that may include the placement of sand fill, coir logs, coir mats, ribbed mussels, and/or native oyster shell. Non-structural shoreline stabilization does not use hard components such as stone.	

GP 8. Residential, Commercial and Institutional Developments (§§ 10 & 404, non-tidal waters of the U.S.); Recreational Facilities (§404, non-tidal waters of the U.S) Discharges of dredged or fill material into non-tidal waters of the U.S for the construction or expansion of: (a) Residences and residential subdivisions; (b) Residential, commercial and institutional building foundations and building pads; and (c) Recreational facilities. This GP authorizes attendant features that are necessary for the use such as driveways, roads, stream crossings, hiking trails, bike, cart and horse paths, parking lots, garages, yards and associated utilities.

Not authorized under GP 8: (a) Permanent impacts that are >1 acre in non-tidal waters and wetlands; (b) Work in tidal waters; or (c) Stormwater treatment or detention systems, or subsurface sewerage disposal systems, in waters of the U.S (See Note 2).

Self-Verification Eligible	PCN Required
Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands.	<ol style="list-style-type: none"> 1. Permanent and temporary impacts are: <ol style="list-style-type: none"> a. >5000 SF to 1 acre in non-tidal waters and wetlands; or b. Located in non-tidal SAS other than non-tidal wetlands; or 2. Work occurs in non-tidal navigable waters of the U.S; or 3. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18; or 4. Stream channelization, relocation, impoundments, or loss of streambed occurs.

Notes:

1. Impacts include the aggregate total impact area in waters of the U.S. for subdivisions and associated individual lots.
2. Stormwater conveyance components and non-porous, septic effluent pipes that transmit effluent to or between components may be eligible for authorization under GP 9.

GP 9. Utility Line Activities (§§ 10 & 404; tidal and non-tidal waters of the U.S.)

Activities required for: (a) The construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines in tidal and non-tidal waters of the U.S.; (b) The construction, maintenance, or expansion of utility line substation facilities associated with a power line or utility line in non-tidal waters; and (c) The construction or maintenance of foundations for overhead utility line towers, poles, and anchors in tidal and non-tidal waters provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the U.S., provided the activity, in combination with all other activities included in one single and complete project, does not cause the permanent loss of greater than 1 acre of non-tidal waters of the U.S.

Not authorized under GP 9 are: (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters and wetlands, >½ acre in tidal waters, >1000 SF in tidal SAS other than vegetated shallows, or >100 SF in tidal vegetated shallows; or (b) Temporary impacts >1 acre in tidal waters, >5000 SF in tidal SAS other than vegetated shallows, or >1000 SF in vegetated shallows.

Self-Verification Eligible	PCN Required
<ol style="list-style-type: none">1. Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands; and2. Permanent access roads for construction or maintenance of utility lines that comply with the "Permanent Crossings in Non-Tidal Streams" section of the Stream Crossing BMPs document (see Note 2); and3. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments.	<ol style="list-style-type: none">1. Permanent and temporary impacts are:<ol style="list-style-type: none">a. >5000 SF in non-tidal waters and wetlands, or in non-tidal SAS other than non-tidal wetlands; orb. Located in tidal waters or SAS; or2. Work occurs in, over or under navigable waters of the U.S.; or3. There is a permanent change in pre-construction contours in waters of the U.S.; or4. Material resulting from trench excavation is temporarily sidecast into waters of the U.S. for >3 months (material must be placed such that it is not dispersed by currents or other forces); or5. The utility line is placed within and runs parallel to or along a streambed; or6. Stream channelization, relocation, impoundments, or loss of streambed occurs; or7. The activity causes turbidity or sediment resuspension during the TOY restriction in the streams or tidal waters specified in GC 18.

Notes:

1. A utility line is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, data, and telegraph messages, and radio and television communication. The term utility line does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
2. www.nae.usace.army.mil/missions/regulatory >> State General Permits>> Massachusetts.
3. Impacts resulting from mechanized pushing, dragging, or other similar activities that redeposit excavated soil material shall be figured into the area limit determination.

GP 10. Linear Transportation Projects and Stream/Wetland Crossings (§§ 10 & 404; tidal and non-tidal waters of the U.S.) Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways) and attendant features. Any stream channel modification is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. Access roads constructed above pre-construction contours and elevations in waters of the U.S. must be properly bridged or culverted to maintain surface flows.

Not authorized under GP 10 are: (a) permanent impacts for any single and complete project that are >1 acre in non-tidal waters and wetlands, >½ acre in tidal waters of the U.S., >1000 SF in tidal SAS other than vegetated shallows, or >100 SF in tidal vegetated shallows; (b) Temporary impacts >1 acre in tidal waters, >5000 SF in tidal SAS other than vegetated shallows, or >1000 SF in vegetated shallows; (c) non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars (see GP 8); or d) new tide gates.

Self-Verification Eligible	PCN Required
<p>1. Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands; and</p> <p>2. Permanent stream crossings (new crossings, replacement crossings, modifications and expansions/extensions of existing crossings) in non-tidal streams that comply with the “Permanent Crossings in Non-Tidal Streams” section of the Stream Crossing BMPs document (See Note 2); and/or modifications for the purpose of improving passage and flow provided that they are authorized in writing by a local, State or non-Corps Federal environmental agency (See PCN Required, paragraph 4); and</p> <p>3. Temporary stream crossings, including mats, in non-tidal streams that comply with the “Temporary Crossings in Non-Tidal Streams” section of the Stream Crossing BMPs document.</p>	<p>1. Permanent and temporary impacts are:</p> <ol style="list-style-type: none"> >5000 SF in non-tidal waters and wetlands or in non-tidal SAS other than non-tidal wetlands; or located in tidal waters or SAS; or <p>2. Permanent stream crossings in non-tidal streams that are not built in accordance with SV-eligible criterion No. 2, or modifications to existing stream crossings that: a) increase velocity; b) decrease the diameter of the crossing; c) decrease the friction coefficient; or d) involve sliplining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining; or</p> <p>3. Work occurs in, over or under navigable waters of the U.S. PCN review guidelines for permanent crossings in tidal streams are provided in the “Permanent Crossings in Tidal Streams” section of the Stream Crossing BMPs document; or</p> <p>4. Stream channelization, relocation, or loss of streambed (see Note 3) including impoundments, occur; or</p> <p>5. Activities that cause turbidity or sediment resuspension during the TOY restriction specified in GC 18; permanent crossings, or temporary culverts or arches, that are installed during the TOY restriction specified in GC 18 (See exception in GC 17(b)), or.</p>

Notes: 1. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters may be authorized under GP 6.

2. www.nae.usace.army.mil/missions/regulatory >> State General Permits>> Massachusetts.

3. Loss of streambed does not require a PCN when: a) stream crossings are constructed in accordance with the Stream Crossing BMPs for permanent crossings; or b) bridge piers or similar supports are used.

GP 11. Mining Activities (§§ 10 and 404; non-tidal waters of the U.S.)

Discharges of dredged or fill material into non-tidal waters and wetlands for mining activities, except for coal mining and metallic mineral mining activities.

Not authorized under GP 11 are: (a) permanent impacts >1 acre in non-tidal waters and wetlands; or (b) work in tidal waters.

Self-Verification Eligible	PCN Required
Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands.	<ol style="list-style-type: none">1. Permanent and temporary impacts are >5000 SF in non-tidal waters and wetlands, or in non-tidal SAS other than non-tidal wetlands; or2. Work occurs in non-tidal navigable waters of the U.S.; or3. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18; or4. Stream channelization, relocation, impoundments, loss of streambed, or discharge of tailings into streams occurs.

GP 12. Boat Ramps and Marine Railways (§§ 10 and 404; tidal and non-tidal waters of the U.S.)

Activities required for the construction of boat ramps and marine railways.

Not authorized under GP 12 are: (a) permanent impacts that are >1 acre in non-tidal waters and wetlands, >½ acre in tidal waters of the U.S., >1000 SF in tidal SAS other than vegetated shallows, or >100 SF in tidal vegetated shallows; (b) Temporary impacts >1 acre in tidal waters, >5000 SF in tidal SAS other than vegetated shallows, or >1000 SF in vegetated shallows; or (c) dredging in navigable waters of the U.S. (see GP 5).

Self-Verification Eligible	PCN Required
Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands.	<ol style="list-style-type: none">1. Permanent and temporary impacts are:<ol style="list-style-type: none">a. >5000 SF in non-tidal waters and wetlands, or in non-tidal SAS other than non-tidal wetlands; orb. Located in tidal waters or SAS; or2. Work occurs in navigable waters of the U.S.; or3. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18; or4. Boat ramps are located within 25 feet of property line extensions unless the properties are owned by the same owner. The Corps may require a letter of no objection from the abutter(s).

GP 13. Land and Water-Based Renewable Energy Generation Facilities (§§ 10 and 404; tidal and non-tidal waters of the U.S.), and Hydropower Projects (§404; tidal and non-tidal waters of the U.S.) Structures and work in navigable waters of the U.S. and discharges of dredged or fill material into tidal and non-tidal waters of the U.S. for the construction, expansion, modification or removal of: (a) Land-based renewable energy production facilities, including attendant features; (b) Water-based wind or hydrokinetic renewable energy generation projects and their attendant features; and (c) Discharges of dredged or fill material associated with hydropower projects.

