Appendix A: Agency Correspondence

This page intentionally left blank

From:	Laurin, Marc
To:	Reczek, Jennifer; Jamie Sikora; Landry, Robert; Scott, David; Stephanie Dyer-Carroll; James Murphy; Dan Hageman
Subject:	FW: Seabrook-Hampton, 15904 - Environmental Assessment
Date:	Wednesday, July 11, 2018 10:17:42 AM
Attachments:	Seabrook - Hampton Bridge.pdf

FYI

-----Original Message-----
From: Hicks, Michael C CIV USARMY CENAE (US) [mailto:Michael.C.Hicks@usace.army.mil]
Sent: Wednesday, July 11, 2018 10:03 AM
To: Laurin, Marc
Cc: O'Donnell, Edward G CIV USARMY CENAE (US); Hatfield, Christopher L CIV USARMY CENAE (US)
Subject: RE: Seabrook-Hampton, 15904 - Environmental Assessment

Mark,

Thanks for the heads up. This is a bridge project and the USCG will need to approve the bridge structure. Also, since it is near/over a Federal Project (see attached), you will need to send Navigation and/or Project Management a request for Section 408 Authorization (I am coping Ed and Chris). Our REG office will do the S. 404/10 evaluation. Also, is there Federal funding of this project, FHWA Lead.

Thanks,
Mike

Michael Hicks, PM
USACE, REG DIV., BR. C
978-318-8157

-----Original Message-----
From: Laurin, Marc [mailto:Marc.Laurin@dot.nh.gov]
Sent: Tuesday, July 10, 2018 4:00 PM
To: Hicks, Michael C CIV USARMY CENAE (US) <Michael.C.Hicks@usace.army.mil>
Cc: Jamie Sikora <jamie.sikora@dot.gov>; Reczek, Jennifer <Jennifer.Reczek@dot.nh.gov>; James Murphy <James.Murphy@hdrinc.com>; Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>; Dan Hageman <DHageman@fhiplan.com>
Subject: [Non-DoD Source] Seabrook-Hampton, 15904 - Environmental Assessment

Mike,

The NH Department of Transportation is in the process of gathering information on the environmental resources present to prepare an Environmental Assessment on the proposed rehabilitation or replacement of the NH Route 1A bridge over Hampton Harbor Inlet in Seabrook and Hampton, NH. We anticipate that we will be presenting the project at the August 2018 Natural Resource Agency meeting.

Attached is letter with further details on the project. I am also sending a similar letter, also attached, to Col. Conde by USPS as I do not have his email.

Please contact me if you have any questions.

Marc

From:	Edith Carson - NOAA Federal
To:	Marc.Laurin@dot.nh.gov
Cc:	Jamie Sikora; Mike Johnson; Reczek, Jennifer; James Murphy; Stephanie Dyer-Carroll; Dan Hageman
Subject:	Re: Seabrook-Hampton, 15904 - Environmental Assessment
Date:	Friday, July 13, 2018 11:37:00 AM

Mr. Laurin,

We received your email on July 10, 2018, regarding the proposed rehabilitation or replacement of the Neil R. Underwood Bridge (NHDOT No. 235/025) and associated roadway improvements. In your letter, you requested any information on the presence of threatened or endangered aquatic species under our jurisdiction. We offer the following comments.

Endangered Species Act

Sea Turtles
Four species of Endangered Species Act (ESA) listed threatened or endangered sea turtles under our jurisdiction are seasonally present in Hampton Harbor including its bays and tributaries: the threatened Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, the threatened North Atlantic DPS of green, and the endangered Kemp's ridley and leatherback sea turtles. Sea turtles typically occur along the New Hampshire coast from May to mid-November, with the highest concentration of sea turtles present from June through October.

Atlantic Sturgeon
Atlantic sturgeon are present in the waters of Hampton Harbor and its adjacent bays and tributaries. The New York Bight, Chesapeake Bay, South Atlantic and Carolina DPS of Atlantic sturgeon are endangered; the Gulf of Maine DPS is threatened. Adult and subadult Atlantic sturgeon originating from any of these DPS could occur in the proposed project area. As young remain in their natal river/estuary until approximately age 2, and early life stages are not tolerant of saline waters, no eggs, larvae, or juvenile Atlantic sturgeon will occur within the waters of Hampton Harbor and its adjacent bays and tributaries.

Shortnose Sturgeon
Shortnose sturgeon could be present in the waters of Hampton Harbor and could occur in their adjacent bays and tributaries. Shortnose sturgeon are listed as endangered throughout their range. As early life stages are not tolerant of saline waters, no eggs, larvae, or juvenile shortnose sturgeon will occur within the saline waters of Hampton Harbor and its adjacent bays and tributaries.

As project details develop, we recommend you consider the following effects of the project on sea turtles and sturgeon:

- For any impacts to habitat or conditions that temporarily render affected water bodies unsuitable for the above-mentioned species, consider the use of timing restrictions for in-water work.
- For activities that increase levels of suspended sediment, consider the use of silt management and/or soil erosion best practices (i.e., silt curtains and/or cofferdams).
- For pile driving or other activities that may affect underwater noise levels, consider the use of cushion blocks and other noise attenuating tools to avoid reaching noise levels that will cause injury or behavioral disturbance to sea turtles and sturgeon - see the table below for more information regarding noise criteria for injury/behavioral disturbance in sea turtles and sturgeon.

Organism	Injury	Behavioral Modification
Sturgeon	206 dB re 1 µPaPeak and 187 dB cSEL	150 dB re 1 µPaRMS
Sea Turtles	180 dB re 1 µPaRMS	166 dB re 1 µPaRMS

Depending on the amount and duration of work that takes place in the water, listed species of sea turtles and sturgeon may occur within the vicinity of your proposed project.The federal action agency will be responsible for determining whether the proposed action may affect listed species. If they determine that the proposed action may

affect a listed species, they should submit their determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 or nmfs.gar.esa.section7@noaa.gov. Please be aware that we have recently provided on our website guidance and tools to assist action agencies with their description of the action and analysis of effects to support their determination. See - http://www.greateratlantic.fisheries.noaa.gov/section7. After receiving a complete, accurate comprehensive request for consultation, in accordance to the guidance and instructions on our website, we would then be able to conduct a consultation under section 7 of the ESA. Should project plans change or new information become available that changes the basis for this determination, further coordination should be pursued. If you have any questions regarding these comments, please contact me (978-282-8490; Edith.Carson@noaa.gov).

Essential Fish Habitat

In addition, we have received a request for information regarding an Essential Fish Habitat (EFH) consultation under the Magnuson-Stevens Fisheries Conservation and Management Act. The information in your letter for federally-managed species and their EFH appears to be correct. In addition, several other NOAA-trust resources are known to occur in the project area, including American lobster, shellfish (e.g., blue mussel, soft-shell clam), and diadromous fish (e.g., alewife, blueback herring, rainbow smelt, American eel, and striped bass). Some of these species are also prey for federally-managed species, and are therefore considered a component of the EFH for them. Therefore, adverse effects to the species and their habitats should be assessed in the EFH consultation.

An EFH assessment to evaluate the potential adverse effect on EFH for federally-managed species should be prepared and sent to Michael Johnson, Habitat Conservation Division. His contact information is mike.r.johnson@noaa.gov, 978-281-9130.

Thank you,

Edith

Edith Carson-Supino, M.Sc.
Section 7/Shortnose Sturgeon Fish Biologist
NOAA Fisheries
U.S. Department of Commerce
Greater Atlantic Regional Fisheries Office
Phone: 978-282-8490
edith.carson@noaa.gov

For ESA Section 7 guidance please see:
https://www.greateratlantic.fisheries.noaa.gov/section7

On Fri, Jul 13, 2018 at 10:32 AM, Edith Carson - NOAA Federal <edith.carson@noaa.gov> wrote:

> Hi Marc,
>
> Thank you for your request. I will review this and send you my comments shortly.

Thanks!

Edith

Edith Carson-Supino, M.Sc.
Section 7/Shortnose Sturgeon Fish Biologist
NOAA Fisheries
U.S. Department of Commerce
Greater Atlantic Regional Fisheries Office
Phone: 978-282-8490
edith.carson@noaa.gov

For ESA Section 7 guidance please see:
https://www.greateratlantic.fisheries.noaa.gov/section7

---------- Forwarded message ----------
From: **Laurin, Marc** < Marc.Laurin@dot.nh.gov>
Date: Tue, Jul 10, 2018 at 2:37 PM
Subject: Seabrook-Hampton, 15904 - Environmental Assessment
To: Max Tritt <max.tritt@noaa.gov>
Cc: Jamie Sikora <jamie.sikora@dot.gov>, Mike Johnson <Mike.R.Johnson@noaa.gov>, "Reczek, Jennifer" <Jennifer.Reczek@dot.nh.gov>, James Murphy <James.Murphy@hdrinc.com>, Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>, Dan Hageman <DHageman@fhiplan.com>

Max,

The NH Department of Transportation is in the process of gathering information on the environmental resources present to prepare an Environmental Assessment on the proposed rehabilitation or replacement of the US Route 1A bridge over Hampton Harbor Inlet in Seabrook and Hampton, NH.

Attached is letter with further details on the project. Your input on the resources of concern is much appreciated.

Please contact me if you have any questions.

Marc

From:	Odom, Matthew T LT
To:	Laurin, Marc
Cc:	Stieb, Jeffrey D CIV; Bisignano, Christopher J CIV; Rousseau, James L CIV; Nichols, Robert F BOSN3; Watts, Thomas F MSTC; Jamie Sikora; Robert.Landry@dot.nh.gov; Michael Hicks; Reczek, Jennifer; James Murphy; Stephanie Dyer-Carroll; Dan Hageman
Subject:	RE: Seabrook-Hampton, 15904
Date:	Thursday, August 16, 2018 8:26:11 AM

Mr. Laurin,

Thank you for the opportunity to provide initial comments. I have been in contact with our District Bridge Branch, who are also in receipt of this letter; they intend on making contact with you and will reply to the letter. I will work closely with their office with regards to the potential navigation impact aspect of the project.

Looking forward to working with you.

Best Regards,

LT Matthew Odom
Sector Northern New England
Chief, Waterways Management Division
Office: (207) 347-5015
Mobile: (207) 899-6291

From: Laurin, Marc <Marc.Laurin@dot.nh.gov>
Sent: Wednesday, August 15, 2018 3:28 PM
To: Odom, Matthew T LT <Matthew.T.Odom@uscg.mil>
Cc: Stieb, Jeffrey D CIV <Jeffrey.D.Stieb@uscg.mil>; Bisignano, Christopher J CIV <Christopher.J.Bisignano@uscg.mil>; Rousseau, James L CIV <James.L.Rousseau2@uscg.mil>; Jamie Sikora <jamie.sikora@dot.gov>; Michael Hicks <Michael.C.Hicks@usace.army.mil>; Reczek, Jennifer <Jennifer.Reczek@dot.nh.gov>; James Murphy <James.Murphy@hdrinc.com>; Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>; Dan Hageman <DHageman@fhiplan.com>
Subject: [Non-DoD Source] Seabrook-Hampton, 15904

Lt. Odom,

The NH Department of Transportation is in the process of gathering information on the environmental resources present to prepare an Environmental Assessment on the proposed rehabilitation or replacement of the US Route 1A bridge over Hampton Harbor Inlet in Seabrook and Hampton, NH.

Attached is a letter with further details on the project. Your initial comments on proposed project is much appreciated.

Please contact me if you have any questions.

Thank you,

Marc Laurin
Senior Environmental Manager
Bureau of Environment
NH Department of Transportation
(603) 271-4044

From:	Stephanie Dyer-Carroll
To:	Stephanie Dyer-Carroll
Subject:	FW: NH Route 1A bridge over Hampton River - Seabrook-Hampton, 15904
Date:	Friday, March 8, 2019 9:19:41 AM

From: vonOettingen, Susi [mailto:susi_vonoettingen@fws.gov]
Sent: Friday, February 15, 2019 9:43 AM
To: Laurin, Marc
Cc: Clifford, Brendan
Subject: NH Route 1A bridge over Hampton River

Good morning, Marc,

I am writing in response to your January 22, 2019 letter requesting comments and/or information regarding federally listed species that are in the vicinity of the proposed replacement of the Route 1A bridge over the Hampton River in Hampton and Seabrook, New Hampshire (Project). At this time, I understand that the project is in a preliminary design phase and you are asking for general comments regarding listed species.

The New Hampshire Department of Transportation (NHDOT) identified rour federally listed species as potentially being present in the vicinity of the project. I agree, that the northern long-eared bat will not be affected based on the information provided in your letter - specifically a lack of foraging or roosting habitat, including the lack of evidence that bats might have been roosting in the bridge. Therefore, no further consultation will be needed for this species if NHDOT (or Federal Highways) concludes that the species will not be affected.

Red knots and roseate terns could forage within the project area, as stated in your letter. Red knots forage on exposed intertidal mud and sand flats, and roost on beach berms, dunes and in salt marshes. To date, there is little evidence that other than lower numbers of migrating red knots are found in the project area. Roseate terns forage in shallow waters when prey is available and have been observed in the project area, either during the breeding season (since Seavey Island is a known breeding colony) or during the staging season.

Piping plovers periodically nest west of the bridge when sufficient nesting habitat is available. This species could be affected by changes to the habitat during construction, or by noise and vibrations from construction activities. In order to avoid adverse effects, we recommend a time of year restriction for construction. Work involving vibrations, noise, mechanical equipment on the beach or other activities that would prevent plovers from establishing territories and nesting, that would disrupt foraging, or otherwise prevent plovers from feeding, breeding or roosting, should occur outside of the plover season, that being April 1 through August 31. There may be instances when construction may occur into April, if a) plovers have not returned to the site or b) are located at a sufficient distance to avoid being disturbed. We can discuss this situation and monitoring and managing requirements as the project design nears finalization.

If you have any questions, please call me at 603-227-6418 or email me. Thank you for your cooperation.

Sincerely,

Susi von Oettingen

****

Susi von Oettingen
Endangered Species Biologist
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301
(W) 603-227-6418
(Fax) 603-223-0104

www.fws.gov/newengland

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

IPaC Record Locator: 136-15061265 January 30, 2019

Subject: Consistency letter for the 'NH Route 1A Bridge over the Hampton River (Seabrook-Hampton Bridge), NHDOT Project No. 15904' project (TAILS 05E1NE00-2018-R-2211) under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated to verify that the NH Route 1A Bridge over the Hampton River (Seabr ook-Hampton Bridge), NHDOT Pr oject No. 15904 (Proposed Action) may rely on the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (Myotis sodalis) or the threatened Northern long-eared bat (Myotis septentrionalis). If the Proposed Action is not modified, no consultation is r equir ed for these two species.

For Pr oposed Actions that include bridge/structur e r emoval, r eplacement, and/or maintenance activities: If your initial bridge/structure assessments failed to detect Indiana bats, but you later detect bats during construction, please submit the Post Assessment Discovery of Bats at Bridge/Structure Form (User Guide Appendix E) to this Service Office. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act

may also be required. In either of these circumstances, please advise the lead Federal action agency for the Proposed Action accordingly.

The following species may occur in your project area and are not covered by this determination:

- Red Knot, Calidris canutus rufa (Threatened)

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

NH Route 1A Bridge over the Hampton River (Seabrook-Hampton Bridge), NHDOT Project No. 15904

Description

The project entails the rehabilitation or replacement of the Neil R. Underwood Bridge (NHDOT No. 235/025) and associated roadway improvements. An Environmental Assessment is currently being prepared for the project.

Determination Key Result

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the threatened Northern long-eared bat. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 et seq.) is required for these two species.

Qualification Interview

1. Is the project within the range of the Indiana bat[1]?

   [1] See Indiana bat species profile

   Automatically answer ed
   No

2. Is the project within the range of the Northern long-eared bat[1]?

   [1] See Northern long-eared bat species profile

   Automatically answer ed
   Yes

3. Which Federal Agency is the lead for the action?

   A) Federal Highway Administration (FHWA)

4. Are all project activities limited to non-construction[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

   [1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

   No

5. Does the project include any activities that are greater than 300 feet from existing road/rail surfaces[1]?

   [1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

   No

6. Does the project include any activities within 0.5 miles of an Indiana bat and/or NLEB hibernaculum[1]?

   [1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

   No

7. Is the project located within a karst area?

   No

8. Is there any suitable[1] summer habitat for Indiana Bat or NLEB within the project action area[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

   [1] See the Service's summer survey guidance for our current definitions of suitable habitat.

   [2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the national consultation FAQs.

   No

9. Does the project include maintenance of the surrounding landscape at existing facilities (e.g., rest areas, stormwater detention basins)?

   No

10. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

    No

11. Does the project include slash pile burning?

    No

12. Does the project include any bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

    Yes

13. Is there any suitable habitat[1] for Indiana bat or NLEB within 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    No

14. Does the project include the removal, replacement, and/or maintenance of any structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

    Yes

15. Is there any suitable habitat[1] for Indiana bat or NLEB within 1,000 feet of the structure? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

    [1] See the Service's current summer survey guidance for our current definitions of suitable habitat.

    No

16. Will the project involve the use of temporary lighting during the active season?

    Yes

17. Is there any suitable habitat within 1,000 feet of the location(s) where temporary lighting will be used?

    No

18. Will the project install new or replace existing permanent lighting?

    Yes

19. Is there any suitable habitat within 1,000 feet of the location(s) where permanent lighting will be installed or replaced?

    No

20. Are all project activities that are not associated with habitat removal, tree removal/ trimming, bridge or structure removal, replacement, and/or maintenance, lighting, or use of percussives, limited to actions that DO NOT cause any stressors to the bat species, including as described in the BA/BO (i.e. activities that do not involve ground disturbance, percussive noise, temporary or permanent lighting, tree removal/trimming, nor bridge/ structure activities)?

    Examples: lining roadways, unlighted signage , rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

    Yes

21. Will the project raise the road profile above the tr ee canopy ?

    No

22. Is the location of this project consistent with a No Effect determination in this key?
    Automatically answer ed
    Yes, because the project action area is outside of suitable Indiana bat and/or NLEB summer habitat

23. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?
    Automatically answer ed
    Yes, because the bridge is more than 1,000 feet from the nearest suitable habitat and is therefore considered unsuitable for use by bats

24. Is the structure removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?
    Automatically answer ed
    Yes, because the structure is more than 1,000 feet from the nearest suitable habitat and is therefore considered unsuitable for use by bats

25. Is the temporary lighting portion of this project consistent with a No Effect determination in this key?
    Automatically answer ed
    Yes, because the lighting will be more than 1,000 feet from the nearest suitable habitat

26. Is the permanent lighting portion of this project consistent with a No Effect determination in this key?
    Automatically answer ed
    Yes, because the lighting will be more than 1,000 feet from the nearest suitable habitat

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on March 16, 2018. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered Indiana bat (Myotis sodalis) and the threatened Northern long-ear ed bat (NLEB) (Myotis septentrionalis).

This decision key should only be used to verify project applicability with the Service's February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects. The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To: March 09, 2021
Consultation Code: 05E1NE00-2018-SLI-2211
Event Code: 05E1NE00-2021-E-05392
Project Name: NH Route 1A Bridge over the Hampton River (Seabrook-Hampton Bridge), NHDOT Project No. 15904

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

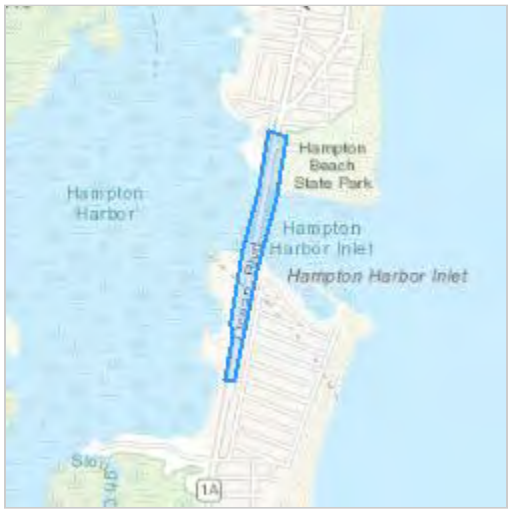
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2211
Event Code: 05E1NE00-2021-E-05392
Project Name: NH Route 1A Bridge over the Hampton River (Seabrook-Hampton Bridge), NHDOT Project No. 15904
Project Type: TRANSPORTATION
Project Description: The project entails the rehabilitation or replacement of the Neil R. Underwood Bridge (NHDOT No. 235/025) and associated roadway improvements. An Environmental Assessment is currently being prepared for the project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.89483705637417,-70.81698462683369,14z



Counties: Rockingham County, New Hampshire

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Susan Bemis, Fitzgerald & Halliday
11 Hanover Square
3rd Floor
New York, NY 10005

From: Amy Lamb, NH Natural Heritage Bureau
Date: 12/24/2020 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB20-3664 Town: Hampton and Seabrook Location: Tax Maps: New Hampshire Route 1A Bridge Over the Hampton River (Neil R. Underwood Bridge)

Description: The project entails the replacement of the Neil R. Underwood Bridge and associated roadway improvements (NHDOT No. 235/025). An Environmental Assessment is currently being prepared for the project. DataCheck previously submitted for the project in June 2018; resubmitting due to the passage of time.

cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments: Please continue to coordinate with NHB and the NH Fish & Game Department to address rare species and exemplary natural community impacts.

Natural Community	**State[1]**	**Federal**	**Notes**
Beach grass grassland	--	--	Dune communities are sensitive to trampling or recreational use that harms the vegetation, since plants growing in the sand serve a critical function in anchoring it in place.
Intertidal flat*	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as ditching or tidal restrictions that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.
Subtidal system	--	--	Threats to these communities are primarily alterations to the hydrology of the wetland (such as alterations that might affect the sheet flow of tidal waters across the intertidal flat) and increased input of nutrients and pollutants in storm runoff.

Plant species	**State[1]**	**Federal**	**Notes**
field wormwood (*Artemisia campestris ssp.*	E	--	This species grows in dry dune systems and is sensitive to disturbances that eliminate

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

CONFIDENTIAL – NH Dept. of Environmental Services review

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

caudata)			its habitat or disturb the natural dynamics of the dune area.
Gray's umbrella sedge (*Cyperus grayi*)	E	--	This species grows in sandplains and disturbed openings, and is sensitive to disturbances that eliminate its habitat.
hairy hudsonia (*Hudsonia tomentosa*)	T	--	This species requires periodic disturbance to its habitat (disturbed openings, river and streambanks). However, existing plants are very sensitive to trampling when growing on open sand.
long-spined sandbur (*Cenchrus longispinus*)	E	--	This species grows in sandplains and disturbed openings, and is sensitive to disturbances that eliminate its habitat.
sand dropseed (*Sporobolus cryptandrus*)*	E	--	This species grows in dry dune systems and is sensitive to disturbances that eliminate its habitat or disturb the natural dynamics of the dune area.
seaside threeawn (*Aristida tuberculosa*)	E	--	This species grows in dry dune systems and is sensitive to disturbances that eliminate its habitat or disturb the natural dynamics of the dune area.

Vertebrate species	**State[1]**	**Federal**	**Notes**
Least Tern (*Sterna antillarum*)	E	--	Contact the NH Fish & Game Dept (see below).
Piping Plover (*Charadrius melodus*)	E	T	Contact the NH Fish & Game Dept and the US Fish & Wildlife Service (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, “SC” = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Department of Natural and Cultural Resources
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DNCR/NHB
172 Pembroke Rd.
Concord, NH 03301

From: Laurin, Marc
To: Stephanie Dyer-Carroll
Subject: FW: Seabrook-Hampton, 15904 - LCHIP Properties NHDOT review
Date: Tuesday, February 16, 2021 9:23:47 AM

Stephanie,

FYI for inclusion in the document agency coordination appendix.

Marc

From: Paula Bellemore <pbellemore@lchip.org>
Sent: Monday, February 15, 2021 10:14 AM
To: Laurin, Marc <marc.g.laurin@dot.nh.gov>
Subject: RE: Seabrook-Hampton, 15904 - LCHIP Properties NHDOT review

---

Marc,
LCHIP has not assisted in the conservation or preservation of historical, natural, or cultural resources in the project area described.

In the future, a GIS package labeled with the project name/number and suitable for uploading in GRANITView should be submitted with each request. You can expect the review to take up to 30 days, depending on when the request is submitted as I review transportation project requests once a month, generally on or about the 15th.

All that said, in a pinch, I am always happy to help out – just let me know you need a rush, preferably in the subject line of your email, or give me a call.

Best,

Paula Bellemore
Natural Resource Specialist
603-325-2253

Land and Community Heritage Investment Program
3 North Spring St., Suite 100
Concord, NH 03301

Learn more at LCHIP.org

From: Laurin, Marc <marc.g.laurin@dot.nh.gov>
Sent: Thursday, January 21, 2021 1:33 PM
To: Paula Bellemore <pbellemore@lchip.org>
Cc: Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>; Reczek, Jennifer

<Jennifer.E.Reczek@dot.nh.gov>; Roch Larochelle <Roch.Larochelle@hdrinc.com>
Subject: Seabrook-Hampton, 15904 - LCHIP Properties NHDOT review

Paula,

An Environmental Assessment is currently being prepared for the project, which is in the towns of Seabrook and Hampton, in Rockingham County (see attached map) for the replacement of the NH Route 1A bridge over the Hampton Harbor Inlet.

The Neil R. Underwood Bridge is approximately 1,199 feet long by 33 feet wide and it spans the Hampton River at the inlet to Hampton Harbor. The Hampton and Blackwater Rivers, as well as Hampton Harbor, lie to the west of the bridge. The Atlantic Ocean lies to the east of the bridge. To the north and south are residential, recreational, and tourism-based development, including the Hampton Beach State Park, which is located north of and on the east side of the bridge, the Hampton State Pier, and the Hampton-Seabrook Dunes Wildlife Management Area (also referred to as the Former Barge Facility and the Hampton Harbor Wildlife Management Area). Hampton Beach State Park is managed by the New Hampshire Division of Parks and Recreation. The Hampton-Seabrook Wildlife Management Area was transferred from NHDOT to the NHFGD and NHDNCR in 1988 with the provision that should the land be needed for highway purposes; it would revert to NHDOT.

The Neil R. Underwood Bridge carries up to 18,000 vehicles per day during peak times. The bridge is structurally deficient and functionally obsolete, and is on the "red-list" for NHDOT, which outlines bridge structures that are a priority for the state to address. There have been numerous efforts to repair and rehabilitate the bridge over its life, with recent repairs including a deck replacement in 2010 and emergency repairs to the bascule span mechanical system in 2018.

Please review and confirm there are no LCHIP properties in the vicinity of the Hampton Harbor Bridge Project. Contact me if you have any questions.

Thanks,

Marc

From:	Laurin, Marc
To:	Stephanie Dyer-Carroll
Cc:	Reczek, Jennifer; Roch Larochelle
Subject:	FW: Seabrook-Hampton, 15904 - LCIP Properties
Date:	Friday, January 22, 2021 7:16:45 AM

FYI

From: Walker, Steve <stephen.g.walker@osi.nh.gov>
Sent: Thursday, January 21, 2021 6:23 PM
To: Laurin, Marc <marc.g.laurin@dot.nh.gov>
Subject: RE: Seabrook-Hampton, 15904 - LCIP Properties

Hi Marc, No LCIP properties in the project area. Thanks steve

---

From: Laurin, Marc <marc.g.laurin@dot.nh.gov>
Sent: Thursday, January 21, 2021 1:33 PM
To: Walker, Steve <stephen.g.walker@osi.nh.gov>
Cc: Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>; Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>; Roch Larochelle <Roch.Larochelle@hdrinc.com>
Subject: Seabrook-Hampton, 15904 - LCIP Properties

Steve,

An Environmental Assessment is currently being prepared for the project, which is in the towns of Seabrook and Hampton, in Rockingham County (see attached map) for the replacement of the NH Route 1A bridge over the Hampton Harbor Inlet.

The Neil R. Underwood Bridge is approximately 1,199 feet long by 33 feet wide and it spans the Hampton River at the inlet to Hampton Harbor. The Hampton and Blackwater Rivers, as well as Hampton Harbor, lie to the west of the bridge. The Atlantic Ocean lies to the east of the bridge. To the north and south are residential, recreational, and tourism-based development, including the Hampton Beach State Park, which is located north of and on the east side of the bridge, the Hampton State Pier, and the Hampton-Seabrook Dunes Wildlife Management Area (also referred to as the Former Barge Facility and the Hampton Harbor Wildlife Management Area). Hampton Beach State Park is managed by the New Hampshire Division of Parks and Recreation. The Hampton-Seabrook Wildlife Management Area was transferred from NHDOT to the NHFGD and NHDNCR in 1988 with the provision that should the land be needed for highway purposes; it would revert to NHDOT.

The Neil R. Underwood Bridge carries up to 18,000 vehicles per day during peak times. The bridge is structurally deficient and functionally obsolete, and is on the “red-list” for NHDOT, which outlines bridge structures that are a priority for the state to address. There have been numerous efforts to repair and rehabilitate the bridge over its life, with recent repairs including a deck replacement in 2010 and emergency repairs to the bascule span mechanical system in 2018.

Please review and confirm there are no LCIP properties in the vicinity of the Hampton Harbor Bridge Project. Contact me if you have any questions.

Thanks,

Marc

Please mail 2 copies of the completed form and required material to:

Cultural Resources Staff
Bureau of Environment
NH Department of Transportation
7 Hazen Drive
Concord, NH 03302

RECEIVED
JUN 28 2018

DHR Use Only	
R&C #	9859
Log In Date	___/___/___
Response Date	___/___/___
Sent Date	___/___/___

Request for Project Review by the New Hampshire Division of Historical Resources for Transportation Projects

☒ This is a new submittal.
☐ This is additional information relating to DHR Review and Compliance (R&C)#:

GENERAL PROJECT INFORMATION

DOT Project Name & Number Seabrook-Hampton 15904

Brief Descriptive Project Title Neil R. Underwood Bridge Project

Project Location NH Route 1A

City/Town Seabrook and Hampton, Rockingham Co.

Lead Federal Agency and Contact *(if applicable)* Federal Highway Administration
(Agency providing funds, licenses, or permits)
Permit Type and Permit or Job Reference # X-A001(026)

DOT Environmental Manager *(if applicable)* Marc Laurin

PROJECT SPONSOR INFORMATION

Project Sponsor Name New Hampshire Department of Transportation

Mailing Address PO Box 483/ 7 Hazen Drive Phone Number 603-271-7968

City Concord State NH Zip 03302-048 Email marc.laurin@dot.nh.gov

CONTACT PERSON TO RECEIVE RESPONSE

Name/Company Marc Laurin, NHDOT

Mailing Address PO Box 483/ 7 Hazen Drive Phone Number 603-271-7968

City Concord State NH Zip 03302-048 Email marc.laurin@dot.nh.gov

This form is updated periodically. Please download the current form at http://www.nh.gov/nhdhr/review. *Please refer to the Request for Project Review for Transportation Projects Instructions for direction on completing this form.* Submit 2 copies of this project review form for each project for which review is requested. Include 1 self-addressed stamped envelope to expedite review response. Project submissions will not be accepted via facsimile or e-mail. This form is required. Review request form must be complete for review to begin. Incomplete forms will be sent back to the applicant without comment. Please be aware that this form may only initiate consultation. For some projects, additional information will be needed to complete the Section 106 review. All items and supporting documentation submitted with a review request, including photographs and publications, will be retained by the DOT and the DHR as part of its review records. Items to be kept confidential should be clearly identified. For questions regarding the DHR review process and the DHR's role in it, please visit our website at: http://www.nh.gov/nhdhr/review or contact the R&C Specialist at christina.st.louis@nh.gov or 603.271.3558.

PROJECTS CANNOT BE PROCESSED WITHOUT THIS INFORMATION 9859

Project Boundaries and Description

- ☒ Attach the relevant portion of a 7.5' USGS Map (photocopied or computer-generated) ***indicating the proposed area of potential effect (APE).*** *(See RPR for Transportation Projects Instructions and R&C FAQs for guidance. Note that the APE is subject to approval by lead federal agency and SHPO.)*
- ☒ Attach a detailed narrative description of the proposed project.
- ☒ Attach current engineering plans with tax parcel, landscape, and building references, and areas of proposed excavation, if available.
- ☒ Attach photos of the project area/APE with mapped photo key (overview of project location and area adjacent to project location, and specific areas of proposed impacts and disturbances.) *(Blank photo logs are available on the DHR website. Informative photo captions can be used in place of a photo log.)*
- ☒ A DHR file review must be conducted to identify properties within or adjacent to the APE. Provide file review results in **Table 1**. *(Blank table forms are available on the DHR website.)*
  File review conducted on 06/16/2018.*

  **The DHR recommends that all survey/National Register nomination forms and their Determination of Eligibility (green) sheets are copied for your use in project development.*

Architecture

Are there any buildings, structures (bridges, walls, culverts, etc.) objects, districts or landscapes within the APE? ☒ Yes ☐ No
If no, skip to Archaeology section. If yes, submit all of the following information:

- ☒ Attach completed **Table 2**.
- ☒ Photographs of ***each*** resource or streetscape located within the APE. Add to the mapped photo key and photo log noted above. (Digital photographs are accepted. All photographs must be clear, crisp and focused.)
- ☒ Copies of National Register boundary (listed *or* eligible) mapping, and add National Register boundaries for listed and eligible properties to the 7.5' USGS project map *(if applicable).*

Archaeology

Does the proposed undertaking involve ground-disturbing activity? ☒ Yes ☐ No
If yes, submit all of the following information:

- ☒ Description of current and previous land use and disturbances.
- ☒ Available information concerning known or suspected archaeological resources within the project area (such as cellar holes, wells, foundations, dams, etc.)

Please note that for many projects an architectural and/or archaeological survey or other additional information may be needed to complete the Section 106 process.

AGENCY COMMENT *This Space for DOT and Division of Historical Resources Use Only*

Sent to DHR; Authorized DOT Signature: Jill Edes Date: 6/28/2018

☐ Insufficient information to initiate review.

☒ Additional information is needed in order to complete review.

Comments: More information, particularly on proposed ground disturbance (including river bottom) should be provided for each alternative. Has any remote sensing of Hampton River been completed?
Above-ground: Note that the Hampton Beach Area Form (2009) is a Proj. Area Form w/recommendations for survey, not NR Eligibility determinations. Concur w/ DOT per conversation w/ Jill E. on 6/28 that a Proj Area Form be prepared for the current Project's APE encompassing visual & direct effects. Suggest preparing a NH Individual Inventory Form for the Underwood Bridge Concurrent w/ PAF.

If plans change or resources are discovered in the course of this project, you must contact the Division of Historical Resources as required by federal law and regulation. Commence reaching out to potential Sect. 106 Consulting Parties, which may result in add'l participants aside from PAC.

Authorized DHR Signature: Laura A. Black Date: July 11, 2018

Appendix B: EFH Assessment and NOAA Programmatic BA

This page intentionally left blank

EFH ASSESSMENT

This page intentionally left blank

EFH ASSESSMENT WORKSHEET

General Project Information

Date Submitted: December 1, 2020 Revised August 13, 2021

Project/Application Number: X-A001(026)

Project Name: Seabrook-Hampton 15904, Neil R. Underwood Bridge

Project Sponsor/Applicant: New Hampshire Department of Transportation

Federal Action Agency (if state agency acting as delegated): FHWA

Fast-41 or One Federal Decision Project: ☐ Yes ☑ No

Action Agency Contact Name: Jamie Sikora

Contact Phone: (603) 410-4870 Contact Email: Jamie.sikora@dot.gov

Latitude: 42°53'45.40"N Longitude: 70°48'59.45"W

Address, City/Town, State:

NH Route 1A, Seabrook and Hampton, NH

Body of Water: Hampton Harbor

Project Purpose:

Replacement of the Hampton Harbor Bridge over Hampton Harbor Inlet (See Attached)

Project Description:

The project would construct a new structural steel fixed bridge approximately 75 feet (23 meters) west of the existing bridge. The existing bridge would then be demolished. The total length of the new bridge would be 1,300 feet (396 meters) and the approaches would be curved slightly to allow the new bridge alignment to tie into NH Route 1A north and south of the bridge. At its peak, the deck of the new fixed bridge would be approximately 30 feet (9 meters) higher than that of the existing bascule bridge. The bridge would have two 11-foot (3.3 meter) travel lanes, with eight-foot (2.4 meter) shoulders and six-foot (1.8 meter) sidewalks on each side, resulting in a 50-foot (15 meter) inside width. (See attached text for more information).

Anticipated Duration of In-Water Work or Start/End Dates:

In-water work: November 15th to March 15th each year (3 yrs). Start in Nov. 2024.

Habitat Description

EFH includes the biological, chemical, and physical components of the habitat. This includes the substrate and associated biological resources (e.g., benthic organisms, submerged aquatic vegetation, shellfish beds, salt marsh wetlands), the water column, and prey species.

Is the project in designated EFH[2]? ☑ Yes ☐ No

Is the project in designated HAPC[2]? ☑ Yes ☐ No

Is this coordination under FWCA only? ☐ Yes ☑ No

Total area of impact to EFH (indicate sq ft or acres): 0.29 acres permanent; 7.01 acres temp.

Total area of impact to HAPC (indicate sq ft or acres): 0.29 acres permanent; 7.01 acres temp.

Current water depths: 0' to ±40' Salinity: ±34 ppt Water temperature range: 35° to 62°F

Sediment characteristics[3]: med. to fine-grained sands; some embedded cobble & bedrock

What habitat types are in or adjacent to the project area and will they be permanently impacted? Select all that apply. Indicate if impacts will be temporary, if site will be restored, or if permanent conversion of habitat will occur. A project may occur in overlapping habitat types.

	Habitat Type	**Total impact (sq ft/acres)**	**Impacts are temporary**	**Restored to pre-existing conditions**	**Permanent conversion of all or part of habitat**
☐	Marine				
☑	Estuarine	317,964 sq. ft. / 7.30 ac	305,332 sq. ft. / 7.01 ac	2,592 sq. ft / 0.06 ac	12,632 sq ft / 0.29ac
☐	Riverine (tidal)				
☐	Riverine (non-tidal)				
☑	Intertidal	76,699 sq. ft / 1.76 ac	74,223 sq. ft / 1.70 ac	531 sq. ft / 0.012 ac	2,476 sq. ft. / 0.06 ac
☑	Subtidal	241,265 sq. ft / 5.54 ac	231,109 sq. ft / 5.31 ac	2,061 sq. ft / 0.047 ac	10,156 sq. ft. / 0.23 ac
☑	Water column	317,964 sq. ft. / 7.30 ac	305,332 sq. ft. / 7.01 ac	2,592 sq. ft / 0.06 ac	12,632 sq ft / 0.29 ac
☐	Salt marsh/ Wetland (tidal)				
☐	Wetland (non-tidal)				

[2] Use the tables on pages 7-9 to list species with designated EFH or the type of designated HAPC present.
[3] The level of detail is dependent on your project – e.g., a grain size analysis may be necessary for dredging.

	Habitat Type	Total impact (sq ft/acres)	Impacts are temporary	Restored to pre-existing conditions	Permanent conversion of all or part of habitat
☑	Rocky/hard bottom[4]:	148,549 sq ft / 3.41 ac	142,759 sq ft / 3.28 ac	901 sq ft / 0.02 ac	5,790 sq ft / 0.13 ac
☑	Sand	169,415 sq. ft. / 3.89 ac	162,573 sq ft / 3.73 ac	1,691 sq ft / 0.039 ac	6,842 sq ft / 0.16 ac
☑	Shellfish beds or oyster reefs	9,579 sq. ft. / 0.22 ac of area colonized by Mytilus edulis	8,714 sq. ft. / 0.20 ac	none assumed	865 sq ft / 0.02 ac
☐	Mudflats				
☐	Submerged aquatic vegetation (SAV)[5], macroalgae, epifauna				
☑	Diadromous fish (migratory or spawning habitat)	317,964 sq. ft. / 7.30 ac of migratory habitat	305,332 sq. ft. / 7.01 ac	2,592 sq. ft / 0.06 ac of watercolumn habitat	12,632 sq ft / 0.29 ac of migratory habitat

Indicate type(s) of rocky/hard bottom habitat (pebble, cobble, boulder, bedrock outcrop/ledge) and species of SAV:

Bedrock outcrop & boulder rip-rap north side of the channel. Rocky intertidal areas are colonized by Fucus, Ascophyllum, and *Condrus crispus*.