For (a) and (b) above, such facilities include water-based wind or hydrokinetic renewable energy generation projects and infrastructure to collect solar (concentrating solar power and photovoltaic), wind, biomass, or geothermal energy. Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable waters of the U.S.

Not authorized under GP 13 are: (a) permanent impacts >1 acre in non-tidal waters and wetlands, >½ acre in tidal waters of the U.S., >100 SF in tidal vegetated shallows, or >1000 SF in other tidal SAS; or (b) Temporary impacts >1 acre in tidal waters, >1000 SF in vegetated shallows, or >5000 SF in other tidal SAS.

Self-Verification Eligible	PCN Required
For land-based facilities, permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands.	<ol style="list-style-type: none"> 1. For land-based facilities, permanent and temporary impacts are: <ol style="list-style-type: none"> a. >5000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or b. Located in tidal waters or SAS. 2. For water-based wind or hydrokinetic renewable energy generation projects, and hydropower projects, permanent and temporary impacts occur in tidal or non-tidal waters and wetlands. 3. For all activities eligible for authorization under GP 13: <ol style="list-style-type: none"> a. Work occurs in, over or under navigable waters of the U.S.; or b. Stream channelization, relocation, impoundments, or loss of streambed occurs; or c. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18.

Note: Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 9.

GP 14. Temporary Construction, Access, and Dewatering (§§ 10 and 404; tidal and non-tidal waters of the U.S.) Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized (if required) by the Corps or the USCG and the temporary work is not included as a component of another GP. This also authorizes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or USCG permit requirements.

Not authorized under GP 14 are: (a) permanent structures or impacts; (b) Temporary impacts in tidal waters that are >1 acre (>1000 SF of impacts in vegetated shallows, >5000 SF in other tidal SAS); (c) use of cofferdams to dewater wetlands or other aquatic areas to change their use; (d) temporary stream crossings (see GP 10); or (e) structures or fill left in place after construction is completed.

Self-Verification Eligible	PCN Required
1. Temporary impacts including land clearing (except for temporary construction mats) in non-tidal waters and wetlands are ≤5000 SF; and 2. Temporary construction mats ≤5000 SF in non-tidal waters and wetlands; and 3. In tidal waters, temporary impacts including mats ≤1000 SF, and temporary structures with no impacts to tidal SAS and left in place ≤30 days.	1. Temporary impacts including land clearing (except for temporary construction mats) in non-tidal waters and wetlands are >5000 SF; or 2. In tidal waters, temporary impacts including mats >1000 SF and temporary structures, with impacts to tidal SAS or in place >30 days; or 4. The activity causes turbidity or sediment resuspension: i) in the Connecticut River from the MA/CT border to the Turners Falls Dam, Merrimack River from the mouth to the Essex Dam, tidal portions of the Taunton River (mouth to the Three Mile River (rkm 19)), and remaining tidal waters that are not rivers, between Mar 16 and Oct 31; or ii) during the TOY restriction specified in GC 18.

Note: Turbidity or sediment resuspension is generally not considered to occur when properly using management techniques to work in dry conditions. PCNs must include plans to demonstrate this.

GP 15. Reshaping Existing Drainage and Mosquito Management Ditches, and Construction of New Ditches (§§ 10 and 404; tidal and non-tidal waters of the U.S.) Discharges to modify the cross-sectional configuration of currently serviceable drainage ditches constructed in waters of the U.S., for the purpose of improving water quality by regrading the drainage ditch with gentler slopes, which can reduce erosion, increase growth of vegetation, and increase uptake of nutrients and other substances by vegetation.

Not authorized under GP 15: Temporary impacts, stream channelization, relocation, impoundments, or loss of streambed.

Self-Verification Eligible	PCN Required
≤500 linear feet of drainage ditch will be reshaped.	1. >500 linear feet of drainage ditch will be reshaped, or the reshaping of the ditch increases the drainage capacity beyond the original as-built capacity or expands the area drained by the ditch as originally constructed (i.e., the capacity of the ditch is not the same as originally constructed or drains additional wetlands or other waters of the U.S.); or 2. New ditches or relocation of drainage ditches constructed in waters of the U.S. (i.e., the location of the centerline of the reshaped drainage ditch is not approximately the same as the location of the centerline of the original drainage ditch; or 3. Mosquito reduction activities; or 4. The activity causes turbidity or sediment resuspension during the TOY restriction provided in GC 18.

GP 16. Response Operations for Oil and Hazardous Substances (§§ 10 and 404; tidal and non-tidal waters of the U.S.)

Eligible for authorization are the activities in (a) - (d) below. SAS should be restored in place at the same elevation. (a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided that the activities are done under either: (i) The Spill Prevention, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-scene coordinator designated by 40 CFR 300; or (iii) Any approved existing State, regional or local contingency plan provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in waters of the U.S. from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable waters for oil and hazardous substance containment, absorption and prevention; and (d) The use of structures and fills for spill response training exercises.

Self-Verification Eligible	PCN Required
<ol style="list-style-type: none">1. Activities are conducted in accordance with (a) or (b) above (see Note 1); and2. Booms placed in navigable waters for oil and hazardous substance containment, absorption and prevention; and3. Temporary impacts for spill response training exercises <5000 SF in non-tidal waters and <1000 SF in tidal waters, and temporary structures in tidal waters, with no impacts to SAS and in place ≤30 days.	<ol style="list-style-type: none">1. Activities that are not conducted in accordance with (a) or (b) above; or2. The activity is planned or scheduled, not an emergency response, and causes turbidity or sediment resuspension during the TOY restriction provided in GC 18; or3. For spill response training exercises, temporary structure and impacts that are not SV eligible, or all permanent structures or impacts.

Notes:

1. For work in the Connecticut River from the MA/CT border to the Turners Falls Dam, Merrimack River from the mouth to the Essex Dam, tidal portions of the Taunton River (mouth to the Three Mile River (rkm 19)), and remaining tidal waters that are not rivers, the permittee must contact the Corps at (978) 318-8338 before or as soon as possible after the work authorized under GP 16(a) - (c) commences for the Corps to address the effects under the Federal Endangered Species Act with NMFS.
2. Permittees have until two weeks following commencement of the activities in GP 16 to submit the SVNF.
3. The requirements in Notes 1 and 2 above do not apply to booms used for spill prevention, or properly contained and cleaned *de minimus* oil or hazardous substance discharges into navigable waters of the U.S.

GP 17. Cleanup of Hazardous and Toxic Waste (§§ 10 and 404; tidal and non-tidal waters of the U.S.)

Specific activities to effect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority. SAS should be restored in place at the same elevation to the maximum extent practicable.

Self-Verification Eligible	PCN Required
1. Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands; and 2. No work in navigable waters of the U.S.; and 3. No stream channelization, relocation, impoundments or loss of streambed.	1. Permanent and temporary impacts are: a. >5000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or b. Located in tidal waters or SAS; or 2. Work occurs in navigable waters of the U.S.; or 3. Stream channelization, relocation, impoundments, or loss of streambed occurs; or 4. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18; or 5. The project involves establishing new disposal sites or expanding existing sites used for the disposal of hazardous or toxic waste.

Notes:

1. Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA as approved or required by EPA, are not required to obtain permits under §404 of the CWA or §10 of the Rivers and Harbors Act.
2. Permittees have until two weeks following commencement of the activities in GP 17 to submit the SVNF.

GP 18. Scientific Measurement Devices (§§ 10 and 404; tidal and non-tidal waters of the U.S.)

Scientific measurement devices for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small weirs and flumes constructed primarily to record water elevation, flow and/or velocity. Upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to pre-construction elevations.

Not authorized under GP 18 are: (a) permanent impacts >5000 SF in tidal and non-tidal waters and wetlands, >100 SF in tidal vegetated shallows, or >1000 SF in other tidal SAS; or (b) Temporary impacts >1 acre in tidal waters, >1000 SF in vegetated shallows, or >5000 SF in other tidal SAS.

Self-Verification Eligible	PCN Required
Permanent and temporary impacts are ≤1000 SF in non-tidal waters and wetlands.	1. Permanent and temporary impacts are: a. >1000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or b. Located in tidal waters or SAS; or 2. The activity involves permanent biological sampling devices in non-navigable waters, temporary or permanent biological sampling devices in navigable waters, or weirs and flumes.

GP 19. Survey Activities (§§ 10 and 404; tidal and non-tidal waters of the U.S.)

Survey activities such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, and historic resources surveys.

Not authorized under GP 19: (a) Permanent impacts >5000 SF in tidal and non-tidal waters and wetlands, >100 SF in tidal vegetated shallows, or >1000 SF in other tidal SAS; or (b) Temporary impacts >1 acre in tidal waters, >1000 SF in vegetated shallows, or >5000 SF in other tidal SAS.

Self-Verification Eligible	PCN Required
<ol style="list-style-type: none">1. Permanent and temporary impacts are ≤1000 SF in waters of the U.S. provided no work in SAS other than non-tidal wetlands; and2. Temporary structures in navigable waters of the U.S.	<ol style="list-style-type: none">1. Permanent and temporary impacts are >1000 SF in non-tidal waters and wetlands, or located in SAS other than non-tidal wetlands; or2. Permanent impacts or structures, temporary impacts >1000 SF, or work in SAS, are located in tidal waters; or3. Permanent structures in navigable waters of the U.S.; or4. Exploratory trenching occurs in waterways (e.g., streams, tidal waters) (see Note 1); or5. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18; or6. Seismic exploratory operations occur between Mar 16 and Oct 31 in the Connecticut River from the MA/CT border to the Turners Falls Dam, Merrimack River from the mouth to the Essex Dam, tidal portions of the Taunton River (mouth to the Three Mile River (rkm 19)), and remaining tidal waters that are not rivers; or7. Work associated with the recovery of historic resources, and the drilling and discharge of excavated material from test wells for oil and gas exploration.

Notes:

1. For the purposes of GP 19, the term “exploratory trenching” means mechanical land or underwater clearing of the upper soil profile to expose bedrock or substrate for the purpose of mapping or sampling the exposed material. (See GCs 13(e) and 16).
2. The discharge of drilling mud and cuttings may require a permit under §402 of the CWA.
3. A SVNF is not required for wetland delineations, core sampling conducted for preliminary evaluation of dredge project analysis, and historic resource surveys.

GP 20. Agricultural Activities (§404; non-tidal waters of the U.S.) Discharges of dredged or fill material in non-tidal waters of the U.S. for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) construction of farm ponds, excluding perennial streams, provided the farm pond is used solely for agricultural purposes; and (c) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in non-tidal streams.

Not authorized under GP 20 are: (a) permanent impacts >1 acre in non-tidal waters and wetlands; (b) work in tidal waters; or (c) construction of farm ponds in perennial streams.

Self-Verification Eligible	PCN Required
Permanent and temporary impacts are ≤5000 SF in non-tidal waters and wetlands.	<ol style="list-style-type: none"> 1. Permanent and temporary impacts are >5000 SF in non-tidal waters and wetlands, or located in non-tidal SAS other than non-tidal wetlands; or 2. Work occurs in non-tidal navigable waters; or 3. Stream channelization, relocation, impoundments, loss of streambed, or farm ponds in non-perennial streams occurs; or 4. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18.

Notes:

This GP authorizes the construction of farm ponds that do not qualify for the CWA §404(f)(1)(C) exemption because of the recapture provision at §404(f)(2).

GP 21. Fish and Wildlife Harvesting and Attraction Devices and Activities (§§ 10 and 404; tidal and non-tidal waters of the U.S.) Fish and wildlife harvesting and attraction devices and activities such as lobster pound nets, crab traps, shellfish dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, shellfish seeding, fish aggregating devices, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.).

Not authorized under GP 21: Artificial reefs or impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area >½ acre.

Self-Verification Eligible	PCN Required
Devices and activities that do not require a PCN.	<ol style="list-style-type: none"> 1. Pound nets other than those traditionally used for lobster, impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre, fish aggregating devices, small fish attraction devices; or 2. Devices and activities that are located in tidal SAS.

Note: A SVNf is not required for work authorized under GP 21.

GP 22. Aquaculture (§§ 10 and 404; tidal and non-tidal waters of the U.S.): (a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into waters of the U.S. necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects.

Not authorized under GP 22 are: (a) Temporary impacts; (b) Finfish aquaculture; (c) Impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area $> \frac{1}{2}$ acre; (d) New or expansions of existing, authorized impoundments and semi-impoundments $> \frac{1}{2}$ acre of waters of the U.S. for the culture or holding of motile species; (e) Cultivation of a nonindigenous species unless that species has been previously cultivated in the waterbody; (f) Cultivation of an aquatic nuisance species; or (g) Attendant features such as docks, piers, boat ramps, stockpiles, or staging areas, or the deposition of shell material back into waters of the U.S. as waste.

Self-Verification Eligible	PCN Required
Devices and activities that do not require a PCN	<ol style="list-style-type: none"> 1. New or expansion of existing aquaculture facilities that: a) are in tidal waters deeper than -6 feet Mean Lower Low Water (MLLW; the exception is for aquaculture bags or cages, which are SV eligible if they are attached to existing docks and piers); or b) total > 2 acres in tidal and non-tidal waters; or 2. Research, educational, commercial-viability or experimental aquaculture gear activities for indigenous species > 1000 SF; or 3. New or expansions of existing, authorized impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster; or 4. Activities take place within 25 feet of SAS, including vegetated shallows, except for aquaculture bags or cages attached to existing docks and piers (see 1 above); or 5. Activities include a species not previously cultivated in the waterbody; or 6. Aquaculture longlines in subtidal waters; or 7. Activities involve a change from bottom culture to floating or suspended culture; or 8. Depth of cultch or spatbed-shell exceeds the minimum necessary for full coverage of the farmed bed bottom; or 9. Shellfish dredging, including mechanical or hydraulic in SAS.
<p>Note: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 defines: a) nonindigenous species as “any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another”; and b) aquatic nuisance species as “a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.”</p>	

GP 23. Aquatic Habitat Restoration, Establishment and Enhancement Activities (§§ 10 and 404; tidal and non-tidal waters of the U.S.) Activities in waters of the U.S. associated with the

restoration, enhancement and establishment of non-tidal and tidal wetlands and riparian areas, including invasive, non-native or nuisance species control; the restoration and enhancement of non-tidal streams and other non-tidal open waters; the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site; the restoration and enhancement of shellfish, finfish and wildlife; and the rehabilitation or enhancement of tidal streams, tidal wetlands and tidal open waters; provided those activities result in net increases in aquatic resource functions and services, and the PCN includes an Aquatic Resource Restoration Plan subject to approval by the Corps.

To the extent that a Corps permit is required, activities authorized by this GP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species may be planted at the site.

Not authorized under GP 23: Stream channelization activities or artificial reefs.

Self-Verification Eligible	PCN Required
<p>1. Permanent or temporary impacts:</p> <ul style="list-style-type: none"> a. Are ≤5000 SF in non-tidal waters and wetlands; and b. Do not occur in tidal waters except for cultch placement provided there are no SAS impacts; and <p>2. Temporary structures in navigable waters of the U.S; or</p> <p>3. SAS planting and transplanting ≤100 SF in tidal waters; and</p> <p>4. The activity is authorized in writing by a local, State or non-Corps Federal environmental resource management agency.</p>	<p>1. Permanent or temporary impacts are:</p> <ul style="list-style-type: none"> a. >5000 SF in non-tidal waters and wetlands; or b. Located in tidal waters, including cultch placement with SAS impacts; or <p>2. Permanent structures in navigable waters of the U.S; or</p> <p>3. SAS planting and transplanting >100 SF in tidal waters; or</p> <p>4. Permanent water impoundments, or dam removal or fish ladders; or</p> <p>5. Stream relocation, impoundments, or loss of streambed occurs; or</p> <p>6. The conversion of: i) a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa, wetland to pond, etc.) or uplands, ii) one wetland type to another (e.g., forested wetland to an emergent wetland). See Note 2; or</p> <p>7. The activity causes turbidity or sediment resuspension during the TOY restriction specified in GC 18.</p>

Notes:

1. GC 8 states a PCN is required for any activity that might affect listed species or habitat. This includes beneficial effects.
2. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type.

IV. GENERAL CONDITIONS:

To qualify for GP authorization, the prospective permittee must comply with the following general conditions, as applicable.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Minimal Effects
4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)
5. Single and Complete Projects
6. Historic Properties
7. National Lands and Federal Projects
8. Federal Threatened and Endangered Species and Related Time of Year Restrictions
9. Wild and Scenic Rivers
10. Navigation
11. Federal Liability
12. Pile Driving and Removal and related Time of Year Restrictions
13. Utility Line Installation and Removal
14. Heavy Equipment in Wetlands
15. Temporary Fill
16. Restoration and Removal of Temporary Fills
17. Soil Erosion and Sediment Controls
18. Time of Year Restrictions
19. Aquatic Life Movements
20. Management of Water Flows
21. Water Quality Certification
22. Coastal Zone Management
23. Floodplains and Floodways
24. Storage of Seasonal Structures
25. Spawning, Breeding, and Migratory Areas
26. Vernal Pools
27. Invasive and Other Unacceptable Species
28. Blasting
29. Suitable Material
30. Permit On Site
31. Self-Verification Notification Form
32. Inspections
33. Maintenance
34. Property Rights
35. Transfer of GP Verifications
36. Modification, Suspension, and Revocation
37. Special Conditions
38. False or Incomplete Information
39. Abandonment
40. Enforcement Cases
41. Previously Authorized Activities
42. Duration of Authorization

1. Other Permits. The permittee must obtain the following State approvals, when applicable, prior to the commencement of work in Corps jurisdiction in order for authorizations under these GPs to be valid:

- Water Quality Certification: See GC 20.
- Coastal Zone Management Consistency Concurrence: See GC 21.