Project Effects

Select all that apply	Project Type/Category
☐	Hatchery or Aquaculture
☐	Agriculture
☐	Forestry
☐	Military (e.g., acoustic testing, training exercises)
☐	Mining (e.g., sand, gravel)
☐	Restoration or fish/wildlife enhancement (e.g., fish passage, wetlands, beach renourishment, mitigation bank/ILF creation)

[4] Indicate type(s). The type(s) of rocky habitat will help you determine if the area is cod HAPC.
[5] Indicate species. Provide a copy of the SAV report and survey conducted at the site, if applicable.

Select all that apply	Project Type/Category
☑	Infrastructure/transportation (e.g., culvert construction, bridge repair, highway, port)
☐	Energy development/use
☐	Water quality (e.g., TMDL, wastewater, sediment remediation)
☑	Dredging/excavation and disposal
☐	Piers, ramps, floats, and other structures
☐	Bank/shoreline stabilization (e.g., living shoreline, groin, breakwater, bulkhead)
☐	Survey (e.g., geotechnical, geophysical, habitat, fisheries)
☐	Other

Select all that apply	Potential Stressors Caused by the Activity	Select all that apply and if temporary or permanent		Habitat alterations caused by the activity
		Temp	Perm	
☑	Underwater noise			
☑	Water quality/turbidity/ contaminant release	☐	☑	Water depth change
☑	Vessel traffic/barge grounding	☐	☐	Tidal flow change
☐	Impingement/entrainment[6]	☐	☑	Fill
☐	Prevent fish passage/spawning	☐	☑	Habitat type conversion
☑	Benthic community disturbance			Other:
☐	Impacts to prey species			Other:

[6] Entrainment is the voluntary or involuntary movement of aquatic organisms from a water body into a surface diversion or through, under, or around screens and results in the loss of the organisms from the population. Impingement is the involuntary contact and entrapment of aquatic organisms on the surface of intake screens caused when the approach velocity exceeds the swimming capability of the organism.

Details: project impacts and mitigation

The level of detail that you provide should be commensurate with the magnitude of impacts associated with the proposed project. Attach supplemental information if necessary.

Describe how the project would impact each of the habitat types selected above. Include temporary and permanent impact descriptions and direct and indirect impacts.

See Attached

What specific measures will be used to avoid impacts, including project design, turbidity controls, acoustic controls, and time of year restrictions? If impacts cannot be avoided, why not?

See Attached

What specific measures will be used to minimize impacts?

See Attached

Is compensatory mitigation proposed? ☐ Yes ☑ No

If no, why not? If yes, describe plans for mitigation and how this will offset impacts to EFH. Include a conceptual compensatory mitigation and monitoring plan, if applicable.

See Attached

Federal Action Agency's EFH determination (select one)	
☐	There is no adverse effect[7] on EFH or EFH is not designated at the project site. EFH Consultation is not required. This is a FWCA-only request.
☑	The adverse effect[7] on EFH is not substantial. This means that the adverse effects are no more than minimal, temporary, or can be alleviated with minor project modifications or conservation recommendations. This is a request for an abbreviated EFH consultation.
☐	The adverse effect[7] on EFH is substantial. This is a request for an expanded EFH consultation. We will provide more detailed information, including an alternatives analysis and NEPA document, if applicable.

EFH and HAPC designations[8]

Use the EFH mapper to determine if EFH may be present in the project area and enter all species and lifestages that have designated EFH. Optionally, you may review the EFH text descriptions linked to each species in the EFH mapper and use them to determine if the described habitat is present. We recommend this for larger projects to help you determine what your impacts are.

Species	**EFH is designated/mapped for:**				**Habitat present based on text description (optional)**
	EFH: eggs	**EFH: larvae**	**EFH: juvenile**	**EFH: adults/ spawning adults**	
Atlantic Wolffish	☑	☑	☑	☑	☐
Haddock	☐	☐	☑	☐	☐
Winter Flounder	☑	☑	☑	☑	☑
Little Skate	☐	☐	☑	☑	☑

[7] An **adverse effect** is any impact that reduces the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components. Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

[8] Within the Greater Atlantic Region, EFH has been designated by the New England, Mid-Atlantic, and South Atlantic Fisheries Management Councils and NOAA Fisheries.

Species	EFH is designated/mapped for:				Habitat present based on text description (optional)
	EFH: eggs	EFH: larvae	EFH: juvenile	EFH: adults/ spawning adults	
Ocean Pout	☑	☐	☑	☑	☑
Atlantic Herring	☐	☑	☑	☑	☑
Atlantic Cod	☑	☑	☑	☑	☑
Pollock	☑	☑	☑	☐	☑
Red Hake	☑	☑	☑	☑	☑
Silver Hake	☑	☑	☐	☑	☑
Yellowtail Flounder	☐	☐	☑	☑	☑
Monkfish	☑	☑	☑	☑	☐
White Hake	☑	☑	☑	☑	☑
Windowpane Flounder	☑	☑	☑	☑	☑
Winter Skate	☐	☐	☑	☑	☑
Witch Flounder	☐	☐	☐	☑	☐
American Plaice	☐	☐	☑	☑	☑
Northern Shortfin Squid	☐	☐	☐	☑	☑
Longfin Inshore Squid	☐	☐	☑	☑	☑
Atlantic Mackerel	☑	☑	☑	☐	☑
Bluefish	☐	☐	☑	☑	☑
Atlantic Butterfish	☐	☐	☑	☑	☑
Spiny Dogfish	☐	☐	☑	☑	☑
Atlantic Surfclam	☐	☐	☑	☑	☑
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

HAPCs

Select all that are in your action area.

☐	Summer flounder: SAV[9]	☐	Alvin & Atlantis Canyons
☐	Sandbar shark	☐	Baltimore Canyon
☐	Sand Tiger Shark (Delaware Bay)	☐	Bear Seamount
☐	Sand Tiger Shark (Plymouth-Duxbury-Kingston Bay)	☐	Heezen Canyon
☑	Inshore 20m Juvenile Cod	☐	Hudson Canyon
☐	Great South Channel Juvenile Cod	☐	Hydrographer Canyon
☐	Northern Edge Juvenile Cod	☐	Jeffreys & Stellwagen
☐	Lydonia Canyon	☐	Lydonia, Gilbert & Oceanographer Canyons
☐	Norfolk Canyon (Mid-Atlantic)	☐	Norfolk Canyon (New England)
☐	Oceanographer Canyon	☐	Retriever Seamount
☐	Veatch Canyon (Mid-Atlantic)	☐	Toms, Middle Toms & Hendrickson Canyons
☐	Veatch Canyon (New England)	☐	Washington Canyon
☐	Cashes Ledge	☐	Wilmington Canyon

[9] Summer flounder HAPC is defined as all native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH. In locations where native species have been eliminated from an area, then exotic species are included. Use local information to determine the locations of HAPC.

Project Purpose (Continued from Worksheet)

The project is necessary because the existing bridge is structurally deficient and functionally obsolete. It is on NHDOT's "Red-List", which identifies deficient bridge structures that are a priority for the state to address. Since its construction in 1949, the bridge has been repaired or rehabilitated numerous times over its 70-year life, including in 1963, 1978, 1984, 1990, 2002, and 2011. In addition, emergency repairs to the bascule span were undertaken in 2018 when the bridge became stuck in the raised position due to deterioration in the gears of the structure's mechanical system.

Despite the efforts to repair and maintain the bridge, several recent inspections have indicated the bridge's superstructure is in poor condition and the substructure is just in satisfactory condition. The bridge's superstructure exhibits extensive paint failure and surface rust, and pack rust is evident between the girder plates in numerous areas on the bridge. The floor beams and bracing also exhibit corrosion, the deck joins show damage, and the bridge's bearings display severe corrosion. One of the piers is slightly out of alignment and has substantial spalling and cracking at its cap, while a second pier has substantial scour pockets below the waterline. Finally, there's corrosion on the stairway supports.

Inspections of the bridge's mechanical system conducted in 2018 found that it is in overall poor condition with a few components in severe condition. The main operating machinery, much of it original to the structure, is in fair to poor condition. There are no machinery brakes and the bridge has no redundant means of operations. The emergency drive system is in severe condition and inoperable due to physical deterioration of the motor, brakes and bearings. Severe section loss is evident in the machinery support and bearing fasteners, and the live load bearings are in poor condition. Moreover, the instrumentation machinery and limit switches are generally outdated and in poor condition due to damaged linkages, physical deterioration, and poor maintenance. This deteriorated machinery led to the 2018 malfunction.

The electrical system is also outdated and doesn't meet current standards. The motor control center and control system are in poor condition due to deterioration, periodic tripping of motor overloads, and a lack of working clearances to meet National Electrical Code requirements. The control desk is also in poor condition due to several inoperable components.

In addition to structural and mechanical deficiencies, the current roadway profile doesn't adequately accommodate the combined use by vehicles, bicyclists and pedestrians. Existing travel lane and shoulder widths at the bridge are inconsistent with roadway approaches. Moreover, the shoulders are narrow and there is no sidewalk on the west side of the bridge; the sidewalk on the east side is narrow, at just 4'-7". Due to the width of the shoulders, some bicyclists use the sidewalk, which creates conflicts between bicyclists and pedestrians. In addition, the shoulder is not wide enough to provide safe haven for disabled vehicles. Video recorded in 2018 for the project's traffic analysis revealed pedestrians and bicyclists crossing the roadway to get to and from the eastern sidewalk. The roadway and bridge do not safely accommodate such crossings. Finally, the narrow shoulders do not allow for the passage of emergency vehicles over the bridge during periods of high traffic which is another safety concern.

A project location map is provided as **Attachment A.**

Project Description (Continued from Worksheet):

The new bridge would be a fixed bridge comprised of seven spans supported on six piers and two abutments. The end spans would measure approximately 162 feet (49.4 meters) in length, while the five central spans would each measure approximately 195 feet (59.4 meters) in length. Scenic overlooks would be installed at Piers 2 and 5 on both sides of the bridge. The increased clearance between the piers would allow for the widening of the navigational channel under the bridge from the current 40 feet (12.2 meters) to 150 feet (45.7 meters). This would match the full width of the entrance channel approaching the bridge.

The vertical under clearance on the new fixed bridge would be 48 feet (14.6 meters) at Mean High Water (MHW), which would accommodate all regular users of Hampton Harbor, as well as the USACE Special Purpose (dredge) Vessel (SPV) *Currituck.* The *Currituck* has an air draft of 44 feet. The elevation would also accommodate four feet (1.2 meters) of sea level rise by 2100, the approximate Intermediate-High range estimated in the New Hampshire Coastal Risk and Hazard Commission.

The bridge piers would be supported on drilled shafts which would be cast into a reinforced concrete pile cap. Steel casings for the drilled shafts would be approximately six feet (1.83 meters) in diameter and would be driven into place. It is assumed each pier would be constructed on six drilled shafts, for a total of 36 drilled shafts for the overall project. The casings would either remain in place or be vibrated out. Cofferdams would be installed at each of the pier locations prior to the installation of the drilled shafts and pier caps to ensure that no suspended sediment from the construction reaches the water column outside of the project area. All water and drill waste material would be extracted from the casing during drilling and pumped onto a barge for removal of suspended particulates and proper disposal. The existing bridge piles would likely be cut off below the channel bottom and left in place. The piles installed as part of the temporary trestles would be fully removed.

The abutments would have U-shaped reinforced concrete wingwalls supported on approximately 124 steel bearing piles (62 piles per abutment). The piles would likely be vibrated to resistance and then driven the rest of the way. Rip rap placement varies between the north and south abutments. The south abutment would be constructed back from the water since there are fewer constraints. Therefore, rip rap scour protection along the southern abutment would be located above the highest observable tide line (HOTL) and the MHW elevation. The rip rap material would be "toed in" to the beach to provide a secure footing and lock it into place. In the north, the intertidal zone already has large amounts of rip rap within the new bridge alignment. The new abutment would be constructed slightly in from the top of bank, but a proposed pedestrian walkway would be constructed under the bridge, which would require some fill material and rip rap within the intertidal zone (already dominated by existing rip rap) to a point 11 feet south of the MHW line; the area of rip rap placement below the MHW elevation would be approximately 340 square feet (sf) (**see Attachment B**). A 250-foot (76 meter) retaining wall would be installed northwest of the bridge abutment to minimize impacts to the adjacent Hampton State Pier property. This retaining wall would be constructed completely above the HOTL elevation on terrestrial land. The wall would be located parallel to the approach roadway on the western side. A similar retaining wall would be constructed on the east side of the roadway to allow for a stormwater treatment swale. As these walls will be constructed completely above the HOTL they would have no impacts to EFH.

A new drainage collection and conveyance system would replace the existing scuppers on the bridge in order to eliminate direct discharge into the harbor. Drainage discharges would be routed through new treatment swales at the northern and southern approaches before flowing into the harbor. It is anticipated that stormwater flow on the southern approach would be similar to existing conditions, with sheet flow off of the pavement and onto embankments where buffer areas would treat the stormwater; however, the final design for stormwater management has not yet been completed for this area. Flow from the northern approach roadway would be channeled to new catch basins with sumps north of the bridge. Stormwater would be diverted to the proposed treatment swale located north of the bridge.

During construction, temporary access would be required for the new bridge construction. As part of this, temporary work trestles would be constructed adjacent to, and west of, the proposed bridge alignment from both the north and south shores, but not across the navigation channel. Likewise, during the demolition of the existing bridge, temporary trestles would be built adjacent to, and east of, the existing bridge from both the north and south shores. The temporary trestles are anticipated to be supported on 12" steel pipe piles. It is estimated that a total of approximately 450 piles would be required for all the proposed temporary trestles. All piles for the trestles would be installed during the in-water work window of November 15th to March 15th. The trestles for the proposed bridge and for the existing bridge would likely not be in place at the same time. It is assumed the trestles would be 30-ft wide, with a leg extending perpendicular to each proposed pier in order to place the cofferdams and to be able to reach all six drilled shafts at each pier; a similar configuration would be used for demolition of the existing bridge. The piles for the existing piers would be removed below the channel bottom, and bottom habitat restored as described below. In addition, the historic wooden piles left in place from the previous bridge construction would be removed below the channel bottom. During construction of the new bridge, the existing bridge would be functional and open to vehicular traffic and the existing navigation channel would be open to boat traffic.

The existing utility lines (two water, one sewer, and one gas) buried below the harbor bed would need to be relocated prior to beginning work on the bridge. The existing utility lines lie on the bottom of the channel. A water line runs from the south into the harbor, approximately 100 feet west of the bridge, crosses NH Route 1A to the Hampton Beach State Park and then continues north on the east side of the road. A second water line runs parallel to the first line across the Hampton Harbor Inlet but continues north along the west side of NH Route 1A. A sewer line runs across the Hampton Harbor Inlet approximately 150 feet west of the bridge. A gas line crosses the Hampton Harbor Inlet between 20 and 50 feet west of the existing bridge; documentation indicates the gas line has been abandoned. The abandoned gas line lies under the proposed alignment of the new bridge. During final design it would be determined whether the line needs to be wholly or partially removed or relocated. The two water lines and one sewer line would be relocated to allow for the installation of the temporary work trestles required for bridge construction. These relocations would be coordinated in advance with utility providers and would not result in lengthy disruption of service. Once relocated, the utility lines could be placed atop the bed in the navigational channel, at least temporarily. The bridge could be designed to allow for the water, sewer and gas lines to be attached to the bridge in the future, however, this has not yet been determined by the utility companies and NHDOT. Directional drilling would not be considered an option if the new utility lines were to be installed in the harbor, since there is too much bedrock in the northern portion of

the harbor. Coordination with utility providers would be undertaken to plan any required utility relocations before other project construction commences to ensure that the proposed bridge construction activities will not disturb existing services. The abandoned water pump station located northwest of the bridge would also require removal.

Anticipated Duration of In-Water Work or Start/End Dates:

Construction of the new bridge and demolition of the existing bridge would occur over 36 months, anticipated to begin in the fall of 2023. In-water work for the relocation of utilities, placement of the sheet pile containment systems, and installation and removal of the trestle piles would occur between November 15th and March 15th to minimize impacts to EFH and listed aquatic species.

Details: project impacts and mitigation (Continued from Worksheet)

Describe how the project would impact each of the habitat types selected above.

Note: All habitats in the project area are Estuarine resources.

Benthic Habitats (Subtidal and Intertidal – includes soft bottom and hard bottom habitats as discussed below):

Bridge Construction: Both temporary and permanent impacts are anticipated within the limits of benthic habitat. Temporary impacts would occur from the installation of and construction within cofferdams, placement of barge spuds, maneuvering of barges, and construction of a temporary work trestle. This work would occur in both the intertidal and subtidal portions of both soft bottom (sand) and hard bottom (gravel or rock) habitat. These temporarily impacted areas would eventually become available for recolonization of benthic organisms, and thus would return as foraging habitat for benthic-dwelling and benthic-foraging fish species (e.g., flounders, cod, etc.). Soft Bottom (sand) habitat spans both intertidal and subtidal zones of the Hampton Harbor channel on the south side of the project area, while hard bottom (rocky) habitat spans both intertidal and subtidal zones on the north side of the project area.

Permanent, direct impact would occur from construction of the new bridge piers within these habitats, a portion of which would impact Rocky Intertidal Zone colonized by Blue Mussel. Blue Mussels would be impacted by the northern most new bridge pier (695 sf), as well as by a small area of rip rap placement required to the west of the northern bridge abutment (170 sf), for a total impact of 865 sf. In addition, there would also be temporary, direct impacts to this habitat. However, the removal of the existing bridge piers would allow the area to be recolonized by benthic organisms. Areas temporarily impacted during construction could also be recolonized. The impact table on Page 3 of the EFH Worksheet identifies in the "Restored to pre-existing conditions" column a total of 0.06 acres (2,592 sf) of estuarine bottom habitat restoration as a result of removal of the existing piers. Of this 2,592 sf, 901 sf (0.02 ac) is rocky/hard bottom habitat and 1,691 sf (0.039 ac) is sand habitat. Within the 901 sf of hardbottom habitat restoration, 176 sf of this would be restored in a different manner, as identified below, to encourage future establishment of Blue Mussel.

The potential restoration of Blue Mussel habitat in the location of the existing northern pier removal area would consist of providing pre-cursor conditions for potential future Blue Mussel establishment and growth. The NHDOT intends to remove the bridge piers but leave the hard concrete material at an elevation level with the existing channel bottom within the intertidal zone. During the final design phase, specific elevations would be determined to ensure the concrete top of the former pier is at an elevation suitable for potential future establishment by Blue Mussel. Since the existing pier (Pier 6N) is currently surrounded by existing Blue Mussel beds, sufficient information exists to determine what elevation is optimal. In addition, sufficient sources of Blue Mussel larval stages are presumed to be available from the existing Blue Mussel bed. The top of the pier left in place would consist of a rough surface, due to the process used for removal of the concrete (likely a hoe ram), encouraging settlement of larvae. Since the time required for, and efficacy of, the reestablishment of the Blue Mussels is not known, the 176 sf has not been included in the restoration to pre-existing conditions in the table on page 3 of the EFH Worksheet.

Depending on what habitat types the existing piers are located in (i.e., hard bottom or sand bottom habitat), the restoration method would vary. In the areas where existing piers are removed from within sand habitat areas (Pier Nos. 1S-6S), the existing piers would be removed to a point two feet below the existing channel elevation. The "voids" left by removal of the piers would be backfilled with a clean sandy material of similar texture and composition to closely match the surrounding bottom conditions and facilitate similar habitat development. This sand material may either be obtained through on-site dredging activities, which are part of the project, or through off-site sources. In the areas where existing piers are removed from within hardbottom habitat areas (Pier Nos. 1N-6N), the existing piers would be removed to the same elevation as the existing channel elevation, so that the top of the pier could be utilized as stable hardbottom material for attachment by macrofauna. The top of the concrete pier would be left rough, and not smooth, to increase surface area and facilitate benthic colonization. The natural recolonization of these areas could take several years, but two of the most important factors favoring recolonization (i.e., substrate type and elevation in relation to tidal range) can be incorporated into final design plans to promote successful recolonization.

In addition to removal of the pier structures, based on plans from a project undertaken in 1983, it is assumed existing rip rap material currently exists around each pier structure (**see Attachment C**). As part of removing the existing piers, the existing rip rap would also be removed to a distance of approximately 10 feet around each pier. This amounts to a total of approximately 12,813 sf of rip rap removal. As with the pier structures, the "voids" left by removal of the rip rap would be backfilled with a clean material of similar texture and composition to closely match the surrounding bottom conditions and facilitate similar habitat development. Since the actual extent of the rip rap is not known at this time, the 12,813 sf has not been included as restoration to pre-existing conditions in the table on page 3 of the EFH Worksheet. The feasibility and extent of this restoration would be further evaluated during the final design and permitting phase of the project.

Federal Channel Dredging: Dredging related to this proposed action would result in the disturbance of benthic substrate (habitat) to widen the existing navigational channel under and through the bridge locations (both existing and proposed reaches). Although the footprint of the widened Federal channel

totals to 17,166 sf, much of the existing channel bottom is well below the proposed federal channel depth of eight-feet, even considering a two-foot overdredge. Therefore, based on recent 2019 bathymetric surveys conducted by the USACE, only approximately 5,000 sf of channel would need to be dredged, for a total of approximately 1,500 cubic yards of dredge material. Channel dredging would result in both temporary and permanent impacts to benthic habitats. Temporary direct impact caused by physical disturbance of the benthic substrate would occur, and direct impact from localized turbidity plumes could occur from operation of the dredge vessel (also see discussion of water column impacts below). This temporary reduction in benthic habitat quality could cause a temporary decrease in foraging potential for bottom-foraging fish species but would return to normal conditions once benthic materials are recolonized as described above. Indirect impacts to filter-feeding trust resources (e.g., Blue Mussels) could occur through turbidity and suspended sediment plumes during dredging activities, however, these are expected to be minimal due to the predominantly sandy sediment and lack of fines in the project area. Permanent, direct impact would occur due to widening a portion of the existing navigational channel in the vicinity of the bridge from a 40-foot (12.2 meters) width to a 150-foot (45.7 meters) width (see **Attachment D**). This new channel width would match the full width of the entrance channel to the east of the bridge. Depth would increase in some areas from the existing MLLW depths of three to seven feet, to approximately eight feet MLLW, however this depth change is localized (only about 5,000 sf) (see **Attachment E**), and is within the depth preference of the species for which EFH has been designated at the site and therefore would not adversely affect these species. Locations where dredging occurs would not be a loss or conversion of EFH since the resulting new bottom would be of similar materials and similar depth. The newly dredged area would then be subject to the same periodic maintenance dredging cycle to which the current navigation channel is subject.

Scour: Some initial indirect impact in the form of localized scour to the existing channel bed may occur in the vicinity of the new bridge piers constructed in sand habitat, causing a change in substrate type from existing sands to coarse sand or gravel. The new piers have been designed in such a way that no scour countermeasures would be required, so none are currently proposed. Either way, a change from fine or medium sands to coarse sand or gravel or to a rocky substrate may occur, favoring those species that prefer pebble, gravel, or rocky habitat type (e.g., juvenile and adult Atlantic Cod, Ocean Pout) over those that prefer more finer-grained sand and mud (e.g., juvenile and adult Atlantic Butterfish, adult Winter Flounder, juvenile and adult Yellowtail Flounder, Windowpane). The distribution of subtidal and intertidal habitats, and soft bottom and hard bottom habitats are depicted on the map provided in **Attachment F**. A Benthic Study, conducted by Normandeau Associates, Inc., was conducted at the bridge site in 2020 and is provided in **Attachment G**.

Water Column Habitat (includes "Diadromous Fish Habitat")

Note: It is presumed that diadromous fish species could theoretically use the entire portion of the water column habitat, so this discussion pertains to both "water column habitat" and "diadromous fish habitat".

Noise: Construction equipment would emit noise levels that could result in adverse behavioral and physiological impact to receptor organisms in the water column if left un-mitigated. The noise generated by the equipment required to construct the bridge and remove the existing bridge cannot be avoided and could result in direct impact (fish avoiding the area) or indirect impact (unquantifiable or unmeasurable physiological stress) to both baitfish and predatory fish. These impacts are expected to occur regardless of habitat type.

Pursuant to the Federal Endangered Species Act (ESA), an underwater noise analysis was conducted as part of a separate Biological Assessment to address potential adverse impacts to the Atlantic and Shortnose Sturgeon, which may occur in the project area. NOAA's *GARFO Acoustics Tool: Analyzing the effects of pile driving on ESA-listed species in the Greater Atlantic Region* (version 8/8/2019) was used to conduct the noise analysis. As a result of this analysis, it was determined that construction equipment had the capacity to emit 204 dB at peak operation. This noise source, if located behind a coffer dam, would be dampened by 20 dB to 184 dB. It was determined that this sound pressure would be further attenuated as it travelled through the water column, with potential adverse impacts (e.g., undesirable behavioral responses) extending out to 88 meters along the trajectory from the coffer dam (for Atlantic Sturgeon and Shortnose Sturgeon). Different fish species respond differently to underwater noise levels based on their tolerance of this factor. It is expected fish would react accordingly to their specific noise tolerance, and some fish would swim through the noise zone, while others may swim around it. At 244 meters wide, the full channel width should allow fish species that are most sensitive to underwater noise to minimize or avoid their exposure. It is not expected the contractor would undertake pile driving or drilling simultaneously at either end of the bridge alignment. Generally, it is expected the contractor would start at one end of the bridge (either north or south) and work to the opposite end, but not both ends at the same time. If pile driving were being conducted in the center of the bridge, approximately 34 meters (111 feet), of passable waterway would be left to either side of the 184 dB sound line.

Hydraulics: The typical flood velocity at the Hampton Harbor Inlet is reportedly 1.5 to 2.2 knots and the ebb velocity is 2.0 to 3.2 knots (The Cecil Group Inc. 2001). This relatively fast current is due to the large tidal variation in the region (approximately nine feet (2.74 meters) between mean lower low water [MLLW] and mean higher high water [MHHW]) in combination with the relatively small cross-sectional area of the inlet in the vicinity of the bridge. The change in blockage (flow obstruction) area due to the proposed bridge is not expected to have a significant effect on the net water velocities across the entire inlet based on preliminary guidance found in HEC-18 (FHWA 2012); net blockage would be similar to the existing bridge. Net flows in and out of the harbor mouth would not result in a measurable change and is therefore considered insignificant and would have no impacts on EFH or trust species. However, local velocities may increase near the proposed piers, causing localized scour, and resultant change in benthic sediment type from fine to medium sands, to coarser sand and gravel in the soft bottom sediment portion of the project area. In contrast, removal of the old piers would result in decreased local velocity in the area of the former pier, allowing for the accumulation of smaller grain sizes on the benthic surface, thus providing habitat for benthic fish preferring smaller grain size (e.g., juvenile and adult Atlantic Butterfish, adult Winter Flounder, juvenile and adult Yellowtail Flounder, Windowpane).

Operation of Barges and Work Vessels: The operation of barges and work vessels within the project area is likely to cause temporary turbidity and noise impacts to the water column habitat that would effectively repel finfish from the immediate area of the disturbance. Vessel traffic is expected to increase temporarily during construction. Various marine vessels would be used during construction including material barges, tugs, crane/drill/equipment bridge vessels, skiffs and other access vessels, and waste removal barges traveling from the four area docks (Eastman's Docks, the Fisherman's Co-Op, the Hampton State Pier, and the Hampton Marina). Collectively, all these anticipated vessels would generate approximately 2,400 additional round trips to the bridge construction site over existing conditions based upon an average 6.5 trips per day over a five-day work week over the course of the three-year construction duration. These additional boat trips could cause additional noise over the baseline and would increase the frequency of boat trips past the bridge. Increased vessel noise and traffic would likely repel resident fish (both EFH-designated species and their prey) from the immediate areas of the navigation channel proximal to the bridge and in the shallower areas of the channel while boats were in transit or operation (direct impact) or could cause indirect impact in the form of physiological stress. Both benthic and water column habitats would be temporarily impacted by these disturbances. Thus, both demersal and water column fish species would presumably move away from the noise source to areas elsewhere within the harbor away from the disturbance. These impacts are expected to be temporary and would return to baseline conditions upon completion of the bridge construction activities. In addition, since boat trips would average 6.5 trips per day, this is also considered insignificant and not expected to have adverse impacts on EFH or EFH-designated species or other trust species.

Boat Traffic: Long-term changes to boat traffic are not anticipated as a result of the replacement of the bridge. The existing bridge has not been a limiting factor for boat use within or access to Hampton Harbor, and the proposed new bridge and widened channel would not change this. Boat traffic is limited by channel depth, berthing/mooring capacity, and other factors unrelated to the proposed project. The proposed project would not significantly increase the Hampton Harbor channel depth; however, a small portion of the existing navigational channel would be widened as discussed above. The widened portions would be deepened to meet the authorized navigational channel depth. The modification to the navigational channel limits would not increase the capacity for boat usage within the harbor, so boating use would be similar to current conditions once the new bridge was constructed. Therefore, long-term changes to boat activity would not be a consequence of the proposed bridge construction.

Dredging: This activity would cause temporary, direct impact to the water column habitat during the dredging activity. The temporary direct impact to water column habitat is associated with increased turbidity and would impact species residing in the water column within the project area during the time period when dredging is allowed to occur (winter months). Since the substate material in the location of the proposed construction area is composed almost entirely of medium to fine-grained sands, with less than one percent fines (based on USACE 2018 sediment test results of samples immediately to the west of the bridge taken prior to recent dredging [USACE, 2018]), potential turbidity associated with the dredging is anticipated to be of minimal extent and of short duration. Dredging could also result in the release of sulfides which can temporarily discourage settlement of benthic invertebrate organisms. Most hydraulic conditions would be expected to return to normal upon cessation of the dredging as turbidity settles and tidal exchange flushes the water column.

Impacts Related to Stormwater: The drainage system on the new bridge would eliminate direct discharge into the Hampton Harbor Inlet. Drainage discharges would be routed through new stormwater treatment swales at the northern and southern approaches before flowing into the Hampton Harbor Inlet. Stormwater flow on the southern approach would be diverted to a proposed treatment swale southeast of the bridge between NH Route 1A and Eisenhower Avenue, but still within the ROW. Flow from the northern approach roadway would be channeled to new catch basins with sumps north of the bridge. Stormwater would then be diverted to the proposed treatment swale located north of the bridge within the ROW. As a result, the replacement of the bridge would improve water quality by treating stormwater prior to it being discharged into the Hampton Harbor Inlet. The improvement occurs since some of the stormwater generated atop of the existing bridge is discharged directly without treatment to the harbor inlet via bridge scuppers. This is a direct pathway for contaminants to enter the aquatic environment untreated and in various forms (e.g., as separate, adsorbed, absorbed or dissolved phases). The presence of a contaminant plus a pathway plus a receptor can result in adverse indirect impacts to receptor organisms due to exposure of the contaminant to receptor organisms. Exposure can occur in both the water column and benthic sediment environments. The proposed new bridge would collect stormwater from the bridge deck and direct it through stormwater pre-treatment systems such as deep sump catch basins, vegetated swales, or other appurtenances.

What specific measures will be used to avoid impacts, including project design, turbidity controls, acoustic controls, and time of year restrictions? If impacts cannot be avoided, why not?

The NHDOT has sought to avoid adverse impacts to EFH to the extent practicable. Regardless, there are still unavoidable impacts associated with the proposed project. Permanent impacts to benthic habitat or water column habitat (through water displacement by structures) cannot be further minimized or avoided since the structural components of the new bridge need to meet a specific structural integrity and design life to ensure a safe structure for the travelling public. Temporary impacts due to the temporary work trestles and barge activity cannot be fully avoided since the contractor needs access within the harbor for both new bridge construction and existing bridge removal. The proposed temporary access, temporary work trestles and barges, would be used in unison to provide contractor access. The use of the work trestles, once installed, would help to minimize potential impacts to harbor resources since the temporary piles would be stable, and would remain in place until work is complete and they are removed, thereby reducing dependency on barges. Barges would require the use of spuds, which are installed and removed each time the barge moves, which causes small amounts of turbidity with each movement. If barges were used for all construction access, it is likely there would be more overall temporary turbidity created. A large, very conservative temporary impact area has been assumed to account for potential temporary impacts to the channel bottom due to the use of barge spuds. No barges would be grounded during construction activities. Barges used in intertidal areas would only be used during high tide conditions, and moved to deeper water prior to low tide conditions to ensure no barge grounding would occur. Measures to avoid impacts are further discussed below.

Temporary impacts due to underwater noise generation would be minimized by conducting in-water work activities during the winter in-water work period from November 15th and March 15th. These activities

would include driving of temporary trestle piles, driving of sheet pile cofferdams around new and existing pier locations, and dredging. Once sheet piles were installed around pier work areas, work could be conducted during any time of year. Cofferdams are expected to dampen underwater noise levels by 20 dB, which would minimize potential impacts outside of the in-water work window. Also, noise would only occur during regular work hours, providing daily periods of down time when no underwater noise would be generated. The installation of cofferdams would also provide effective control of potential turbidity in the water column during both new pier installation and old pier removal.

Project Design: According to the TS&L Study (HDR 2020), most of the existing piers have steel sheet pilings and/or riprap installed, and the abutments have riprap placed around them. The proposed bridge would include scour countermeasures at the south and north abutments. Rip rap scour protection would extend down the bridge embankment to meet the existing ground. The rip rap at the south abutment would be designed to protect against scour at the base of the embankment, therefore, local scour is not anticipated at the abutment due to these countermeasures. Rip rap would also be installed around the northern abutment and would be placed over existing rip rap to provide scour protection. The new abutment would be constructed slightly in from the top of bank, but a proposed pedestrian walkway would be constructed under the bridge, which would require some fill material and rip rap within the intertidal zone (already dominated by existing rip rap) to a point 11 feet south of the MHW line; the area of rip rap placement below the MHW elevation would be approximately 340 sf. Based on the current proposed design, countermeasures (rip rap) at the bridge piers are not anticipated to be needed due to the use of deep drilled shafts. Although rip rap would not provide "equal" habitat to natural rocky material, it would over time gain some habitat value of its own and not be fully devoid of habitat value for some federally-managed species (no rip rap is being counted as habitat restoration). In fact, most of the rocky habitat that exists at the site today is not natural and is composed of rip rap resulting from bank stabilization efforts over the years and a project in 1983 which "blanketed" a large area of the harbor bottom from the existing channel north to the harbor bank. Some areas of natural bedrock are intermingled with this existing rip rap material.

Turbidity Controls: The bridge piers would be supported on drilled shafts which would be cast into a reinforced concrete pile cap. Steel casings for the shafts would be six feet (1.83 meters) in diameter and would be driven into place. The casings would either remain in place or be vibrated out. Cofferdams would be installed at each of the pier locations prior to the installation of the drilled shafts and pier caps to ensure that no suspended sediment from the construction reaches the water column. All water and drill waste material would be extracted from the casing during drilling and pumped onto a barge for removal of suspended particulates and proper disposal. The existing piles would likely be cut off below the channel bottom and the subgrade portion left in place to reduce the potential for excess turbidity which might occur during full removal. Turbidity control measures, including cofferdams, would be designed to not entangle or entrap finfish species.

Time of Year Restriction: Construction of the new bridge and demolition of the existing bridge would occur over 36 months, beginning in 2024. Sheet piling coffer dams would be installed around work areas for the new piers of the proposed bridge and the temporary piles of the work trestle. The coffer dam would be installed during the time period between November 15th and March 15th. Once the coffer sheet

piling is installed, work would be separated from water column contact and thus could continue unimpeded through the rest of the construction duration.

Construction sequencing has been phased in order for in-water work related to the relocation of utilities, placement of the sheet piles, and installation and removal of the trestles would occur between November 15th and March 15th to minimize impacts EFH-designated and other trust species. By conducting the in-water work during this work window, direct impacts from noise and turbidity to listed species and life stages that have designated EFH are greatly reduced. As stated previously, the installation of coffer dams around work areas would also help to reduce and minimize potential noise and turbidity impacts to listed species outside of the work window through containment of the work activity.

What specific measures will be used to minimize impacts?

Water Quality Impact Minimization: Any temporary discharges would be designed to provide the requisite measures needed to meet state and federal guidelines for the protection of receiving waters.

The drainage system on the new bridge would eliminate direct discharge into the harbor. Drainage discharges would be routed through new stormwater treatment swales at the northern and southern approaches before flowing into the harbor. Stormwater flow on the southern approach would be diverted to a proposed treatment swale southeast of the bridge between NH Route 1A and Eisenhower Avenue, but still within the ROW. Flow from the northern approach roadway would be channeled to new catch basins with sumps north of the bridge. Stormwater would then be diverted to the proposed treatment swale located north of the bridge within the ROW. As a result, the new bridge would improve water quality by treating stormwater prior to it being discharged into the Hampton Harbor Inlet.

Acoustic Control: When anticipated noise is above the relevant behavioral noise threshold of finfish, a "soft start" would be required to allow organisms an opportunity to leave the project vicinity before sound pressure increases. In addition to using a soft start at the beginning of the workday for pile driving, it would also be required of the contractor at any time following cessation of pile driving for a period of 30 minutes or longer.

Time of Year Restrictions: In-water work would be conducted between November 15th and March 15th (see above in "Avoidance Measures").

Other Measures: Barge and work boat speed limits would be set so as not to create wave energy and wakes which can produce erosion of beach sediment, displacement of juvenile and larval fish and can cause juvenile strandings when waves over-wash rocks, jetties and beach areas. Dredging activity would be conducted by mechanical or hydraulic low volume hopper dredges.

Is Compensatory Mitigation being proposed?

Of the total permanent impact of 0.29 acres to EFH, 0.11 acres (5,000 sf) of that impact is due to widening of the existing navigation channel by dredging. As discussed previously, the actual area requiring dredging is much less than the full dredge envelope (0.39 acres) since water depth already exceeds the eight-foot channel depth in much of the area. Although the dredging would cause a permanent change of

bathymetry in the widened area, as previously discussed, the newly exposed benthic materials would recolonize and be productive EFH. Also, this depth change is within the depth preference of the species for which EFH has been designated at the site and therefore would still be available to these species.

The remaining permanent impact (0.18 acres) is associated with installation of the new piers and would be permanently lost habitat. As a result of the removal of the existing bridge, and its underwater piers, approximately 0.06 acres of benthic EFH would likely be restored within the channel. This restored habitat would partially off-set the impacts from the new bridge piers (0.18 acres), so that the total net permanent loss of benthic and water column EFH, after restoration, would be 0.12 acres. The existing piers do have rip rap scour protection. Each existing pier is 6-ft by 30-ft in size (174 sf), with the exception of the bascule pier which is 13-ft by 50-ft. (650 sf), for a total of 0.06 acres. The calculation provided in the EFH Assessment of restored habitat by removal of the piers (totaling 2,592 sf [0.06 ac]) is based solely on the existing concrete pier structures, and does not include removal of rip rap materials beyond the pier face. If the removal of this rip rap material were undertaken, and the areas restored to match the surrounding channel bottom, it would provide additional restoration beyond the 2,592 sf currently proposed. It is suspected that rip rap material is "piled" up against each of the existing piers, based on the 1983 bridge plan. Assuming rip rap exists at all existing piers, and it would be removed to a distance of ten feet out from the edge of pier, approximately 12,813 sf of rip rap material would be removed and the bottom habitat restored to match the surrounding bottom conditions. As with the pier structures, the "voids" left by removal of the rip rap would be backfilled with a clean material of similar texture and composition to closely match the surrounding bottom conditions and facilitate similar habitat development. Since the actual extent of the rip rap is not known at this time, the 12,813 sf has not been included as restoration to pre-existing conditions in the table on page 3 of the EFH Worksheet. The feasibility and extent of this restoration would be further evaluated during the final design and permitting phase of the project.

During the final design phase of the project, the NHDOT would undertake coordination with the U.S. Army Corps of Engineers (USACE) and the NH Department of Environmental Services (NHDES) to determine mitigation needs for the project. Since the USACE and NHDES regulate all work below the HOTL (which includes benthic habitat and shellfish beds), it is anticipated all impacts to EFH as a result of this project would be fully mitigated through utilization of the New Hampshire Aquatic Resource Mitigation (ARM) In-lieu Fee Program and no additional mitigation would be needed. The FHWA and NHDOT are committed to integrate potential compensation for impacts to EFH into the Section 404 process to ensure a comprehensive mitigation plan which is inclusive and compatible across different resource needs. This is important since detailed design information has currently not yet been developed and will not be developed until the final design phase, which has not yet begun. FHWA and NHDOT will continue to coordinate with NOAA through final design regarding detailed design items which may affect EFH resources and their restoration.