2. Federal Jurisdictional Boundaries.

- Activities shall be evaluated with reference to Federal jurisdictional boundaries for waters of the U.S. under the Clean Water Act (33 CFR 328) and navigable waters of the U.S. under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329).
- The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current federal method required by the Corps. Applicants are responsible for ensuring that the applicable jurisdictional boundaries are depicted on permit application drawings and for conducting an adequate site-specific survey to verify that vegetated shallows are not present. See www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands for more information on delineating jurisdictional areas and Submerged Aquatic Vegetation Survey Guidance.

3. Minimal Effects⁵. Projects shall have no more than minimal direct, indirect, and secondary adverse environmental effects. Project proponents shall identify all indirect and secondary effects to the extent reasonable and practicable. All PCNs must include this information.

4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

- Activities must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site (i.e., on site). Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) is required to the extent necessary to ensure that the adverse effects to the aquatic environment are no more than minimal.
- Applicants shall consider riparian/forested buffer best management practices (BMPs) for stormwater management, and low impact development (LID) BMPs to reduce impervious cover and manage stormwater, to minimize impacts to the maximum extent practicable.⁶
- Compensatory mitigation⁷ for unavoidable adverse effects to waters of the U.S., including direct, secondary and temporal, will generally be required for permanent impacts that require PCNs, and may be required for temporary impacts that require PCNs, to offset unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects, or temporary impact work with no secondary effects, may generally be excluded from this requirement.

⁵ The New England District Compensatory Mitigation Guidance is a resource for assessing secondary impacts. <http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/CompensatoryMitigationGuidance.aspx>

⁶ See: www.nae.usace.army.mil/missions/regulatory >> State General Permit >> Massachusetts >> Mitigation for this additional information: a) “Wetland BMP Manual - Techniques for Avoidance & Minimization,” b) riparian/forested buffer BMPs, and c) LID BMPs. LID BMPs include, but are not limited to: replacing curbs and gutters with swales; using an open space design for subdivisions; using permeable, pervious or porous pavements; constructing bio-retention systems; and/or, adding a green roof or rain garden.

⁷ Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at www.nae.usace.army.mil/missions/regulatory >> Mitigation.

The MA In-Lieu Fee Program allows Corps permittees, as compensation for their project impacts to aquatic resources of the U.S. in MA pursuant to §404, to make a monetary payment *in-lieu of* permittee-responsible mitigation. Information is provided at www.nae.usace.army.mil/missions/regulatory >> Mitigation >> Massachusetts In-Lieu Fee Program.

5. Single and Complete Project means the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. The GPs shall not be used for piecemeal work and shall be applied to single and complete projects.

a. Proponents must quantify any permanent fill associated with the single and complete project that has occurred since October 5, 1984 and provide that information in the PCN. For real estate subdivisions created or subdivided after October 5, 1984, a PCN is required for any discharge which would cause the aggregate total loss of waters of the U.S. for the entire subdivision to exceed 5,000 square feet.

b. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed, even if the other phases were not built, can be considered as separate single and complete projects with independent utility.

c. Unless the Corps determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project.

d. For linear projects such as power lines or pipelines with multiple crossings, a “single and complete project” is all crossings of a single water of the U.S. (i.e. single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a separate single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an individual permit review, then the entire linear project shall be reviewed as one project under PCN or the individual permit procedures.

6. Historic Properties

a. No undertaking shall cause effects (defined at 33 CFR 325 Appendix C and 36 CFR 800) on properties listed in, determined to be eligible for listing in, or potentially eligible for listing in the National Register of Historic Places⁸, including previously unknown historic properties within the permit area, unless the Corps or another Federal action agency has satisfied the consultation requirements of §106 of the National Historic Preservation Act (NHPA). The State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO) and the National Register of Historic Places can assist with locating information on: i) previously identified historic properties; and ii) areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

b. For SV eligible activities, proponents must ensure and document that the activity will not cause effects as stated in 6(a). Coordination with the SHPO and applicable THPOs using the forms/methods specified in 6(c) below is recommended to demonstrate due diligence to identify historic properties. The SHPO and THPOs are expected to provide comment to the applicant and/or the Corps within 30 days of receipt if there are additional historic properties which need to be addressed. Proponents must submit a PCN if the authorized activity may cause effects as stated in 6(a) as soon as possible to ensure that the

⁸ The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

Corps is aware of any potential effects of the permitted activity on any historic property to ensure all §106 requirements are met.

c. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the District Engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The Corps will initiate the Federal, State and tribal coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

7. Activities Affecting Structures or Works Built by the United States.

a. If a GP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project, the prospective permittee must submit a PCN. An activity that requires section 408 permission is not authorized by these GPs until the Corps issues the section 408 permission to alter, occupy, or use the USACE project, and the Corps issues a written GP verification.

b. A PCN is required for all work in the area of the Cape Cod Canal located west of the vertical lift railroad bridge as detailed at www.nae.usace.army.mil/regulatory >> State General Permits >> Massachusetts.

c. A PCN is required for GP activities within, or with any secondary or indirect adverse environmental effects on, any National Wildlife Refuge, National Forest, National Marine Sanctuary (e.g., Stellwagen Bank), National Park or any other area administered by the National Park Service (e.g., Cape Cod National Seashore), U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service.

8. Federal Threatened and Endangered Species and Related Time of Year Restrictions

a. No activity is authorized under these GPs which: i) is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species; or ii) “may affect” a listed species or critical habitat, unless consultation under §7 of the ESA, addressing the effects of the proposed activity, has been completed.

b. For listed species or critical habitat under USFWS jurisdiction, a PCN is required if any listed species or critical habitat under USFWS jurisdiction might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, unless another (lead) federal agency has already completed all required §7 consultation. See <http://ecos.fws.gov/ipac> for assistance.

c. For listed species or critical habitat under NMFS jurisdiction, the Corps has determined that all SV eligible work will have no effect on listed species or critical habitat; therefore project proponents are not required to check for listed species or critical habitat for work that is SV eligible. Note 1 in GP 16 requires notification to NMFS in some areas. A PCN is required for activities in the following areas:

- Atlantic sturgeon (*Acipenser oxyrinchus*) spawning areas in the Connecticut River all year
- Shortnose sturgeon (*A. brevirostrum*) spawning areas in the Connecticut and Merrimack Rivers all year
- Shortnose sturgeon overwintering areas in the Connecticut and Merrimack Rivers from Nov. 1 to March 15
- Shortnose sturgeon rearing areas in the Connecticut and Merrimack Rivers from April 15 to July 15.

For aerial photos illustrating these areas, see www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts. These TOY restrictions can only be modified by the Corps, not in a written State determination.

d. Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the Corps with the appropriate documentation to demonstrate compliance with those requirements. The Corps will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary.

9. Wild and Scenic Rivers

a. The following activities in designated river or study river segments in the National Wild and Scenic River (WSR) System require a PCN unless the National Park Service has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:

- i. Activities that occur in WSR segments, in and 0.25 miles up- or downstream of WSR segments, or in tributaries within 0.25 mile of WSR segments;
- ii. Activities that occur in wetlands adjacent to WSR segments;
- iii. Activities that have the potential to alter free-flowing characteristics in WSR segments.

b. As of 29 March 2016, the Taunton River, Sudbury/Assabet/Concord Rivers, and Westfield River are designated rivers; and the Nashua River is a study river. The most up to date list and descriptions of the WSR segments are provided at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts, under “Wild and Scenic Rivers”.

10. Navigation

a. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.

b. Any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulations or otherwise, must be installed and maintained at the permittee’s expense on authorized facilities in navigable waters of the U.S.

c. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

d. A PCN is required for all work in, over or under a Corps FNP or its buffer zone except for the work authorized in GPs 1 and 16, and the work specified in GPs 2 and 4.

11. Federal Liability

In issuing these GPs, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes;
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest;
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit;
- d. Design or construction deficiencies associated with the permitted work; or
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.

12. Pile Driving and Removal and Related Time of Year Restrictions

a. Derelict, degraded or abandoned piles and sheet piles in navigable waters, except for those inside existing work footprints for piers, must be completely removed, cut and/or driven to 3 feet below the

substrate to prevent interference with navigation, and in some cases to remove polluting materials. Existing creosote piles that are affected by project activities should be completely removed. In areas of fine-grained substrates, piles must be removed by the direct, vibratory or clamshell pull method⁹ to minimize turbidity and sedimentation impacts and prevent interference with navigation from cut piles. Removed piles shall be disposed of in an upland location landward of mean high water (MHW) or ordinary high water (OHW) and not in wetlands, tidal wetlands, their substrate or mudflats. See GC 17 for sheet pile removal.

b. A PCN is required for all pile-driving work that does not meet one of the following conditions in navigable waters of the U.S. (pile driving can generate underwater sound pressure waves that may injure, harm or kill managed fish and prey species):

i. Piles are ≤ 12 inches in diameter. Use a soft start each day of pile driving, building up power slowly from a low energy start-up over a period of 20-40 minutes to provide adequate time for fish and marine mammals to leave the vicinity. The buildup of power should occur in uniform stages to provide a constant increase in output. Bubble curtains can be used to reduce sound pressure levels during vibratory or impact hammer pile driving; or

ii. Piles are installed between Nov 1 and March 15.

c. A PCN is required for the installation of structures with jetting techniques.

13. Utility Line Installation and Removal

a. Subsurface utility lines shall remain subsurface.

b. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment. The bottom cover associated with the initial installation of utility lines under navigable waters and navigation channels shall be a minimum of 48 inches in soil or a minimum of 24 inches in rock excavation in competent rock unless otherwise specified in a written determination.

c. The permittee and their contractor shall have onsite and implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

d. Abandoned or inactive utility lines must be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) must be removed or repaired. A written verification from the Corps is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.

e. Utility lines shall not adversely alter existing hydrology, and trenches cannot be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). In wetland areas, structures such as ditch plugs, cut-off walls, clay blocks, bentonite, or other suitable material shall be used within utility trenches to ensure that the trench through which the utility line is installed does not drain waters of the U.S. including wetlands.

14. Heavy Equipment in Wetlands.

Operating heavy equipment other than fixed equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and such equipment shall not be stored, maintained or repaired in wetlands, to the

⁹ Direct Pull: Each piling is wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the piling directly upward, removing the piling from the sediment. Vibratory Pull: The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The vibrating hammer loosens the piling while the crane pulls up. Clamshell Pull: This can remove intact, broken or damaged pilings. The clamshell bucket is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. The size of the clamshell bucket is minimized to reduce turbidity during piling removal.

maximum extent practicable. Where construction requires heavy equipment operation in wetlands, the equipment shall either have low ground pressure (typically <3 psi), or it shall be placed on swamp/construction/timber mats (herein referred to as “construction mats”) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written Corps authorization. Similarly, the permittee may request written authorization from the Corps to waive use of mats during frozen or dry conditions. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the Construction Mat BMPs at [>> State General Permits >> Massachusetts](http://www.nae.usace.army.mil/missions/regulatory)

15. Temporary Fill

- a. Temporary fill, which includes construction mats and corduroy roads, shall be entirely removed as soon as it is no longer needed to construct the authorized work. A PCN is required for: i) all temporary fill that is in place greater than two years (unless otherwise stated in a GP), or ii) temporary fill consisting of only construction mats and corduroy roads >5000 SF that are in place in for: 1) >1 year when installed during the growing period, or 2) any portion of more than one growing period when installed outside the growing period. The growing period is from May 1 to Oct 1 for the purposes of these GPs.
- b. A PCN is required for construction mats and corduroy roads that involve underlying fill.
- c. Temporary fill shall be placed in its original location, or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S.
- d. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable. Materials must be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of wetlands. Temporary fill shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade (construction mats are excluded from this requirement).

16. Restoration and Removal of Temporary Fills

- a. Temporary fills must be removed in their entirety and the affected areas restored to their pre-construction condition, function and elevation. The affected areas must be revegetated, as appropriate. Seed mixes and vegetation shall include only plant species native to New England (See also GC 27). Restoration shall typically commence no later than the completion of construction. See the BMPs at [>> State General Permits >> Massachusetts >> Restoration of Special Aquatic Sites](http://www.nae.usace.army.mil/missions/regulatory).
- b. In areas of authorized temporary disturbance, cut woody vegetation (trees, shrubs, etc.) shall be cut at or above ground level, and not uprooted, in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

17. Soil Erosion and Sediment Controls

- a. Appropriate soil erosion, sediment and turbidity controls¹⁰ must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the OHW mark or HTL, must be permanently stabilized at the earliest practicable date.

¹⁰ Appropriate soil erosion and sediment controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), phased construction, installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control

Trenches must be backfilled as soon as practicable to reduce turbidity impact duration.

- b. A PCN is required for controls in streams that encroach >50% of the waterway width at OHW during the TOY restriction in GC 18, or of the waterway width at MLW. However, water diversions¹¹ and temporary crossings in non-tidal streams associated with either permanent stream crossings that comply with the “Permanent Crossings in Non-Tidal Streams” section of the Stream Crossing BMPs document, or modifications for the purpose of improving passage and flow (see GP 10), may remain: i) into the TOY restriction provided that they are removed before March 1 when upstream fish passage begins; and ii) after March 1 if specified by the Corps in writing.
- c. Maintain downstream passage for diadromous fish throughout the project unless otherwise specified by the Corps in writing.
- d. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands where suspended solids shall be removed prior to discharge back into waters or wetlands. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.
- e. Temporary soil erosion, sediment and turbidity controls shall be removed upon completion of work, or after all disturbed areas are permanently stabilized, whichever is later. Sediment and debris collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable, and flows, and aquatic life movements are not disrupted.
- f. The material within sandbags shall not be released during their removal.

18. Time of Year Restrictions

- a. For projects that otherwise meet the criteria for self-verification, in-stream (e.g., rivers, streams, brooks, etc.) construction work shall be conducted (a) during July 1 through September 30 in non-tidal streams or (b) during November 16 to February 15 in tidal waters. Activities that are not to be conducted during those time periods are ineligible for self-verification, and a PCN is required, regardless of the waterway and wetland fill and/or impact area.
- b. For any projects that require PCN, the Corps may include specific time-of-year restrictions depending on the waterway, wetland fill, and/or impact area, the proposed project, and/or specific construction techniques or activities.

19. Aquatic Life Movements

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity’s primary purpose is to impound water. Permanent water impoundments require a PCN. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be:

- a. Suitably culverted, spanned, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species (it is important that a continuous thalweg (deepest portion of the channel) be maintained through the structure), and preserve hydraulic and ecological connectivity including connectivity between the wetlands on either side of a road; and
- b. Properly aligned and constructed to prevent bank erosion or streambed scour, both adjacent to and inside, the culvert or span.

mixes, hay bales or other devices) downhill of all exposed areas, retention of existing vegetated buffers, application of temporary mulching during construction, and permanent seeding and stabilization, etc.

¹¹ Water diversions are activities such as bypass pumping or water withdrawals. Temporary flume pipes, culverts or cofferdams where continuity of flow/normal flow is maintained within the stream boundary’s confines are not water diversions. “Normal flow” is defined as no change in flow from pre-project conditions.

20. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

21. Water Quality Certification

- a. Any activity under these GPs that requires authorization under §404 of the Clean Water Act for the discharge of dredged or fill material into waters of the U.S. requires applicants to obtain a water quality certification or waiver from the state and authorized tribes, or EPA where applicable, in accordance with §401(a)(1) of the Clean Water Act (hereinafter referred to as “§401 WQC”). In Massachusetts, the MassDEP has authority to issue or deny §401 WQC. Activities authorized under these GPs must comply with all conditions set forth in the [INSERT DATE UPON ISSUANCE] conditional WQC for these GPs (located at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts) or in an Individual §401 WQC. Authorization under the GPs is not valid and no work may commence in Corps jurisdiction until the MassDEP has issued or waived §401 WQC.
- b. The conditional §401 WQC is for certain activities identified in 314 CMR 9.03: Activities Not Requiring an Application, (1) through (6), and an Individual §401 WQC is not required provided the applicant obtains a Final Order of Conditions issued pursuant to 310 CMR 10.00, which serves as the §401 WQC.
- c. The conditional §401 WQC requires that applicants obtain an Individual §401 WQC for the activities listed at 314 CMR 9.04: Activities Requiring an Application (www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Massachusetts).
- d. If a §401 WQC is issued for work different from that in the Corps authorization, the Corps authorization is not valid and the permittee must resubmit a PCN to the Corps to allow the Corps to reevaluate the project and issue a written verification as appropriate.
- e. The Corps or MassDEP may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality. All projects authorized by these GPs shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants.

22. Coastal Zone Management

- a. §307(c)(1) of the Coastal Zone Management Act requires the Corps to provide a consistency determination and receive State agreement prior to the issuance, reissuance, or expansion of activities authorized by a GP that authorizes activities within a state with a Federally-approved Coastal Management Program when activities that would occur within, or outside, that state’s coastal zone will affect any land or water use or natural resource of the state’s coastal zone. The Massachusetts Office of Coastal Zone Management (MA CZM) administers the [Massachusetts CZM program](#).
- b. For self-verified activities authorized under these GPs, MA CZM has agreed with the Corps consistency determination and therefore these activities do not require any additional CZM Federal consistency review.
- c. For PCN activities in the Coastal Zone that are eligible for authorization under these GPs, MA CZM requires that permittees obtain a Federal consistency concurrence from MA CZM. The Corps will coordinate review with MA CZM and then notify applicants if an individual consistency concurrence is required. Authorization under these GPs becomes valid only after MA CZM determines that the activity is consistent with the MA CZM program. If the MA CZM consistency concurrence is for work different from that in the Corps authorization, the Corps authorization is not valid and the permittee must

resubmit a PCN to the Corps so the Corps may reevaluate the project and issue a written verification as appropriate.

d. The Corps or MA CZM may require additional measures to ensure that the authorized activity is consistent with State CZM requirements.