EFH and HAPC designations

Habitat Not Present Based upon Text Description

One or more EFH attributes do not appear to be present for the life stages indicated in four out of the 20 species for which EFH is designated/mapped at the project location using the location query function of the online EFH Mapper. These four species are as follows:

- Atlantic Wolffish (*Anarhichas lupus*)- The depth of the project area ranges from 0 to 12.5m (0 to approximately 41 ft) MLLW. In the Gulf of Maine (GOM), Atlantic Wolffish reportedly occur in waters 40-240m but are concentrated between 80-120m (Rountree, 2002). Therefore, water depth at the project site does not appear to meet the depth preference for this species.
- Haddock (*Melanogrammus aeglefinus*) – The project area is designated as occurring in EFH for Juvenile Haddock. Cargnelli et al., (1999a) reported the depth preference for juvenile haddock to be from 50 to 100 meters. In the 2018 EFH Omnibus Amendment, the habitat description for juvenile haddock, includes areas as shallow as 20 meters along the coast of New Hampshire (https://s3.amazonaws.corn/nefmc.org/OA2-FEIS Vol 2 FINAL 171025.pdf). However, the project area is shallower than 20m and thus it does not appear to meet the depth preference of juvenile haddock.
- Monkfish (*Lophius americanus*) - The project area is designated as occurring in EFH for all life stages of Monkfish. However, Monkfish eggs are reportedly not found in estuaries; and the site location is not deep enough to meet the range of known depth occurrences for larvae (15 - >1000m), juveniles (>20m, with a peak between 40-75m), and adults in the GOM (reportedly from 130-206m).
- Witch Flounder (*Glyptocephalus cynoglossus*) - The project area is designated as occurring in EFH for adult Witch Flounder. However, in the GOM, Witch Flounder adults occur from 90-300m with a mean of 147m. This depth preference far exceeds the depth of the project area.

A copy of the EFH Mapper Query Report is provided as **Attachment H.**

References and Literate Cited:

Cargnelli, L. M., S. J. Griesbach, P. L. Berrien, W. W. Morse, and D. L. Johnson. 1999a. Haddock, (*Melanogrammus aeglefinus*) Life History and Habitat Characteristics. September 1999 V+ 31 p.

Cargnelli, Luca M., S. J. Griesbach, D. B. Packer, P. L. Berrien, W. W. Morse, and D. L. Johnson. 1999b. Witch Flounder, (*Glyptocephalus cynoglossus*) Life History and Habitat Characteristics. September 1999.

Cecil Group, Inc. (2001). Hampton Beach Area Master Plan.

Chang, S., P. L. Berrien, D. L. Johnson, and W. W. Morse. 1999d. Windowpane, (*Scophthalmus aquosus*) Life History and Habitat Characteristics. September 1999. V+ 32 p.

FHWA (Federal Highway Administration) (2012). Publication No. FHWA-HIF-12-003 Hydraulic Engineering Circular No. 18 Evaluating Scour at Bridges. Fifth Edition April 2012. Springfield, VA: National Technical Information Service,

HDR Engineering, Inc. (2020). Type, Size, and Location Study for the Hampton Harbor Bridge Project.

Normandeau Associates, Inc. (2020). Hampton Harbor Bridge Benthic Survey Results Prepared by: Normandeau Associates, Inc. July 2020

Rountree, 2002. Atlantic Wollfish. In: Bigelow, A.F., Schroeder, W.C., Collette, B.B. and Klein-MacPhee, G., 2002. *Bigelow and Schroeder's Fishes of the Gulf of Maine*. Smithsonian Institution Press.

Steimle, F. W., W. W. Morse, and D. L. Johnson. 1999. Goosefish (Lophius americanus) Life History and Habitat Characteristics. September 1999. V +31 p.

U.S. Army Corps of Engineers, CENAE–PDE Memorandum: *FINAL Suitability Determination for the Hampton Harbor Federal Navigation Project, Hampton and Seabrook, New Hampshire*. November 8, 2018

Attachment A: Project Location

This page intentionally left blank

Hampton Harbor Bridge Project
EFH Project Area
Attachment A
Project No. 15904
Bridge No. 235/025
Seabrook and Hampton, New Hampshire

Legend

- Impact Area
- Permanent Channel Dredging Area
- Existing Channel

N W E S

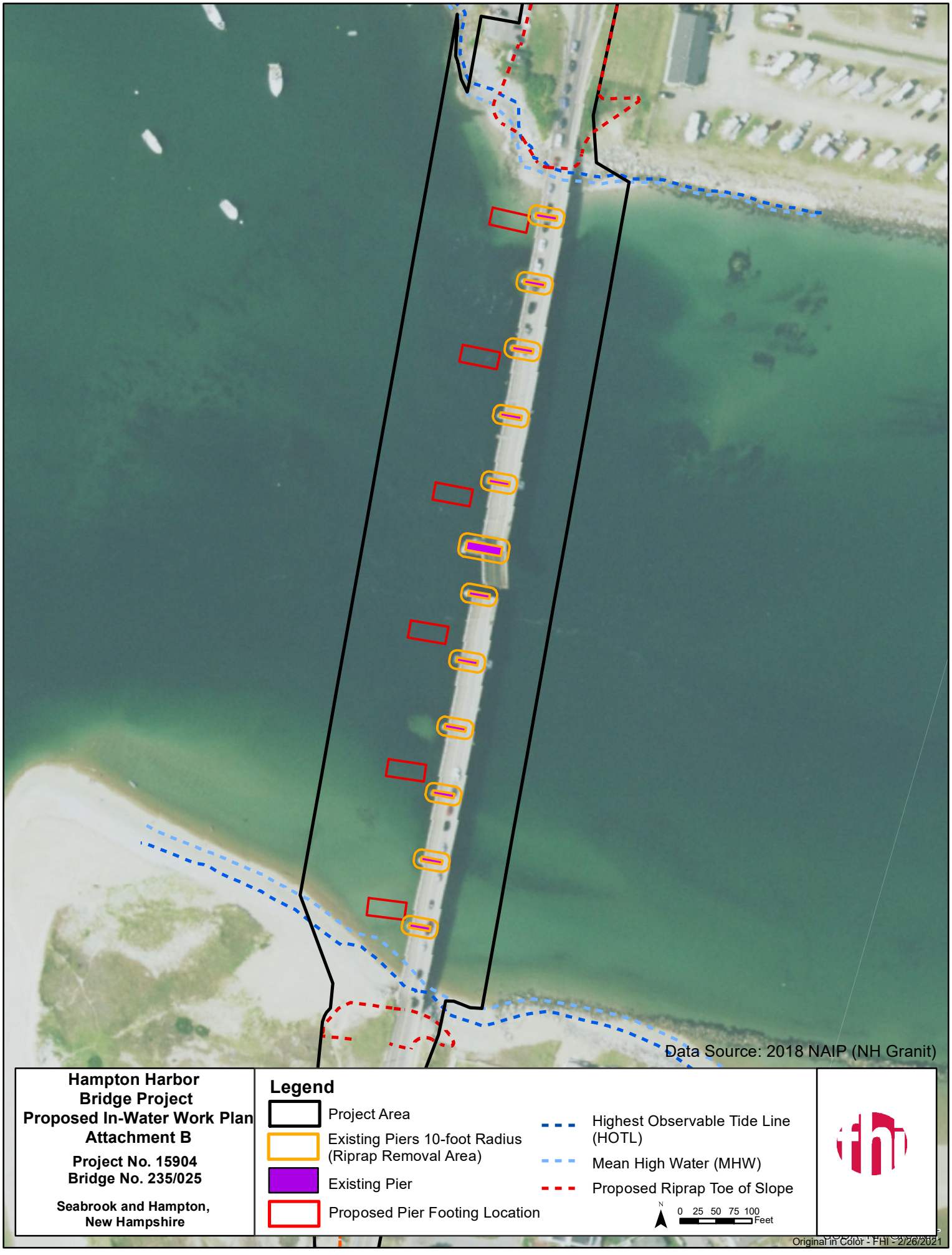
0 250 500 750 1,000 Feet

Original in Color - FHI - 3/18/2021

This page intentionally left blank

Attachment B: In-Water Work Plan

This page intentionally left blank

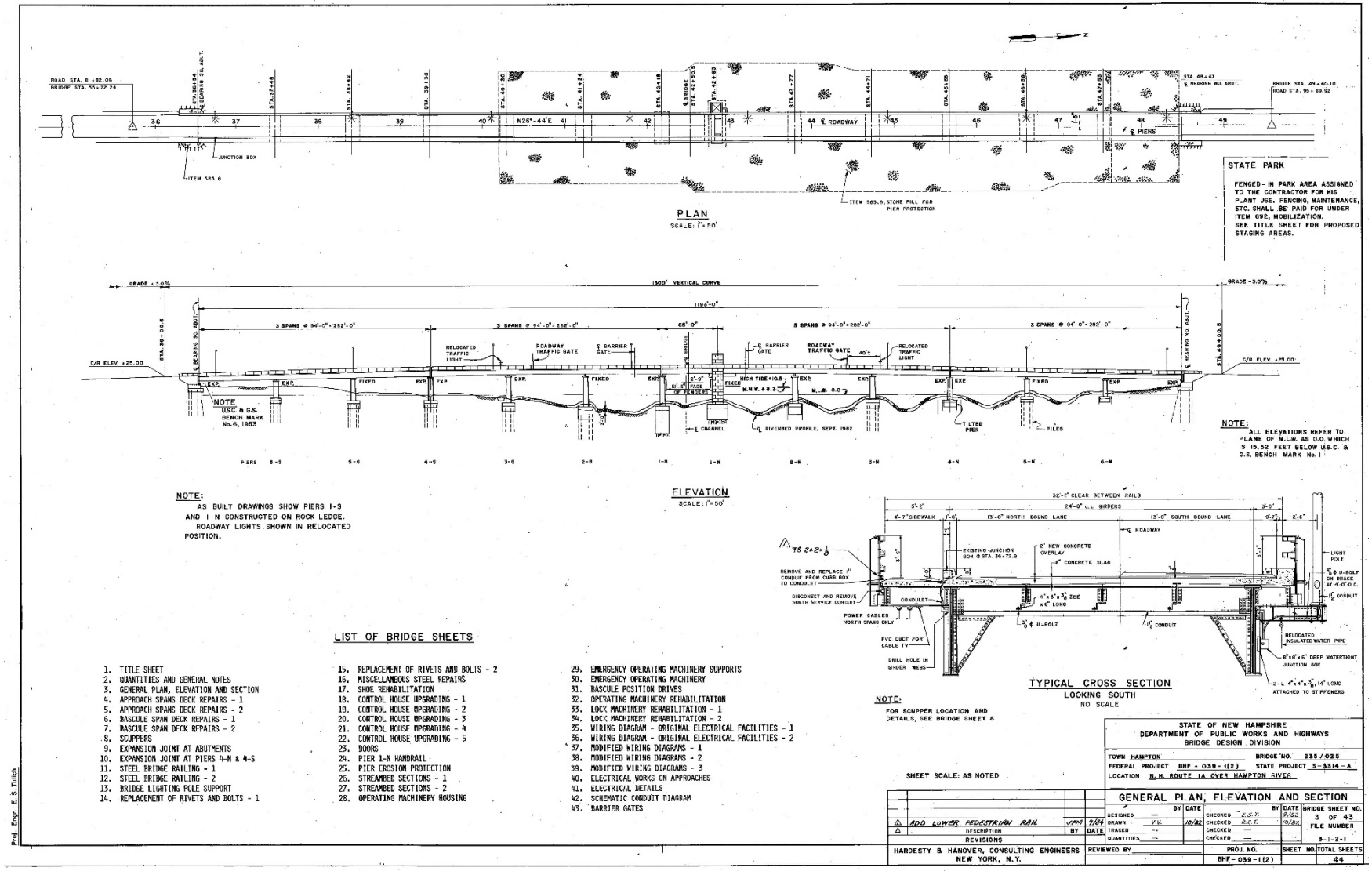

Data Source: 2018 NAIP (NH Granit)
Hampton Harbor
Bridge Project
Proposed In-Water Work Plan
Attachment B
Project No. 15904
Bridge No. 235/025
Seabrook and Hampton,
New Hampshire
Legend
Project Area
Existing Piers 10-foot Radius
(Riprap Removal Area)
Existing Pier
Proposed Pier Footing Location
Highest Observable Tide Line
(HOTL)
Mean High Water (MHW)
Proposed Riprap Toe of Slope
N
0 25 50 75 100
Feet
Original in Color - FHI - 2/26/2021

This page intentionally left blank

Attachment C: 1983 Bridge Plan

This page intentionally left blank

Attachment C – 1983 Bridge Plan



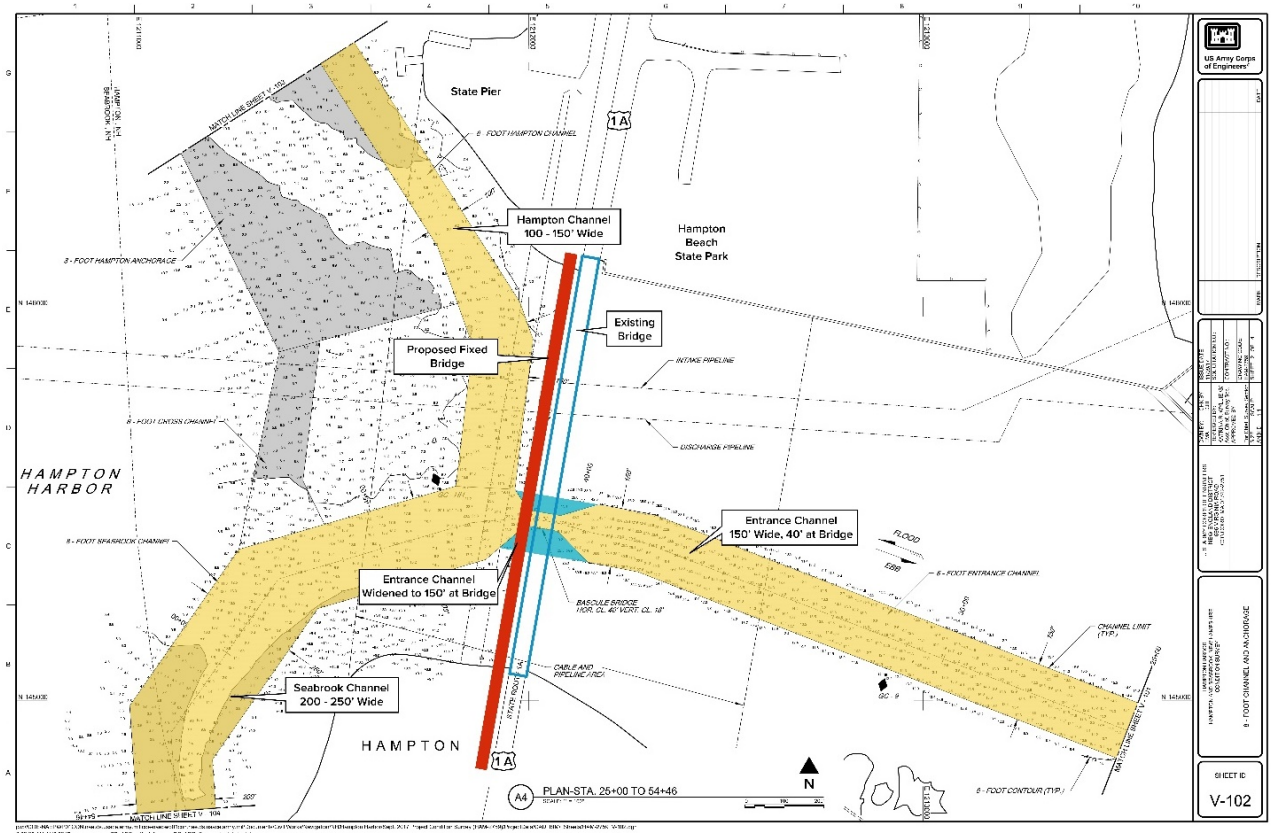
Source: NHDOT

This page intentionally left blank

Attachment D: Dredge Limits

This page intentionally left blank

Attachment D – Dredge Limits



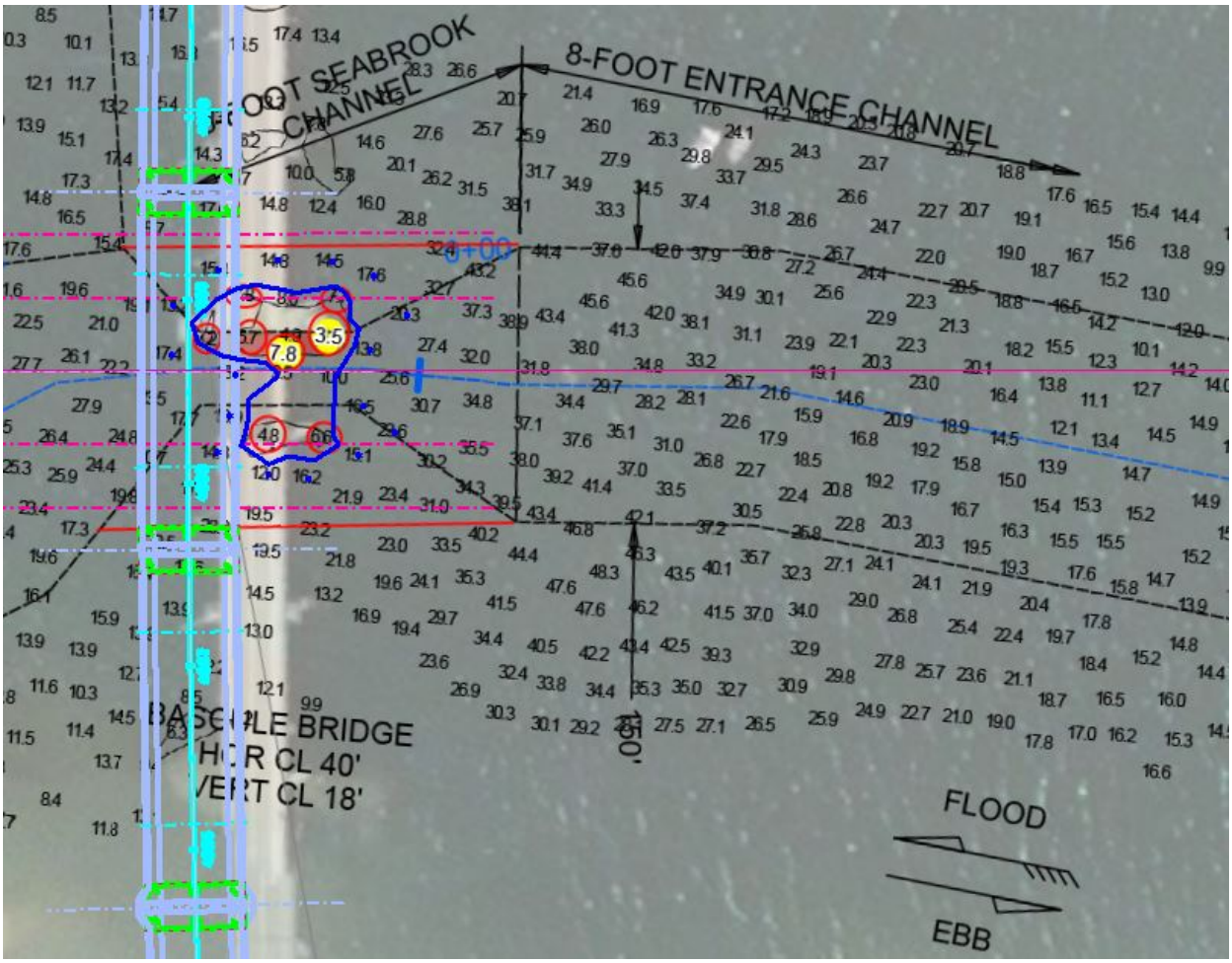
Source: USACE, HDR, Inc. and FHI

This page intentionally left blank

Attachment E: Estimated Dredge Area

This page intentionally left blank

Attachment E – Estimated Dredge Area



Source: USACE and HDR, Inc.

This page intentionally left blank

Attachment F: EFH Resources

This page intentionally left blank

Hampton Harbor Bridge Project
EFH Resources
Attachment F
Project No. 15904
Bridge No. 235/025
Seabrook and Hampton, New Hampshire

Original in Color - FHI - 11/13/2020

This page intentionally left blank

Attachment G: Benthic Study

This page intentionally left blank

NORMANDEAU ASSOCIATES
Environmental Consultants

Hampton Harbor Bridge
Benthic Survey Results

Prepared by:
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110

July 2020
www.normandeau.com

Table of Contents

Page

1.0 INTRODUCTION 1

2.0 METHODS 1

2.1 FIELD METHODS 1
2.2 LABORATORY METHODS AND QUALITY CONTROL 3
2.3 DATA HANDLING AND REDUCTION METHODS 4

3.0 RESULTS 5

4.0 REFERENCES 10

APPENDIX

Appendix Table: Macroinvertebrate Data

1.0 Introduction

Normandeau Associates, Inc. (Normandeau), as a subcontractor to Fitzgerald and Halliday, Inc. (FHI), was contracted to collect and process benthic samples as part of a benthic survey to provide data for use in the Essential Fish Habitat (EFH) and Biological Assessments for the Hampton Harbor Bridge replacement project. The Hampton Harbor Bridge is a bascule bridge over Hampton Harbor Inlet that connects Hampton and Seabrook, NH. The proposed work scope for this project included a soft-bottom macrofauna survey, a hard-bottom intertidal survey, and a soft-shell clam survey. These surveys characterized the macrofauna community found within the direct vicinity of the Hampton Harbor Bridge to provide requisite data for understanding potential impacts to the system throughout the permitting processes.

This report summarizes processing methods, and presents the macroinvertebrate data that were collected from the samples and from the intertidal survey. Field methods, laboratory processing methods, and data handling procedures are described in Section 2.0. Laboratory processing results and the intertidal survey summary results are provided in Section 3.0, and a listing of the macroinvertebrate data are provided in Appendix A.

2.0 Methods

2.1 Field Methods

Six soft-shell clam (*Mya arenaria*) survey samples were proposed for this project (Figure 1-1). Four of these samples were collected at the Seabrook end of the bridge and the remaining two were collected at the Hampton end. Adult clams (>25mm) were surveyed using a 12" x 24" frame sampled to 18" depth, with clam spat (1-25mm) to be sub-sampled within the frame using a 4" diameter core sampled to 4" depth. All six proposed soft-shell clam samples were successful, however these samples were devoid of all Myidae, including adult clams and *Mya* spat. Therefore there are no reportable result tables or figures for this portion of the survey.

Five benthic samples in total were proposed under the soft-bottom macrofauna survey (Figure 1-1). Of these five samples, two samples were to be collected from the proposed dredge areas located underneath the center of the bridge and three samples from the proposed dredge area to the west (inshore) of the bridge. All field sample procedures were followed as outlined in the sampling plan (Fitzgerald & Haliday, Inc. 2020). Samples could not be collected at the two stations that were located under the bridge due to the lack of soft-substrate resulting from strong tidal currents and a scoured seafloor. The remaining three samples were collected at slightly altered locations, based on availability of soft-substrate. The three samples were collected at the following locations given as latitude and longitude in decimal degrees: Station 3 (42.89583°, -70.8170°), Station 4 (42.8960°, -70.8180°), and Station 5 (42.8973°,-70.8175°). All samples were collected using a 0.04 m^2 Van Veen Grab. Collected grabs were rinsed in the field usng a 500 micron mesh screen, bottled and preserved in 10% buffered formalin, and stained with rose Bengal prior to transport. All collected samples were safely transported and delivered to Normandeau's laboratory in Bedford, NH.

Figure 1-1. Proposed sampling locations for soft-shell clam survey and soft-bottom macrofauna survey from Fitzgerald and Halliday (2020).

An intertidal hard-bottom survey consisting of three transects (Figure 1-2) for this project was located on the north side of the channel as originally planned. The first transect was located 5 meters west of the bridge, the second transect was located under the center of the bridge, and the third transect was located 5 meters east of the bridge. The hard-bottom substrate was generally composed of bedrock outcrops, rip-rap boulders, and components of the bridge sub-structure. All three transects were successfully conducted, with minor adjustments. The original field plan was to utilize a 0.25 m^2 frame which would be placed at meter intervals to count the density of present organisms. However, this spatial frequency was modified to account for the long length of the mussel and barnacle zones and the high density of the organisms found. Field crews reported that small barnacles (1-2 mm) covered 90% of all surfaces, including the mussels. As a result, three representative frame (0.25m^2) counts were collected along each transect within the mussel and barnacle zones and one frame sample was collected along each transect within the Irish Moss Zone (which was less than 2 meters wide for all transects).

Figure 1-2. Mapped transect locations with highlighted intertidal zones from the hard-bottom survey

2.2 Laboratory Methods and Quality Control

Soft-bottom macroinvertebrate samples and soft-shell clam samples were processed by Normandeau's Bedford, NH laboratory following standard processing protocols. Upon arrival at the laboratory, all macroinvertebrate samples were gently rinsed with fresh water through a 0.5 mm mesh screen. To facilitate sorting, samples were elutriated to separate heavy and light materials and those with heterogeneously sized debris or organisms were washed through a series of graduated sieves down to a 0.5 mm mesh. Homogeneous sized sand greater than 0.5 mm was pan sorted with an overhead magnifier light. Macroinvertebrates were sorted into major taxonomic groups using a dissecting microscope and placed in vials with 70% ethanol for preservation. All organisms were identified to the lowest practical taxon (usually species) and enumerated, with the following exceptions: oligochaetes were identified to class; platyhelminthes, nemerteans, and nematodes to phylum; and meiofauna (e.g., benthic copepods, ostracods) were not enumerated. Immature or damaged specimens that were missing

the necessary diagnostic features for identification to the target taxonomic level were identified to the lowest practical taxon. Soft-shell clam samples were rinsed through a 1.0 mm sieve and pan sorted for spat and adults. Due to the small sample size, the entirety of each sample was sorted and enumerated, and no subsampling was employed.

Quality control protocols for sorting and identification included reanalysis of a minimum of 10% of the samples completed by each sorter or taxonomist. Due to the small number of samples, only the first sorted sample underwent Quality Control. Communication between taxonomists and spot checking ensured accurate identifications for the three samples. Identified specimens were inventoried and prepared for storage; all sorted samples were re-preserved and prepared for disposal following federal regulations, pending authorization by FHI. Normandeau's internal quality control for sorting and taxonomy follows the National Coastal Condition Assessment 2015 Laboratory Operations Manual (Version 2.1 May 2016; USEPA 2016) guidelines.

2.3 Data Handling and Reduction Methods

Data handling was conducted by Normandeau's Data Center in Bedford, NH. All data were double keypunched using Normandeau's keypunch verification software. All electronic formatted data was checked for 100% accuracy against the original recorded laboratory results.

Data preparation, reduction, and computation of summary statistics were run in SAS system software (version 9.4). Macroinvertebrate community structure parameters were calculated based on the biotic abundance estimates for each sample. Summary statistics for the macroinvertebrate community included: total abundance, number of species, Shannon-Wiener diversity index (H' per sample, log base e), and Pielou's evenness index (J' per sample) (Magurran 1988). Abundance was reported as counts per 0.04 m^2 grab sample and taxonomic group. All taxa identified to a taxanomic level higher than genus were removed before calulcating diversity indices. The PRIMER 6 package of statistical routines (Clarke & Gorley, 2006) was used to calculate Shannon-Wiener diversity (H') and Pielou's evenness value J'. Both H' and J' indices are based on the proportional abundances of species (Magurran 1988). Evenness (J') is entirely a function of proportional abundance; J' values are unaffected by the number of species in a sample. Values for J' can range between 0 and 1, with J' = 1 when all species in a sample have equal abundances. Diversity (H') is a function of both proportional abundance and the number of species in the sample. The maximum possible H' diversity (Hmax) for a given number of species occurs where all species have equal abundances. Any log base can be used to calculate H'; $\log_e$ is used most commonly (Magurran 1988). H' values calculated using different log bases are not comparable and must be converted to a common base prior to comparison. J' values are not affected by log base. H' increases both with increasing numbers of species, and with increasingly even distributions of the total abundance among those species. Thus, H' values depend on the log base used and on the numbers of taxa per sample, in addition to proportional abundance. H' can range from 0 (with only one species in a sample) to a typical maximum of around 4.5 (Magurran 1988).

The contents of this report provide the raw data and a brief data summary as delineated in the project work scope, which includes tables presenting the following parameters:

- Number of Samples

- Mean Taxa Richness (±1 SD)
- Total Number of Taxa
- Number of Taxa Observed by Taxonomic Group
- Percent of Total Abundance by Taxonomic Group
- Relative Abundance of Taxa Recovered, and
- Intertidal Survey Results

3.0 Results

All six of the soft-shell clam survey samples contained very coarse pebble/gravel material. No adult clams or spat (juveniles) were found. Laboratory taxonomists noted the lack of any living organisms found within the samples. These samples were not only devoid of *Mya*, but of other bivalve spat typically found in nearby mud flats. This may be a result of the strong tidal current and coarse substrate found in the sampling area.

Three soft-bottom samples were collected at the stations west of the bridge and yielded a total of 40 macroinvertebrate families (and higher taxonomic-level organisms including Oligochaeta, Archannelida, Nematoda, and Turbellaria) from six phyla. Ninety percent of the macroinvertebrates were from three phyla: Annelida (contributing 46%), Mollusca (33%), and Arthropoda (11%, Table 3-1; and Figure 3-1). The other phyla recorded in the samples: Nemertea, Platyhelminthes, and Nematoda together contributed 10 percent to the total abundance. Annelida had the highest number of taxa (n=19); followed by Mollusca and Arthropoda (for each n=9), and the remaining three phyla had only one taxa each (Table 3-1). Annelida were also the most abundant organisms with a total of 303 individuals among all samples, followed by Mollusca with 215 individuals, and Arthropoda (70 individuals; Table 3-1). Total abundances of Nemertea, Platyhelminthes, and Nematoda were relatively low ranging from 37 nemerteans to 5 nematodes.

Overall, the mean abundance was 219 individuals per sample (5,475 organisms per m^2) with station 5 having the highest number of individuals at 7,200 per m^2 (n=288 individuals per 0.04m^2; Table 3-2). The mean number of taxa among all samples was 19 with station 4 having the highest taxa count (n=29). The mean Shannon diversity index for all samples was 1.71, and the average Pielou's evenness for all three samples was 0.58 (Table 3-2).

Intertidal survey results are presented separately for each transect (Tables 3-3 to 3-5). Four identifiable zones were found in each transect: a thin Irish moss zone (~2 meters), a broad blue mussel zone (~12 meters), a large barnacle zone (~21 meters), and a thin black zone characterized by algal growth (~5 meters). Although a black zone was identifiable, field crews noted that the algae was very sparse at each transect location. Subsample area invertebrate counts were done for each zone, except the black zone as outlined in the sampling plan (Fitzgerald & Haliday, Inc. 2020). For each zone, a characteristic organism was given as a visual percent cover. The organism used for each zone is described as follows: 1) the Irish moss zone used *Chondrus crispus*, 2) the blue mussel zone used *Mytilus edulis* (Figure 3-2a), 3) the barnacle zone used *Balanus* sp. (Figure 3-2b), and 4) the black zone used blue-green algae presence. Transects 1, 2, and 3 were all dominated by the barnacle zone, and while some other small invertebrates were noted, barnacles consistently made up the majority of the macroinvertebrate

community surveyed. In summary, this is an area that experiences strong tidal currents, and contains large coarse substrate ranging from cobble to boulders resulting in a faunal assemblage in this intertidal zone that reflects these hydrodynamic conditions.

Table 3-1. Phyla represented in the macroinvertebrate samples collected during the Hampton Harbor soft-bottom survey in May 2020.

Phylum	Number of Taxa[1]	Total abundance (number of individuals across all samples)	Percentage
Annelida	19	303	46.12
Mollusca	9	215	32.72
Arthropoda	9	70	10.65
Nemertea	1	37	5.63
Platyhelminthes	1	27	4.11
Nematoda	1	5	0.76

[1]Identified to the family-level with the exception of Oligochaeta, Nematoda, Nemertea, and Platyhelminthes.

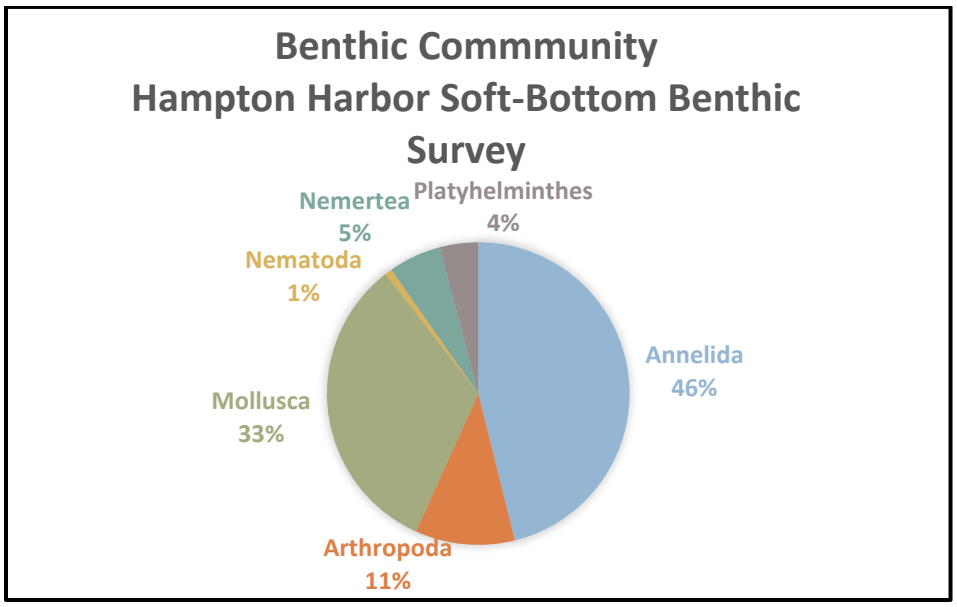


Figure 3-2. Percent contribution to total abundance by phyla in benthic samples collected during the Hampton Harbor soft-bottom macroinvertebrate survey in May 2020.

Table 3-2. Community parameters for samples collected during the Hampton Harbor soft-bottom survey in May 2020.

Station (Sample ID)	Total Number of Taxa	Total Count (no. per 0.04 m²)	Diversity (H')	Evenness (J')
3	14	90	0.90	0.38
4	29	279	1.47	0.61
5	15	288	2.07	0.64
Mean	19.3	219.0	1.48	0.54

Table 3-3. Hampton Bridge Intertidal Survey Results from Transect 1, west of bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	1.5	*Chondrus crispus*	1	21	4	0	0	1	0
		50	N/A						
			N/A						
Blue Mussel Zone	12	*Mytilus edulis*	1	33	165	20,000+	0	0	0
		60	2	121	178	20,000+	0	0	0
			3	31	62	20,000+	0	0	0
Barnacle Zone	27.5	*Balanus* sp.	1	56	0	20,000+	0	0	0
		90	2	72	0	20,000+	0	0	0
			3	57	0	20,000+	0	0	0
Black Zone	5	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

Table 3-4. Hampton Bridge Intertidal Survey Results from Transect 2, under the bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	1.5	*Chondrus crispus*	1	44	56	10,000+	3	1	0
		20	N/A						
			N/A						
Blue Mussel Zone	9.7	*Mytilus edulis*	1	13	146	20,000+	0	0	0
		80	2	46	113	20,000+	0	0	14
			3	38	243	20,000+	0	0	0
Barnacle Zone	18.5	*Balanus* sp.	1	64	12	20,000+	0	0	0
		90	2	67	2	20,000+	0	0	0
			3	29	6	20,000+	0	0	0
Black Zone	6	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

Table 3-5. Hampton Bridge Intertidal Survey Results from Transect 3, east of the bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	0.6	*Chondrus crispus*	1	18	3	0	4	0	0
		60	N/A						
			N/A						
Blue Mussel Zone	14.5	*Mytilus edulis*	1	26	269	20,000+	0	0	0
		40	2	27	136	20,000+	0	0	1
			3	28	89	20,000+	0	0	0
Barnacle Zone	16.7	*Balanus* sp.	1	121	2	10,000+	0	0	0
		50	2	38	1	10,000+	0	0	1
			3	0	0	10,000+	0	0	0
Black Zone	3.6	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

a.

b.

Figure 3-2. Representative field photos from hard-bottom transects: a.) blue mussel zone and b.) barnacle zone.

4.0 References

Clarke, KR and RN Gorley. 2006. Primer V6: User Manual-Tutorial. Plymouth Marine Laboratory.

Fitzgerald & Haliday, Inc. 2020. Benthic Sampling Plan: 15904 Seabrook-Hampton, Bridge No. 235/025.

Magurran, AE. 1988. Ecological Diversity and Its Measurement. Princeton University Press. Princeton, NJ. 179 pp.

USEPA 2016. National Coastal Condition Assessment 2015: Laboratory Operations Manual. EPA- 841-R-14-008. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Appendix

Macroinvertebrate Data

Appendix Table. Benthic macroinvertebrate counts (per 0.04 m²) collected during the Hampton Harbor soft-bottom survey; May 2020.

Phylum	Taxa	Station 3	Station 4	Station 5
		Individuals per sample (count/0.04m²)		
Annelida	*Aricidea (Acmira) catherinae*		3	
	Capitella capitata		31	
	Capitellidae		1	
	Eteone longa		1	
	Gyptis vittata		1	
	Levinsenia gracilis		1	
	Microphthalmus sp.			1
	Oligochaeta		3	149
	Opisthodonta longocirrata			1
	Parexogone hebes		1	60
	Parougia caeca	1		3
	Pholoe tecta		1	
	Polygordius jouinae	1	12	5
	Polynoidae			1
	Pygospio elegans		2	
	Streptosyllis arenae		1	1
	Streptosyllis websteri			8
	Tharyx acutus		1	
	Typosyllis sp.	2	6	5
Arthropoda	*Balanus crenatus*	2	27	
	Calliopius laeviusculus		16	
	Caprella mutica		1	
	Gammarellus angulosus		1	
	Gammarus lawrencianus		5	
	Gammarus mucronatus		1	
	Ischyrocerus minutus	2	4	
	Jassa marmorata		10	
	Metopa sp.	1		
Mollusca	*Ameritella agilis*		7	2
	Doto coronata		1	
	Gemma gemma		1	
	Lacuna vincta		1	
	Modiolus modiolus	1		
	Mytilus edulis	60	111	23
	Onchidoris sp.	1		
	Petricolaria pholadiformis	2		
	Spisula solidissima	1	3	1

Appendix Table A continued.

Phylum	*Taxa*	*Station 3*	*Station 4*	*Station 5*
		Individuals per sample (count/0.04m^2)		
Nematoda	Nematoda	1		4
Nemertea	Nemertea	12	25	
Platyhelminthes	Platyhelminthes	3		24

This page intentionally left blank

Attachment H: EFH Query

This page intentionally left blank

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 42º53'45" N, Longitude = 71º11'0" W
Decimal Degrees: Latitude = 42.90, Longitude = -70.82

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
			Atlantic Wolffish	ALL	New England	Amendment 14 to the Northeast Multispecies FMP
			Haddock	Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Winter Flounder	Eggs Juvenile Larvae/Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
			Ocean Pout	Adult Eggs Juvenile	New England	Amendment 14 to the Northeast

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
						Multispecies FMP
			Atlantic Herring	Juvenile Adult Larvae	New England	Amendment 3 to the Atlantic Herring FMP
			Atlantic Cod	Larvae Adult Juvenile Eggs	New England	Amendment 14 to the Northeast Multispecies FMP
			Pollock	Juvenile Eggs Larvae	New England	Amendment 14 to the Northeast Multispecies FMP
			Red Hake	Adult Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Silver Hake	Eggs/Larvae Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			Yellowtail Flounder	Adult Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Monkfish	Adult Eggs/Larvae Juvenile	New England	Amendment 4 to the Monkfish FMP
			White Hake	Larvae Adult Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Windowpane Flounder	Adult Larvae Eggs Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate

Show	Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
						Complex FMP
			Witch Flounder	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
			American Plaice	Adult Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
			Northern Shortfin Squid	Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Longfin Inshore Squid	Juvenile Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Atlantic Mackerel	Eggs Larvae Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
			Atlantic Butterfish	Adult Juvenile	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
			Spiny Dogfish	Sub-Adult Female Adult Male Adult Female	Mid-Atlantic	Amendment 3 to the Spiny Dogfish FMP
			Atlantic Surfclam	Juvenile Adult	Mid-Atlantic	Surfclam and Ocean Quahog

HAPCs

Show	Link	Data Caveats	HAPC Name	Management Council

Show	Link	Data Caveats	HAPC Name	Management Council
			Inshore 20m Juvenile Cod	NEFMC

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. **For links to all EFH text descriptions see the complete data inventory: open data inventory -->
Mid-Atlantic Council HAPCs, No spatial data for summer flounder SAV HAPC.