23. Floodplains and Floodways

- a. Appropriate measures must be taken to minimize flooding to the maximum extent practicable.
- b. Activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency (FEMA)-approved State and/or local floodplain management permitting requirements.

24. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, etc. that are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands or mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is waterward of MHW or OHW.

25. Spawning, Breeding, and Migratory Areas

- a. Direct, indirect and secondary adverse effects in spawning areas shall be avoided and minimized to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- b. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for obtaining any “take” permits required under the USFWS’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such “take” permits are required for a particular activity.

26. Vernal Pools

- a. Direct, indirect and secondary adverse effects to all vernal pools (VPs), including their envelopes and critical terrestrial habitats,¹² and activities in VP amphibian breeding areas shall be avoided and minimized¹³ to the maximum extent practicable. Site clearing, grading and construction activities associated with a regulated activity¹⁴ in the VP depression, envelope or critical terrestrial habitat may cause these adverse effects to the VP.
- b. For the PCN’s project plans, show all VPs that are located: i) less than 750 feet offsite and known (based upon searches of publically available documentation, including databases and GIS mapping (e.g., MA Natural Heritage and Endangered Species Program; [MA NHESP](#)), regulatory agency or historical

¹² The VP depression, envelope, and critical terrestrial habitat are defined in Section VIII on page 45.

¹³ The following documents provide avoidance and minimization practices, and conservation recommendations, and are located at www.nae.usace.army.mil/missions/regulatory.aspx >> Vernal Pools. The directional corridor and concentric circle concepts are explained in (a) below. The concentric circle concept is also explained in (b) & (c).

a. Corps Vernal Pool BMPs

b. Science and Conservation of Vernal Pools in Northeastern North America, Calhoun and deMaynadier, 2008. Chapter 12, Conservation Recommendations section, Page 241, is particularly relevant.

c. Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S., Calhoun and Klemens, 2002. Chapter III, Management Goals and Recommendations, Pages 15 – 26, is particularly relevant.

¹⁴ The discharge of dredged or fill material into waters of the U.S., or structure or work in navigable waters. See Section II, Page 3.

records, etc.); and ii) onsite based upon the sources in 26(b)(i) above and field surveys. The Corps will determine if a waterbody (e.g., a VP) is jurisdictional.

c. A PCN is required when the following occur:

- i. A discharge of dredge or fill material occurs within a jurisdictional VP depression (submit the Vernal Pool Characterization Form¹⁵ along with the PCN); or
- ii. There is a VP depression, either offsite (if known) or onsite, within 750 feet of any regulated activity.

27. Invasive and Other Unacceptable Species¹⁶

a. The introduction or spread of invasive or other unacceptable plant or animal species on the project site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive species or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by these GPs. Seed mixes and vegetation shall include only plant species native to New England and shall not include any species listed in Appendix D, "Invasive and Other Unacceptable Plant Species," of the "New England District Compensatory Mitigation Guidance".

28. Blasting. Blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc. is not authorized under these GPs.

29. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see §307 of the Clean Water Act).

30. Permit On Site. The permittee shall ensure that any contractor(s) and or workers executing the activities authorized by this GP(s) have knowledge of the terms and conditions of this authorization and any modification(s), and that a copy of this GP document and any accompanying authorization letter and attached plans are at the site of the authorized work throughout the period(s) of time the work is underway.

31. Self-Verification Notification Form. For those activities that do not require PCNs and are eligible for self-verification, permittees must complete and submit the SVNf provided at Section V to the Corps for work authorized by these GPs. See the SVNf for submittal requirements and timing.

32. Inspections. The permittee shall allow the Corps to inspect the authorized activities and mitigation parcels at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of the applicable GP(s) and any written verification from the Corps. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms:

- For Self-Verification: The SVNf. See GC 31.

¹⁵ See the Corps "Vernal Pool Assessment" document and the accompanying "Vernal Pool Characterization Form" at www.nae.usace.army.mil/missions/regulatory >> Vernal Pools. The form is only required if there is a discharge in the VP, but the Corps may otherwise require the form on a case-by-case basis.

¹⁶ See www.nae.usace.army.mil/missions/regulatory >> Mitigation. The June 2009 "Corps of Engineers Invasive Species Policy" provides policy, goals and objectives and is located at www.nae.usace.army.mil/missions/regulatory >> Invasive Species. Additional information can be found at: www.eddmaps.org/ipane.

- For PCN: The a) Work-Start Notification Form, b) Compliance Certification Form, and/or c) Mitigation Work-Start Notification Form whenever these forms are provided with the authorization letter.

33. Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions and activity-specific special conditions provided in a written verification from the Corps. This does not include maintenance of dredging, related disposal, or beach nourishment projects unless specified in a written authorization from the Corps.

34. Property Rights. These GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor do they authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

35. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps to validate the transfer. A copy of the GP verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by these GPs are still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of these GPs and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

36. Modification, Suspension, and Revocation. These GPs or any work authorized under these GPs by self-verification or PCN may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

37. Special Conditions. The permittee must comply with any special conditions added by the Corps to this GP. Failure to comply with all applicable terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or an ordered restoration, and/or the permit may be modified, suspended or revoked by the Corps.

38. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under these GPs and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid and modify, suspend or revoke the authorization. In such cases, the U.S. Government may institute legal proceedings.

39. Abandonment. If the permittee abandons or decides to abandon the activity authorized under these GPs, the work must be removed and the area restored to the maximum extent practicable unless a GP or IP specifically authorizes the abandonment.

40. Enforcement cases. These GPs do not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

41. Previously Authorized Activities

- a. Activities that were authorized and completed in accordance with previous GPs or nationwide permits are not affected by these GPs and continue to be authorized in accordance with the original terms and conditions of those authorizations, including their terms, general conditions, expiration date, and any special conditions in a written verification.
- b. Activities authorized pursuant to 33 CFR 330.3 (“Activities occurring before certain dates”) are not affected by this GP.

42. Duration of Authorization

- a. These GPs expire on [INSERT DATE UPON ISSUANCE]. Activities authorized under GPs 1 - 23 that have either commenced (i.e., are under construction) or are under contract to commence before these GPs expire will have until [INSERT DATE UPON ISSUANCE] to complete the activity under the terms and conditions of the current GPs. The permittee must be able to document to the Corps’ satisfaction that the project was under construction or under contract by the appropriate date. If work is not completed within the one year extended timeframe nor SV eligible under any subsequently issued GPs, the permittee must contact the Corps to discuss obtaining a separate Corps authorization to complete the work.
- b. Activities completed under these GPs will continue to be authorized unless special conditions require removal of the authorized work and restoration of the affected area after a specified time period.

DISTRICT ENGINEER

DATE



V: Self-Verification Notification Form

(for all tidal and non-tidal projects subject to Corps jurisdiction)

US Army Corps of Engineers®

New England District

Complete **all** fields (write "none" if applicable) below or use the fillable form at www.nae.usace.army.mil/missions/regulatory >> State **General Permits** >> Massachusetts. Send this form and the existing plans to the address below, fax to (978) 318-8303, or email to cenae-r@usace.army.mil before work within Corps jurisdiction commences unless otherwise specified. Please call (978) 318-8338 with questions.

Regulatory Division
U.S. Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location (provide detailed description if necessary): _____
Address, City, State & Zip: _____
Latitude/Longitude Coordinates (if address doesn't exist): _____
Waterway Name: _____

Contractor (write none if same as permittee): _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Purpose: _____

Work Description: _____

Work will be done under the following activity(s) in Section III, Eligible Activities (check all that apply):

1 _____	5 _____	9 _____	13 _____	17 _____	21 _____
2 _____	6 _____	10 _____	14 _____	18 _____	22 _____
3 _____	7 _____	11 _____	15 _____	19 _____	23 _____
4 _____	8 _____	12 _____	16 _____	20 _____	

(continued on next page)

Aggregate total wetland impact area*: temporary_____SF permanent_____SF
Aggregate total waterway impact area*: temporary_____SF permanent_____SF
(*leave blank if work involves structures only)

Does your project include any secondary impacts? (See General Condition 3.) Yes_____ No_____
If yes, describe here: _____

Proposed Work Dates: Start: _____ Finish: _____

Your name/signature below, as permittee, confirms that your project a) meets the self-verification criteria and b) that you accept and agree to comply with the applicable terms and conditions in the General Permits for Massachusetts.

Permittee Printed Name: _____

Permittee Signature: _____ Date: _____

VI: Content of Pre-Construction Notification

Applicants may email applications to cenae-r@usace.army.mil. In addition to the following required information, the applicant must provide additional information as the Corps deems essential to make a public interest determination including, where applicable, a determination of compliance with the §404(b)(1) guidelines or ocean dumping criteria. Such additional information may include environmental data and information on alternate methods and sites as may be necessary for the preparation of the required environmental documentation. For a more comprehensive checklist, go to www.nae.usace.army.mil/missions/regulatory >> Forms >> Application and Plan Guideline Checklist. Please check with the Corps for project-specific requirements.