Federal Interagency Comment Form

Date: Sept. 15, 2021
Project: Seabrook-Hampton 15904, Neil R. Underwood Bridge
Appl No.:
Commenting Agency: NOAA/NMFS/GARFO/HCD
Action Agency Project Manager: Marc Laurin (NH DOT, on behalf of Jamie Sikora, FHWA)
Waterway: Atlantic Ocean and Hampton-Seabrook Harbor
Activity: Bridge replacement/construction and dredging

ESSENTIAL FISH HABITAT (EFH)
Project may adversely affect EFH.

ESSENTIAL FISH HABITAT CONSERVATION RECOMMENDATIONS: (Note: EFH CRs require a response from the federal action agency within 30 days of receipt or 10 days before a permit is issued if CRs are not included as a special condition of the permit. In addition, a distinct and further EFH consultation must be reinitiated pursuant to 50 CFR 600.920 (j) if new information becomes available, or if the project is revised in such a manner that affects the basis for the above EFH determination or EFH conservation recommendations.)

1. Compensatory mitigation for unavoidable adverse effects to EFH and HAPC, including juvenile Atlantic cod, should be provided through the NH In-lieu Fee Program for the following impacts:
    a. Hard bottom (gravel, cobble, pebble; ~5,800 sf) and blue mussel (870 sf) habitat at the north and south ends of the bridge impacted by engineered stone (riprap)
    b. Shallow subtidal habitat (~16,500 sf) permanently impacted by improvement dredging
2. A time-of-year restriction for all turbidity producing activity from March 16-Nov. 14 to protect spawning winter flounder that migrate into sheltered areas of Hampton Harbor. This includes all dredging, trenching, and excavation.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

1. A time-of-year restriction for all turbidity producing activity from March 16-Nov. 14 to protect spawning migrations of diadromous fish

ENDANGERED SPECIES
Threatened or endangered species under the jurisdiction of NMFS may be present in the project area. The federal action agency will be responsible for determining whether the proposed action may affect listed species. If they determine that the proposed action may affect a listed species, they should submit their determination of effects, along with justification and a request for concurrence to the attention of the Section 7 Coordinator, NMFS, Greater Atlantic Regional Fisheries Office, Protected Resources Division, 55 Great Republic Drive, Gloucester, MA 01930 or nmfs.gar.esa.section7@noaa.gov. If you have any questions regarding these comments, please contact Roosevelt Mesa.

OTHER:
Provide a copy of the permit when issued.

Prepared by: __Michael Johnson_____ date: __Sept. 15, 2021_____

This page intentionally left blank

NOAA PROGRAMMATIC BA

This page intentionally left blank

Appendix A. Verification Form (updated March 27, 2020)

Federal Highway Administration (FHWA) or the applicable state Department of Transportation (DOT) shall submit a signed version of this completed form, together with any project plans, maps, supporting analyses, etc., to NOAA's National Marine Fisheries Service (NMFS), Greater Atlantic Regional Fisheries Office, Protected Resources Division (GARFO PRD) at nmfs.gar.esa.section7@noaa.gov with "FHWA GARFO NLAA Program: [Project Title or Number]" in the subject line. **Note:** project design contractors and/or consultants may assist in preparing the form, but only FHWA/DOT staff shall sign off on it on the final page.

Project Activity Type (check all that apply to the entire action):

- ☒ 1. Bridge repair, demolition, or replacement project
- ☐ 2. Culvert repair or replacement project
- ☐ 3. Dock, pier, or waterway access project (includes construction, demolition, and repairs)
- ☐ 4. Slope stabilization project

Transportation Project Information

Name of Project:	Seabrook-Hampton 15904, Neil R. Underwood Bridge		
Reinitiation (Yes/No):	No		
State DOT/Program:	New Hampshire Department of Transportation		
DOT ID Code:	X-A001(026)		
Contact Person:	Marc Laurin		
Phone:	(603) 271-4044	Email:	marc.g.laurin@dot.nh.gov
Project Latitude (e.g., 42.625884):		42.895882	
Project Longitude (e.g., -70.646114):		-70.816542	
Maximum Water Depth (m)		8.5	
Anticipated Project Start Date:	Summer 2023	Anticipated Project End Date:	Summer 2026
City/Town:	Hampton/Seabrook, NH	Water body:	Hampton Harbor
Project/Action Description and Purpose:	The New Hampshire Department of Transportation (NHDOT) is currently undertaking the preliminary design for the replacement of the Neil R. Underwood Bridge which carries NH Route 1A over Hampton Harbor. Constructed in 1949, it is one of two remaining bascule bridges in the State of New Hampshire. A Rehabilitation Study was completed in 2019, followed by a Type, Size and Location Study (TS&L) in March 2020 which recommended Replacement with a Fixed Bridge as the Preferred Alternative. The purpose of the project is to provide a safe, reliable, and structurally sound crossing over the Hampton Harbor Inlet, while also improving mobility for the traveling public. The project is necessary because the existing bridge is structurally deficient and functionally obsolete. The project would construct a new fixed structural steel bridge comprised of seven spans supported on six piers and two abutments approximately 75 feet west of the existing bridge, which would be demolished once the new bridge was complete. At its peak, the deck of the new fixed bridge would be approximately 30 feet higher than that of the existing bascule bridge. A new drainage collection and conveyance system would replace the existing scuppers on the bridge in order to eliminate direct discharge into the harbor. The federal channel under the bridge would be widened through dredging from 40 feet to 150 feet. Each bridge pier would rest on six drilled shafts, installed behind temporary cofferdams. In-water work for the relocation of utilities, placement of cofferdams, dredging, and installation of the temporary trestles would occur between November 15th and March 15th. (Please		

ESA-listed species and/or critical habitats in the action area (Check all that apply)

☑	Atlantic sturgeon (all DPSs)	☑	Kemp's ridley sea turtle
☐	Atlantic sturgeon critical habitat Indicate which DPS (GOM, NYB, Chesapeake Bay DPSs): Select DPS	☑	Loggerhead sea turtle (Northwest Atlantic DPS)
☑	Shortnose sturgeon	☑	Leatherback sea turtle
☐	Atlantic salmon (GOM DPS)	☐	North Atlantic right whale
☐	Atlantic salmon critical habitat (GOM DPS)	☐	North Atlantic right whale critical habitat
☑	Green sea turtle (North Atlantic DPS)	☐	Fin whale

* Please consult GARFO PRD's ESA Section 7 Mapper for ESA-listed species and critical habitat information for your action area at: https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater.

The following stressors are applicable to the action:

- ■ Underwater Noise
- ■ Impingement/Entrainment and Entanglement
- ■ Water Quality/Turbidity
- ■ Habitat Alteration
- ■ Vessel Traffic

Impacts Table

Habitat Alteration		
	Permanent (acres)	Temporary (acres)
Sand (saline)	0.40	3.49
Silt/Mud/Clay (saline)		
Hard bottom (saline)	0.17	3.24
Submerged Aquatic Vegetation (SAV) (saline)		
Sand (freshwater)		
Silt/Mud/Clay (freshwater)		
Hard bottom (freshwater)		
Submerged Aquatic Vegetation (SAV) (freshwater)		
Total amount of habitat alteration	0.57	
In-water Construction Impacts		
	Amount in meters	
Width of water body in action area (m)	244.0	
Stressor category that extends furthest distance into water body (e.g.; underwater noise, turbidity plume)	underwater noise	
Maximum extent of stressor into the water body (m)	88.0	

Project Design Criteria (PDC) Checklist
FHWA/DOT shall incorporate all general PDCs and all applicable PDCs in the appropriate stressor categories. For any PDCs that are not incorporated, additional justification is required for a project to be eligible for the NLAA Program. FHWA/DOT shall check the corresponding box for each PDC that is, or will be, incorporated into the project or indicate if not applicable.

GENERAL PDCs			
Yes	N/A	PDC #	PDC Description
☑	☐	1.	Ensure all operators, employees, and contractors are aware of all FHWA environmental commitments, including these PDC, when working in areas where ESA-listed species may be present or in critical habitat.
☑	☐	2.	No portion of the proposed action will individually or cumulatively have an adverse effect on ESA-listed species or critical habitat.
☐	☑	3.	No portion of the proposed action that may affect the GOM DPS of Atlantic salmon will occur in the tidally influenced portion of rivers/streams where their presence is possible from April 10 through November 7. The range of the GOM DPS only occurs in Maine. **Note**: If the project will occur within the geographic range of the GOM DPS Atlantic salmon but their presence is not expected following the best available commercial scientific data, the work window does not need to be applied. Please attach best available information (i.e. local fisheries biologist correspondence).
☑	☐	4.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as spawning grounds as follows: i. Gulf of Maine: Apr 1-Aug 31 ii. Southern New England/New York Bight: Mar 15-Aug 31 iii. Chesapeake Bay: Mar 15-Jul 1 and Sep 15-Nov 1 **Note**: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval.
☑	☐	5.	No portion of the proposed action that may affect shortnose or Atlantic sturgeon will occur in areas identified as overwintering grounds where dense aggregations are known to occur as follows: i. Gulf of Maine: Oct 15-Apr 30 ii. Southern New England/New York Bight: Nov 1-Mar 15 iii. Chesapeake Bay: Nov 1-Mar 15 **Note**: If river specific information exists that provides better or more refined time of year information, those dates may be substituted with NMFS approval.
☐	☑	6.	Within designated critical habitat for Atlantic sturgeon, no work will affect hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand) (PBF 1).
☑	☐	7.	Work will result in no or only temporary/short-term changes in water temperature, water flow, salinity, or dissolved oxygen levels.

Yes	N/A	PDC #	PDC Description
☑	☐	8.	If ESA-listed species are (a) likely to pass through the action area at the time of year when project activities occur; and/or (b) the project will create an obstruction to passage when in-water work is completed, then a zone of passage (~50% of water body) with appropriate habitat for ESA-listed species (e.g., depth, water velocity, etc.) must be maintained (i.e., physical or biological stressors such as turbidity and sound pressure must not create barrier to passage).
☑	☐	9.	The project will not adversely impact any submerged aquatic vegetation (SAV) or oyster reefs.
☑	☐	10.	No blasting or use of explosives will occur.
☑	☐	11.	No in-water work on large dams or tide gates (small dam and tide gate repairs may be permitted with prior review and approval from NMFS).

UNDERWATER NOISE PDCs			
Yes	N/A	PDC #	PDC Description
☑	☐	12.	If pile driving is occurring during a time of year when ESA-listed species may be present, and the anticipated noise is above the behavioral noise threshold, a "soft start" is required to allow animals an opportunity to leave the project vicinity before sound pressure levels increase. *In addition to using a soft start at the beginning of the work day for pile driving, one must also be used at any time following cessation of pile driving for a period of 30 minutes or longer.* <u>For impact pile driving</u>: pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one minute wait period, then two subsequent three-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving. <u>For vibratory pile installation</u>: pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.

Yes	N/A	PDC #	PDC Description
☐	☐	13.	If the project includes non-timber piles*, please attach your calculation to this verification form showing that the noise is below the injury thresholds of ESA-listed species in the action area. The GARFO Acoustic Tool can be used as a source, should you not have other information: https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-consultation-technical-guidance-greater-atlantic. *Effects from timber and steel sheet piles were analyzed in the NLAA programmatic consultation, so no additional information is necessary.
☐	☐	14.	Any new pile-supported structure must involve the installation of no more than 50 piles (below MHW).

Pile material (e.g., steel pipe, concrete)	Pile diameter/ width (inches)	Number of piles	Installation method (e.g., impact hammer, vibratory start and then impact hammer to depth, drilling)
steel pipe	12	450	impact hammer
steel pipe	72	36	initial vibratory hammer; then impact hammer

IMPINGEMENT/ENTRAINMENT AND ENTANGLEMENT PDCs			
Yes	N/A	PDC #	PDC Description
☑	☐	15.	If excavating or dredging, only mechanical buckets, hydraulic cutterheads, or low volume hopper dredges (e.g., CURRITUCK, ≤300 cubic yard maximum bin capacity) may be used. **Note**: We consider excavating a smaller scale form of mechanical dredging.
☑	☐	16.	No new excavation or dredging in Atlantic sturgeon or salmon critical habitat (excavation in a prior construction footprint or maintenance dredging is permitted, but still must meet all other PDCs). New excavation or dredging outside Atlantic sturgeon or salmon critical habitat is limited to one-time events (e.g., burying a cable or utility line) and minor (≤2 acres) expansions of areas already subject to prior excavation or maintenance dredging. Locating a replacement bridge within 250 feet (centerline to centerline) of an existing bridge and excavation of sediment around bridge piers are considered work in a previous construction footprint. **Note**: We consider excavating a smaller scale form of mechanical dredging.

Yes	N/A	PDC #	PDC Description
☑	☐	17.	Temporary intakes related to construction are prohibited in sturgeon and salmon spawning, rearing, or overwintering habitat during the time of year windows identified in General PDCs 3-5. If utilized outside those areas and times of year and in an area with anticipated sturgeon and salmon presence, temporary intakes must be equipped with 2-millimeter wedge wire mesh screening and must not have greater than 0.5 feet per second intake velocities, to prevent impingement or entrainment of juvenile and early life stages of these species.
☑	☐	18.	Work behind cofferdams, turbidity curtains, or other instruments that prevent access of animals to the project area is required when ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, access control measures are not necessary). Once constructed, work inside a cofferdam at any time of year may be permitted with NMFS approval, provided the cofferdam is installed/removed outside the time-restricted period.
☑	☐	19.	No new permanent surface water withdrawal, water intakes, or water diversions.
☑	☐	20.	Turbidity control measures, including cofferdams, must be designed to not entangle or entrap ESA-listed species.
☑	☐	21.	Any in-water lines, ropes, or chains must be made of materials and installed in a manner to minimize or avoid the risk of entanglement by using thick, heavy, and taut lines that do not loop or entangle. Lines can be enclosed in a rigid sleeve.

WATER QUALITY/TURBIDITY PDCs			
Yes	N/A	PDC #	PDC Description
☐	☑	22.	In-water offshore disposal may only occur at designated disposal sites that have already been the subject of ESA section 7 consultation with NMFS and where a valid consultation is in place.
☑	☐	23.	Any temporary discharges must meet state water quality standards (e.g., no discharges of substances in concentrations that may cause acute or chronic adverse reactions, as defined by EPA water quality standards criteria).
☑	☐	24.	Only repair, upgrades, relocations, and improvements of existing discharge pipes or replacement in-kind are allowed; no new construction of untreated discharges.
☑	☐	25.	Work behind cofferdams, turbidity curtains, or other instruments to control turbidity is required when operationally feasible and ESA-listed species are likely to be present (if presence is limited to rare, transient individuals, turbidity control methods are not necessary).

HABITAT ALTERATION PDCs			
Yes	N/A	PDC #	PDC Description
☑	☐	26.	Minimize all new waterward encroachment and permanent fill.
☐	☑	27.	In Atlantic salmon critical habitat, stream simulation design with a minimum span of 1.2 bankfull width will be used in areas with minimal tidal influence. In tidal areas, a design that allows for unimpeded flow will be used (no delay in water entering or exiting the area upstream of the crossing).
☐	☑	28.	In Atlantic salmon critical habitat, no culvert end extensions, invert line culvert rehabilitation, or slipline culvert rehabilitation may occur.

VESSEL TRAFFIC PDCs			
Yes	N/A	PDC #	PDC Description
☑	☐	29.	Maintain project (i.e., construction) vessels operating within the action area to speed limits below 10 knots and dredge vessels to speeds of 4 knots maximum, while dredging.
☑	☐	30.	Maintain a 1,500-foot buffer between project (i.e., construction) vessels and ESA-listed whales and a 300-foot buffer between project vessels and sea turtles. This also applies to dredge vessels.
☑	☐	31.	The number of project (construction) vessels must be limited to the greatest extent possible, as appropriate to size and scale of project.
☑	☐	32.	The project must not result in the permanent net increase of commercial vessels.

Justification for NLAA Determination if not Incorporating All PDC
If the project is not in compliance with all of the general and stressor-based PDCs, but you can provide justification and/or special conditions to demonstrate why the project still meets the NLAA determination and is consistent with the aggregate effects considered in the programmatic consultation, you may still certify your project through the NLAA program using this verification form. Please identify which PDCs your project does not meet (e.g., PDC 9, PDC 15, PDC 22, etc.) and provide your rationale and justification for why the project is still eligible for the verification form. Project modifications must not result in different effects not already considered.

To demonstrate that the project is still NLAA, you must explain why the effects on ESA-listed species or critical habitat are **insignificant** (i.e., too small to be meaningfully measured or detected) or **discountable** (i.e., extremely unlikely to occur). **Please use this language in your justification.**

PDC#	Justification
13	While underwater noise has the potential to occur throughout the three-year construction period, the highest underwater noise is expected to be from pile driving activities during the first and third years of construction. The installation of the piles for the temporary work trestles and the sheet piling coffer dams for the pier work would be undertaken between November 15th and March 15th. Once the sheet pile coffer dams are in place, then pile driving of the 36 drilled shaft casings could take place within these coffer dams during any time of the year. The 124 micropiles for the abutments could potentially be installed via an impact pile driver during any time of the year since they are land-based. Due to the habitat preferences and migratory tendencies of the subject ESA species, in-water construction would not coincide with the potential occurrence times of the ESA species of concern. Since
14	The project would involve the installation of 36 new permanent piles, sheet piling to contain the pier construction areas (six pier locations), and approximately 450 temporary 12-inch steel piles to support the temporary work trestles during construction, all of which would be installed during the in-water work window between November 15th and March 15th. Due to the proposed construction schedule and complexity of the work activities associated with the bridge construction, the temporary sheet piles and trestle piles may potentially need to be removed outside of the in-water work window. Since the majority of in-water work would take place within the in-water work window, with the potential exception of temporary pile removal, and since ESA-listed species presence in the Action Area is expected to be extremely rare and limited to transient individuals opportunistically foraging, potential

FHWA/DOT Verification of Determination (To be filled out by FHWA/DOT staff only)
By submitting this Verification Form, FHWA, or the state DOT as FHWA's designated non-federal representative, indicates that they determined that the proposed activity described above is not likely to adversely affect (NLAA) ESA-listed species or designated critical habitat under NMFS jurisdiction in accordance with the Program, and all effects (direct, indirect, interrelated, and interdependent) are either insignificant (so small they cannot meaningfully be measured, detected, or evaluated) or discountable (extremely unlikely to occur).

☐	In accordance with the FHWA GARFO NLAA Program, we have determined that the action complies with all applicable PDCs and is not likely to adversely affect listed species.
☑	In accordance with the FHWA GARFO NLAA Program, we have determined that the action is not likely to adversely affect listed species per the justifications and/or special conditions provided above.

FHWA/DOT Signature:	Date:
Marc G. Laurin Digitally signed by Marc G. Laurin Date: 2020.12.11 11:33:41 -05'00'	12/09/2020

By providing your determination and signature, you are certifying that to the best of your knowledge the information provided in this form is accurate and based upon the best available scientific information. This form must be filled out and signed by FHWA or state DOT staff, as an officially designated non-federal representative.

GARFO PRD Concurrence (To be filled out by GARFO PRD)
After receiving the Verification Form, GARFO PRD will contact FHWA/DOT with any concerns and indicate whether GARFO PRD concurs with FHWA/DOT's determination.

☐	In accordance with the FHWA GARFO NLAA Program, GARFO PRD concurs with FHWA/DOT's determination that the action complies with all applicable PDCs and is not likely to adversely affect listed species or critical habitat.
☑	In accordance with the FHWA GARFO NLAA Program, GARFO PRD concurs with FHWA/DOT's determination that the action is not likely to adversely affect listed species or critical habitat per the justifications and/or special conditions provided above.
☐	GARFO PRD does not concur with FHWA/DOT's determination that the action complies with the applicable PDCs (with or without justifications), and recommends an individual Section 7 consultation to be completed independent from the FHWA GARFO NLAA Program.

GARFO PRD Signature:	Date:
MESA GUTIERREZ.ROOSEVELT.ANDRES.1586982881 Digitally signed by MESA GUTIERREZ.ROOSEVELT.ANDRES.1586982881 Date: 2020.12.16 16:13:05 -05'00'	12/16/2020

New Hampshire Department of Transportation

Hampton Harbor Bridge Project

NOAA Programmatic Biological Assessment

Supporting Text

Project History

The Neil R. Underwood Bridge carries NH Route 1A over the Hampton River at the inlet to Hampton Harbor (see Figure 1). The Hampton and Blackwater Rivers, as well as Hampton Harbor, lie to the west of the bridge (see Figure 2). The Atlantic Ocean lies to the east of the bridge. To the north and south are residential, recreational, and tourism-based development, including the Hampton Beach State Park, which is located north of and on the east side of the bridge, and the Hampton-Seabrook Dunes Wildlife Management Area (Dunes WMA), which is located southwest of the bridge. The bridge is approximately 1,199-feet (365 meters) long by approximately 33 feet (10 meters) wide (53 feet [16 meters] wide at the barrier gates), and it carries up to 18,000 vehicles per day during peak times. Constructed in 1949, it is one of two remaining bascule bridges in the State of New Hampshire. It replaced an earlier bridge at the crossing, the "Mile-Long Bridge", the alignment of which was located west of the existing structure in what is now the Dunes WMA.

A Rehabilitation Study was undertaken in November 2018 and updated in 2019. The study assessed various options for rehabilitating the existing bridge and improving the existing roadway. An Alignment and Profile Study was also undertaken to assess various options for roadway typical sections, alignments and profiles. It was determined that an eastern alignment was not feasible due to the potential impact to properties southeast of the bridge. Finally, a Type, Size and Location Study (TS&L) was completed in March 2020 which recommended Replacement with a non-movable Fixed Bridge as the Preferred Alternative. NHDOT has identified the Replacement with a Fixed Bridge as their preferred alternative.

Project Purpose and Need

The purpose of the project is to provide a safe, reliable, and structurally sound crossing over the Hampton Harbor Inlet, while also improving mobility for the traveling public. This includes drivers, bicyclists and pedestrians, as well as maritime users.

The project is necessary because the existing bridge is structurally deficient and functionally obsolete. It is on NHDOT's "Red-List", which identifies deficient bridge structures that are a priority for the state to address. Since its construction in 1949, the bridge has been repaired or rehabiliated numerous times over its 70-year life, including in 1963, 1978, 1984, 1990, 2002, and 2011. In addition, emergency repairs to the bascule span were undertaken in 2018 when the bridge became stuck in the raised posititon due to deterioration in the gears of the structure's mechanical system.

Despite the efforts to repair and maintain the bridge, several recent inspections have indicated the bridge's superstructure is in poor condition and the substructure is just in satisfactory condition. The bridge's superstructure exhibits extensive paint failure and surface rust, and pack rust is evident between

the girder plates in numerous areas on the bridge. The floor beams and bracing also exhibit corrosion, the deck joints show damage, and the bridge's bearings display severe corrosion. One of the piers is slightly out of alignment and has substantial spalling and cracking at its cap, while a second pier has substantial scour pockets below the waterline. Finally, there's corrosion on the stairway supports.

Inspections of the bridge's mechanical system conducted in 2018 found that it is in overall poor condition with a few components in severe condition. The main operating machinery, much of it original to the structure, is in fair to poor condition. There are no machinery brakes and the bridge has no redundant means of operation. The emergency drive system is in severe condition and inoperable due to physical deterioration of the motor, brakes and bearings. Severe section loss is evident in the machinery support and bearing fasteners, and the live load bearings are in poor condition. Moreover, the instrumentation machinery and limit switches are generally outdated and in poor condition due to damaged linkages, physical deterioration, and poor maintenance. This deteriorated machinery led to the 2018 malfunction.

The electrical system is also outdated and doesn't meet current standards. The motor control center and control system are in poor condition due to deterioration, periodic tripping of motor overloads, and a lack of working clearances to meet National Electrical Code requirements. The control desk is also in poor condition due to several inoperable components.

In addition to structural and mechanical deficiencies, the current roadway width doesn't adequately accommodate the combined use by vehicles, bicyclists and pedestrians. Existing travel lane and shoulder widths at the bridge are inconsistent with roadway approaches. Moreover, the shoulders are narrow and there is no sidewalk on the west side of the bridge; the sidewalk on the east side is narrow, at just 4'-7". Due to the width of the shoulders, some bicyclists use the sidewalk, which creates conflicts between bicyclists and pedestrians. In addition, the shoulder is not wide enough to provide safe haven for disabled vehicles. Video recorded in 2018 for the project's traffic analysis revealed pedestrians and bicylists crossing the roadway to get to and from the eastern sidewalk. The roadway and bridge do not safely accommodate such crossings. Finally, the narrow shoulders do not allow for the passage of emergency vehicles over the bridge during periods of high traffic which is another safety concern.

Project Description

The project would construct a new structural steel bridge approximately 75 feet (23 meters) west of the existing bridge. The existing bridge would then be demolished. The total length of the bridge would be 1,300 feet (396 meters) and the approaches would be curved slightly to allow the new bridge alignment to tie into NH Route 1A north and south of the existing bridge. At its peak, the deck of the new fixed bridge would be approximately 30 feet (9 meters) higher than that of the existing bascule bridge. The bridge would have two 11-foot (3.3 meter) travel lanes, with eight-foot (2.4 meter) shoulders and six-foot (1.8 meter) sidewalks on each side, resulting in a 50-foot (15 meter) inside width.

The bridge would be comprised of seven spans supported on six piers and two abutments. The end spans would measure approximately 162 feet (49.4 meters) in length, while the five central spans would each measure approximately 195 feet (59.4 meters) in length. Scenic overlooks would be installed at Piers 2 and 5 on both sides of the bridge. The increased clearance between the piers would allow for the widening of the channel under the bridge from the current 40 feet (12.2 meters) to 150 feet (45.7 meters). This would match the full width of the entrance channel approaching the bridge.

The vertical under clearance on the new bridge would be 48 feet (14.6 meters), which would accommodate all regular users of Hampton Harbor, as well as the USACE Special Purpose (dredge) Vessel (S/P/V) Currituck. The elevation would also accommodate four feet (1.2 meters) of sea level rise by 2100, the approximate Intermediate-High range estimated in the New Hampshire Coastal Risk and Hazard Commission.

The bridge piers would be supported on drilled shafts which would be cast into a reinforced concrete pile cap. Steel casings for the shafts would be six feet (1.83 meters) in diameter and would be driven into place. The casings would either remain in place or be vibrated out. Cofferdams would be installed at each of the pier locations prior to the installation of the drilled shafts and pier caps to ensure that no suspended sediment from the construction reaches the water column. All cofferdams would be installed during the in-water work window (November 15th and March 15th), and thereafter, work inside the cofferdams could take place at any time. All water and drill waste material would be extracted from the casing during drilling and pumped onto a barge for removal of suspended particulates and proper disposal. The existing piles would likely be cut off below the channel bottom and left in place.

The abutments would have U-shaped reinforced concrete wingwalls supported on approximately 124 steel bearing piles (62 piles per abutment). The piles would likely be vibrated to resistance and then driven the rest of the way. Riprap would extend from the face of the abutment and wingwalls to below the high tide line, to provide armoring for the abutment. A 250-foot (76 meter) retaining wall would be installed northwest of the bridge to minimize impacts in this area.

A new drainage collection and conveyance system would replace the existing scuppers on the bridge in order to eliminate direct discharge into the harbor. Drainage discharges would be routed through new treatment swales at the northern and southern approaches before flowing into the harbor. It is anticipated that stormwater flow on the southern approach would be similar to existing conditions, with sheet flow off of the pavement and onto embankments where buffer areas will treat the stormwater; however, the final design for stormwater management has not yet been completed for this area. Flow from the northern approach roadway would be channeled to new catch basins with sumps north of the bridge. Stormwater would be diverted to the proposed treatment swale located north of the bridge.

During construction, temporary access would be required for the new bridge construction. As part of this, work trestles would be constructed adjacent to, and west of, the proposed bridge alignment from both the north and south shores, but not across the navigation channel. Likewise, during the demolition of the existing bridge, temporary trestles would be built adjacent to, and east of, the existing bridge from both the north and south shores. The temporary trestles would be supported on 12” steel pipe piles. It is estimated that a total of approximately 450 piles would be required for all the proposed temporary trestles. All piles for the trestles would be installed during the in-water work window of November 15th and March 15th. The proposed bridge and existing bridge trestles would likely not be in place at the same time. It is assumed the trestles would be 30-ft wide, with a leg extending perpendicular to each proposed pier in order to place the cofferdams and to be able to reach all six drilled shafts at each pier; a similar configuration would be used for demolition of the existing bridge. During construction of the new bridge, the existing bridge would be functional and open to vehicular traffic; the navigation channel would also be maintained.

The water, sewer, and gas lines below the harbor would need to be relocated prior to beginning work on the bridge. The gas and sewer lines are directly under the proposed location of the new bridge, so the

utility relocation would have to take place prior to construction. Construction access would probably be considered in the relocation so at this stage of design/planning all utility lines are anticipated to be relocated to the west of the trestle since it would be at the shortest move. The water lines are clear of the new bridge, but they are under the west side of the north end of the trestle. The final location of where the water lines will be moved has not yet been determined at this stage of design, but the relocated utilities would be placed in the navigational channel at least temporarily. It has not yet been determined if the water and gas will be relocated to the bridge superstructure. The sewer, likely being gravity-fed, would thus not be raised to the bridge without a pump station. The abandoned water pump station located northwest of the bridge would also be removed.

Construction of the new bridge and demolition of the existing bridge would occur over 36 months, beginning in the fall of 2023. In-water work for the relocation of utilities, placement of the sheet piles, and installation of the trestles would occur between November 15th and March 15th to minimize impacts to listed aquatic species and EFH. Due to the proposed construction schedule and complexity of the work activities associated with the bridge construction, the temporary sheet piles and trestle piles could potentially be removed outside of the in-water work window.

Action Area

For the purposes of this Biological Assessment, the "Project Area" is defined as the footprint of the proposed bridge construction including associated utility appurtenances and construction staging area(s). NOAA generally defines the Action Area associated with a project as all areas directly or indirectly affected by the proposed action regardless of whether those areas are found on land or in the water (50 CFR § 402.02). Therefore, the "Action Area" is defined herein as the extent of potential adverse impacts associated with the bridge construction such as noise, vibration, sediment disturbance, and other effects that may travel beyond the footprint of the construction (see Figure 3). The Action Area is defined by the area of construction activity for the new bridge construction, existing bridge removal, temporary access for these activities, as well as travel routes for workers and materials via waterborne vessels. The locations of four docks that may be used for staging are also shown on Figure 3: the Yankee Fisherman's Coop, Eastman's Docks, the Hampton State Pier, and the Hampton Marina. There are no vegetated wetlands within the Action Area, only sandy intertidal estuarine wetlands (see Figure 4). No eel grass beds are present within the Action Area. Benthic sampling was conducted within the vicinity of the bridge to determine what benthic habitat and species are present where piles would be installed. The *Hampton Harbor Bridge Benthic Survey Report*, provided in Attachment A, summarizes the resources found; these include primarily hardbottom habitat and softbottom habitat.

According to correspondence from NOAA Fisheries, Greater Atlantic Regional Fisheries Office, Protected Resources Division (email coordination, dated 9/22/2019), presence in Hampton Harbor is possible for both sturgeon species and four sea turtle species, however, NOAA expects their presence to be limited to rare, transient individuals partaking in migrating and foraging behavior. The Mapper indicates the possible presence of Atlantic salmon, but NOAA does not expect them to occur in the Action Area.

Project Phasing

Construction would occur in three phases, each lasting approximately one year. In Phase 1, an access road would be established west of the proposed bridge alignment and a work trestle would be constructed extending from the west side of the proposed south abutment north to the proposed location of Pier 3

on the south side of the navigational channel. Similarly, a second work trestle would be constructed on the west side of the proposed bridge north of the navigational channel extending from the proposed location of Pier 4 to the west side of the north abutment. Construction of the temporary trestles would help to minimize the use of barges and ultimately reduce the amount of temporary sediment disturbance resulting from barge spud use. Sediment and erosion control measures would be put in place in all upland areas prior to ground disturbance and would be maintained for the duration of the project. Sheet pile cofferdams would be installed around the limits of the proposed pier pile caps and their respective drilled shafts, as well as the proposed abutments. This work would all be undertaken within the in-water work window between November 15th and March 15th. Use of sheet pile cofferdams would prevent suspended sediments and drill waste from getting into the water column during installation of the drilled shafts. It would also ensure that any concrete waste does not enter the water column during pier forming and pouring. Following the installation of the cofferdams, the drilled shafts would be installed, the pile caps and piers would be constructed within the cofferdams, abutment walls would be constructed behind cofferdams, and the construction of the north and south roadway approaches and abutments would be initiated. Cofferdams would allow for dewatering of the work area, which would provide a reduction in underwater noise levels due to vibratory/impact hammering of the outer casings. During this phase, vehicular traffic would be maintained over the existing bridge and marine traffic within the navigational channel. The types of equipment used for this phase of the construction would include bulldozers, front-end loaders, dump trucks, and vibratory rollers for the earthen access road, and barges, cranes, trucks, drilling equipment (both vibratory and ram), cement trucks, concrete pumps, and loaders for installation of the sheet piles, drilled shafts and pier caps.

In Phase 2, work would begin on the superstructure. This would include the complete erection of the central five bridge spans, and the partial construction of the southernmost and northernmost spans. This would be completed from the western work trestles. The north and south roadway approaches would also be completed. The removal of the western trestles and the cofferdams would begin within the in-water work window defined above. Throughout this phase, vehicular traffic would be maintained over the existing bridge and marine traffic within the navigational channel. The types of equipment used for this phase of the superstructure construction would include barges, cranes, trucks, cement trucks and loaders.

In Phase 3, the roadway traffic would be shifted to the partially completed bridge and roadway approaches. Marine traffic would be maintained within the existing navigational channel. The remaining portions of the superstructure at the northernmost and southernmost spans would be completed; and a new fender system would be constructed to protect the bridge piers on either side of the channel. The western trestles would be fully removed. An access road would be constructed on the east side of the existing south approach, and new work trestles would be constructed from the east side of the north and south approaches to the navigational channel. The superstructure of the existing bridge would be removed, and then the substructure would be removed within the in-water work window. Finally, the eastern trestles would be removed; the roadway would be graded, and the disturbed areas would be stabilized; the navigational channel would be widened from 40 feet (12.2 meters) to 150 feet (45.7 meters) through dredging; vehicular traffic would be fully shifted to the final roadway layout; and the widened navigational channel would be opened to marine traffic. Dredging would be completed in accordance with U.S. Army Corps of Engineers permitting requirements under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, and through the New Hampshire Department of Environmental Services permitting process for Section 401 Water Quality Certification. As part of the permitting process,

coordination with NOAA would continue to further determine any potential restrictions or conditions for this dredging work.

Project Design Criteria (PDC) Checklist Justification Discussion

PDC # 13(continued)

The design calls for the installation of 36 concrete drilled shafts for the in-water piers. The outer steel casings required for drilling of the shafts would be approximately 6-feet in diameter and would likely be vibrated to a certain depth or resistance, then driven with a diesel or hydraulic impact hammer, causing underwater noise. Each drilled shaft would have a rock socket into the bedrock, which are a means of setting the drilled shaft into secure bedrock for structural integrity. The rock sockets would have a diameter six inches less than the drilled shaft and would likely extend 3 – 4.6 meters (10-15 feet) into bedrock.

Based on the proposed design specifications for the new bridge, the *GARFO Acoustics Tool* (version dated 9/14/2020) was used to estimate underwater noise levels associated with the new piers and the temporary work trestle piles. As a nearshore water, the Simplified Attenuation Formula (SAF) criteria were used for the analysis. Table 1 provides a list of the proxy projects used by the Acoustics Tool to ultimately determine the underwater noise from the project. Table 2 summarizes the estimated underwater noise results of this analysis, based on the project-specific criteria input into the Acoustic Tool.

Table 1: Proxy Projects for Estimating Underwater Noise

Project Location	Water Depth (m)	Pile Size (inches)	Pile Type	Hammer Type	Attenuation rate (dB/10m)
Not Available	0	72"	Steel Pipe	Impact	5
Sausalito, CA - Richardson Bay	2	12"	Steel Pipe	Cushioned Impact	5
Sausalito, CA - Richardson Bay	2	12"	Steel Pipe	Impact	5

Table 2: Proxy-Based Estimates for Underwater Noise

Type of Pile	Hammer Type	Estimated Peak Noise Level (dB_{Peak})	Estimated Pressure Level (dB_{RMS})	Estimated Single Strike Sound Exposure Level (dB_{sSEL})
72" Steel Pipe	Impact	204	189	175
12" Steel Pipe	Cushioned Impact	177	165	152
12" Steel Pipe	Impact	203	191	178

As previously discussed, the 12-inch steel piles for the temporary work trestles and the sheet pile cofferdams for the piers would be installed during the approved in-water work period between November 15th and March 15th. Since both sturgeon species tend to migrate during the month of April, in-water work would not coincide with these typical migration times. Although sturgeon tend to spend time at the mouths of large rivers during the winter season, they would not likely utilize the action area during the

proposed seasonal work window since they either leave the geographical area or they occupy sites of much deeper water than is found at the project site during winter months. Any occurrences within the action area would likely be associated with feeding during warmer months when no in-water work is proposed. Thus, in-water construction would not coincide with the potential occurrence times of the listed species.

Likewise, the proposed seasonal work window between November 15th and March 15th would also avoid much of the potential periods of activity for all four sea turtles, although there is potential for overlap of sea turtle occurrence in November. Therefore, the time of year restrictions placed on the project largely avoids direct impact to these turtle species.

The outer steel casings for the drilled shaft piers could be driven during any time of the year since they would be installed behind the cofferdams. Tables 3 and 4 provide the results of the underwater noise assessment for the 72-inch outer casings for the sturgeon and turtle species. The results show a potential Behavioral Disturbance Threshold (150 dB_{RMS}) for sturgeon of 88 meters from the source, which includes no noise abatement measures. Similarly, the results show a potential Behavioral Disturbance Threshold (150 dB_{RMS}) for turtles of 38 meters, also with no noise abatement measures.

Table 3: Estimated Distances to Sturgeon Injury and Behavioral Thresholds

Type of Pile	Hammer Type	Distance (m) to 206dB_{Peak} (injury)	Distance (m) to 150 dB_{sSEL} (surrogate for 187 dBcSEL injury)	Distance (m) to Behavioral Disturbance Threshold (150 dB_{RMS})
72" Steel Pipe	Impact	6.0	60.0	88.0
12" Steel Pipe	Cushioned Impact	NA	14.0	40.0
12" Steel Pipe	Impact	4.0	66.0	92.0

Table 4: Estimated Distances to Sea Turtle Injury and Behavioral Thresholds

Type Pile	Hammer Type	Distance (m) to Sea Turtle TTS (SEL weighted) 189 dB_{RMS}	Distance (m) to Sea Turtle TTS (Peak SPL) 226 dB_{Peak}	Distance (m) to Sea Turtle PTS (SEL weighted) 204 dB_{SEL}	Distance (m) to Sea Turtle PTS (Peak SPL) 232 dB_{Peak}	Distance (m) to Sea Turtle Behavioral Threshold 175 dB_{RMS}
72" Steel Pipe	Impact	NA	NA	NA	NA	38.0
12" Steel Pipe	Cushioned Impact	NA	NA	NA	NA	NA
12" Steel Pipe	Impact	NA	NA	NA	NA	42.0

Since Hampton Harbor is approximately 244 meters (800 feet) in width (during low tide) at the bridge site, and since the sturgeon behavioral distance is 88 meters (289 feet), even without any attenuation mitigation measures, approximately 500 feet of the horizontal extent of the harbor would be below the

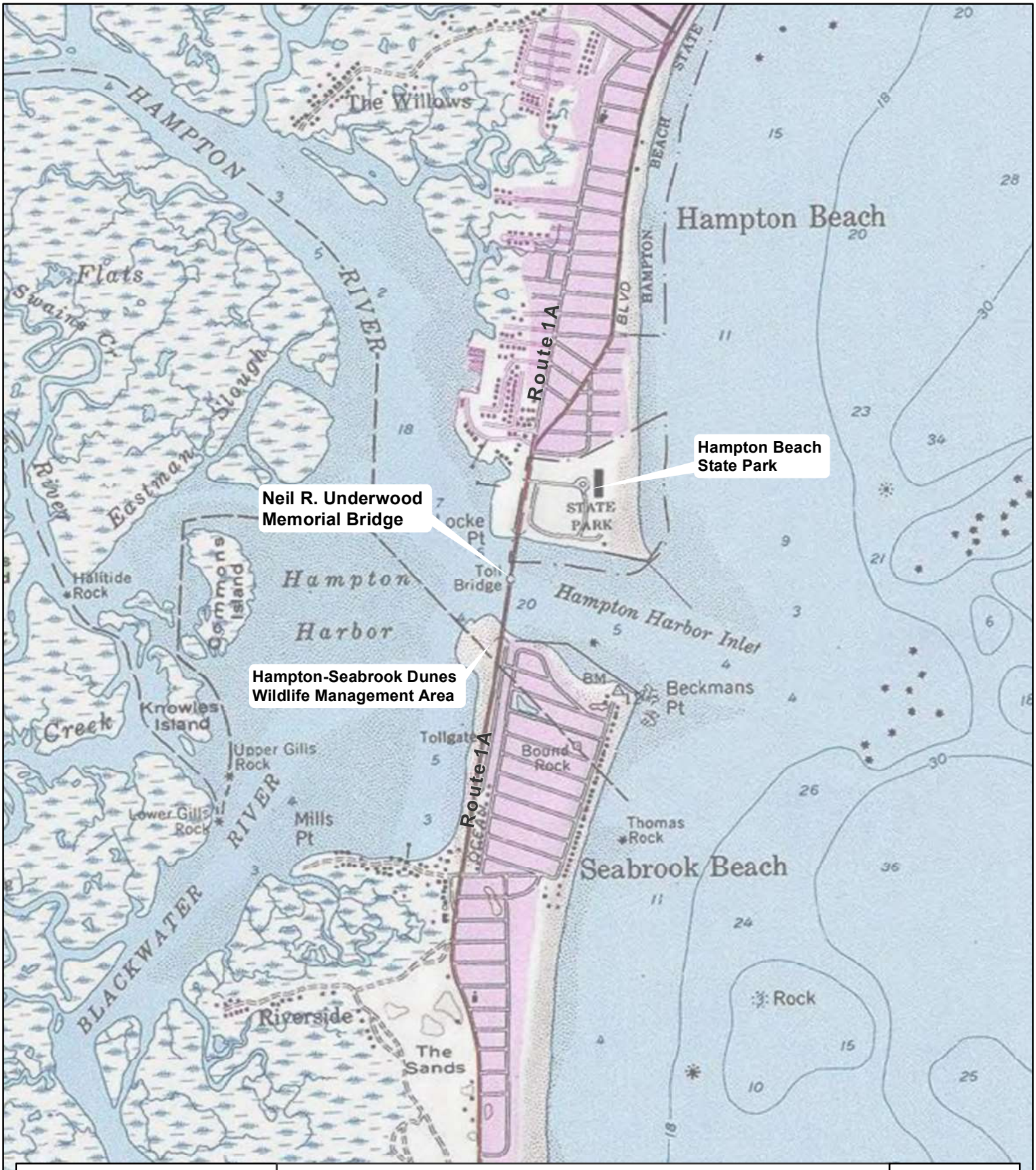
behavioral noise level, providing space for sturgeon to avoid higher noise levels. Since the behavioral distance for sea turtles is even less, at 38 meters (125 feet), there would be even more horizontal space for turtles to traverse around the noise center. This would provide any ESA species ample space to maneuver around /avoid high underwater noise areas. Because of the use of best management practices and the time of year restrictions, it is extremely unlikely that the intermittent and temporary acoustic effects would create a barrier to migration or otherwise alter the conservation function of the harbor, and therefore the effect is considered to be discountable.

Based on the noise attenuation information provided in the *GARFO Acoustics Tool*, underwater noise decibels (dB) created by pile driving may be reduced by 20 dB for steel piles greater than 49" diameter if installed behind dewatered cofferdams. The potential for dewatering cofferdams was evaluated as part of this BA, however, based on engineering reasons it was determined that it would not be practicable to dewater the cofferdams during driving of the outer casing for the drilled shafts. If the cofferdams are not dewatered, the water pressure on each side of the sheet piles will be equal, and the cofferdam does not need to be over-designed for the higher hydrostatic pressure which would occur if they were dewatered (which typically exceeds the force of soil pressure). This is a tremendous savings in materials, effort and cost. Once dewatered, keeping cofferdams dewatered is also more difficult under conditions with tidal flow. Therefore, fully dewatered cofferdams are not proposed for this project.

Based on the underwater noise assessment above, the use of "slow starts" for pile driving, and the fact that the presence of sturgeon and sea turtles are thought to be limited to rare, transient individuals partaking in migrating and foraging behavior, the applicant believes this activity still meets the NLAA determination and is consistent with the aggregate effects considered in the programmatic consultation.

PDC # 14 (continued)

Since the majority of in-water work would take place within the in-water work window, with the potential exception of temporary pile removal, and since ESA-listed species presence in the Action Area is expected to be extremely rare and limited to transient individuals opportunistically foraging, potential impacts due to driving and removal of temporary piles are considered discountable. In addition, since the substrate material in the location of the proposed temporary pile installation/removal is composed almost entirely of sand, with less than one percent fines (based on 2018 sediment test results from the USACE prior to recent dredging), potential turbidity associated with the pile removal is anticipated to be minimal and potential effects on ESA species insignificant.



Hampton Harbor Bridge Project
Project Location - Figure 1

Project No. 15904
Bridge No. 235/025

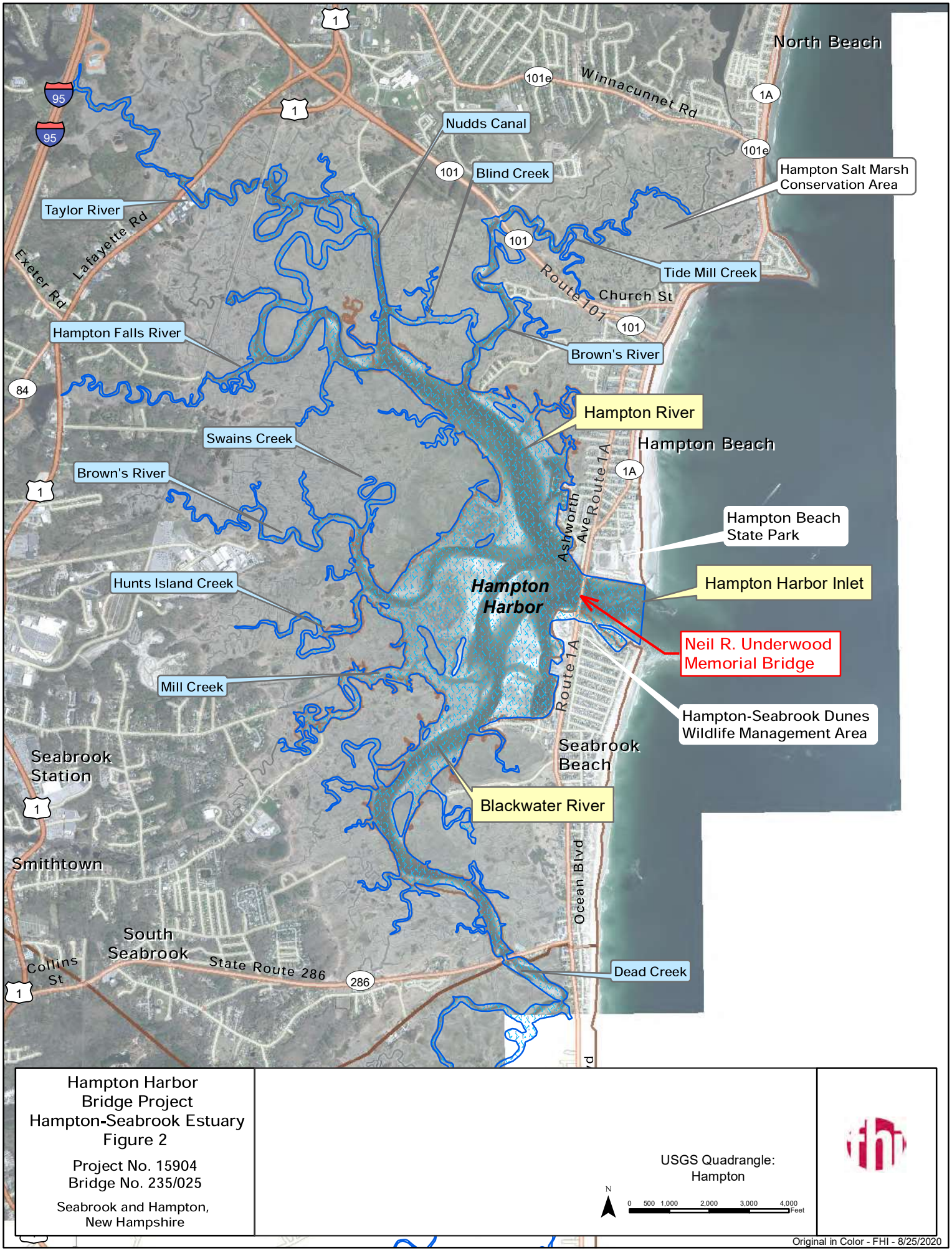
Seabrook and Hampton, New Hampshire

USGS Quadrangle: Hampton

N

0 250 500 1,000 1,500 2,000 Feet

Original in Color - FHI - 8/7/2020



Hampton Harbor
Bridge Project
Hampton-Seabrook Estuary
Figure 2

Project No. 15904
Bridge No. 235/025

Seabrook and Hampton,
New Hampshire

USGS Quadrangle:
Hampton

N

0 500 1,000 2,000 3,000 4,000 Feet

Original in Color - FHI - 8/25/2020

Hampton Harbor
Bridge Project
Action Area
Figure 3
Project No. 15904
Bridge No. 235/025
Seabrook and Hampton,
New Hampshire

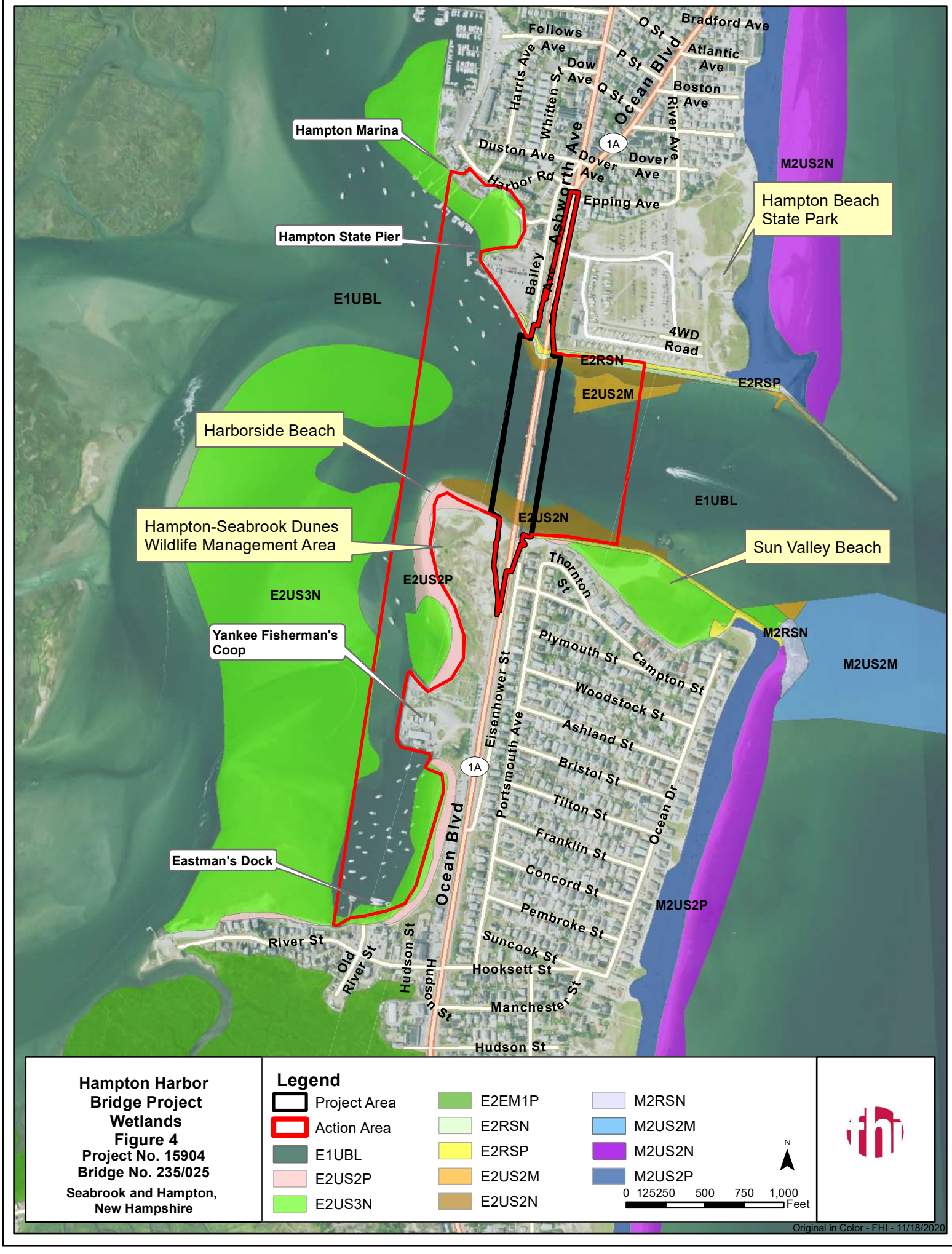
Legend

Project Area

Action Area

0 95 190 380 570 760 Feet

Original in Color - FHI - 8/31/2020



Hampton Harbor Bridge Project
Wetlands
Figure 4
Project No. 15904
Bridge No. 235/025
Seabrook and Hampton, New Hampshire

Original in Color - FHI - 11/18/2020

From:	Stephanie Dyer-Carroll
To:	"Zachary Jylkka - NOAA Federal"
Cc:	Murphy, James F.; Reczek, Jennifer; Laurin, Marc; Dan Hageman
Subject:	RE: Seabrook-Hampton Bridge project
Date:	Friday, February 22, 2019 1:28:00 PM

Hi Zach,

This is very helpful. Based on prior correspondence with your office on this project, we'd anticipated the sea turtles and sturgeon, however we were surprised when we consulted the mapper to see Atlantic salmon identified. It's good to know your thoughts on their presence.

Best,

Stephanie Dyer-Carroll, AICP
Senior Project Manager / Cultural Resources Specialist
sdyer-carroll@fhiplan.com
D: (860) 256-4922 M: (860) 402-6038

FHI | Fitzgerald & Halliday, Inc.
Innovative Planning, Better Communities
416 Asylum Street | Hartford, CT 06103
CT • NY • NJ | www.fhiplan.com

From: Zachary Jylkka - NOAA Federal <zachary.jylkka@noaa.gov>
Sent: Friday, February 22, 2019 12:26 PM
To: Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com>
Cc: Murphy, James F. <james.murphy@hdrinc.com>; Reczek, Jennifer <Jennifer.Reczek@dot.nh.gov>; Laurin, Marc <Marc.Laurin@dot.nh.gov>
Subject: Re: Seabrook-Hampton Bridge project

Hi Stephanie,

I don't have any data points on the use of Hampton Harbor by ESA-listed species under our jurisdiction. You can get some information on the general anticipated distribution of our species using the Section 7 Mapper (also see attached). While presence in Hampton Harbor is possible for both sturgeon species and four sea turtle species, we expect their presence to be limited to rare, transient individuals partaking in migrating and foraging behavior. The Mapper indicates the possible presence of Atlantic salmon, but we really only expect Atlantic salmon to be present between the waters encompassed by Atlantic salmon critical habitat and the Gulf of St. Lawrence and Grand Bank, and the Labrador Sea.

See also:
http://seaturtlesightings.org/maps.html

Hope this helps.

Zach

On Fri, Feb 22, 2019 at 12:12 PM Stephanie Dyer-Carroll <sdyer-carroll@fhiplan.com> wrote:

> Hi Zachary,
>
> We are working with the New Hampshire Department of Transportation (NHDOT) on the Seabrook-Hampton Bridge Project in Hampton, NH. Last year, Max Tritt provided us with information on sturgeon movement in the Piscataqua River for the Biological Assessment for the New Castle-Rye Bridge Project. We wanted to inquire whether your office has similar information for Hampton Harbor. We'd also appreciate you sharing any information you may have on sea turtle movements in the area.
>
> Thanks for your assistance.
>
> **Stephanie Dyer-Carroll, AICP**
> **Senior Project Manager / Cultural Resources Specialist**
> sdyer-carroll@fhiplan.com
> D: (860) 256-4922 M: (860) 402-6038
>
> **FHI | Fitzgerald & Halliday, Inc.**
> Innovative Planning, Better Communities
> 416 Asylum Street | Hartford, CT 06103
> CT • NY • NJ | www.fhiplan.com

--
Zach Jylkka
Fisheries Biologist
Protected Resources Division
Greater Atlantic Regional Fisheries Office
NOAA Fisheries
Gloucester, MA 01930
zachary.jylkka@noaa.gov
office: (978) 282-8467

For additional ESA Section 7 information and Critical Habitat guidance, please see:
www.greateratlantic.fisheries.noaa.gov/protected/section7

This page intentionally left blank

ATTACHMENT A

Hampton Harbor Bridge Benthic Survey

This page intentionally left blank

NORMANDEAU ASSOCIATES
Environmental Consultants

Hampton Harbor Bridge
Benthic Survey Results

Prepared by:
Normandeau Associates, Inc.
25 Nashua Road
Bedford, NH 03110

July 2020
www.normandeau.com

Table of Contents

Page

1.0 INTRODUCTION 1

2.0 METHODS 1

2.1 FIELD METHODS 1
2.2 LABORATORY METHODS AND QUALITY CONTROL 3
2.3 DATA HANDLING AND REDUCTION METHODS 4

3.0 RESULTS 5

4.0 REFERENCES 10

APPENDIX

Appendix Table: Macroinvertebrate Data

1.0 Introduction

Normandeau Associates, Inc. (Normandeau), as a subcontractor to Fitzgerald and Halliday, Inc. (FHI), was contracted to collect and process benthic samples as part of a benthic survey to provide data for use in the Essential Fish Habitat (EFH) and Biological Assessments for the Hampton Harbor Bridge replacement project. The Hampton Harbor Bridge is a bascule bridge over Hampton Harbor Inlet that connects Hampton and Seabrook, NH. The proposed work scope for this project included a soft-bottom macrofauna survey, a hard-bottom intertidal survey, and a soft-shell clam survey. These surveys characterized the macrofauna community found within the direct vicinity of the Hampton Harbor Bridge to provide requisite data for understanding potential impacts to the system throughout the permitting processes.

This report summarizes processing methods, and presents the macroinvertebrate data that were collected from the samples and from the intertidal survey. Field methods, laboratory processing methods, and data handling procedures are described in Section 2.0. Laboratory processing results and the intertidal survey summary results are provided in Section 3.0, and a listing of the macroinvertebrate data are provided in Appendix A.

2.0 Methods

2.1 Field Methods

Six soft-shell clam (*Mya arenaria*) survey samples were proposed for this project (Figure 1-1). Four of these samples were collected at the Seabrook end of the bridge and the remaining two were collected at the Hampton end. Adult clams (>25mm) were surveyed using a 12" x 24" frame sampled to 18" depth, with clam spat (1-25mm) to be sub-sampled within the frame using a 4" diameter core sampled to 4" depth. All six proposed soft-shell clam samples were successful, however these samples were devoid of all Myidae, including adult clams and *Mya* spat. Therefore there are no reportable result tables or figures for this portion of the survey.

Five benthic samples in total were proposed under the soft-bottom macrofauna survey (Figure 1-1). Of these five samples, two samples were to be collected from the proposed dredge areas located underneath the center of the bridge and three samples from the proposed dredge area to the west (inshore) of the bridge. All field sample procedures were followed as outlined in the sampling plan (Fitzgerald & Haliday, Inc. 2020). Samples could not be collected at the two stations that were located under the bridge due to the lack of soft-substrate resulting from strong tidal currents and a scoured seafloor. The remaining three samples were collected at slightly altered locations, based on availability of soft-substrate. The three samples were collected at the following locations given as latitude and longitude in decimal degrees: Station 3 (42.89583°, -70.8170°), Station 4 (42.8960°, -70.8180°), and Station 5 (42.8973°,-70.8175°). All samples were collected using a 0.04 m^2 Van Veen Grab. Collected grabs were rinsed in the field usng a 500 micron mesh screen, bottled and preserved in 10% buffered formalin, and stained with rose Bengal prior to transport. All collected samples were safely transported and delivered to Normandeau's laboratory in Bedford, NH.

Figure 1-1. Proposed sampling locations for soft-shell clam survey and soft-bottom macrofauna survey from Fitzgerald and Halliday (2020).

An intertidal hard-bottom survey consisting of three transects (Figure 1-2) for this project was located on the north side of the channel as originally planned. The first transect was located 5 meters west of the bridge, the second transect was located under the center of the bridge, and the third transect was located 5 meters east of the bridge. The hard-bottom substrate was generally composed of bedrock outcrops, rip-rap boulders, and components of the bridge sub-structure. All three transects were successfully conducted, with minor adjustments. The original field plan was to utilize a 0.25 m^2 frame which would be placed at meter intervals to count the density of present organisms. However, this spatial frequency was modified to account for the long length of the mussel and barnacle zones and the high density of the organisms found. Field crews reported that small barnacles (1-2 mm) covered 90% of all surfaces, including the mussels. As a result, three representative frame (0.25m^2) counts were collected along each transect within the mussel and barnacle zones and one frame sample was collected along each transect within the Irish Moss Zone (which was less than 2 meters wide for all transects).

Figure 1-2. Mapped transect locations with highlighted intertidal zones from the hard-bottom survey

2.2 Laboratory Methods and Quality Control

Soft-bottom macroinvertebrate samples and soft-shell clam samples were processed by Normandeau's Bedford, NH laboratory following standard processing protocols. Upon arrival at the laboratory, all macroinvertebrate samples were gently rinsed with fresh water through a 0.5 mm mesh screen. To facilitate sorting, samples were elutriated to separate heavy and light materials and those with heterogeneously sized debris or organisms were washed through a series of graduated sieves down to a 0.5 mm mesh. Homogeneous sized sand greater than 0.5 mm was pan sorted with an overhead magnifier light. Macroinvertebrates were sorted into major taxonomic groups using a dissecting microscope and placed in vials with 70% ethanol for preservation. All organisms were identified to the lowest practical taxon (usually species) and enumerated, with the following exceptions: oligochaetes were identified to class; platyhelminthes, nemerteans, and nematodes to phylum; and meiofauna (e.g., benthic copepods, ostracods) were not enumerated. Immature or damaged specimens that were missing

the necessary diagnostic features for identification to the target taxonomic level were identified to the lowest practical taxon. Soft-shell clam samples were rinsed through a 1.0 mm sieve and pan sorted for spat and adults. Due to the small sample size, the entirety of each sample was sorted and enumerated, and no subsampling was employed.

Quality control protocols for sorting and identification included reanalysis of a minimum of 10% of the samples completed by each sorter or taxonomist. Due to the small number of samples, only the first sorted sample underwent Quality Control. Communication between taxonomists and spot checking ensured accurate identifications for the three samples. Identified specimens were inventoried and prepared for storage; all sorted samples were re-preserved and prepared for disposal following federal regulations, pending authorization by FHI. Normandeau's internal quality control for sorting and taxonomy follows the National Coastal Condition Assessment 2015 Laboratory Operations Manual (Version 2.1 May 2016; USEPA 2016) guidelines.

2.3 Data Handling and Reduction Methods

Data handling was conducted by Normandeau's Data Center in Bedford, NH. All data were double keypunched using Normandeau's keypunch verification software. All electronic formatted data was checked for 100% accuracy against the original recorded laboratory results.

Data preparation, reduction, and computation of summary statistics were run in SAS system software (version 9.4). Macroinvertebrate community structure parameters were calculated based on the biotic abundance estimates for each sample. Summary statistics for the macroinvertebrate community included: total abundance, number of species, Shannon-Wiener diversity index (H′ per sample, log base e), and Pielou's evenness index (J′ per sample) (Magurran 1988). Abundance was reported as counts per 0.04 m^2 grab sample and taxonomic group. All taxa identified to a taxanomic level higher than genus were removed before calulcating diversity indices. The PRIMER 6 package of statistical routines (Clarke & Gorley, 2006) was used to calculate Shannon-Wiener diversity (H′) and Pielou's evenness value J′. Both H′ and J′ indices are based on the proportional abundances of species (Magurran 1988). Evenness (J′) is entirely a function of proportional abundance; J′ values are unaffected by the number of species in a sample. Values for J' can range between 0 and 1, with J' = 1 when all species in a sample have equal abundances. Diversity (H′) is a function of both proportional abundance and the number of species in the sample. The maximum possible H′ diversity (Hmax) for a given number of species occurs where all species have equal abundances. Any log base can be used to calculate H′; $\log_e$ is used most commonly (Magurran 1988). H′ values calculated using different log bases are not comparable and must be converted to a common base prior to comparison. J' values are not affected by log base. H′ increases both with increasing numbers of species, and with increasingly even distributions of the total abundance among those species. Thus, H′ values depend on the log base used and on the numbers of taxa per sample, in addition to proportional abundance. H′ can range from 0 (with only one species in a sample) to a typical maximum of around 4.5 (Magurran 1988).

The contents of this report provide the raw data and a brief data summary as delineated in the project work scope, which includes tables presenting the following parameters:

- Number of Samples

- Mean Taxa Richness (±1 SD)
- Total Number of Taxa
- Number of Taxa Observed by Taxonomic Group
- Percent of Total Abundance by Taxonomic Group
- Relative Abundance of Taxa Recovered, and
- Intertidal Survey Results

3.0 Results

All six of the soft-shell clam survey samples contained very coarse pebble/gravel material. No adult clams or spat (juveniles) were found. Laboratory taxonomists noted the lack of any living organisms found within the samples. These samples were not only devoid of *Mya*, but of other bivalve spat typically found in nearby mud flats. This may be a result of the strong tidal current and coarse substrate found in the sampling area.

Three soft-bottom samples were collected at the stations west of the bridge and yielded a total of 40 macroinvertebrate families (and higher taxonomic-level organisms including Oligochaeta, Archannelida, Nematoda, and Turbellaria) from six phyla. Ninety percent of the macroinvertebrates were from three phyla: Annelida (contributing 46%), Mollusca (33%), and Arthropoda (11%, Table 3-1; and Figure 3-1). The other phyla recorded in the samples: Nemertea, Platyhelminthes, and Nematoda together contributed 10 percent to the total abundance. Annelida had the highest number of taxa (n=19); followed by Mollusca and Arthropoda (for each n=9), and the remaining three phyla had only one taxa each (Table 3-1). Annelida were also the most abundant organisms with a total of 303 individuals among all samples, followed by Mollusca with 215 individuals, and Arthropoda (70 individuals; Table 3-1). Total abundances of Nemertea, Platyhelminthes, and Nematoda were relatively low ranging from 37 nemerteans to 5 nematodes.

Overall, the mean abundance was 219 individuals per sample (5,475 organisms per m^2) with station 5 having the highest number of individuals at 7,200 per m^2 (n=288 individuals per 0.04m^2; Table 3-2). The mean number of taxa among all samples was 19 with station 4 having the highest taxa count (n=29). The mean Shannon diversity index for all samples was 1.71, and the average Pielou's evenness for all three samples was 0.58 (Table 3-2).

Intertidal survey results are presented separately for each transect (Tables 3-3 to 3-5). Four identifiable zones were found in each transect: a thin Irish moss zone (~2 meters), a broad blue mussel zone (~12 meters), a large barnacle zone (~21 meters), and a thin black zone characterized by algal growth (~5 meters). Although a black zone was identifiable, field crews noted that the algae was very sparse at each transect location. Subsample area invertebrate counts were done for each zone, except the black zone as outlined in the sampling plan (Fitzgerald & Haliday, Inc. 2020). For each zone, a characteristic organism was given as a visual percent cover. The organism used for each zone is described as follows: 1) the Irish moss zone used *Chondrus crispus*, 2) the blue mussel zone used *Mytilus edulis* (Figure 3-2a), 3) the barnacle zone used *Balanus* sp. (Figure 3-2b), and 4) the black zone used blue-green algae presence. Transects 1, 2, and 3 were all dominated by the barnacle zone, and while some other small invertebrates were noted, barnacles consistently made up the majority of the macroinvertebrate

community surveyed. In summary, this is an area that experiences strong tidal currents, and contains large coarse substrate ranging from cobble to boulders resulting in a faunal assemblage in this intertidal zone that reflects these hydrodynamic conditions.

Table 3-1. Phyla represented in the macroinvertebrate samples collected during the Hampton Harbor soft-bottom survey in May 2020.

Phylum	Number of Taxa[1]	Total abundance (number of individuals across all samples)	Percentage
Annelida	19	303	46.12
Mollusca	9	215	32.72
Arthropoda	9	70	10.65
Nemertea	1	37	5.63
Platyhelminthes	1	27	4.11
Nematoda	1	5	0.76

[1]Identified to the family-level with the exception of Oligochaeta, Nematoda, Nemertea, and Platyhelminthes.

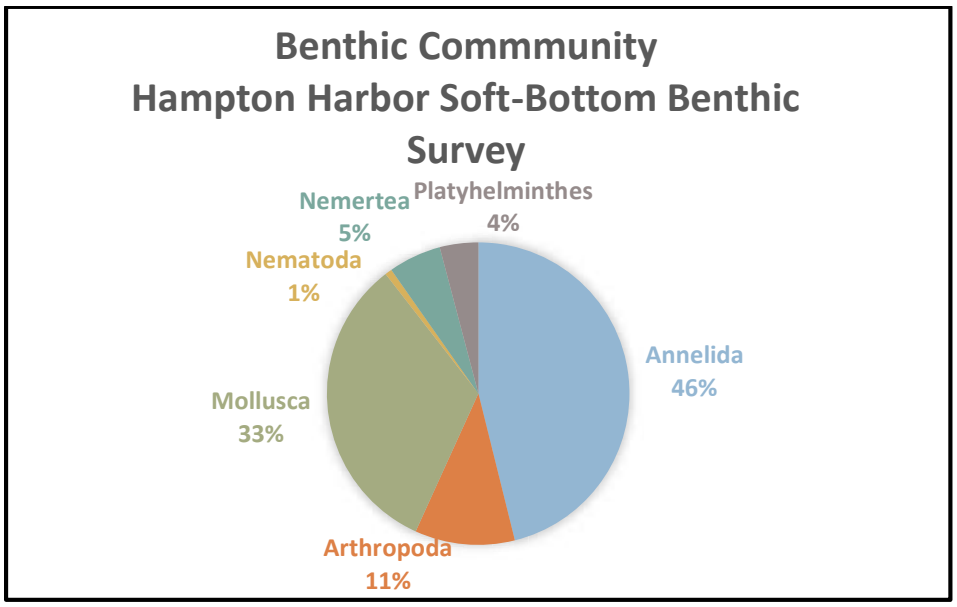


Figure 3-2. Percent contribution to total abundance by phyla in benthic samples collected during the Hampton Harbor soft-bottom macroinvertebrate survey in May 2020.

Table 3-2. Community parameters for samples collected during the Hampton Harbor soft-bottom survey in May 2020.

Station (Sample ID)	Total Number of Taxa	Total Count (no. per 0.04 m²)	Diversity (H')	Evenness (J')
3	14	90	0.90	0.38
4	29	279	1.47	0.61
5	15	288	2.07	0.64
Mean	19.3	219.0	1.48	0.54

Table 3-3. Hampton Bridge Intertidal Survey Results from Transect 1, west of bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	1.5	*Chondrus crispus*	1	21	4	0	0	1	0
		50	N/A						
			N/A						
Blue Mussel Zone	12	*Mytilus edulis*	1	33	165	20,000+	0	0	0
		60	2	121	178	20,000+	0	0	0
			3	31	62	20,000+	0	0	0
Barnacle Zone	27.5	*Balanus* sp.	1	56	0	20,000+	0	0	0
		90	2	72	0	20,000+	0	0	0
			3	57	0	20,000+	0	0	0
Black Zone	5	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

Table 3-4. Hampton Bridge Intertidal Survey Results from Transect 2, under the bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	1.5	*Chondrus crispus*	1	44	56	10,000+	3	1	0
		20	N/A						
			N/A						
Blue Mussel Zone	9.7	*Mytilus edulis*	1	13	146	20,000+	0	0	0
		80	2	46	113	20,000+	0	0	14
			3	38	243	20,000+	0	0	0
Barnacle Zone	18.5	*Balanus* sp.	1	64	12	20,000+	0	0	0
		90	2	67	2	20,000+	0	0	0
			3	29	6	20,000+	0	0	0
Black Zone	6	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

Table 3-5. Hampton Bridge Intertidal Survey Results from Transect 3, east of the bridge.

Transect Zone	Length of Zone (m)	% Cover	Frame	Counts of Invertebrates per 0.25 m² Quadrat					
				Periwinkle	Blue Mussel	Barnacle[a]	Slipper Shell	Hermit Crab	Dog Whelk
Irish Moss Zone	0.6	*Chondrus crispus*	1	18	3	0	4	0	0
		60	N/A						
			N/A						
Blue Mussel Zone	14.5	*Mytilus edulis*	1	26	269	20,000+	0	0	0
		40	2	27	136	20,000+	0	0	1
			3	28	89	20,000+	0	0	0
Barnacle Zone	16.7	*Balanus* sp.	1	121	2	10,000+	0	0	0
		50	2	38	1	10,000+	0	0	1
			3	0	0	10,000+	0	0	0
Black Zone	3.6	Blue-green Algae	1						
		5	2						
			3						

[a] **All transect survey barnacle counts are based on visual estimates as recorded by field staff.**

a.

b.

Figure 3-2. Representative field photos from hard-bottom transects: a.) blue mussel zone and b.) barnacle zone.

4.0 References

Clarke, KR and RN Gorley. 2006. Primer V6: User Manual-Tutorial. Plymouth Marine Laboratory.

Fitzgerald & Haliday, Inc. 2020. Benthic Sampling Plan: 15904 Seabrook-Hampton, Bridge No. 235/025.

Magurran, AE. 1988. Ecological Diversity and Its Measurement. Princeton University Press. Princeton, NJ. 179 pp.

USEPA 2016. National Coastal Condition Assessment 2015: Laboratory Operations Manual. EPA- 841-R-14-008. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Appendix

Macroinvertebrate Data

Appendix Table. Benthic macroinvertebrate counts (per 0.04 m²) collected during the Hampton Harbor soft-bottom survey; May 2020.

Phylum	Taxa	Station 3	Station 4	Station 5
		Individuals per sample (count/0.04m²)		
Annelida	*Aricidea (Acmira) catherinae*		3	
	Capitella capitata		31	
	Capitellidae		1	
	Eteone longa		1	
	Gyptis vittata		1	
	Levinsenia gracilis		1	
	Microphthalmus sp.			1
	Oligochaeta		3	149
	Opisthodonta longocirrata			1
	Parexogone hebes		1	60
	Parougia caeca	1		3
	Pholoe tecta		1	
	Polygordius jouinae	1	12	5
	Polynoidae			1
	Pygospio elegans		2	
	Streptosyllis arenae		1	1
	Streptosyllis websteri			8
	Tharyx acutus		1	
	Typosyllis sp.	2	6	5
Arthropoda	*Balanus crenatus*	2	27	
	Calliopius laeviusculus		16	
	Caprella mutica		1	
	Gammarellus angulosus		1	
	Gammarus lawrencianus		5	
	Gammarus mucronatus		1	
	Ischyrocerus minutus	2	4	
	Jassa marmorata		10	
	Metopa sp.	1		
Mollusca	*Ameritella agilis*		7	2
	Doto coronata		1	
	Gemma gemma		1	
	Lacuna vincta		1	
	Modiolus modiolus	1		
	Mytilus edulis	60	111	23
	Onchidoris sp.	1		
	Petricolaria pholadiformis	2		
	Spisula solidissima	1	3	1

Appendix Table A continued.

Phylum	*Taxa*	*Station 3*	*Station 4*	*Station 5*
		Individuals per sample (count/0.04m^2)		
Nematoda	Nematoda	1		4
Nemertea	Nemertea	12	25	
Platyhelminthes	Platyhelminthes	3		24

This page intentionally left blank

Appendix C: Effects Memorandum and MOA

This page intentionally left blank

EFFECTS MEMORANDUM

This page intentionally left blank

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

Victoria F. Sheehan
Commissioner

William Cass, P.E.
Assistant Commissioner

Seabrook-Hampton
15904
X-A001(026)
RPR 9859

Adverse Effect Memo

Pursuant to the meetings and discussions on July 12, 2018, February 14, 2019, and March 12, 2020, and for the purpose of compliance with regulations of the National Historic Preservation Act, as amended, and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the NH Division of Historical Resources and the NH Division of the Federal Highway Administration have coordinated the identification and evaluation of historic and archaeological properties with plans to replace the Neil R. Underwood Memorial Bridge (the Seabrook-Hampton Bridge) (235/025). The structure will be replaced with a fixed span.

Project Description

This project consists of the replacement of the existing bascule bridge that carries NH 1A over the Hampton Harbor Inlet (Bridge No. 235/025). This alternative replaces the existing bridge with a new high-level fixed structure on an alignment located to the west of the existing bridge. The design would provide a 150' wide navigational channel through the bridge with a vertical underclearance of 48'. The Area of Potential Effect includes properties north of the bridge along Ashworth Avenue; portions of the Hampton Beach State Park and adjacent residential streets; properties adjacent to Ocean Boulevard south of bridge; properties along River Street; and properties west across Hampton Harbor in both Seabrook and Hampton, NH.

Identification

Above-Ground Resources

In July 2018 a Request for Project review was submitted to NHDHR for the Seabrook-Hampton bridge project. Following the RPR review and a Cultural Resources Meeting at NHDOT on July 12, 2018 a Project Area Form was completed and reviewed by NHDHR in March 2019; the following inventories were completed:

- Seabrook-Hampton Bridge (235/025) (HAM0103) – determined eligible
- Hampton Beach Cottages Historic District (HAM-HBHD) – determined eligible
- 177-179 Ashworth Avenue (HAM0108) –determined not eligible
- 197 Ashworth Avenue (HAM0109) – determined eligible
- Hampton Beach Salt Water Pump House (HAM 0110) –determined not eligible
- 16 Portsmouth Avenue (HAM0111) – determined not eligible
- 20 Portsmouth Avenue (HAM0112) – determined not eligible
- Eastern Railroad Historic District (ZMT-ERLD) – was previously determined eligible in 2002

The New Hampshire Department of Transportation found 54 River Street (SEA0025) and 266 Portsmouth Avenue (SEA0024) in Seabrook, also located within the Area of Potential Effect, to be ineligible for the National Register. However, the New Hampshire Division of Historical Resources did not agree with this determination.

Below-Ground Resources
A Phase IA Archaeological Assessment and an addendum were completed to address both nautical and archaeological sensitivity. The addendum thoroughly researched the maritime history of the area, however review of the project area identified that there is low sensitivity for the occurrence of submerged resources and determined that no additional survey was necessary. A subsequent Phase 1B survey was also undertaken to document wooden piles under the south side of the bridge, remnants of a temporary trestle used during the bridge's construction, as well as an unidentified iron pin.

Project Consultation

Public Information Meetings were held in September 2018 and January 2019. A Project Advisory Committee (PAC) was formed in July 2018 consisting of the Hampton and Seabrook Town Managers, adjacent property owners, the Hampton and Seabrook Harbormasters, a member of Hampton Historical Society, and area businesses, among others. The PAC has met four times to date. Consulting parties have been identified as Kitty Henderson (Historic Bridge Foundation), Gary Bashline (resident), and Kate Bashline (resident).

The Advisory Council on Historic Preservation (ACHP) was contacted by SHPO in February 2014, to weigh in on FHWA's Section 106 review regarding the 1994 Memorandum of Agreement between FHWA, NHDOT and SHPO regarding the Dover, BRF-012-1(40), 11657 project. That project specified the Seabrook-Hampton bascule bridge and the New Castle-Rye bascule bridge should not be demolished except in the case of an extreme emergency or public safety concern. The ACHP advised FHWA to continue the consultation process with SHPO and other consulting parties and to follow current templates for developing MOA's in the future. FHWA will continue to consult with ACHP throughout this project and the New Castle-Rye project (16127).

Determination of Effect

Seabrook-Hampton Bridge (HAM0103)
The Seabrook-Hampton Bridge, or Hampton Harbor Bridge as it is known locally, is significant under C as a rare example of a bascule bridge in New Hampshire. Removal of the bridge is an adverse effect.