1. Activities located upon or which may affect Corps Civil Works Projects:

- ☐ For any activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps. See GC 7(a).

2. Information required for all projects:

- ☐ Corps application form ([ENG Form 4345](#)) or appropriate State application form (). The MassDEP WQC, Chapter 91 application form and Notice of Intent are not acceptable as application forms for Department of the Army permits.
- ☐ Drawings, sketches, or plans that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), to scale, and no larger than 11"x17". Numeric and graphic/bar scales must agree and plan details must be measurable using a standard engineer's scale on printed plans. Reduced plans are not acceptable. Wetland area impact sheets should have the highest resolution possible to show work within Corps jurisdiction. Provide a color locus map and a plan overview of the entire property with a key index to the individual impact sheets. The locus map on a section of color USGS topographic map is encouraged. Digital submissions in PDF format are encouraged.
- ☐ Include:
 - ☐ Any required information as stated throughout this GP document.
 - ☐ All direct, indirect, secondary, permanent and temporary effects the project would cause, including the anticipated area of impacts to waters of the U.S. expected to result from the activity, in square feet, acres, linear feet, or other appropriate unit of measure.
 - ☐ Any historic permanent fill previously authorized by the Corps and the date of authorization.
 - ☐ Cross-section views of all wetland and waterway fill areas and wetland replication areas.
 - ☐ Delineation of all wetlands, other special aquatic sites (vegetated shallows, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Use Federal delineation methods and include Corps wetland delineation data sheets (see GC 2).
 - ☐ The MLLW, MHW and HTL elevations in tidal waters, and OHW elevation in lakes and

non-tidal streams.

- ☐ Existing vs. proposed conditions.
- ☐ For vegetated shallow and eelgrass survey guidance, see www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands >> Submerged Aquatic Vegetation Survey Guidance for the New England Region.
- ☐ Show all known VPs on the project site. See GC 26 for vernal pool identification requirements.
- ☐ Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, waterward of OHW in inland waters and the HTL in coastal waters.
- ☐ The name(s) of any species or critical habitat listed on the Federal threatened or endangered species list, present in the action area and any other required information (see GC 8).
- ☐ A restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions (see GC 16).

3. Information that may be required:

- ☐ Photographs of wetland/waterway to be impacted. Photos at low tide are preferred for work in tidal waters.
- ☐ For drawings, sketches, or plans:
 - ☐ The vertical datum for all coastal projects must be in U.S. survey feet and referenced to MLLW and current tidal epochs, with a *reference chart showing conversion factor* to NAVD88; do not use local datum. See www.nae.usace.army.mil/missions/regulatory >> Forms and Publications >> Vertical Datum - FEMA (Jul 2007);
 - ☐ The horizontal state plane coordinates in U.S. survey feet and based on the appropriate state plane coordinate system.
- ☐ For the construction of a filled area or pile or float-supported platform, the use of, and specific structures to be erected on, the fill or platform.
- ☐ For the discharge of dredged or fill material into waters of the U.S. or the transportation of dredged material for the purpose of disposing of it in ocean waters, the source of the material; the purpose of the discharge, a description of the type, composition and quantity of the material; the method of transportation and disposal of the material; and the location of the disposal site.
- ☐ For the discharge of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized. Include either a statement describing how impacts to waters of the U.S. are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.
- ☐ Purpose and need for the proposed activity;
- ☐ Limits and coordinates of any Federal Navigation Project in the vicinity of the project area.
- ☐ Limits and coordinates of any proposed mooring field, reconfiguration zone or aquaculture activity. Provide coordinates for all corners;
- ☐ Schedule of construction/activity;
- ☐ Location and dimensions of adjacent structures;
- ☐ *Invasive Species Control Plan* (see GC 26). For sample control plans, see www.nae.usace.army.mil/missions/regulatory >> Invasive Species.

4. Information that may be required for dredging projects:

- ☐ Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing. For projects proposing open water disposal, applicants are encouraged to contact the Corps as early as possible regarding sampling and testing protocols. Sampling and testing of sediments without such contact should not occur and if done, would be at the applicant's risk.
- ☐ The area in square feet and volume of material to be dredged below mean high water.
- ☐ Existing and proposed water depths.
- ☐ Type of dredging equipment to be used.
- ☐ Nature of material (e.g., silty sand).
- ☐ Any existing sediment grain size and bulk sediment chemistry data for the proposed or any nearby projects.
- ☐ Information on the location and nature of municipal or industrial discharges and occurrence of any contaminant spills in or near the project area.
- ☐ Shellfish survey.
- ☐ Location of the disposal site (include locus sheet).
- ☐ Identification and description of any potential impacts to Essential Fish Habitat.
- ☐ Delineation of submerged aquatic vegetation (e.g., eelgrass beds).

VII: SHPO/THPO Notification Form
(To be completed by the Corps)

The SHPO, BUAR and THPOs will contact the Corps if there is any potential for an effect on a historic property and the Corps will begin consultation. The Corps will use 33 CFR 325 Appendix C, including its "permit area" definition, to determine its scope of analysis for the consideration of historic properties. This is to ensure that work is done in a cost-effective manner, in accordance with Corps requirements and to mitigate effects to historic properties before the consultation requirements of §106 of the NHPA have been satisfied.

[File No.: Project Name]

Applicant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Name: _____
Project Location (provide detailed description if necessary): _____
Address, City, State & Zip: _____
Latitude/Longitude Coordinates (if address doesn't exist): _____
Waterway Name: _____
Project Purpose: _____
Work Description: _____

Are any historic or archaeological properties known to exist within the project's area of potential effects? If so, specify. _____

Corps Project Manager: [Project Manager],
[Phone No.]
[E-mail address]

VIII. DEFINITIONS AND ACRONYMS

Definitions

Artificial or Living Reef: A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.

Attendant Features: Occurring with or as a result of; accompanying.

Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo-(bio)degradable plastics are not considered biodegradable under this GP.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockminiums, municipal facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or municipal mooring fields that charge an equitable user fee based on the actual costs incurred.

Brushing the Flats: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Buffer Zone: The buffer zone of a Corps FNP is equal to three times the authorized depth of the FNP.

Construction mats: Constructions, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.

Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230.11(g).

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.

Dredging:

Maintenance Dredging: Includes areas and depths previously authorized by the Corps and dredged. The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of accumulated sediment to maintain the design depths of serviceable navigation channels, harbors, marinas, boat launches and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.

New Dredging: Dredging of an area or to a depth that has never been authorized by the Corps or dredged.

Dredged material & discharge of dredged material: These are defined at 33 CFR 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Expansions: Work that increases the footprint of fill, structures or floats, or slip capacity.

Essential Fish Habitat (EFH): The Federal Magnuson-Stevens Fishery Management and Conservation Act broadly defines EFH to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. See www.greateratlantic.fisheries.noaa.gov/habitat for more information.

Fill material & discharge of fill material: These are defined at 33 CFR 323.2(e) and (f). The term fill material is defined as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.

Federal anchorages: See the definition of "Federal navigation projects."

Federal channels: See the definition of "Federal navigation projects."

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and are comprised of Corps Federal anchorages, Federal channels and Federal turning basins. The buffer zone is equal to three times the authorized depth of a FNP. The following are FNPs in MA and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation >>

Navigation Projects:

Andrews River, Harwich, MA	Green Harbor	Pollock Rip Shoals, Nantucket
Aunt Lydia's Cove	Hingham Harbor	Sound
Beverly Harbor	Hyannis Harbor	Provincetown Harbor
Boston Harbor	Ipswich River	Red Brook Harbor
Buttermilk Bay Channel	Island End River (Chelsea, MA)	Rockport Harbor
Canapitsit Channel	Kingston Harbor	Salem Harbor
Cape Cod Canal	Lagoon Pond	Sandy Bay Harbor of Refuge
Chatham Harbor	Little Harbor Woods Hole	Saugus River
Cohasset Harbor	Lynn Harbor	Scituate Harbor
Cross Rip Shoals, Nantucket Sound	Malden River	Sesuit Harbor
Cuttyhunk Harbor	Menemsha Creek	Taunton River
Dorchester Bay and Neponset River	Merrimack River	Vineyard Haven Harbor
Duxbury Harbor	Mystic River	Wareham Harbor
Edgartown Harbor	Nantucket Harbor of Refuge	Wellfleet Harbor
Essex River	New Bedford and Fairhaven Harbor	Westport River and Harbor
Fall River Harbor	Newburyport Harbor	Weymouth Back River
Falmouth Harbor	Oak Bluffs Harbor	Weymouth Fore and Town Rivers
Gloucester Harbor and Annisquam River	Pigeon Cove Harbor	Winthrop Harbor
	Plymouth Harbor	Woods Hole Channel

Federal turning basin: See the definition of "Federal navigation projects."

Flume: An open artificial water channel, in the form of a gravity chute, which leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

Frac out: During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Individual Permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Intertidal: The area in between mean low water and the high tide line.

Living Reef: See the definition of “artificial or living reef.”