Hampton Beach Cottages Historic District (HAM-HBHD)
The HBHD is eligible for listing under A for its association with seaside tourism and under C as a representative example of seasonal dwellings. Replacing the bascule bridge with a fixed span would have no adverse effect on the district, as it will not physically alter the district and the limited nature of the visual changes would not diminish the integrity of the district's setting.

197 Ashworth Avenue (HAM0109)
The Madaline Cottage/Harris Inn is eligible for history and architecture as an upper-class seasonal home. Due to distance and viewshed, the project will either be minimally seen or not seen at all and will therefore not alter characteristics of the house that qualify it for inclusion in the National Register, therefore no historic properties would be affected.

Eastern Railroad Historic District (ZMT-ERLD)
The resource is eligible for its historic and engineering significance. Due to distance, the project will be largely indistinguishable from the railroad alignment and will therefore not alter characteristics of the railroad that qualify it for inclusion in the National Register, therefore no historic properties would be affected.

54 River Street (SEA0025)
The replacement of the existing bridge with a new fixed bridge would not diminish 54 River Street's integrity of location, design, materials, setting, workmanship, feeling or association, therefore no historic properties would be affected.

> Note: NHDOT found this property not eligible and NHDHR disagreed. In consultation with the FHWA Historic Preservation Officer, if the effect finding was anything other than no effect or no historic properties affected, the eligibility would be brought to the Keeper for their review. Because the undertaking will not affect the property, the dispute can remain unresolved.

266 Portsmouth Avenue (SEA0024)
The resource is eligible for history and architecture as a seasonal cottage. Due to distance and viewshed, the project will either be minimally seen or not seen at all and will therefore not alter characteristics of the cottage that qualify it for inclusion in the National Register, therefore no historic properties would be affected.

> Note: NHDOT found this property not eligible and NHDHR disagreed. In consultation with the FHWA Historic Preservation Officer, if the effect finding was anything other than no effect or no historic properties affected, the eligibility would be brought to the Keeper for their review. Because the undertaking will not affect the property, the dispute can remain unresolved.

Additional information regarding the effects to each of the above resources is outlined in the Effect Tables, which are on file at the NHDOT.

Applying the criteria of effect at 36 CFR 800.5, we have determined that the overall project results in an **Adverse Effect**, due to the removal and replacement of the Seabrook-Hampton Bridge.

Section 4(f) *(to be completed by FHWA)*	*There Will Be:*	☐ **No 4(f);**	☒ **Programmatic 4(f);**	☐ **Full 4 (f);** or
	☐ **A finding of *de minimis* 4(f) impact as stated:** In addition, with NHDHR concurrence of no adverse effect for the above undertaking, and in accordance with 23 CFR 774.3, FHWA intends to, and by signature below, does make a finding of *de minimis* impact. NHDHR's signature represents concurrence with both the no adverse effect determination and the *de minimis* findings. Parties to the Section 106 process have been consulted and their concerns have been taken into account. Therefore, the requirements of Section 4(f) have been satisfied.			

Mitigation Measures
Mitigation for the loss of the bridge will be determined and documented in a Memorandum of Agreement prior to the removal of the bridge.

In accordance with the Advisory Council's regulations, consultation will continue, as appropriate, as this project proceeds.

for Patrick Bauer, Administrator — Date 3/25/2020
Federal Highway Administrator

Jill Edelmann — Date 3/25/2020
Cultural Resources Manager

Concurred with by the NH State Historic Preservation Officer:

Nadine Miller — Date 3/26/2020
Deputy State Historic Preservation Officer
NH Division of Historical Resources

c.c. Jamie Sikora, FHWA
Marika Labash, NHDHR
Jennifer Reczek, NHDOT
Jim Murphy, HDR
Loretta Girard Doughty, NHDOT
Stephanie Dyer-Carroll, FHI

MOA

This page intentionally left blank

MEMORANDUM OF AGREEMENT AMONG NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, AND THE NEW HAMPSHIRE STATE HISTORIC PRESERVATION OFFICER REGARDING THE HAMPTON HARBOR BRIDGE PROJECT, X-A001(026), 15904, IN THE TOWNS OF SEABROOK AND HAMPTON, NH

WHEREAS, the Federal Highway Administration (FHWA) plans to provide funds for the New Hampshire Department of Transportation (NHDOT) to replace the Neil R. Underwood Memorial Bridge over the Hampton Harbor Inlet in the towns of Seabrook and Hampton, New Hampshire (undertaking); and

WHEREAS, the undertaking consists of the replacement of the existing bascule bridge that carries NH 1A over the Hampton Harbor Inlet (Bridge No. 235/025) with a new high-level fixed structure on an alignment located to the west of the existing bridge; and

WHEREAS, FHWA has defined the undertaking's area of potential effects (APE) as properties north of the bridge along Ashworth Avenue; portions of the Hampton Beach State Park and adjacent residential streets; properties adjacent to Ocean Boulevard south of bridge; properties along River Street; and properties west across Hampton Harbor in both Seabrook and Hampton, NH (see Attachment A); and

WHEREAS, FHWA has determined that the undertaking will have an adverse effect on the Neil R. Underwood Memorial Bridge (NHDOT Bridge No. 235/025) which is eligible for listing in the National Register of Historic Places as an individual resource, and has consulted with the NHDOT and the New Hampshire State Historic Preservation Officer (SHPO) pursuant to 36 C.F.R. part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, FHWA has consulted with Kitty Henderson (Historic Bridge Foundation), Gary Bashline (resident), Kate Bashline (resident), and James Metcalf (Hampton Heritage Commission) regarding the effects of the undertaking on historic properties; and

WHEREAS, NHDOT has reached out to the Hampton Historical Society and has received input on the proposed mitigation; and

WHEREAS, NHDOT and FHWA committed to the long-term maintenance and preservation of the Neil R. Underwood Memorial Bridge in the 1994 MOA for the replacement of the Alexander Scammell Bridge over the Bellamy River in Dover, NH; and

WHEREAS, NHDOT and FHWA also committed to the long-term maintenance and preservation of the NH 1B Bridge over Little Harbor in the 1994 MOA for the replacement of the Alexander Scammell Bridge over the Bellamy River in Dover, NH; and

WHEREAS, NHDOT and FHWA have undertaken extensive maintenance of the Neil R. Underwood Memorial Bridge since the preparation of the 1994 MOA; and

WHEREAS, the deteriorated condition of the Neil R. Underwood Memorial Bridge now makes rehabilitation and long-term maintenance of the bridge infeasible; and

WHEREAS, there was no consulting party participation in the 1994 consultation for the replacement of the Alexander Scammell Bridge because this category of public participation didn't exist at the time; and

WHEREAS, in accordance with Stipulation V of the Scammell MOA, FHWA and NH SHPO solicited comments from the Advisory Council on Historic Preservation (ACHP) on how to address the stipulations in the Scammell MOA pursuant to 36 CFR Part 800.6(b); and

WHEREAS, ACHP has allowed that FHWA can proceed with a new Section 106 consultation for this activity given the passage of time and an updated purpose and need statement; and

WHEREAS, through consultation, FHWA, NHDOT and NH SHPO have identified new stipulations as noted below; and

WHEREAS, if the future rehabilitation or replacement of the NH 1B Bridge over Little Harbor results in an adverse effect under Section 106, additional stipulations will be identified for that project, and a separate MOA will be prepared; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation, and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

NOW, THEREFORE, FHWA, NHDOT and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

FHWA/NHDOT shall ensure that the following measures are carried out:

I. NHDOT will provide a Mitigation Coordinator to oversee and manage the implementation of the mitigation measures identified below. The Mitigation Coordinator will be familiar with Section 106 requirements and have at least two years project management experience.

II. NHDOT will market the bridge for re-use in compliance with 23 USC Section 144. Marketing will occur for a period of thirty (30) days and will include advertising on the NHDOT website. Ownership transfer for the re-use of the bridge will require the use of restrictive preservation and maintenance covenants lasting for ten (10) years to ensure the

long-term protection of the character-defining features of the bridge. The award will be based on the applicant's plan for moving the historic bridge and the future use, which most satisfactorily meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings." If there are no offers or proposals for use of the bridge by the end of the 30-day period, final bid and construction documents will be completed to specify demolition and disposal of the bridge.

III. NHDOT will ensure that up to twenty (20) digital photos are taken of key features of the Neil R. Underwood Memorial Bridge by a 36 CFR 61-qualified architectural historian. These will include general views of all sides; detail views of significant features, including the traffic deck support system (if accessible); and abutment and approach details. The photos will be offered to the Town of Hampton's Lane Memorial Library and to the Hampton Historical Society as an addendum to the Individual Inventory Form, digitally (as TIFFs at 3000 x 4000 ppi) and in archival hard copy format (8"x10" printed at 300 dpi). They will also be submitted to NHDHR on continuation sheets to be appended to the Individual Inventory Form.

IV. NHDOT will develop a kiosk with up to three (3) interpretive panels. The first panel will be devoted to the history and significance of the Neil R. Underwood Memorial Bridge, and its relation to other bascule bridges in the state. The second panel will focus on why the bridge was constructed, and the role it played in the history of the towns of Hampton and Seabrook, including the growth of tourism and the advent of the trolley. The third panel will describe how the bascule bridge functions and its mechanical components. The panels will include text, historic photographs of the bridge, and photographs of current conditions. NHDOT will determine if a weblink or QR code can be incorporated within the kiosk to link to additional information. The kiosk location will be determined during final design, however, it is anticipated it will be placed within NHDOT right-of-way north of the existing bridge and just south of State Park Road, near the existing Hampton Beach State Park sign and the sidewalk on the east side of Ocean Boulevard. The brass Neil R. Underwood Memorial Bridge plaque currently located on the bridge's operator house will be cleaned and displayed alongside the kiosk. The NHDOT will consult with DNCR-DPR on the final placement of the kiosk.

a. The content of the panels will be prepared by a 36 CFR 61-qualified architectural historian. The NH SHPO and the Hampton Heritage Commission will be provided an opportunity to review one (1) draft of the panels' content and layout with a review period of thirty (30) days. Upon approval of the panels, they will be fabricated and their installation will be coordinated with the bridge construction schedule.

b. If the Hampton Heritage Commission provides a template to NHDOT for the layout of the interpretive panels by June 1, 2022, NHDOT will use the template when designing the panels for the kiosk.

V. NHDOT will prepare a mock-up of the layout for a new single-page webpage for the Hampton Historical Society's website related to the Neil R. Underwood Bridge and other historic bascule bridges in New Hampshire. The mock-up will include photos and introductory text describing the history of the bridge and key features. It will also introduce

and link to historical information compiled through the course of the project. This historical information may include, but is not limited to, the Individual Inventory Form for the bridge, contextual information from the Phase 1A Archaeological Assessment Survey, Historic Movable Bridge of New Hampshire, and digital copies of the kiosk panel layouts. Previous research material could also be augmented by additional images, including those that show the landforms over time. The materials will be provided to the Hampton Historical Society by NHDOT to post to their site. The Hampton Historical Society's webmaster will be responsible for creating the new tab within their website and maintaining the information. All material and text will be prepared by a 36 CFR 61-qualified architectural historian.

a. The Hampton Historical Society and the NH SHPO will be provided the opportunity to review the mock-up with a review period of thirty (30) days. Upon approval of the website mock-up, NHDOT will provide the documentation to the Hampton Historical Society to upload and manage.

VI. NHDOT, through the Mitigation Coordinator, will support the production of three (3), three-to-seven-minute videos on various aspects of bascule bridges. The first video will address the bascule bridge function and its mechanical components, focusing on three locations: the Neil R. Underwood Memorial Bridge, the NH 1B Bridge over Little Harbor, and the Alexander Scammell Bridge. The second video will place these three bridges into the context of the history of the Seacoast, including the watershed; early history; natural, economic, and social development; and maritime uses. The final video will focus exclusively on the Neil R. Underwood Memorial Bridge, its history and significance within the Towns of Hampton and Seabrook. The video content may include current and historical still images, video from the three bridge locations and surroundings, and short interviews. Any new video footage will be taken by a professional videographer. DVDs of these videos will be provided to NHDHR for their records.

a. A Storyboard for each video will be developed by a 36 CFR 61-qualified architectural historian working in cooperation with a graphic designer/videographer. The video content will be drawn from current and historic maps and photos, documentation collected and/or prepared throughout the life of the project, interviews, and other video footage taken by a professional videographer to provide a cohesive product.

b. NHDOT will host one 90-minute formal public opening event to include a screening of the videos and a question-and-answer session facilitated by a 36 CFR 61-qualified architectural historian. The event will be planned and facilitated by NHDOT with the potential for panel discussion. The location, timing, and venue (in-person or virtual) will be determined by NHDOT during the event planning. NHDOT will partner with the NH Preservation Alliance to publicize the event.

c. NHDOT will post the videos online and make them available for broadcast on interested television and social media channels including:

i. Public access Hampton Channel 22 and other opportunities for televised broadcast
ii. YouTube (potentially including the NHDHR, New Hampshire Humanities, and New Hampshire Preservation Alliance Channels)
iii. NH historical society websites (Hampton Historical Society, New Castle Historical Society, with others upon request by the society)
iv. NHDHR website

d. NHDOT will develop a distribution plan and an information packet for other interested organizations to reference and follow in order for them to host an independent screening event and/or promote the videos. The information packet will include guidance on hosting an event related to these videos. The distribution plan will identify organizations that will be notified of the availability of the information packet. The Mitigation Coordinator will be available to answer questions and provide direction for one year following the initial public viewing.

VII. DURATION

This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, FHWA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation XIII below.

VIII. POST-REVIEW DISCOVERIES

If previously unidentified archaeological resources are discovered during project construction that may be affected by the undertaking, NHDOT shall notify the signatories of the discovery and cease all work at that location until NHDOT and SHPO have been consulted and a process agreed upon.

IX. MONITORING AND REPORTING

Each year following the execution of this MOA until it expires, is terminated or stipulations completed, NHDOT shall provide all parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FHWA's efforts to carry out the terms of this MOA.

X. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If the FHWA determines that such objection cannot be resolved, FHWA will:

a. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to the ACHP. The ACHP shall provide FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed

according to its final decision.

b. If the ACHP does not provide its advice regarding the dispute within the thirty (30)-day time period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

c. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

XI. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

XII. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XIII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, FHWA must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. FHWA shall notify the signatories as to the course of action it will pursue.

Execution of this MOA by FHWA, NHDOT and NH SHPO and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By: LEIGH I LEVINE Digitally signed by LEIGH I LEVINE Date: 2022.02.03 14:34:24 -05'00' Date:

for - Patrick A. Bauer
NH Division Administrator

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

By: Date: 1/26/2022

Nadine Miller
Deputy State Historic Preservation Officer

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

By: Date: 2/2/2022

Peter Stamnas
Director of Project Development

INVITED SIGNATORIES

THE HAMPTON HISTORICAL SOCIETY

By: Lori Cotter Date: Nov. 8, 2021

Lori Cotter
President

NEW HAMPSHIRE PRESERVATION ALLIANCE

By: _____ Date: _____

Jennifer Goodman
Executive Director

This page intentionally left blank

Appendix D: Environmental Justice Analysis

This page intentionally left blank

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL JUSTICE ANALYSIS
INTER-OFFICE COMMUNICATION

DATE: February 9, 2021

FROM: Ramsay Dean, Title VI Specialist

TO: Marc Laurin, Bureau of Environment

RE: Environmental Justice Population Analysis, Project: **Seabrook-Hampton 15094**

The attached analysis and recommendations are provided pursuant to Title VI of the Civil Rights Act of 1964 and Executive Orders 12898 & 13166. The intent of these statutes is to ensure fair and full participation and the equal receipt of benefits under Federally-assisted programs. Your efforts to accommodate and encourage participation by traditionally underserved groups, where significant, will ensure program access and minimize the potential for disproportionate project impacts on protected groups.

The table entitled "EJ Population Analysis" shows the presence of protected groups that might be impacted by the project. Personnel responsible for project planning/design and the coordination of public meetings/hearings should use this analysis to guide their outreach efforts under Title VI and in support of developing a context sensitive solution. Based on the availability of information and where appropriate, we have included specific outreach recommendations to facilitate public comment from underrepresented groups.

Please note that US Census Bureau, American Community Survey (ACS) 2014-2018 data is used to provide to an EJ Population analysis for the project. If you have questions regarding this analysis, please contact me @ 603-271-3735.

Encls: EJ Population Analysis Supportive Documentation

cc: K. Nyhan – Bureau of Environment
T. Reynolds – Bureau of Highway Design
P. Coddington, Bureau of Right-of-Way
J. Reczek - Bureau of Highway Design
R. Crickard – Bureau of Environment

EJ Population Analysis for Project: **Seabrook-Hampton 15094**

STUDY AREA	AVG % Minority Population	AVG% Elderly Population	AVG% LEP	AVG % Low-income Population
Replacement of Neil Underwood Bridge (over Hampton Harbor Inlet in Seabrook and Hampton) 1 mile radius	5.79%	**25.66%**	0.00%	**15.80%**
Surrounding Area – 3 mile radius of project area	4.16%	**21.86%**	0.06%	**14.05%**

REMARKS:

* The population percentage identified is meaningfully greater than the surrounding area and constitutes an EJ population. Characteristics of this particular study area indicate that targeted outreach efforts to solicit public participation should be taken.

** Low-income population for this analysis is defined as household income of less than $25,000.

LEP Definition: Where there is a population of people who speak English as a second language less than well (as indicated by the U.S. Census data). When a particular LEP language group constitutes 5% (or 1,000 people) of the impacted population, the Department is required to translate public information meeting notices and take appropriate measures to ensure language access. If this requirement exists, the Project Manager should contact the Title VI Specialist for further assistance.

Impacted Area: The impacted area was defined by the project limits and a 1-mile radius the immediate vicinity.

Surrounding Area: The surrounding area was defined by a 3-mile radius (excluding the impact area) of the project area.

Special Considerations: Special consideration should be given to any project features that affect pedestrian accessibility. This project constitutes an alteration in accordance with Title II of the Americans with Disabilities Act. As such, minimum ADAAG accessibility requirements apply, unless deemed technically infeasible. ADAAG was adopted as the 2010 Standards for Accessible Design on July 23, 2010 by the DOJ:

http://www.ada.gov/reg3a.html#Anchor-Appendix-52467

For more information, I have provided a link to the Draft Public Rights-of-Way Guidelines (PROWAG). The Draft PROWAG (Revised Draft Guidelines for Accessible Public Rights-of-Way) was released in November 2005 and has not been adopted by DOJ or FHWA. In 2006, FHWA issued a statement that the Draft PROWAG is to be considered best practice for making public rights-of-way accessible:

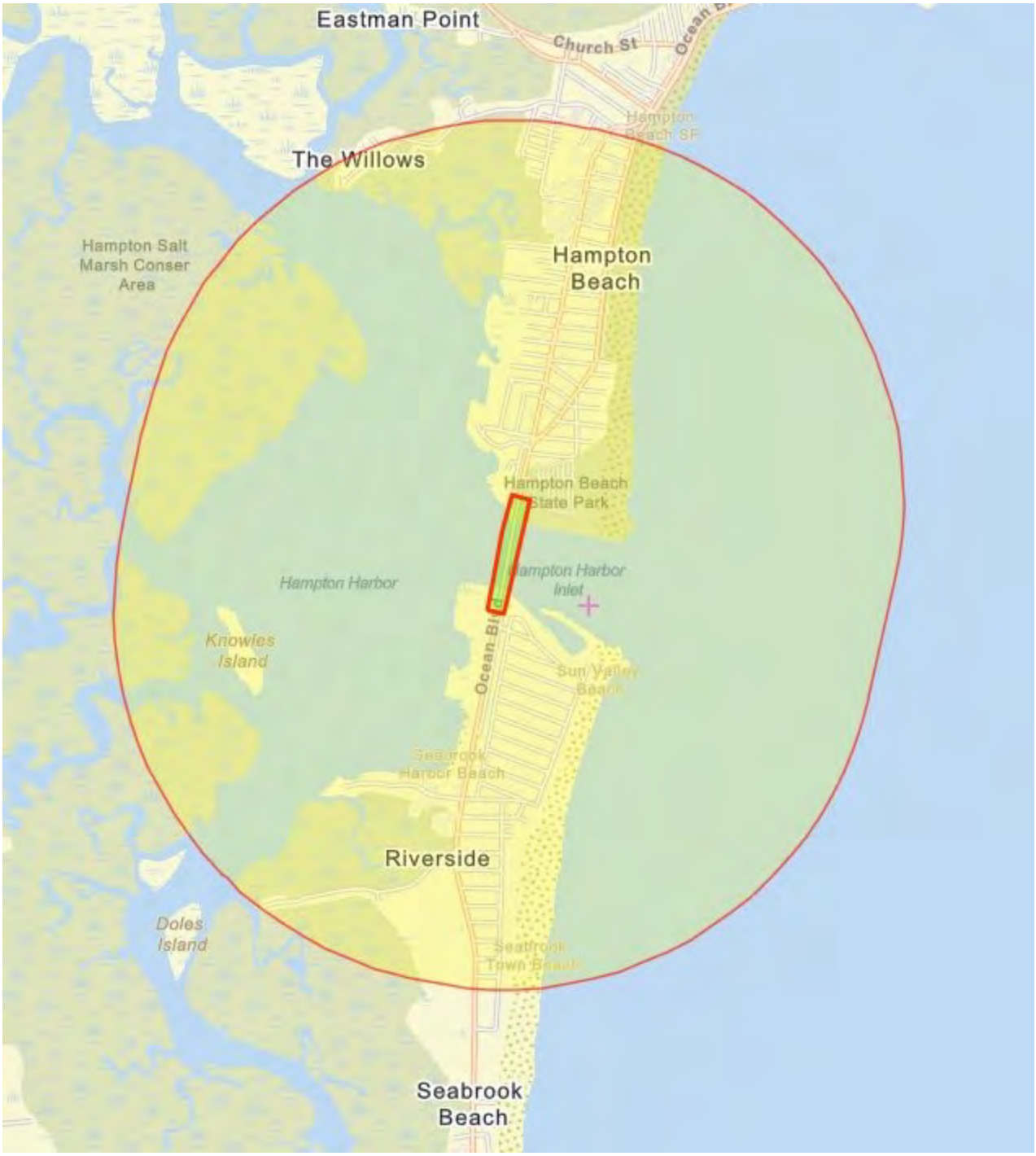
http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/background/revised-draft-guidelines

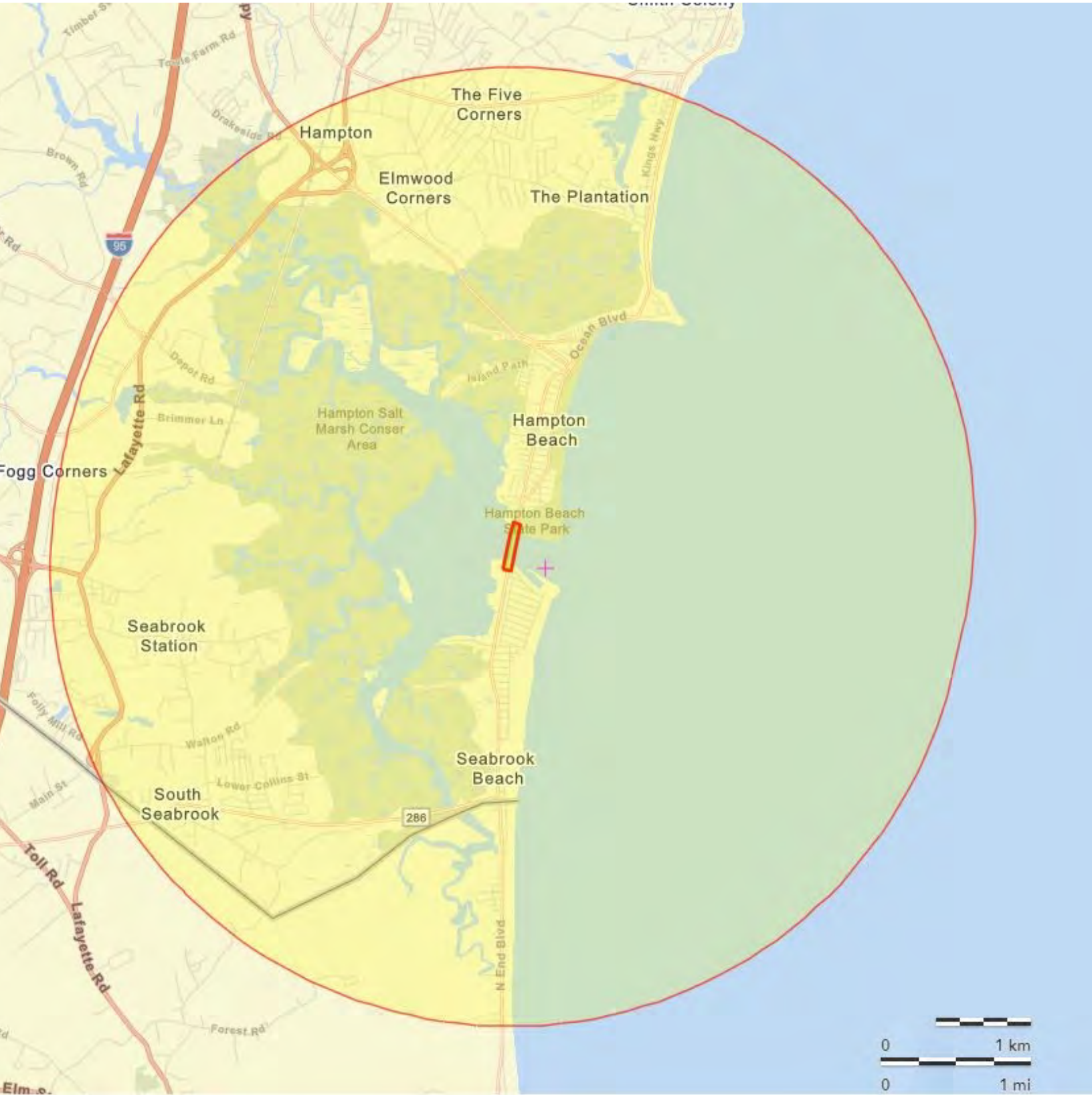
The Draft PROWAG includes specifications for detectable warnings and gives detailed information regarding their installation on curb ramps and on blended curbs, including at street corners, at cut-through islands and medians, and in front of buildings. It also has sections on accessible pedestrian signals (APS), roundabouts, channelized turn lanes, protruding objects, channelizing devices and barriers, and tactile and print signs.

Outreach Recommendations: The data used in this analysis shows a high percentage of elderly and low-income population in the impacted and surrounding area. Please refer to figures in Bold from the table above. Below is the contact information for community outreach. These contacts should be included in your notification list for the project.

Agency/Organization/Resident	Address	Telephone Number	Email
Hampton Town Hall	100 Winnacunnet Rd., Hampton, NH 03842	603-926-6766	N/A
Seabrook Town Hall	99 Lafayette Rd., Seabrook, NH 03874	603-474-3311	N/A
Hobbs House Help Center	200 High St., Hampton, NH 03842	603-926-4936	N/A
Seabrook Community Center	311 Lafayette Rd., Seabrook, NH 03874	603-474-5746	N/A
SOS Recovery Community Center	1 Lafayette Rd., Bldg. 1, Hampton, NH 03842	603-841-2350 Ext. 3	N/A
Lane Memorial Library	2 Academy Ave., Hampton, NH 03842	603-926-3368	N/A
Hampton Falls Free Library	7 Drinkwater Rd., Hampton Falls, NH 03844	603-926-3682	N/A
Seabrook Library	25 Liberty Ln., Seabrook, NH 03874	603-474-2044	N/A
Dearborn House	7 Dearborn Ave., Hampton, NH 03842	603-926-0278	N/A
Transportation Assistance for Seacoast Citizens	200 High St., Hampton, NH 03842	603-926-9026	coordinator@tasc-rides.org

Seacoast Senior Resources	9 Alexis Ln., Hampton Falls, NH 03844	603-498-1210	seacoastseniorresources@comcast.net
Assisted Living Center – Salisbury	19 Beach Road, Salisbury, MA 01952	978-463-9809	tom@assistedlivingcenter.org
Seabrook Housing Authority	81 Railroad Ave #42, Seabrook, NH 03874		N/A
Community Home Solutions	68 Lafayette Rd., Seabrook, NH 03874	603-944-0263	N/A
Governor Weare Apartments	689 Lafayette Rd., Seabrook, NH 03874	603-474-3113	N/A
Rockingham Community Action	146 Lafayette Rd., Seabrook, NH 03874	603-474-3507	N/A
United States Postal Service	2 Exeter Rd., Hampton Falls, NH 03844	800-275-8777	N/A
United States Postal Service	19 Main St., Seabrook, NH 03874	800-275-8777	N/A
Church of Christ	867 Lafayette Rd., Seabrook, NH 03874	603-474-2660	
First Congregational Church of Hampton	127 Winnacunnet Rd., Hampton, NH 03842	603-926-2837	N/A
United Methodist Church	525 Lafayette Rd., Hampton, NH 03842	603-926-2702	N/A
Faith Community Church	112 High St., Hampton, NH 03842	603-758-6495	N/A
Our Lady of the Miraculous Medal	289 Lafayette Rd., Hampton, NH 03842	603-926-2206	N/A
Little River Church	95 Atlantic Ave., North Hampton, NH 03862		
First Baptist Church of Hampton Falls	3 Lincoln Ave., Hampton Falls, NH 03844	603-926-3724	N/A
Trinity Episcopal Church	200 High St., Hampton, NH 03842	603-926-5688	N/A
St. Patrick's Church	5 Lyons St., Hampton, NH 03842	603-926-2205	N/A
New England Shores Baptist Church	69 High St., Hampton, NH 03842	603-892-0827	N/A
Still Waters Church	920 Lafayette Rd., Unit 204A, Seabrook, NH 03874	781-593-5715	N/A
Four Corners Church	1 Farm Ln., Seabrook, NH 03874	N/A	N/A
Healing Rain Ministries	49 New Zealand Rd., Seabrook, NH 03874	603-601-0656	N/A
The Church of Jesus Christ of Latter-Day Saints	55 Hampton Falls Rd., Exeter, NH 03833	603-772-0697	N/A
New England Christian Church	249 Lafayette Rd., Salisbury, MA 01952	603-682-8994	N/A


Eastman Point
Church St
The Willows
Hampton Salt Marsh Conser Area
Hampton Beach
Hampton Beach State Park
Hampton Harbor
Hampton Harbor Inlet
Knowles Island
Ocean Blvd
Riverside
Doles Island
Seabrook Beach


The Five Corners
Hampton
Elmwood Corners
The Plantation
Kings Hwy
95
Ocean Blvd
Depot Rd
Island Path
Brimmer Ln
Lafayette Rd
Hampton Salt Marsh Conser Area
Hampton Beach
Fogg Corners
Hampton Beach State Park
Seabrook Station
Folly Mill Rd
Walton Rd
Seabrook Beach
Lower Collins St
Main St
South Seabrook
286
Toll Rd
Lafayette Rd
N End Blvd
Forest Rd
0
1 km
0
1 mi


Seabrook-Hampton, 15904
Project Area
Great Boars Head
Eastman Point
The Willows
Hampton Beach
Hampton River
Robbins Point
Seabrook Powerplant
Hunts Island
Halfmile Rock
Knowles Island
Beckmans Island
Upper Gills Rock
Mills Point
Lower Gills Rock
Walton Landing
Boat Ramp
Old Cellar Rock
Outer Sunk Rocks
Inner Sunk Rocks
Gun Rock
Beckmans Point
Round Rock
Thomas Rock
Seabrook Beach
Outer Tappen Rock
Inner Tappen Rock
Round Rock
Dates Island
Riverside
The Sands
Seabrook Sch
Gravel Pit
SEABROOK
Majors Rock
Wrights Island
Trues Island
ROCKINGHAM CO
ESSEX CO
Seabrook Beach
N
0 0.75 Mi
0 4000 Ft
Map provided by MyTopo.com

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 1-miles radius
Description: Seabrook-Hampton 15094

Summary of ACS Estimates	2014 - 2018
Population	2,175
Population Density (per sq. mile)	1,161
People of Color Population	126
% People of Color Population	6%
Households	1,152
Housing Units	2,777
Housing Units Built Before 1950	716
Per Capita Income	46,878
Land Area (sq. miles) (Source: SF1)	1.87
% Land Area	70%
Water Area (sq. miles) (Source: SF1)	0.82
% Water Area	30%

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	2,175	100%	308
Population Reporting One Race	2,159	99%	405
White	2,119	97%	318
Black	6	0%	17
American Indian	6	0%	13
Asian	28	1%	35
Pacific Islander	0	0%	11
Some Other Race	0	0%	11
Population Reporting Two or More Races	16	1%	37
Total Hispanic Population	76	3%	52
Total Non-Hispanic Population	2,100		
White Alone	2,049	94%	318
Black Alone	6	0%	17
American Indian Alone	0	0%	13
Non-Hispanic Asian Alone	28	1%	35
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	11
Two or More Races Alone	16	1%	37
Population by Sex			
Male	1,034	48%	187
Female	1,142	52%	128
Population by Age			
Age 0-4	37	2%	32
Age 0-17	258	12%	110
Age 18+	1,917	88%	182
Age 65+	558	26%	110

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018 .

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 1-miles radius
Description: Seabrook-Hampton 15094

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	1,748	100%	181
Less than 9th Grade	27	2%	37
9th - 12th Grade, No Diploma	46	3%	66
High School Graduate	530	30%	93
Some College, No Degree	483	28%	100
Associate Degree	127	7%	66
Bachelor's Degree or more	661	38%	126
Population Age 5+ Years by Ability to Speak English			
Total	2,139	100%	308
Speak only English	2,016	94%	253
Non-English at Home[1+2+3+4]	122	6%	71
[1]Speak English "very well"	118	6%	71
[2]Speak English "well"	4	0%	37
[3]Speak English "not well"	0	0%	11
[4]Speak English "not at all"	0	0%	11
[3+4]Speak English "less than well"	0	0%	11
[2+3+4]Speak English "less than very well"	4	0%	37
Linguistically Isolated Households*			
Total	0	0%	37
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	35
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	1,152	100%	104
< $15,000	78	7%	42
$15,000 - $25,000	104	9%	49
$25,000 - $50,000	269	23%	62
$50,000 - $75,000	240	21%	68
$75,000 +	461	40%	94
Occupied Housing Units by Tenure			
Total	1,152	100%	104
Owner Occupied	770	67%	92
Renter Occupied	382	33%	69
Employed Population Age 16+ Years			
Total	1,976	100%	207
In Labor Force	1,298	66%	192
Civilian Unemployed in Labor Force	78	4%	37
Not In Labor Force	678	34%	116

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 1-miles radius
Description: Seabrook-Hampton 15094

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,020	100%	197
English	942	92%	184
Spanish	49	5%	73
French	9	1%	16
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	0	0%	11
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	12	1%	16
Chinese	4	0%	11
Japanese	N/A	N/A	N/A
Korean	0	0%	11
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	11
Other Asian	0	0%	11
Tagalog	0	0%	11
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	3	0%	9
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	0	0%	11
Total Non-English	78	8%	270

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018.
*Population by Language Spoken at Home is available at the census tract summary level and up.

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 3-miles radius
Description: Seabrook-Hampton 15094

Summary of ACS Estimates	2014 - 2018
Population	15,195
Population Density (per sq. mile)	944
People of Color Population	667
% People of Color Population	4%
Households	7,116
Housing Units	10,615
Housing Units Built Before 1950	2,136
Per Capita Income	44,659
Land Area (sq. miles) (Source: SF1)	16.09
% Land Area	88%
Water Area (sq. miles) (Source: SF1)	2.23
% Water Area	12%

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	15,195	100%	477
Population Reporting One Race	15,018	99%	832
White	14,701	97%	495
Black	115	1%	109
American Indian	11	0%	50
Asian	158	1%	90
Pacific Islander	0	0%	12
Some Other Race	34	0%	76
Population Reporting Two or More Races	176	1%	125
Total Hispanic Population	185	1%	55
Total Non-Hispanic Population	15,010		
White Alone	14,528	96%	495
Black Alone	115	1%	109
American Indian Alone	4	0%	50
Non-Hispanic Asian Alone	158	1%	90
Pacific Islander Alone	0	0%	12
Other Race Alone	29	0%	76
Two or More Races Alone	176	1%	125
Population by Sex			
Male	7,513	49%	232
Female	7,682	51%	339
Population by Age			
Age 0-4	360	2%	79
Age 0-17	2,410	16%	158
Age 18+	12,784	84%	380
Age 65+	3,404	22%	168

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018 .

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 3-miles radius
Description: Seabrook-Hampton 15094

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	11,895	100%	381
Less than 9th Grade	251	2%	87
9th - 12th Grade, No Diploma	452	4%	111
High School Graduate	3,757	32%	216
Some College, No Degree	3,479	29%	202
Associate Degree	1,261	11%	128
Bachelor's Degree or more	3,956	33%	258
Population Age 5+ Years by Ability to Speak English			
Total	14,835	100%	457
Speak only English	14,292	96%	419
Non-English at Home[1+2+3+4]	543	4%	120
[1]Speak English "very well"	470	3%	92
[2]Speak English "well"	65	0%	44
[3]Speak English "not well"	8	0%	29
[4]Speak English "not at all"	0	0%	12
[3+4]Speak English "less than well"	8	0%	29
[2+3+4]Speak English "less than very well"	73	0%	52
Linguistically Isolated Households*			
Total	26	100%	37
Speak Spanish	2	8%	29
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	24	92%	35
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	7,116	100%	167
< $15,000	393	6%	79
$15,000 - $25,000	627	9%	103
$25,000 - $50,000	1,323	19%	130
$50,000 - $75,000	1,441	20%	121
$75,000 +	3,333	47%	192
Occupied Housing Units by Tenure			
Total	7,116	100%	167
Owner Occupied	5,089	72%	156
Renter Occupied	2,027	28%	123
Employed Population Age 16+ Years			
Total	13,089	100%	391
In Labor Force	8,903	68%	343
Civilian Unemployed in Labor Force	382	3%	77
Not In Labor Force	4,185	32%	198

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 3-miles radius
Description: Seabrook-Hampton 15094

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	14,780	100%	341
English	14,211	96%	346
Spanish	170	1%	73
French	91	1%	50
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	26	0%	110
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	149	1%	85
Chinese	70	0%	90
Japanese	N/A	N/A	N/A
Korean	3	0%	28
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	16
Other Asian	26	0%	35
Tagalog	4	0%	36
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	6	0%	16
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	4	0%	33
Total Non-English	569	4%	482

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018.
*Population by Language Spoken at Home is available at the census tract summary level and up.