Maintenance: Maintenance does not include any modification that changes the character, scope, or size of the original fill design.

Marina reconfiguration zone: A Corps-authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Metallic mineral: Any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. “Metallic mineral” does not include thorium or uranium.

Minor deviations: Deviations in the structure’s configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards.

Navigable waters of the U.S.: See the definition of “waters of the U.S.”

Nearshore disposal: This is defined in the USACE Coastal Engineering Manual as “(1) In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone. (2) The zone which extends from the swash zone to the position marking the start of the offshore zone, typically at water depths of the order of 20m.” A nearshore berm is an artificial berm built in shallow water using dredged material. Often, the berm is intended to renourish the adjacent and downdrift shore over time under the influence of waves and currents.

Ordinary High Water Mark (OHW): A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).

Overall project: See the definition of “single and complete linear project.”

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.

Pre-construction notification (PCN): A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by these GPs. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized under these GPs.

Real estate subdivision: Includes circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or developing said

parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: reestablishment and rehabilitation.

Secondary effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final §404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are a) aquatic areas drained, flooded, fragmented, or mechanically cleared, b) fluctuating water levels in an impoundment and downstream associated with the operation of a dam, c) septic tank leaching and surface runoff from residential or commercial developments on fill, and d) leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Shellfish dredging: Shellfish dredging typically consists of a net on a frame towed behind a boat to capture shellfish and leave the sediment behind. Dredges may skim the surface, utilize hydraulic jets, toothed rakes or suction apparatus.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of these GPs. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see the definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in a GP authorization.

Special aquatic sites: These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.

Streambed: The substrate of the stream channel between the OHW marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

Temporary impacts: Temporary impacts include waters of the U.S. that are temporarily filled, flooded, excavated, drained or mechanically cleared because of the regulated activity.

Tide gates: Structures such as duckbills, flap gates, manual and self-regulating tide gates, etc. that regulate or prevent upstream tidal flows.

Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term 'utility line' does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.

Vegetated shallows: Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass and widgeon grass (*Ruppia maritima*) in marine systems (does not include salt marsh) as well as a number of freshwater species in rivers and lakes. These are a type of SAS defined at 40 CFR 230.43. Vegetated shallows are also commonly referred to as submerged aquatic vegetation or SAV. Survey guidance is located at www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands >> Submerged Aquatic Vegetation Survey Guidance.

Vernal pools (VPs): For the purposes of these GPs, VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, VPs support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish. VP areas are:

- Depression (includes the VP depression up to the spring or fall high water mark, and includes any vegetation growing within the depression),
- Envelope (area within 0-100 feet of the VP depression's edge), and
- Critical terrestrial habitat (area within 100-750 feet of the VP depression's edge).

The envelope and critical terrestrial habitat protect the water quality of the breeding site (e.g., providing shade, leaf litter, and coarse woody material) and support the non-larval life-cycle stages of amphibian species. Note: The Corps may determine that a waterbody should not be designated as a VP based on available evidence.

Water diversions: Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.

Waters of the United States (U.S.)

33 CFR 320.1(d) states, "The terms "navigable waters of the United States" and "waters of the United States" are used frequently throughout these regulations, and it is important from the outset that the reader understand the difference between the two.

"Navigable waters of the United States" are generally defined as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." Further information for identifying navigable waters of the U.S. is provided in 33 CFR 329. These are waters that are navigable in the traditional sense where permits are required for certain work or structures pursuant to §§ 9 and 10 of the Rivers and

Harbors Act of 1899. These waters include the following federally designated navigable waters in Massachusetts: Merrimack River, Connecticut River, and Charles River to the Watertown Dam. This list represents only those waterbodies for which affirmative determinations have been made; absence from this list should not be taken as an indication that the waterbody is not navigable.

“**Waters of the U.S.**” are defined in 33 CFR 328. These waters include more than navigable waters of the U.S. and are the waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the Clean Water Act. Waters of the U.S. include jurisdictional wetlands. Contact the Corps with any questions regarding waters and wetlands subject to Clean Water Act jurisdiction.

Acronyms

BMPs	Best Management Practices
BUAR	Board of Underwater Archaeological Resources
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
CZM	Coastal Zone Management
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
EFH	Essential Fish Habitat
FNP	Federal Navigation Project
GC	General condition
GP	General permit
HTL	High Tide Line
IP	Individual Permit
LID	Low impact development
MassDEP	Massachusetts Department of Environmental Protection
MA DMF	Massachusetts Division of Marine Fisheries
MA NHESP	Natural Heritage and Endangered Species Program
MHC	Massachusetts Historical Commission
MHHW	Mean Higher High Water
MHW	Mean High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHW	Ordinary High Water
PCN	Preconstruction notification
SAS	Special aquatic sites
SF	Square Feet
SV	Self-verification
STURAA	Surface Transportation and Uniform Relocation Assistance Act
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer
TOY	Time of year
USFWS	U.S. Fish and Wildlife Service
USCG	U.S. Coast Guard
USGS	U.S. Geological Service
VP	Vernal pool
WPA	Wetlands Protection Act
WQC	Water Quality Certification

Part IX: Contacts and Tribal Areas of Interest

1. Federal

U.S. Army Corps of Engineers
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
(978) 318-8338 (phone); (978) 318-8303 (fax)
www.nae.usace.army.mil/missions/regulatory

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP05-2)
Boston, Massachusetts 02109-3912
(617) 918-1692 (phone)

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930
(978) 281-9300 (phone)
(*Federal endangered species & EFH*)

U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
(603) 223-2541 (phone)
(*Federal endangered species*)

National Park Service
15 State Street
Boston, MA 02109
(617) 223-5191 (phone)
(*Wild and Scenic Rivers*)

Commander (dpb)
First Coast Guard District
Battery Building
One South Street
New York, NY 10004-1466
(212) 514-4331 (phone); (212) 514-4337 (fax)
(*bridge permits*)

2. State of Massachusetts

Department of Environmental Protection (MassDEP)

DEP Division of Wetlands and Waterways
One Winter Street
Boston, MA 02108
(617) 292-5695

DEP Western Region
Wetlands Protection Program
436 Dwight Street
Springfield, MA 01103
(413) 784-1100

DEP Southeast Region
Wetlands Protection Program
20 Riverside Drive, Route 105
Lakeville, MA 02347
(508) 946-2800

DEP Central Region
Wetlands Protection Program
8 New Bond Street
Worcester, MA 01606
(508) 792-7650

DEP Northeast Region
Wetlands Protection Program
205B Lowell Street
Wilmington, MA 01887
(978) 694-3200

Massachusetts Office of Coastal Zone Management (CZM)

MA Office of Coastal Zone Management
251 Causeway Street, Suite 800
Boston, MA 02114
(617) 626-1200 (phone)

3. Historic Resources:

a. Massachusetts Historical Commission (MHC)

The Massachusetts Archives Bldg.

220 Morrissey Boulevard

Boston, MA 02125

(617) 727-8470 (phone); (617) 727-5128 (fax)

Area of concern: The entire Commonwealth of Massachusetts

b. Massachusetts Board of Underwater Archaeological Resources (BUAR)

251 Causeway Street, Suite 800

Boston, MA 02114

(617) 626-1141 (phone); (617) 626-1240 (fax); victor.mastone@state.ma.us

Area of concern: All Massachusetts lakes, ponds, rivers and navigable waters.

c. Tribal Historic Preservation Officers (THPOs)

Tribal Historic Preservation Officer

Wampanoag Tribe of Gay Head (Aquinnah)

20 Black Brook Road

Aquinnah, MA 02535

(508) 645-9265, x175 (phone); (508) 645-3790 (fax); bettina@wampanoagtribe.net

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Mashpee Wampanoag Tribe

483 Great Neck Road South

Mashpee, MA 02649

(508) 477-0208, x101 (phone); (508) 477-1218 (fax); rpeters@mwtribe.com

Area of concern: The entire Commonwealth of Massachusetts

Tribal Historic Preservation Officer

Stockbridge-Munsee Mohican Tribal Historic Preservation, New York Office

65 1st Street

Troy, NY 12180

(518) 244-3164 (phone); bonney.hartley@mohican-nsn.gov

Area of concern: West of Connecticut River

Tribal Historic Preservation Officer

Narragansett Indian Longhouse

4425 South County Trail

Charlestown, RI 02813

(401) 491-9459 (phone); (401) 862-5106 (cell); (413) 325-7691 (cell); (401) 491-9458 (fax)

brwnjbb123@aol.com, dhnthpo@gmail.com

Area of Concern: Boston and its surrounding neighborhoods; Lynn; Newton; these cities and towns in Plymouth County (Carver, Duxbury, Hingham, Kingston, Marshfield, Middleborough, Plymouth, Plympton, Scituate); these cities and towns in Norfolk County (Milton, Quincy, Braintree, Randolph, Canton, Sharon and Foxborough); the Blackstone River valley and the cities and towns west of Worcester (which are those including and west of Ashburnham, Westminster, Princeton, Holden, Paxton, Leicester, Oxford and Webster).