This page intentionally left blank

Appendix E: Visual Impact Assessment

This page intentionally left blank

Visual Impact Assessment

Hampton Harbor Bridge Project
Seabrook and Hampton, NH
X-A001(026), 15904
March 2021

U.S. Department of Transportation
Federal Highway Administration

New Hampshire DOT
Department of Transportation

This page intentionally left blank

Table of Contents

1 Introduction 1

2 Visual Environment 2

2.1 Visual Setting 2

2.2 Viewers 2

2.3 AVE and Landscape Units 4

2.3.1 Landscape Units 6

2.3.2 Marsh West of the Bridge 11

3 Alternatives 13

3.1 Replacement with Fixed Bridge (Preferred Alternative) 13

3.2 Replacement with Bascule Bridge 13

4 Visual Effects 15

4.1 Replacement with Fixed Bridge 15

4.1.1 Ashworth Avenue 15

4.1.2 Hampton Beach State Park and State Pier 16

4.1.3 Dunes and Beach 17

4.1.4 Eisenhower Street and NH Route 1A 19

4.1.5 River Street 20

4.2 Replacement with Bascule Bridge 21

4.2.1 Ashworth Avenue 21

4.2.2 Hampton Beach State Park and State Pier 22

4.2.3 Dunes and Beach 23

4.2.4 Eisenhower Street and NH Route 1A 25

4.2.5 River Street 26

4.3 Visual Effects Summary and Mitigation Measures 28

4.3.1 Summary 28

4.3.2 Mitigation 28

Figures

Figure 1: Project Location 3
Figure 2: Area of Visual Effect and Landscape Units 5
Figure 3: Existing view looking south along Ashworth Avenue at Q Street 6
Figure 4: Existing view from Hampton Beach State Park looking southwest 7
Figure 5: Existing view from State Pier looking southeast 7
Figure 6: Existing view looking north from the Hampton-Seabrook Dunes WMA 8
Figure 7: Existing view looking northwest from Sun Valley Beach 9
Figure 8: Existing view on Eisenhower Street looking northwest 10
Figure 9: Existing view from the west end of River Street looking northeast 11
Figure 10: View looking northeast from the Farm Lane boat launch across the marsh 12
Figure 11: View looking southeast from the beach at the south end of Island Path across the harbor 12
Figure 12: Aerial Visualization of Fixed Bridge Alternative 13
Figure 13: Aerial Visualization of Bascule Bridge Alternative 14
Figure 14: Simulation of the Fixed Bridge – south along Ashworth Avenue at Q Street 16
Figure 15: Simulation of the Fixed Bridge Alternative – Hampton Beach State Park looking southwest 17
Figure 16: Simulation of the Fixed Bridge – State Pier looking southeast 17
Figure 17: Simulation of the Fixed Bridge – north from the Hampton-Seabrook Dunes WMA 18
Figure 18: Simulation of the Fixed Bridge – northwest from Sun Valley Beach 19
Figure 19: Simulation of the Fixed Bridge – northwest on Eisenhower Street 20
Figure 20: Simulation of the Fixed Bridge – west end of River Street looking northeast 21
Figure 21: Simulation of the Bascule Bridge – south along Ashworth Avenue at Q Street 22
Figure 22: Simulation of the Bascule Bridge – Hampton Beach State Park looking southwest 23
Figure 23: Simulation of the Bascule Bridge – State Pier looking southeast 23
Figure 24: Simulation of the Bascule Bridge – north from the Hampton-Seabrook Dunes WMA 24
Figure 25: Simulation of the Bascule Bridge – northwest from Sun Valley Beach 25
Figure 26: Simulation of the Bascule Bridge – northwest on Eisenhower Street 26
Figure 27: Simulation of the Bascule Bridge – west end of River Street looking northeast 27

Tables

Table 1: Summary of Impacts within each landscape unit 28

1 Introduction

Located in Hampton, NH, the Neil R. Underwood Memorial Bridge (Neil R. Underwood Bridge) (Bridge No. 235/025) carries NH 1A over the Hampton Harbor Inlet. It is one of two remaining bascule bridges in the State, the other being the New Castle-Rye Bridge that carries NH 1B (Wentworth Road) over Little Harbor (Bridge No. 066/071). The New Hampshire Department of Transportation (NHDOT) determined that the bridge is structurally deficient and functionally obsolete; it is on NHDOT's "Red-List", which identifies bridge structures that are a priority for the state to address. The purpose of the project is to provide a safe, reliable, and structurally sound crossing over the Hampton Harbor Inlet, while also improving mobility for the traveling public. This includes drivers, bicyclists and pedestrians, as well as maritime users.

Between 2018 and 2020, NHDOT and the Federal Highway Administration (FHWA) investigated a range of alternatives to address the deficiencies including Rehabilitation with a Widened Bridge, Replacement with a Bascule Bridge, Replacement with a Fixed Bridge, and a Twin Bridge Alternative consisting of one new bridge alongside the rehabilitated existing bridge. Following the preparation of a Type, Size and Location Study, Replacement with a Fixed Bridge was identified by NHDOT and FHWA as the Preferred Alternative. The Replacement with a Bascule Bridge Alternative is also considered in the Environmental Assessment for the project. Both replacement alternatives are evaluated in this Visual Impact Assessment (VIA).

This VIA was prepared in support of the project's EA and in accordance with FHWA's *Guidelines for the Visual Assessment of Highway Projects* (2015). Information on the visual environment was collected through desktop reviews and site visits conducted between 2018 and 2020. The methodology in FHWA's guidelines was followed to establish the affected environment (or visual resources), the affected population (or viewers) and the intersection between the two (the relationship viewers have with the visual environment). The guidelines call for the evaluation of existing aesthetic resources in the landscape; the identification of the visual features, or resources, of the landscape; the assessment of the character and quality of those resources relative to overall visual character; and the identification of the importance to people, or sensitivity, of views in the landscape.

The VIA seeks to:

- Establish the existing visual environment by defining the Area of Visual Effect (AVE) and associated landscape units;
- Identify the visual character of the AVE and key visual resources;
- Define viewer groups and their sensitivity to their visual environment; and
- Assess the impacts of each of the two alternatives on key viewsheds and viewer groups.

In accordance with FHWA's Guidelines, impacts are characterized as *beneficial, adverse,* or *neutral* to the relationship viewers have with their visual environment.

2 Visual Environment

2.1 Visual Setting

The Neil R. Underwood Bridge carries NH Route 1A (Ocean Boulevard) over the Hampton River at the inlet to Hampton Harbor (Figure 1). The bridge is approximately 1,199-feet long by 33-feet wide (53 feet wide at the barrier gates), and it carries up to 18,000 vehicles per day during summer peak times. New Hampshire Route 1A is a designated State Scenic and Cultural Byway, the New Hampshire Coastal Byway. The Hampton and Blackwater Rivers, as well as Hampton and Seabrook Harbors, lie to the west of the bridge. The Atlantic Ocean lies to the east of the bridge. To the north and south are residential, recreational, and tourism-based development. Hampton Beach State Park is located north of and on the east side of the bridge; the Hampton State Pier is located north and west of the bridge; the Hampton-Seabrook Dunes Wildlife Management Area (Dunes WMA) is located southwest of the bridge; and Sun Valley Beach lies to the southeast of the bridge. Each of these recreational resources affords unobstructed views of the bridge. Several commerical uses are located along NH Route 1A north of the bridge before its intersection with Ashworth Avenue, and south of the bridge, including the Yankee Fisherman's Co-op south of the Dunes WMA. Residential uses lie north of the bridge, immediately north of the State Pier, along Ashworth Avenue, and north of the Hampton Beach State Park. Sun Valley, a solidly residential neighborhood, lies southeast of the bridge, between Eisenhower Street, which is parallel and directly adjacent to NH Route 1A and the Atlantic Ocean. Residential uses also line River Street further south of the bridge.

2.2 Viewers

The VIA considers whose views would be affected within the AVE. Those that would be affected are referred to as viewers and are defined in two groups: neighbors and travelers.

Neighbors include those who are adjacent to the bridge or its approaches and have views of the bridge, as well as those who can see the bridge from their location in the AVE. Within the AVE, this consists of residents and visitors, commercial and recreational boaters, commercial business owners, employees, and patrons in close proximity to the bridge and its approaches. The recreational visitors to Hampton Beach State Park, Sun Valley Beach and the Hampton-Seabrook Dunes WMA would also be defined as neighbors. Residents closest to the bridge would be most sensitive to changes in the viewshed because the duration of their views are continuous. Recreational users would have continuous views only while proximate to the bridge.

Travelers are those who are using the bridge and have views from the bridge. This includes drivers, passengers, pedestrians and bicyclists. Travelers within the AVE include local residents, seasonal visitors and tourists, employees and patrons, and regional commuters. Views experienced by vehicular travelers are of a short duration. These travelers primarily experience the roadway crossing the bridge and views out from the bridge. Bicyclists and pedestrians share similar experiences, but their views are generally of a longer duration.

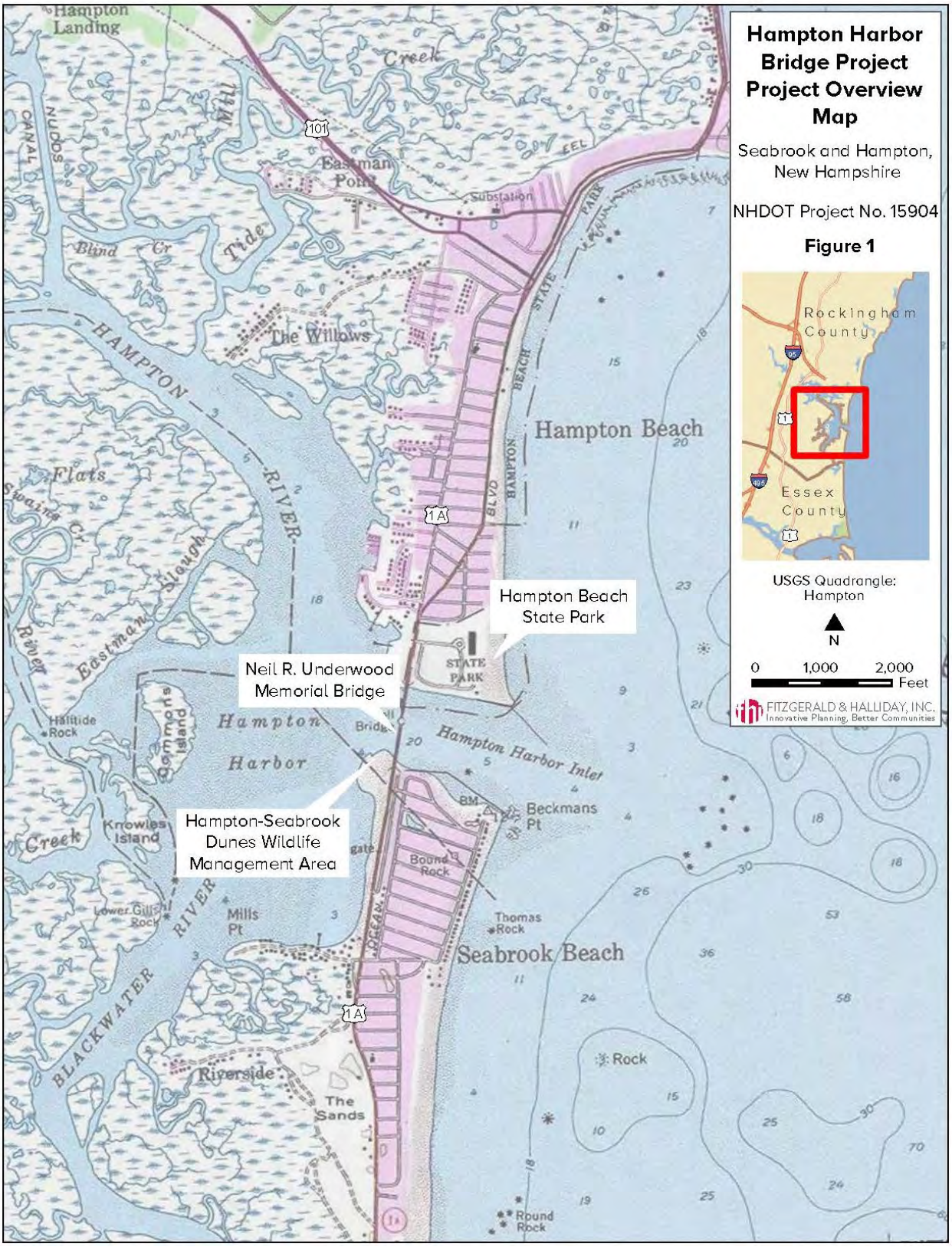


Figure 1: Project Location

2.3 AVE and Landscape Units

The AVE includes properties north of the bridge along Ashworth Avenue; portions of the Hampton Beach State Park and adjacent residential streets; properties adjacent to NH Route 1A south of bridge; properties along River Street; and properties west across Hampton Harbor in both Seabrook and Hampton, NH (see Figure 2). The overall topography of the AVE is characterized by coastal lowlands, tidal pools and salt marshes, which supports the visual quality of the area. The bridge affords travelers expansive views to the east and west across the water. Views to the west include the Hampton and Seabrook Harbors and salt marshes, and to the east, the Atlantic Ocean.

Five landscape units have been defined in the vicinity of the site that afford distinguishable views of the bridge as well as views out from the bridge (see Figure 2). Representative viewpoints within these units were identified based on viewer sensitivity and the likelihood for the view to be altered. While the bridge is visible across the marsh to the west, it is largely indistinguishable within its larger developed context.

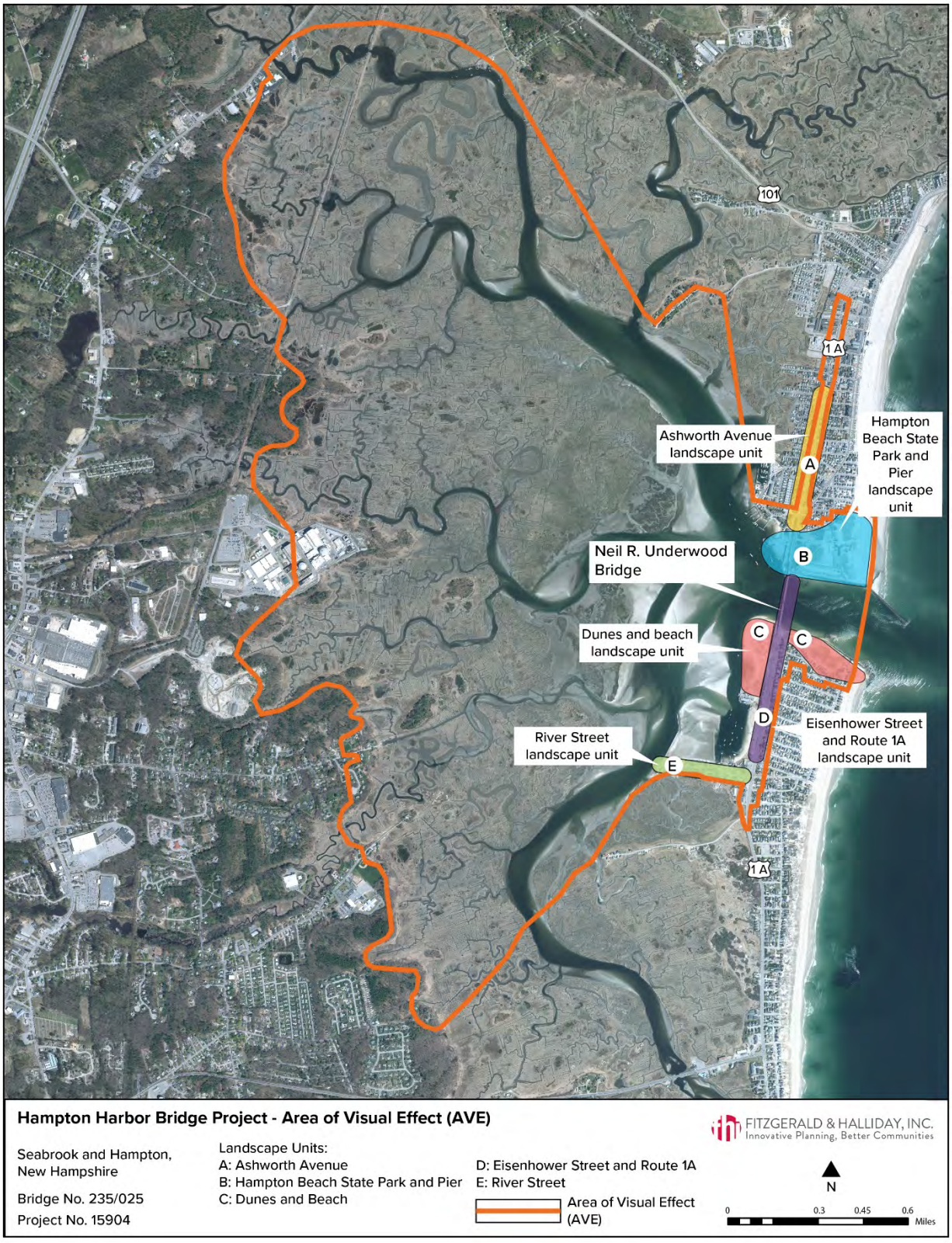


Figure 2: Area of Visual Effect and Landscape Units

2.3.1 Landscape Units

2.3.1.1 Ashworth Avenue

The landscape unit along Ashworth Avenue includes a variety of small commercial structures, motels, condominiums and low-scale single- and multi-family housing (Figure 3; Viewpoint A on the AVE map). Ashworth Avenue itself is a two-lane road with sidewalks on either side. Vehicular traffic is one-way traveling south. Building setbacks along the corridor are generally minimal, with some structures located directly adjacent to the sidewalk. As such, the corridor is dominated by hardscape, with some small planting beds in front of individual buildings. The building lines are broken by occasional open parking lots. Views south on Ashworth are tightly framed by the building lines; the bridge's operator house appears as a vertical element in the distance at the center of the view.

Figure 3: Existing view looking south along Ashworth Avenue at Q Street

2.3.1.2 Hampton Beach State Park and State Pier

The Hampton Beach State Park and State Pier landscape unit is characterized by waterfront recreational and commercial activity. The area is generally flat with low-lying topography. On the west side of the bridge at the State Pier, the area is comprised of small, one-story wood frame commercial structures looking onto NH Route 1A across a surface parking lot. Further to the west, there is a large asphalt parking area that serves the pier on the harbor side of the State Pier property. Hampton Beach State Park is a large, open, and flat expanse of grass and both sandy and paved parking areas. The park facilities include a picnic shelter and gazebo, restroom facilities, picnic benches, and an RV campground at the southern end of the park. Two modern one-story maintenance buildings are located just east of the bridge approach. The open fields northeast of the bridge afford views east towards the oceanfront swimming beach, as well as southwest towards the bridge (Figure 4, Viewpoint B on the AVE map). The park's campground has direct views of the bridge to the southwest as it crosses the harbor inlet. Views from the

State Park towards the bridge include a combination of both natural and man-made elements. The commercial buildings at the State Pier lie adjacent to the northern bridge approach, providing views southeast to the bridge and the Hampton Harbor Inlet Figure 5, Viewpoint C on the AVE map). These views are characterized by both built forms, including the bridge, and natural elements, such as the inlet and harbor.

Figure 4: Existing view from Hampton Beach State Park looking southwest

Figure 5: Existing view from State Pier looking southeast

2.3.1.3 Dunes and Beach

The Dunes and Beach landscape unit is characterized by a system of sand dunes partially covered in established low grasses and a few small shrubs to the west of the bridge and a broad soft sand beach to the east of the bridge, just south of the Hampton Harbor Inlet. These natural areas with recreational functions have direct, open views of Hampton Harbor and the Inlet, the bridge and abutments, and the Hampton Beach development across the water (see Figure 6 and Figure 7; Viewpoints D and E on the AVE map). On the east side of the bridge, the beach is ringed to the south by vacation rentals and low-scale residential homes with views of the Hampton Harbor Inlet to the north and the bridge to the northwest. The bridge appears as a dominant built form in views from the natural shoreline east and west of the bridge.

Figure 6: Existing view looking north from the Hampton-Seabrook Dunes WMA

Figure 7: Existing view looking northwest from Sun Valley Beach

2.3.1.4 Eisenhower Street and NH Route 1A (Ocean Blvd)

The Eisenhower Street and NH Route 1A landscape unit includes single-family, low scale residential units and vacation rentals lining the east side of Eisenhower Street. The west side of Eisenhower Street is open to and runs parallel to NH Route 1A, separated by a planted sand berm. The views from Eisenhower Avenue are open across the vegetated sand berm and NH Route 1A to the harbor to the northwest. At the north end of Eisenhower Avenue, several of the residences are located across from the south approach of the Neil R. Underwood Bridge. The vegetated sand berm between Eisenhower Street and NH Route 1A is higher in this location, filtering the views of the bridge approach and signage from the pedestrian level (see Figure 8; Viewpoint F on the AVE map). The NH Route 1A linear corridor runs between the Hampton-Seabrook Dunes WMA to the west and Eisenhower Street to the east. It has open views to Hampton Harbor to the northwest. The bridge and operator house are most visible near the bridge's approach, with a more limited corridor view that dissipates into the distance as the viewer moves south. As travelers cross the bridge, they experience expansive views of the Atlantic Ocean to the east and the Hampton and Seabrook Harbors and salt marshes to the west.

Figure 8: Existing view on Eisenhower Street looking northwest

2.3.1.5 River Street

The River Street landscape unit is characterized primarily by one- and two-story commercial and residential structures, asphalt driveways, open sand and gravel parking areas. There are several newer three-story structures as well as some examples of small, typical early seasonal cottages. The development lines both sides of this dead-end street. The buildings on the north side of the street look out over the docks and the harbor towards the Neil R. Underwood Bridge, which can be seen in the distance towards the west end of the street, looking back over the Hampton-Seabrook Dunes WMA (Figure 9; Viewpoint G on the AVE map).

Figure 9: Existing view from the west end of River Street looking northeast

2.3.2 Marsh West of the Bridge

To the west of the bridge, the visual character is comprised predominately of salt marshes. The views across these marshes east towards the project area are seen from a distance of at least 1.5 miles. While the Neil R. Underwood Bridge can be seen as a form in the distance, its design and characteristics are difficult to distinguish from the larger built and natural landscape (Figure 10 and Figure 11).

Figure 10: View looking northeast from the Farm Lane boat launch across the marsh

Figure 11: View looking southeast from the beach at the south end of Island Path across the harbor

3 Alternatives

3.1 Replacement with Fixed Bridge (Preferred Alternative)

The Replacement with Fixed Bridge Alternative would construct a new structural steel and concrete bridge approximately 75 feet west of the existing bridge and the existing bridge would then be demolished (see Figure 12). The total length of the bridge would be approximately 1,300 feet and the approaches would be curved slightly to allow the new bridge alignment to tie into NH Route 1A north and south of the bridge. At its peak, the deck of the new fixed bridge would be approximately 30 feet higher than that of the existing bascule bridge.

Figure 12: Aerial Visualization of Fixed Bridge Alternative

The bridge would be comprised of seven spans supported on six piers and two abutments. The increased clearance between the piers would allow for the widening of the navigational opening under the bridge from the current 40 feet to 150 feet. Scenic overlooks are proposed at Piers 2 and 5 on the east and west sides of the bridge to provide a place for pedestrians to enjoy views of Hampton Harbor and the Atlantic Ocean. Retaining walls would be employed on either side of the ROW on the north side to minimize permanent impacts to the Hampton State Pier and Hampton Beach State Park. They would be precast-concrete modular walls with an ashlar formliner on the face to add texture. A new drainage collection and conveyance system would replace the existing scuppers on the bridge to eliminate direct discharge into the harbor inlet. Drainage discharges would be routed through new vegetated treatment swales at the northern and southern approaches before flowing into the harbor inlet.

3.2 Replacement with Bascule Bridge

The Replacement with Bascule Bridge Alternative would construct a new concrete and steel bridge with a movable span over the navigational channel (see Figure 13). The existing bridge would be demolished.

Like the Replacement with Fixed Bridge Alternative, the bridge would be constructed approximately 75 feet west of the existing alignment at the midpoint of the bridge. The total length of the bridge would be 1,300 feet and the approaches would be curved slightly to allow the new bridge alignment to tie into NH Route 1A north and south of the bridge. At its peak, the deck of the new fixed bridge would be approximately 15 feet higher than that of the existing bascule bridge. Similarly, the top of the operator's house would be 11 feet higher than that on the current bridge.

Figure 13: Aerial Visualization of Bascule Bridge Alternative

The proposed span arrangement would maintain the existing navigational channel alignment with a new single-leaf bascule span and multi-girder approach spans. The spacing of the piers six piers would allow for the widening of the navigational opening from 40 to 80 feet. The proposed bascule pier would be located south of the navigational channel, minimizing impacts to the Seabrook and Hampton Channels. The operator's house would be located on the bridge's west side, similar to the existing bridge. Scenic overlooks would be located at Piers 2 and 5 on the east and west sides of the bridge to provide a place for pedestrians to enjoy views of Hampton Harbor and the Atlantic Ocean. Similar to the Fixed Bridge Alternative, retaining walls would be employed on either side of the ROW on the north side to minimize permanent impacts to the Hampton State Pier and Hampton Beach State Park. They would be precast-concrete modular walls with an ashlar formliner on the face to add texture. Drainage discharges would be routed through new vegetated treatment swales at the northern and southern approaches before flowing into the harbor inlet.

4 Visual Effects

4.1 Replacement with Fixed Bridge

Overall, in closer views experienced by neighbors from the properties adjacent to the bridge, the structure would appear bulkier than the existing bridge and at a higher elevation, due to the additional roadway width, massing of the steel superstructure, and raised bridge elevation. The Fixed Bridge Alternative would remove the large bascule pier and would also include longer spans with fewer piers and therefore wider openings, which would create opportunities for additional views under the bridge. This would be a similar change for marine users experiencing the bridge in close proximity from the water. From more distant views, the bridge would have a stronger profile than it currently does, however the overall form and massing would appear similar to the existing bridge. The primary difference would be the absence of the operator's house as a vertical element on the structure. Travelers would generally perceive a similar visual character and quality when approaching and traversing the bridge, as it would continue to appear as a concrete and metal structure, although rising higher in the foreground at the bridge approaches. The expansive views available to travelers to the east and west when traversing the bridge would also continue. As detailed below, the Fixed Bridge Alternative would create minor adverse impacts on visual quality by causing some noticeable changes to the viewshed within the Eisenhower Street and NH Route 1A landscape unit, and the Hampton Beach State Park and State Pier landscape unit. The Fixed Bridge Alternative would not result in adverse impacts to visual quality in the remaining landscape units.

4.1.1 Ashworth Avenue

The higher elevation of the Fixed Bridge Alternative would be visible in the background of the view looking south along Ashworth Avenue. The bridge's visual character would be compatible with the existing visual quality of the environment for both neighbors looking towards the bridge from the Ashworth Avenue landscape unit and travelers approaching it along the roadway. Impacts are anticipated to be neutral.

Figure 14: Simulation of the Fixed Bridge – south along Ashworth Avenue at Q Street

4.1.2 Hampton Beach State Park and State Pier

At the south end of Hampton Beach State Park and State Pier, the new retaining walls along the bridge would be a more dominant feature in views close to the bridge, with their visual presence diminishing as the viewer moves away from the bridge to other portions of the State Park and Pier (Figure 15 and Figure 16). The addition of the retaining wall would add a vertical element into the view that would obscure Hampton Harbor and the ocean for viewers close to the bridge. While the overall character and coherence of the views would be similar to the existing setting, the retaining wall may result in a minor adverse impact. To provide additional visual cohesion, the concrete retaining walls would be faced with ashlar formliners to add texture.

Figure 15: Simulation of the Fixed Bridge Alternative – Hampton Beach State Park looking southwest

Figure 16: Simulation of the Fixed Bridge – State Pier looking southeast

4.1.3 Dunes and Beach

The bridge and its abutments would become a larger visual feature at the northern end of the Hampton-Seabrook Dunes WMA, as the bridge's increased height and massing would be more perceptible at the

close viewing distance at the north end of the dunes (as depicted in Figure 17) due to the shift in the bridge's alignment to the west. The bridge would appear as a continuous horizontal form, lacking an operator's house. The bridge's increased height, removal of the large bascule pier, and longer spans with fewer piers would also create opportunities for views under the bridge of Hampton and Seabrook Harbors to the west and the ocean to the east. As recreational viewers move around the Dunes WMA during their visits, there would be minimal change to the overall visual character, as the Fixed Bridge Alternative would continue to appear as a built structure within a naturally dominated landscape like the existing bridge . On the east side of the bridge at Sun Valley Beach, the bridge would appear slightly taller, but with a similar visual character and quality to the existing view (Figure 18). Overall, visual impacts are anticipated to be neutral.

Figure 17: Simulation of the Fixed Bridge – north from the Hampton-Seabrook Dunes WMA

Figure 18: Simulation of the Fixed Bridge – northwest from Sun Valley Beach

4.1.4 Eisenhower Street and NH Route 1A

Along the Eisenhower Street view corridor, the bridge approach would extend further south on NH Route 1A. The guard rails and arc of the bridge would be visible to residents and visitors over the top of the vegetated sand dune at the northern end of Eisenhower Street. Additional plantings would be incorporated into the treatment swale along the existing dune in a manner similar to the existing natural character of the view (Figure 19). While the change in visual character is minimal, the introduction of new vehicular guard rails and roadway may result in a minor adverse impact due to the duration of the views experienced by the viewers in this location. The views for travelers along NH Route 1A would continue to have a similar visual quality, with clearer views of the bridge and its approaches as the viewer moves to the north. Travelers would generally perceive a similar visual character and quality when approaching and traversing the bridge, with continued open views to the east and west.

Figure 19: Simulation of the Fixed Bridge – northwest on Eisenhower Street

4.1.5 River Street

The visual character and quality of the views from the River Street landscape unit would not be altered with the Fixed Bridge Alternative (Figure 20). Although the new structure would appear as a slightly taller element along the horizon, the view would still be dominated by Hampton Harbor in the foreground, and the bridge would continue to appear as part of a distant built landscape. Visual impacts would be neutral.

Figure 20: Simulation of the Fixed Bridge – west end of River Street looking northeast

4.2 Replacement with Bascule Bridge

Overall, in closer views experienced by neighbors from the properties adjacent to the bridge, the structure would appear bulkier than the existing bridge and at a slightly higher elevation, due to the additional roadway width, massing of the steel superstructure, and raised bridge elevation. The Bascule Bridge Alternative would include longer spans with fewer piers and therefore wider openings, which would create opportunities for additional views under the bridge. This would be a similar change for marine users experiencing the bridge in close proximity from the water. From more distant views, the bridge would have a stronger profile, however the overall form and massing would appear similar to the existing bridge, including the blocky vertical form of the operator's house and the massing of the bascule pier. Travelers would generally perceive a similar visual character and quality when approaching and traversing the bridge, as it would continue to appear as a concrete and metal structure, although rising slightly higher in the foreground at the bridge approaches. The expansive views available to travelers to the east and west when traversing the bridge would also continue. As detailed below, the Bascule Bridge Alternative would create minor adverse impacts on visual quality by causing some noticeable changes to the viewshed within the Eisenhower Street and NH Route 1A landscape unit, and the Hampton Beach State Park and State Pier landscape unit. The Bascule Bridge Alternative would not result in adverse impacts to visual quality in the remaining landscape units.

4.2.1 Ashworth Avenue

The higher elevation of the Bascule Bridge Alternative would be visible in the background of the view looking south along Ashworth Avenue. The bridge's visual character would be compatible with the existing visual quality of the environment for both neighbors looking towards the bridge from the

Ashworth Avenue landscape unit and travelers approaching it along the roadway. Impacts are anticipated to be neutral.

Figure 21: Simulation of the Bascule Bridge – south along Ashworth Avenue at Q Street

4.2.2 Hampton Beach State Park and State Pier

At south end of Hampton Beach State Park and State Pier, the new retaining walls along the bridge would become a more dominant feature in views close to the bridge, with their visual presence diminishing as the viewer moves away from the bridge to other portions of the State Park and Pier (Figure 22 and Figure 23). The addition of the retaining walls would add a vertical element into the view that would obscure Hampton Harbor and the ocean for viewers close to the bridge. While the overall character and coherence of the views would be similar to the existing setting, the retaining wall may result in a minor adverse impact. To provide additional visual cohesion, the concrete retaining walls would be faced with ashlar formliners to add texture.

Figure 22: Simulation of the Bascule Bridge – Hampton Beach State Park looking southwest

Figure 23: Simulation of the Bascule Bridge – State Pier looking southeast

4.2.3 Dunes and Beach

The bridge and its abutments would become a larger visual feature at the northern end of the Hampton-Seabrook Dunes WMA as the bridge's increased height and massing would be more perceptible at such

the close viewing distance at the north end of the dunes (as depicted in Figure 24) due to the shift in the bridge's alignment to the west. The bridge would appear as a horizontal form with a vertical element from the operator's house and the massing of the bascule pier. The bridge's increased height and longer spans with fewer piers would also create opportunities for views under the bridge of Hampton Harbor to the west and the ocean to the east. As recreational viewers move around the Dunes WMA during their visits, there would be minimal change to the overall visual character, as the Bascule Bridge Alternative would continue to appear as a built structure crossing the harbor inlet within a naturally dominated landscape like the existing bridge. On the east side of the bridge at Sun Valley Beach, the bridge would be moved slightly west, but would continue to have a similar visual character and quality to the existing view (Figure 25). Overall, visual impacts are anticipated to be neutral.

Figure 24: Simulation of the Bascule Bridge – north from the Hampton-Seabrook Dunes WMA

Figure 25: Simulation of the Bascule Bridge – northwest from Sun Valley Beach

4.2.4 Eisenhower Street and NH Route 1A

Along the Eisenhower Street view corridor, the bridge approach would extend further south on NH Route 1A. The guard rails and bridge operator house would be visible to residents and visitors over the top of the vegetated sand dune at the northern end of Eisenhower Street under the Bascule Bridge Alternative. Additional plantings would be incorporated into the treatment swale along the existing dune in a manner similar to the existing natural character of the view (Figure 26). While the change in visual character is minimal, the introduction of new vehicular guard rails and the operator house may result in a minor adverse impact due to the duration of the views experienced by the viewers in this location. The views for travelers along NH Route 1A would continue to have a similar visual quality, with clearer views of the bridge, its approaches, and the operator house as the viewer moves to the north. Travelers would generally perceive a similar visual character and quality when approaching and traversing the bridge, with continued open views to the east and west.

Figure 26: Simulation of the Bascule Bridge – northwest on Eisenhower Street

4.2.5 River Street

The visual character and quality of the views from the River Street landscape unit would not be altered with the Bascule Bridge Alternative (Figure 27). Although the new structure would appear as a slightly more visible element along the horizon, the view would still be dominated by Hampton Harbor in the foreground, and the bridge would continue to appear as part of a distant built landscape. Visual impacts would be neutral.

Figure 27: Simulation of the Bascule Bridge – west end of River Street looking northeast

4.3 Visual Effects Summary and Mitigation Measures

4.3.1 Summary

Both alternatives would result in similar impacts to the visual character and existing environment within each landscape unit. The structure of both alternatives would appear bulkier than the existing bridge and have a stronger profile than it currently does, however the overall form and massing would appear similar to the existing bridge. Travelers would generally perceive a similar visual character and quality when approaching and traversing the bridge in both alternatives. Each alternative would result in minor adverse impacts to visual quality by causing some noticeable changes to the viewshed within the Eisenhower Street and NH Route 1A landscape unit, and the Hampton Beach State Park and State Pier landscape unit. Table 1 provides a summary for each landscape unit.

Table 1: Summary of Impacts within each landscape unit

Landscape Unit	Fixed Bridge Alternative	Bascule Bridge Alternative
Ashworth Avenue	Visual impacts are anticipated to be neutral.	
Hampton Beach State Park and State Pier	New retaining walls along the bridge would be a more dominant feature in views close to the bridge and may result in a minor adverse impact	
Dunes and Beach	The bridge would appear as a continuous horizontal form, lacking an operator's house. Overall, visual impacts are anticipated to be neutral.	The bridge would appear as a horizontal form with the operator's house appearing as a vertical element and the massing of the bascule pier. Overall, visual impacts are anticipated to be neutral.
Eisenhower Street and NH Route 1A	The guard rails and arc of the bridge would be visible to residents and visitors over the top of the vegetated sand dune. The introduction of these new elements may result in a minor adverse impact due to the duration of the views experienced by the viewers in this location.	The guard rails and bridge operator house would be visible to residents and visitors over the top of the vegetated sand dune. The introduction of these new elements may result in a minor adverse impact due to the duration of the views experienced by the viewers in this location.
River Street	Visual impacts would be neutral.	

4.3.2 Mitigation

The concrete retaining walls on the north side of the bridge would be faced with ashlar formliners to add a stone masonry texture, create visual interest, and integrate the retaining walls into the State Pier and Hampton Beach State Park landscape unit. Landscape plantings that could serve as visual screening elements for the retaining walls on the north side of the bridge are not proposed but would be considered for incorporation during the final design if found to be appropriate or requested.

Appendix F: Section 6(f) Coordination

This page intentionally left blank

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

Victoria F. Sheehan
Commissioner

William Cass, P.E.
Assistant Commissioner

March 8, 2021

Eric Feldbaum
Community Recreation Specialist/CPRP
Division of Parks and Recreation
NH Department of Natural and Cultural Resources
172 Pembroke Road
Concord, NH 03301

RE: Seabrook-Hampton, 15904 – Section 6(f) LWCF Impacts

Dear Mr. Feldbaum:

Attached please find a memo detailing the Section 6(f) Resource Impacts on the State of NH Hampton State Pier property anticipated to occur due to the construction of the new bridge spanning the Hampton Harbor Inlet. During construction of the new bridge, access to a trestle, to construct the new bridge, would be provided through the parking lot at the southeast end of the property, eliminating 18 parking spaces for up to two years. These parking spaces would be returned to service once construction is complete.

The area of temporary impact would be approximately 13,161 square feet (sf). Approximately 2,973 sf of the Hampton State Pier property would be converted to a transportation use. In order to mitigate the construction-period and permanent conversion impacts, NHDOT is proposing the establishment of a pedestrian walkway under the bridge's north side which would serve to connect these two Section 6(f) recreational resources, the Hampton State Pier and Hampton Beach State Park.

This memo is provided to assist you in your coordination with the National Park Service on the proposed Section 6(f) impacts to this property. Please contact me or Jennifer Reczek (jennifer.e.rezcek@dot.nh.gov), the Project Manager, if you require further information.

Sincerely,

Marc G. Laurin
Senior Environmental Manager
Bureau of Environment
(603) 271-4044
marc.g.laurin@dot.nh.gov

MGL:mgl
Encl.
cc. Tracey Boisvert, Johanna Lyons, Meredith Collins, Bill Gegas, Geno Marconi, Stephanie Dyer-Carrol, Jennifer Reczek, Bob Juliano, John Stockton, Jamie Sikora, Roch Larochelle

FITZGERALD & HALLIDAY, INC.
Innovative Planning, Better Communities

416 Asylum Street
Hartford, CT 06103
t (860) 247-7200
www.fhiplan.com

MEMORANDUM

To:	Jennifer Reczek, NHDOT	Project:	Hampton Harbor Bridge Project (Seabrook-Hampton 15904)
From:	Stephanie Dyer-Carroll, FHI	Date:	3/4/21
Subject:	Section 6(f) Resource Impacts		

Project Background

The New Hampshire Department of Transportation (NHDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the Neil R. Underwood Bridge (NHDOT Bridge No. 235/025), in Hampton, NH (see Figure 1). The Neil R. Underwood Bridge carries NH Route 1A over the Hampton River at the inlet to Hampton Harbor and is a vital transportation link between Hampton Beach in the north and Seabrook in the south. The Neil R. Underwood Bridge has been on NHDOT's Red List of deficient bridges since 1999 due to the poor condition of the superstructure and is considered New Hampshire's No. 1 priority Red-Listed bridge. NHDOT is preparing an Environmental Assessment for the project and Replacement with a Fixed Bridge has been identified as the Preferred Alternative.

The Replacement with Fixed Bridge Alternative would construct a new structural steel fixed bridge approximately 75 feet west of the existing bascule bridge, allowing for continued use of the existing bridge while the new bridge is being constructed. The existing bridge would then be demolished. The total length of the new bridge would be approximately 1,300 feet and the approaches would be curved slightly to allow the new bridge alignment to tie into NH Route 1A north and south of the bridge. The duration of construction would be approximately 36 months.

Hampton Beach State Park/Hampton State Pier

Hampton Beach State Park and the Hampton State Pier are located north of the bridge, on either side of NH Route 1A. Comprising approximately 50 acres along the Atlantic Oceanfront, Hampton Beach State Park is owned and managed by the NH Department of Natural and Cultural Resources (DNCR), Division of Parks and Recreation (DPR). The park is a recreational destination with over a mile of oceanfront beaches, swimming, fishing, picnicking, and RV camping. The park is open year-round, with a full staff and facilities as well as RV campground reservations available during the summer season.

The approximately 4.5-acre Hampton State Pier facility is owned by the Pease Development Authority, Division of Ports and Harbors. The pier includes a fuel dock, a State boat launch ramp, and commercial and recreational moorings. There is also a large parking area for the facilities, a bait and tackle shop, and several commercial businesses along its eastern edge. The Hampton State Pier provides access to water-based recreational activities including recreational boating, fishing,

and charter services such as deep-sea fishing, whale watching, and day or evening cruises. Although the Hampton State Pier and Hampton Beach State Park are distinct parcels divided by NH Route 1A, they are considered a single Section 6(f) resource due to the use of Land and Water Conservation Fund monies in 1974 for the construction of a boat launch, 35 additional parking spaces, improvements and additions to a gangway and dock (referred to as a stage in the application).

Potential Impacts

The proposed alignment of the new bridge would encroach upon the Hampton State Pier property, having both temporary and permanent impacts. During construction of the new bridge, access to a trestle, to construct the new bridge, would be provided through the parking lot at the southeast end of the property, eliminating 18 parking spaces for up to two years. These parking spaces would be returned to service once construction is complete. The area of temporary impact would be approximately 13,161 square feet (sf). A retaining wall would be installed along the side of the NH Route 1A approach, thereby minimizing permanent impacts to the Hampton State Pier property. Nevertheless, approximately 2,973 sf of the Hampton State Pier property would be converted to a transportation use. Figure 2 shows the areas of temporary and permanent impact.

In order to mitigate the construction-period and permanent conversion impacts, NHDOT is proposing the establishment of a pedestrian walkway under the bridge's north side which would serve to connect these two recreational resources, the Hampton State Pier and Hampton Beach State Park (see Figure 3). The walkway would extend north along the sides of the proposed retaining walls on the east and west sides of the north approach in order to provide connections to the NH Route 1A sidewalks and the existing pedestrian infrastructure within the State Park and State Pier. Under current conditions, there is no designed pedestrian crossing. However, pedestrians do cross NH Route 1A at this location in an undefined and uncontrolled manner creating a safety hazard. Where the new path emerges from under the bridge, the State Pier land would be graded creating a new slope that supports/protects the abutment and walkway, and a new level area that could be used for viewing the Hampton Harbor Inlet to the south.

Figure 1: Project Site

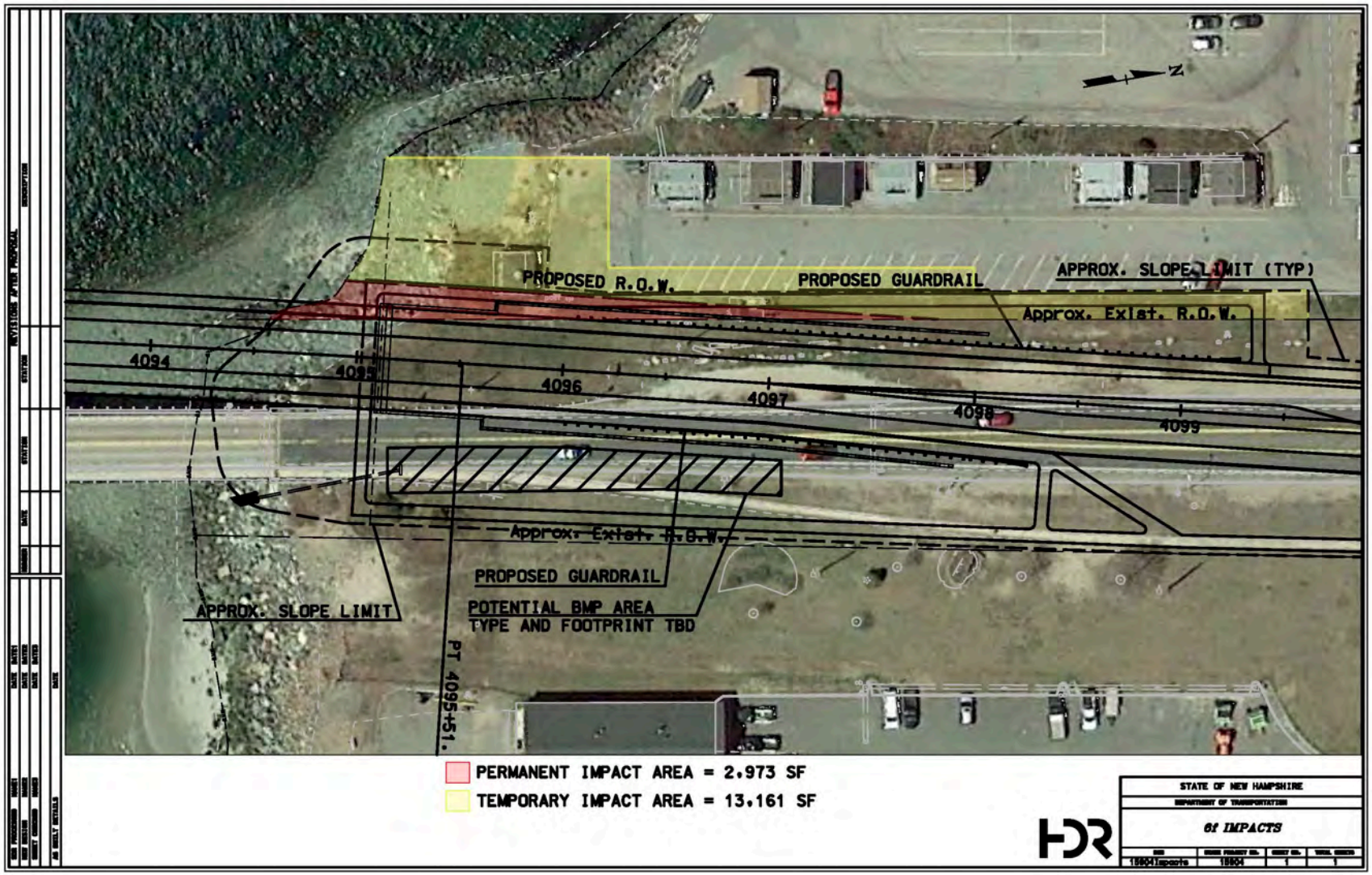


Figure 2: Temporary and Permanent Impacts to Hampton State Pier property

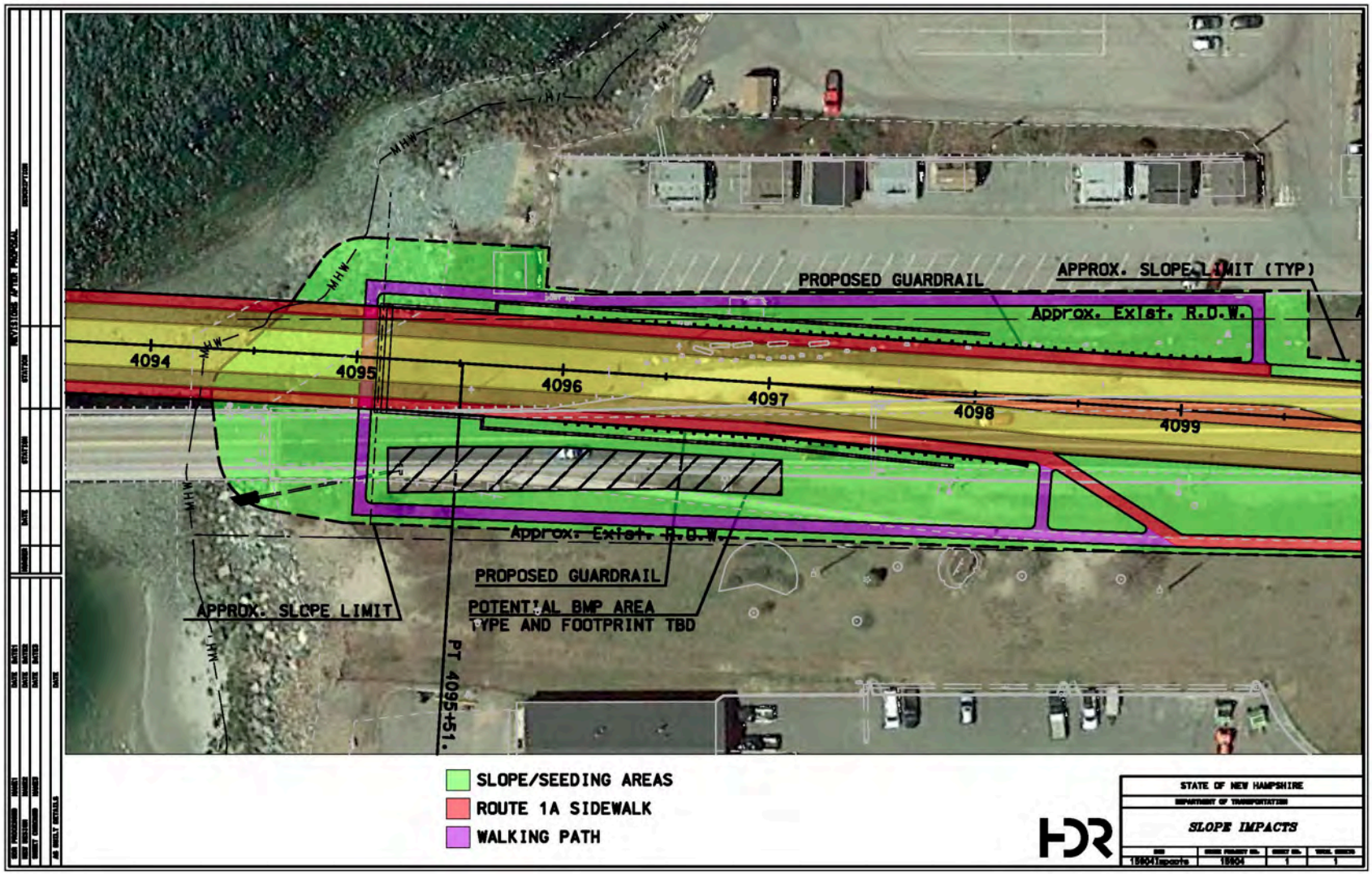


Figure 3: Proposed Pedestrian Walkway

Appendix G: Section 4(f) De Minimis Concurrence

This page intentionally left blank

PEASE
INTERNATIONAL
PORTS AND HARBORS

555 Market Street, Suite 1 Portsmouth, NH 03801

March 22, 2021

Jennifer E. Reczek, P.E.
NH DOT
7 Hazen Dr.
Concord, NH 03301

Dear Ms. Reczek,

The Pease Development Authority Division of Ports and Harbors (the "Division"), in accordance with RSA 12-G:42, IX, shall have the responsibility for and jurisdiction over state-owned commercial piers and associated facilities, including the Hampton Harbor Marine Facility.

The Division is aware that the Federal Highway Administration (FHWA) and New Hampshire Department of Transportation, (NHDOT) are preparing to release the Environmental Assessment and 4(f) Evaluation for the Hampton Harbor Bridge Project (Seabrook-Hampton, 15904). Due to the fact that the project would only require the permanent acquisition of approximately 2,973 square feet of the Hampton Harbor Marine Facility property, and that the project would not adversely affect the activities, features, and attributes that qualify the State Pier for protection under Section 4(f) of the US Department of Transportation Act, FHWA has made a *de minimis* finding.

As the Agency with Jurisdiction over the Hampton Harbor Marine Facility property, the Pease Development Authority Division of Ports and Harbors concurs with this finding.

Sincerely,

Geno J. Marconi
Division Director

This page intentionally left blank

Appendix H: Agency and Public Comments

This page intentionally left blank

From: Stephanie Dyer-Carroll
To: Stephanie Dyer-Carroll
Subject: FW: Fixed Bridge - Hampton River
Date: Wednesday, December 1, 2021 6:23:20 PM

-----Original Message-----
From: Scott Duhamel <sduhamel@comcast.net>
Sent: Monday, April 05, 2021 11:51 AM
To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
Subject: Re: Fixed Bridge - Hampton River

EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.

Thank you...

Sent from my iPhone

> On Apr 5, 2021, at 9:54 AM, Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov> wrote:
>
> Right now it's looking like the end of 2026 for the new bridge to be constructed and the old one removed.
>
> Jennifer E. Reczek, P.E.
> NHDOT Project Manager
> 603-271-3401
> Jennifer.Reczek@dot.nh.gov
>
>
> -----Original Message-----
> From: Scott Duhamel <sduhamel@comcast.net>
> Sent: Monday, April 05, 2021 8:32 AM
> To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
> Subject: Re: Fixed Bridge - Hampton River
>
> EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.
>
> Great news —-
>
> When can we expect completion
>
> Sent from my iPhone
>
>> On Apr 5, 2021, at 8:04 AM, Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov> wrote:
>>
>> Good morning Captain,
>>
>> The new bridge will have 7-spans vs. 13 in the existing bridge. The Federal navigation channel will be widened from 40-ft to 150-ft in width through the bridge, with 48' of vertical clearance at MHW. The other spans will have a similar horizontal clearance of 150+ feet, but lower vertical clearance.
>>
>> Best Regards,
>>
>> Jennifer E. Reczek, P.E.
>> NHDOT Project Manager
>> 603-271-3401
>> Jennifer.Reczek@dot.nh.gov

>>
>> -----Original Message-----
>> From: Scott Duhamel <sduhamel@comcast.net>
>> Sent: Sunday, April 04, 2021 2:21 PM
>> To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
>> Subject: Fixed Bridge - Hampton River
>>
>> EXTERNAL: Do not open attachments or click on links unless you recognize and trust the sender.
>>
>> Hi Jenifer,
>>
>> I saw some information regarding the Hampton Bridge. The nex fixed bridge would be wider and about 100 longer than the current bridge.
>>
>> My question is the following and related to the numerous boat accidents there...
>>
>> Q1. Will the span of the support columns be wider to better facilitate boat traffic too?
>>
>> Regards,
>> Captain Scott
>>
>> Sent from my iPhone
>

CHRISTOPHER T. SUNUNU
GOVERNOR

STATE OF NEW HAMPSHIRE
OFFICE OF STRATEGIC INITIATIVES
107 Pleasant Street, Johnson Hall
Concord, NH 03301-3834
Telephone: (603) 271-2155
Fax: (603) 271-2615

DIVISION OF PLANNING
DIVISION OF ENERGY
www.nh.gov/osi

MEMORANDUM

TO: Jennifer E. Reczek, P.E., Project Manager, NH DOT

FROM: Samara Ebinger, Principal Planner
State National Flood Insurance Program, Assistant Coordinator

DATE: April 22, 2021

SUBJECT: NHDOT Bridge Project - Seabrook-Hampton 15904

I am writing in reference to your March 24, 2021, email regarding the above-referenced project and the availability of the environmental assessment prepared for the project. I have reviewed the information provided, including the Environmental Assessment Report and the FEMA Flood Insurance Rate Map (FIRM) for the area and am providing comments regarding applicable National Flood Insurance Program (NFIP) requirements.

As indicated in Section 4.2 of the March 2021 Environmental Assessment Report for the project, it appears that a portion of the project area is located within Special Flood Hazard Areas (SFHAs) designated as Zone AE, AO, and VE on the FIRM. There are no areas nearby within a regulatory floodway.

Since the Towns of Hampton and Seabrook and the Seabrook Beach Village District are participating communities of the NFIP, any development occurring in an SFHA in the community should meet the NFIP requirements contained in the community's floodplain management ordinance. Development is defined under the NFIP as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials."

For areas located in the SFHA, the applicable requirements that would apply in the communities' floodplain management ordinances for the type of development proposed would be the requirement for a local permit and assurance that all other applicable Federal and State permits have been obtained. Additionally, if applicable, in VE zones man-made alterations of sand dunes that would increase potential flood damage are prohibited.

If you have questions, please feel free to contact me at 603-271-1755 or samara.m.ebinger@osi.nh.gov.

HAMPTON BEACH AREA COMMISSION

100 WINNACUNNET ROAD, HAMPTON, NH 03842

April 19, 2021

Jennifer E. Reczek, PE
NH Department of Transportation
7 Hazen Drive, P.O. Bo 483
Concord, NH 03301-0483
Jennifer.Reczek@dot.nh.gov<mailto: jreczek@dot.state.nh.us

Dear Jennifer,

On behalf of the Hampton Beach Area Commission I am responding to the open comment period for DOT project 15904 Seabrook-Hampton.

Thank you for the presentation given in the public hearing on April 8, 2021. It was very clear about the work that has been done to not only consider the travelling public; vehicle, marine, emergency vehicles, bicycling, walking but including an area for lookout and individual fishing. Care has also been given to the sensitivity of the area and in support of the economies and increased tourism during relatively few but very important months.

We are excited with the proposal and the vision for Hampton maintaining its vibrant hospitality service and convenience for the travelling public.

If I can answer any questions please don't hesitate to reach out to me, HBACChair@comcast.net .

Thank you,
Nancy Stiles
Nancy Stiles, Chair HBAC

New Hampshire Natural Heritage Bureau

Division of Forests & Lands - DNCR
172 Pembroke Road, Concord, NH 03301
(603) 271-2214 https://www.nh.gov/nhdfl/

April 22, 2021

Ms. Jennifer Reczek, Project Manager
NH Department of Transportation
PO Box 483
Concord, NH 03302-0483
Jennifer.E.Reczek@dot.nh.gov

RE: NHDOT Replacement of Neil R. Underwood Bridge Seabrook Hampton 15904 Environmental Assessment

Dear Jennifer Reczek:

Thank you for the opportunity to comment on the Environmental Assessment (EA) of the Seabrook Hampton bridge replacement 15904. The NH Natural Heritage Bureau (NHB), under the authority of the Rare Plant Protection Act of 1987 (RSA 217-A), works to study, protect, and provide information on native plant species and natural communities in New Hampshire. NHB publishes the list of State Threatened and Endangered plants (Ncr 312) in New Hampshire, and maintains a comprehensive statewide database of these species, as well as exemplary natural communities and natural community systems. In cooperation with the NH Fish & Game Department's Nongame and Endangered Wildlife Program (Nongame Program), NHB also maintains the statewide database of threatened, endangered and special concern wildlife species.

Section 4.10.4 Impacts of the Fixed Bridge Alternative

There are many sections of the EA that how reliant plant and animal species are on dune habitat. Dune habitat is critically important and NHB recommends compensatory mitigation through ARM Fund In-Lieu fee program.

Section 4.11.6 Mitigation [for Threatened and Endangered Species]

The following listed plant species (some are ruderal) were found on site:
- Seaside threeawn (*Aristida tuberculosa*) (NH endangered)
- Hairy hudsonia (*Hudsonia tomentosa*) (NH threatened)
- Gray's umbrella sedge (*Cyperus grayi*) (NH endangered)
- Sand dropseed (*Sporobolus cryptandrus*) (NH endangered)
- Seaside sandmat (*Euphorbia polygonifolia*) (NH endangered)
- Field wormwood (*Artemisia campestris* ssp. *caudata*) (NH endangered)

What is the survival of the rare plants that the UNH Coastal Habitat Restoration Team, community volunteers and the NH Sea Grant Extension's Coastal Research Volunteer program relocated in 2019 from the alignment of a proposed construction access drive west of the south abutment and transplanted to an area further south within the Dunes WMA?

The EA identifies additional impacts to the Dunes WMA, will the impacts occur in any areas were the plants were relocated in 2019? Also, NHB requests coordination with NH DOT and contractors when finalizing the impacted areas to the Dunes WMA (e.g. shapefile) to assist in planning the rare plant Mitigation plan (e.g., where the plants are currently located, where they can or cannot be relocated).

New Hampshire Natural Heritage Bureau
Division of Forests & Lands - DNCR
172 Pembroke Road, Concord, NH 03301
(603) 271-2214 https://www.nh.gov/nhdfl/

NHB requests to coordinate with NHDOT and partners (e.g. the UNH Coastal Habitat Restoration Team, community volunteers and the NH Sea Grant Extension's Coastal Research Volunteer program) to assist in developing a rare plant mitigation plan, with specifics about planning the relocation of rare plant species.

Thank you for referencing the Coastal Risks and Hazards Committee's 2016 report titled "*Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation: Final Report and Recommendations.*" That report states on pg. 32 that a "loss of biodiversity has a cascading effect on the natural system's ability to recover from disruption and maintain the functions (flood attenuation, recreational benefits, fisheries habitat, etc.) that people value." The more biodiverse the state of New Hampshire is, the more resilient it is to threats like climate change (shifting climate), storm surge, sea level rise, and extreme precipitation. We appreciate NHDOT's commitment to protecting NH's biodiversity.

Thank you for coordinating with NHB please contact us if you have any questions.

Sincerely,

Sabrina Stanwood

Sabrina Stanwood, Bureau Administrator

cc:
Amy Lamb, NHB Data manager
Jessica Bouchard, Environmental reviewer (in training), NHB

From:	James Metcalf
To:	Reczek, Jennifer
Cc:	Sikora, Jamie (FHWA); Carnaby Ann; Bushway Chris; Deborah Wrobel; Regina Barnes; Stephanie Dyer-Carroll; Juliano, Robert; Edelmann, Jillian; Larochelle, Roch; Betty Moore
Subject:	RE: Hampton Projects 15904 and 40797
Date:	Tuesday, April 20, 2021 10:16:14 AM
Attachments:	8E942F8A99344567B10602E8F13A0BF5.png 1076995E251C492DABDC13853F335933.png

Dear Ms. Reczek:
Thanks for your prompt reply. I recognize we're late in the process. The Hampton Heritage Commission was reconstituted by vote of the Town in March 2019 with our first meeting that August. Therefore (referring to the Adverse Effect Memo included in Appendix C of the current Project 15904 EA), we were in no position to participate in the public meetings of September 2018 or January 2019 or to join the PAC formed in July 2018.
Until recently I (for one) was under the misapprehension that the Seabrook-Hampton bridge project was completely coupled to the Ocean Boulevard project. A public meeting I attended early in the Ocean Boulevard planning (when, as I recall, the scope was limited to just the section south of Great Boar's Head and Ashworth Avenue) also included discussion of the potential length and alignment of the bridge improvement. In any case, I was unaware that the bridge project had progressed as far as it had (being aware only of the status of the Ocean Boulevard effort); and I was entirely unaware of its coupling to the Rye-New Castle bridge project (which, apparently, is also well underway).
In any case, the Commission appreciates the Consulting status we've now been given. Thank you.
James Metcalf
Hampton Heritage Commission Chair

Sent from Mail for Windows 10

From: Reczek, Jennifer
Sent: Monday, April 19, 2021 9:33 AM
To: 'James Metcalf'
Cc: Sikora, Jamie (FHWA); Carnaby Ann; Bushway Chris; Deborah Wrobel; Regina Barnes; 'Stephanie Dyer-Carroll'; Juliano, Robert; Edelmann, Jillian; Larochelle, Roch
Subject: RE: Hampton Projects 15904 and 40797

Hi Mr. Metcalf,

Thank you for your email. We're pleased to have the Hampton Heritage Commission participate as a Consulting Party in the Section 106 consultation for the Hampton Harbor Bridge Project.

Since you are coming in at the end of the process, we want to provide you with some information to bring you up to speed and to help you understand our progress and decisions to date. These items include:

- The Rehabilitation Study Report which assessed two different options for rehabilitating the bridge (available at the project website at https://www.nh.gov/dot/projects/seabrookhampton15904/index.htm);

- The Type, Size and Location Study which evaluated four potential alternatives, and resulted in the identification of the Replacement with Fixed Bridge as the Preferred Alternative (available at the project website);
- Minutes and PowerPoint presentations from PAC and Public Meetings held to date (available at the project website);

- Minutes from the Cultural Resources Coordination Meetings held in July 2018 and February 2019 (available at https://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/crmeetings.htm#ByDate);

- Effects Tables for the Neil R. Underwood Bridge; the Hampton Beach Cottages Historic District; Madaline Cottage (197 Ashworth Avenue); the Eastern Railroad Historic District; 266 Portsmouth Avenue; and 54 River Street;

- The Determination of Effect signed by the NH Division of Historical Resources (NHDHR), the Federal Highway Administration and NHDOT (attached); and

- Draft Mitigation Measures developed with NHDHR and Consulting Parties for both the Hampton Harbor Bridge Project and the New Castle-Rye Bridge Project (attached).

The Draft Mitigation Measures were discussed at the April and October 2020 Cultural Resources Coordination Meetings, and distributed to NHDHR and Consulting Parties for their review and comment in January 2021. As a new Consulting Party, we welcome your input on these measures. The minutes of these two meetings are in the process of being posted.

In response to your questions below, in 2014 NHDHR, FHWA, and NHDOT consulted with the Advisory Council on Historic Preservation (ACHP) regarding the Scammell MOA and its commitments as they relate to the New Castle-Rye Bridge project. The ACHP advised that FHWA could elect to proceed with a new consultation for the New Castle-Rye Bridge Project given the passage of time and an updated purpose and need statement. ACHP further advised that if FHWA decided to proceed with a new MOA, it should clarify the connection between the Scammell MOA and the new agreement document. In accordance with the guidance provided on the New Castle-Rye Bridge Project, FHWA and NHDOT are currently preparing a Draft MOA for the Hampton Harbor Bridge Project. A separate MOA will be prepared for the New Castle-Rye Bridge Project. The release date of the New Castle-Rye Bridge Environmental Assessment is not known at this time.

Please don't hesitate to contact me with any questions about the above materials or the project. We look forward to receiving your input on the Draft Mitigation Measures.

Sincerely,
Jennifer

Jennifer E. Reczek, P.E.
NHDOT Project Manager
603-271-3401
Jennifer.Reczek@dot.nh.gov

From: James Metcalf <n-gin-ear@comcast.net>
Sent: Thursday, April 15, 2021 3:30 PM
To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
Cc: Sikora, Jamie (FHWA) <Jamie.Sikora@dot.gov>; Carnaby Ann <annthehatter@gmail.com>; Bushway Chris <christinemb21@yahoo.com>; Deborah Wrobel <dwrobel1992@gmail.com>; Regina Barnes <reginamary511@gmail.com>
Subject: RE: Hampton Projects 15904 and 40797

Dear Ms. Reczek:
Thank you for passing our request for Consulting Party status on to Mr. Sikora. By communication from Mr. Sikora, I understand our Consulting Party status has been confirmed.
I've received correspondence from you office regarding the two Hampton-related projects 40897 and 15904, but I understand there is also the Rye-New Castle Project 16127 which is related to Project 15904 by the Scammell Bridge Memorandum of Agreement. This agreement "stated that both New Castle-Rye and Seabrook-Hampton bridges would be preserved unless under extraordinary circumstances such as natural disaster, prohibitive cost for their rehabilitation, or severe environmental impacts caused by alternative route consideration" (Project 16127 presentation, Public Advisory Committee Meeting, August 27, 2020). There was also "concern for loss of bascule bridge type voiced by NHDHR and Consulting Parties during New Castle-Rye consultation process" (ibid). Since we are still in a position to comment on the EA for Project 15904 and since the NHDHR apparently raised concerns with respect to Project 16127, can you provide a reference for the disposition of the Scammell Bridge Memorandum of Agreement? Moreover, Section 4.20.2 of the Project 15904 EA states "The NH 1B [Rye-New Castle] Bridge Replacement is currently in the planning stages and an EA is being prepared that identifies the replacement of the NH 1B Bridge with a fixed bridge as the Preferred Alternative." When will the Project 16127 EA be available for public comment?
Our next Heritage Commission meeting is on April 20th and all comments on the Project 15904 EA are due to your office by April 23rd. Your answers to the two questions above would be most helpful in our evaluating the Project 15904 EA more knowledgeably.
Thank you,
James Metcalf
Hampton Heritage Commission Chair

Sent from Mail for Windows 10

From: Reczek, Jennifer
Sent: Thursday, April 8, 2021 10:25 AM
To: 'n-gin-ear@comcast.net'
Cc: Edelmann, Jillian; Laurin, Marc; 'Stephanie Dyer-Carroll'; Sikora, Jamie (FHWA)
Subject: FW: Hampton Projects 15904 and 40797

Hi James,

I am forwarding your e-mail requesting Consulting Party status for Seabrook-Hampton 15904, where we are in the process of finalizing the NEPA process, and Hampton 40797, which in still in the data collection phase to Jamie Sikora, the FHWA Environmental Program Manager, who considers these requests.

Jennifer E. Reczek, P.E.
NHDOT Project Manager
603-271-3401
Jennifer.Reczek@dot.nh.gov

From: James Metcalf <n-gin-ear@comcast.net>
Sent: Thursday, April 08, 2021 8:58 AM
To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>; Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
Subject: Hampton Projects 15904 and 40797

Dear Ms. Reczek:
My name is James Metcalf. I am the Chair of the Hampton Heritage Commission. I'm aware of the planned public hearing this evening regarding the Rte 1A bridge replacement over Hampton Harbor. I and other Commission members are planning to listen in. We may also be commenting on the Environmental Assessment (comments due April 23rd).
I understand that the New Hampshire Division of Historical Resources acts as the State Historic Preservation Office with respect to meeting NHPA Section 106 requirements, but our Commission would like to be considered a consulting party for the bridge project (15904) as well as for Project 40797 (for Rte 1A in Hampton Beach) at least until we are satisfied that no historic resource is threatened. At the very least, we want to stay informed about project planning for both efforts.
Thank you very much for your assistance.
James Metcalf
Hampton Heritage Commission Chair
Sent from Mail for Windows 10

Sen.Nancy Stiles

1 Hayden Circle Hampton, NH 03842
603 918-0553 nstiles@comcast.net

April 19, 2021

Jennifer E. Reczek, PE
NH Department of Transportation
7 Hazen Drive, P.O. Bo 483
Concord, NH 03301-0483

Dear Jennifer,

In my personal comments I really want to say a BIG THANK YOU to you and your team for the incredible amount of effort and considerations you put into DOT Project 15904 Seabrook-Hampton.

It's been a long process and I'm really looking forward to the construction. The involvement you have allowed the town community, the fishing community, conservation, historical considerations, local area residents, other state and federal agencies all while dealing with the current virus complications has produced a tremendous project proposal addressing everyone's questions and concerns.

It will give the visiting public access and the safety needed for all the various modes of transportation with careful consideration to each of their needs. As you know I had deep concerns about the emergency vehicle needs and our marine navigation community and this has accommodates those needs.

In appreciation,

Nancy Stiles

Nancy Stiles
Former District 24 Senator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

April 23, 2021

Jamison Sikora
Environmental Program Manager
J.C. Cleveland Federal Building
53 Pleasant Street, Suite 2200
Concord, NH 03301

RE: Hampton Harbor Bridge Project Environmental Assessment, Seabrook and Hampton, NH

Dear Mr. Sikora:

We are writing in response to your March 24, 2021 Notice of Availability for the Hampton Harbor Bridge Project Environmental Assessment (EA) in Seabrook and Hampton, New Hampshire. We submit the following response to the EA in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The EA describes work that the New Hampshire Department of Transportation (NHDOT) intends to conduct in conjunction with the Federal Highway Administration (FHWA) to replace the Neil R. Underwood Memorial Bridge between Hampton Beach and Seabrook, New Hampshire. The Notice of Availability for the EA notes that the purpose of the project is to "…provide a safe, reliable, and structurally sound crossing over the Hampton Harbor Inlet, while also improving mobility for the traveling public. This includes drivers, bicyclists and pedestrians, as well as maritime users." The EA notes that the bridge is ranked as the number one priority for replacement by the State of New Hampshire and that it has been classified as "structurally deficient and functionally obsolete." Since its construction in 1949 the bridge has been repaired numerous times including emergency repairs in 2017 when the bascule drawbridge became stuck in the open position.

The EA evaluates the no action as well as a fixed bridge (the preferred alternative) and bascule bridge alternative. The design of the preferred alternative will reduce the number of supporting piers in the waterway (as compared to the current condition) and proposes overall widening of the navigation channel beneath the bridge from 40 to 150 feet to match the width of the existing approach channel to the bridge. The vertical clearance of the bridge was designed with consideration given to projected sea level rise estimates provided by the New Hampshire Coastal Risk and Hazard Commission. Construction of the new bridge and demolition of the existing bridge is anticipated to take a total of thirty-six months.

Based on our review we offer the following recommendations and observations for your consideration as you work to finalize the EA.

Stormwater Management/Water Quality:

The EA notes that the existing bridge features an open scupper drainage system that discharges directly to the harbor. Under the preferred alternative a "…new drainage collection and conveyance system" is proposed that routes "drainage discharges" through new treatment swales within the existing ROW at the northern and southern approaches before the stormwater is allowed to flow into the harbor. The proposed changes to stormwater treatment system for the preferred alternative represent an improvement from current conditions.

Recommendation:

- We recommend that additional detail be provided regarding the design parameters and performance standards that will be targeted for the system. The EA notes that the preferred alternative "…would comply with MS4 and other water quality permitting requirements." It would be helpful if the EA provided information to explain how that outcome will be achieved. We also recommend that the EA include a description of the proposed maintenance protocols for the stormwater system and a description of design measures proposed to avoid erosion at the discharge locations.

Environmental Justice:

The EA notes that, "NHDOT prepared an environmental justice analysis for the project using the EPA EJScreen ACS Summary Report (see Appendix B). This assessment summarized minority and low-income populations as documented within the 2014-2018 Census Bureau ACS. The analysis identifies an EJ group where the proportion (percentage) of the minority or low-income population in an area is "meaningfully greater" than the percentage in the broader, surrounding area. For the purposes of this analysis, the Study Area was defined as the area within one mile of the Project Site. The surrounding area was defined as the area within three miles of the Project Site. " The analysis concludes that the project will not result in disproportionate impacts to communities with environmental justice (EJ) concerns.

Recommendation:

- We note that EPA's EJSCREEN is an EJ mapping and screening tool that can help identify areas with minority and/or low-income populations, potential environmental quality issues, combinations of environmental and demographic indicators that are greater than usual, and other factors that may be of interest. (https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen). The mapping and screening tool is not intended to be a substitute for an EJ analysis and we note that the screening-level results do not, by themselves, determine the existence or absence of environmental justice concerns in a given location, do not provide a risk assessment and have other significant limitations. That said we recommend that FHWA and NHDOT coordinate with EPA in the future regarding the application of EJSCREEN and how best to use the screening level information it compiles as part of the environmental analysis.

Air Quality:

Section 4.6.5 of the EA covers mitigation related to potential air quality impacts from the proposed bridge replacement and removal activity. We offer the following comments and recommendations regarding that discussion.

Recommendations:

- The EA notes that Ultra-Low Sulphur Diesel (ULSD) fuel should be used for all diesel engines throughout the construction site. For future reference, since 2014 EPA's diesel standards have required that all nonroad, locomotive, and marine (NRLM) diesel fuel be ULSD, and all NRLM engines and equipment must (rather than should) use this fuel (with some exceptions for older locomotive and marine engines). In addition, ULSD requirements applied to all onroad diesel vehicles after 2010. We suggest that the EA be revised to reflect that these are established regulatory requirements that reduce air pollution from a variety of diesel engines.

- We note that the discussion of EPA's Tier 1 through 4 standards in the EA should be revised to note that all non-road construction equipment, including marine vessels, with a power rating of 50 hp or greater must (rather than should) meet Tier 4-Final emissions standards.

- We note that New Hampshire Regulation (Chapter Env-A 1100, Part Env-A 1102.02) Idling Limitations for Motor Vehicles, sets maximum idling times for an owner or operator of a motor vehicle under certain conditions, with exemptions. Consistent with that regulation we recommend that to the extent practicable, idling of onroad and nonroad vehicles and equipment should be minimized during project construction.

- We recommend that air quality mitigation measures suggested in the EA related to fugitive dust and vehicle fueling be formally integrated into the construction contracts for the project.

Wetland Mitigation:

The EA describes the proposed dredging at the entrance channel of the bridge (an improvement over existing conditions for mariners) and that, "During the final design phase of the project, the NHDOT would undertake coordination with the USACE and NHDES to determine potential mitigation needs for the project. It is currently anticipated all impacts to wetland resources as a result of this project would be fully mitigated through utilization of the New Hampshire Aquatic Resource Mitigation (ARM) Fund In-lieu Fee Program and no additional mitigation would be necessary."

Recommendations:

- We recommend that mitigation options be more fully described in the EA to support future project permitting and mitigation discussions to follow. EPA requests the opportunity to participate in mitigation discussions with NHDOT, the USACE and NHDES.

- We also recommend that the analysis be expanded to include a clear presentation of permanent and temporary impacts to help inform future discussions regarding mitigation at the state and federal level.

Marine and Coastal Impacts

- We recommend that the discussion in the EA be expanded to explain whether the construction of the new bridge and widening of the navigation channel from 40 to 150 feet will alter water flow direction or velocity and cause erosion or sedimentation impacts to vegetation and/or habitat upstream and downstream of the bridge.

Bicycle Safety

Section 4.5.4 Impacts of Fixed Bridge and Bascule Bridge Alternatives states: "The proposed roadway cross section on a replacement bridge would be the same regardless of whether it is fixed or bascule. The cross section would include six-foot sidewalks on both sides of the roadway, which would not only match best practices for sidewalk accessibility but would also reduce the need for pedestrians to cross NH Route 1A to access the sidewalk on the east side of the bridge. The cross section also would include shoulders of sufficient width to safely accommodate bicyclists, thereby minimizing conflicts with through traffic and pedestrians. NHDOT will not be responsible for maintaining the sidewalks." We support the incorporation of bicycles into the design of the project and offer the following recommendation to improve bicyclist safety on the proposed bridge.

Recommendation:

- We recommend that NHDOT further address bicyclist safety on the bridge by clearly delineating (through painted markings or similar striping) bike lanes in the shoulder to indicate "bike only" space (except for emergency/disabled vehicles). This would further encourage safer bike travel and potentially lead to fewer vehicles and emissions.

EPA appreciates the opportunity to review the Hampton Harbor Bridge Project Environmental Assessment. We look forward to working with the NHDOT and FHWA as you work to develop responses to the comments and recommendations contained in this letter and we request a copy of the final EA when it is available for review. We also anticipate working with the U.S. Army

Corps of Engineers to review the dredging work associated with widening the navigation channel in the vicinity of the bridge. If you have any questions, please contact me at 617-918-1025.

Sincerely,

TIMOTHY TIMMERMANN

Digitally signed by TIMOTHY TIMMERMANN
Date: 2021.04.23 15:03:17 -04'00'

Timothy Timmermann
Director, Office of Environmental Review

cc:

Jennifer Reczek, NHDOT
Larry Oliver, USACE

From: Reczek, Jennifer
To: Stephanie Dyer-Carroll; Marcy Miller; Laurin, Marc
Cc: "Larochelle, Roch"
Subject: FW: Seabrook-Hampton Bridge project - conversation summary
Date: Tuesday, April 20, 2021 5:46:19 PM

Hi Team,

Please see edits below from Kate, regarding the questions that were brought us in our conversations.

Jennifer E. Reczek, P.E.
NHDOT Project Manager
603-271-3401
Jennifer.Reczek@dot.nh.gov

From: Kate Bashline <bashlinek@gmail.com>
Sent: Monday, April 19, 2021 1:53 PM
To: Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov>
Subject: Re: Seabrook-Hampton Bridge project - conversation summary

---

Hi Jen, How best to respond is a large part of our concentration since the EA. We add a few thoughts in red to your excellent compilation.

Discussion relating to the overall project process,

- Clarification of the location and height of the new roadway (how much further from your home and how much higher) **How much disturbance to the existing sand dune with beach grass burm on the east side of !A, especially from Campton St to the end of Eisenhower St. ?**

- Whether there would be impacts to Eisenhower Street **and the sandy beach at the end of Eisenhower St. at the southeastern abutment of the existing Neil Underwood Bridge** and and whether the contractor would be using it during construction,

- Concerns about making sure the area is vegetated with native coastal plants. Preferably, disturbed areas would be replanted with beach grass. There is also a native form of dusty miller.

- The beach grass is very fragile, and is easily killed. The project disturbance should be as small as possible because once the grass dies the soil erodes or blows away quickly.

- What happens to extra soil, does it leave the site? Keeping soil on site is important due to ongoing erosion in the area. **Could any dredged sand be placed on**

the east side of the existing bridge?

- Discussion related to stormwater treatment:
    - Type of vegetation to be used
    - Is there another place they could be located?
    - Doesn't the discharge into the harbor put pollution there?
    - Will the swales be fenced?
- Why doesn't it look like there is any mitigation for impacts to the Dunes Wildlife Area?

We are concerned with vibration from the construction causing damage to our 2 homes.

On Mon, Apr 19, 2021 at 1:06 PM Reczek, Jennifer <Jennifer.E.Reczek@dot.nh.gov> wrote:

> Hi Kate and Gary,
>
> I hope you are well. Thank you for sending along the Memorial Bridge note card, it was a nice pick-me-up last week.
>
> I don't know if you had planned to submit any written comments on the Environmental Assessment (EA). If not, that is perfectly fine, the comments you made at the Hearing will be addressed. The team is thinking it would be good to include some of the points you made during our telephone conversations, as some of them relate to the environmental considerations and it occurred during the EA comment period. Below is a quick summary I pulled together, please let me know if I have accurately captured the questions and concerns that we discussed:
>
> - Discussion relating to the overall project process,
> - Clarification of the location and height of the new roadway (how much further from your home and how much higher)
> - Whether there would be impacts to Eisenhower Street and whether the contractor would be using it during construction,
> - Concerns about making sure the area is vegetated with native coastal plants. Preferably, disturbed areas would be replanted with beach grass. There is also a native form of dusty miller.
> - The beach grass is very fragile, and is easily killed. The project disturbance should be as small as possible because once the grass dies the soil erodes or blows away quickly.

- What happens to extra soil, does it leave the site? Keeping soil on site is important due to ongoing erosion in the area.
- Discussion related to stormwater treatment:
    - Type of vegetation to be used
    - Is there another place they could be located?
    - Doesn't the discharge into the harbor put pollution there?
    - Will the swales be fenced?
- Why doesn't it look like there is any mitigation for impacts to the Dunes Wildlife Area?

The comment period closes on Thursday, so if possible, can you please let me know before then if there is anything I have missed that should be addressed in the final version.

Thank you,
Jennifer

Jennifer E. Reczek, P.E.
Project Manager
NH Department of Transportation
7 Hazen Drive, P.O. Box 483
Concord, NH 03301-0483
603-271-3401
Jennifer.Reczek@dot.nh.gov

This page intentionally left blank