

Durham 16236, X-A001(202)  
US Route 4 Bridge over Bunker Creek  
NHDOT Bridge No. 145/116  
Categorical Exclusion

State of New Hampshire







# CATEGORICAL EXCLUSION NON-PROGRAMMATIC ENVIRONMENTAL IMPACT SUMMARY

**Action/Project Name:** Durham  
**Federal Project Number:** X-A001(202)

**State Project Number:** 16236

### Description of Project:

The New Hampshire Department of Transportation (NHDOT) is proposing to replace Bridge #145/116 over Bunker Creek on US Route 4 in the Town of Durham, NH (NHDOT Project #16236) (*Exhibit 1 -Project Location*). The bridge, originally built in 1933, has deteriorated to an extent that necessitates its complete replacement. The bridge is a single-span reinforced concrete slab that has most recently been updated ca. 1970. Several options were evaluated, including construction of a new crossing north or south of the existing bridge or detouring traffic around the bridge while it is rebuilt in place.

### Existing Conditions:

US Route 4 is a major artery that connects Concord, NH and points west with the City of Portsmouth, NH. Although the surrounding area was active farm land at the time of the original bridge construction in 1933, it has become increasingly developed, with residential subdivisions present on either side of the project area.

Bridge #145/116 is 18 feet long with a clear span of 15 feet and a curb-to-curb width of 30 feet, sitting 12.8 feet above the mean low water line of Bunker Creek. Bunker Creek is tidally influenced, discharging immediately south of the bridge into the north side of the Oyster River, which subsequently discharges into Little Bay. Drainage ditches have been constructed in uplands on the north side of US Route 4 that discharge into the creek. The ditches have developed into small freshwater wetlands contiguous with the estuarine intertidal zone.

### Project Purpose and Need:

The purpose of this project is to address the deteriorated condition of the bridge as demonstrated by its substandard condition. The bridge has required numerous repairs over the years, most recently in 2012 and 2014. Repair or replacement of the bridge is NHDOT Bridge Priority #8 of 2014 and is currently funded for replacement in 2019 in the approved Ten Year Transportation Improvement Plan 2015-2024. The project also will address two geometric deficiencies, the sag vertical curve restricting sight distance on US Route 4 and deficient intersection sight distance at Morgan Way, a road that services a subdivision on the north side of US Route 4 approximately 800 feet east of the bridge. The existing bridge also has low clearance at mean high tide, preventing passage by kayaks, canoes and other similar sized non-motorized water crafts during certain times in the tide cycles.

### Proposed Action:

The project will involve complete replacement of the existing bridge across Bunker Creek on its current alignment. It includes installation of two lanes 12 feet in width with 5-foot shoulders. The clear span will be increased from 15 feet to a maximum width of 76 feet. As construction of the project will be a Design Build Contract the span may ultimately be less than 76 feet, however the ultimate span length shall be designed to meet environmental parameters for open width and flood passage for the 100 year predicted flood risk occurrences. The proposed improvements will also include the reconstruction of US Route 4 extending 850 feet east of the bridge to the intersection with Morgan Way and 750 feet west of the bridge (*Exhibit 2 - Post-Hearing Preliminary Plan*). The vertical grade of US Route 4 will be raised approximately four (4) feet to

accommodate superstructure clearance for the 100 year predicted flood risk occurrence with high tide. The new structure and roadway approach will be widened from existing 30 feet with narrow shoulders to two 12-foot lanes flanked by five (5) foot shoulders for curb-to-curb width of 34 feet. The roadway reconstruction includes lowering the vertical crest of US Route 4 to the east of Bunker Creek by approximately one to two feet to meet all decision stopping distance for the design speed. The horizontal alignment is proposed to be shifted eight (8) feet to the north side at the bridge crossing to localize the impacts to the tidal area to the north side and to reduce Right-of-Way acquisitions to properties located along the south side of US Route 4. The project includes a proposed stormwater treatment swale in the northeast quadrant of the project on a Town-owned parcel.

The proposed traffic control alternative is a short-term closure of the bridge for no more than 14 days with the use of Accelerated Bridge Construction<sup>1</sup> techniques for the bridge replacement and approach construction. This would require a detour of up to 18 miles during the bridge closure (*Exhibit 3 - Traffic Control Alternative 1*). After the crossing is reopened, the remainder of the project will be constructed under traffic. Short-term alternating one-way traffic may be required as appropriate.

### **Alternatives Considered:**

#### ALTERNATIVE A: NO-BUILD ALTERNATIVE

The No-Build Alternative is not a viable option as the bridge needs to be repaired or replaced to provide safe passage for travelers. This alternative also does not address current roadway geometric deficiencies nor the geometric deficiencies and deteriorated condition of the existing bridge.

#### ALTERNATIVE B: REPAIR ALTERNATIVE

The Repair Alternative would simply repair the existing span. The existing bridge is in an advanced state of disrepair and has substandard width for the existing vehicular and bicycle traffic. Rehabilitation would be cost prohibitive and would not address the geometric deficiencies of the bridge or the roadway.

#### ALTERNATIVE C: OFFLINE ALIGNMENT TO THE NORTH

This alternative would build a new bridge to the north of the existing bridge and realign the roadway accordingly. The Offline Alignment to the North would result in greater impact to conservation lands and result in greater natural resource impacts. Comments at the Public Informational Meeting held on October 17, 2013 indicated a preference for maintaining the current alignment. The replacement bridge and roadway modifications would address the existing reduced sight distance along US Route 4 and the deficient intersection sight distance at Morgan Way.

#### ALTERNATIVE D: OFFLINE ALIGNMENT TO THE SOUTH

This alternative would build a new bridge to the south of the existing bridge and realign the roadway accordingly. The Offline Alignment to the South would result in greater impacts to private property, natural resources, and possibly cultural resources. Comments at the Public Informational Meeting held on October 17, 2013 indicated a preference for maintaining the current alignment. The replacement bridge and roadway modifications would address the existing reduced sight distance along US Route 4 and the deficient intersection sight distance at Morgan Way.

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<sup>1</sup> Accelerated Bridge Construction (ABC) is bridge construction that uses innovative planning, design, materials, and construction methods in a safe and cost-effective manner to reduce the onsite construction time that occurs when building new bridges or replacing and rehabilitating existing bridges. <https://www.fhwa.dot.gov/bridge/abc/>

Table 1 - Contact Letters Sent and Replies Received

<b>AGENCY/ORGANIZATION</b>	<b>CONTACT</b>	<b>LETTER SENT</b>	<b>REPLY RECV'D</b>
Dover Fire Department	Richard Driscoll	1/29/14	No Reply Received
Dover Police Department	Anthony Colarusso, Jr	1/29/14	2/3/2014 ( <i>Exhibit 4</i> )
Durham Conservation Commission	John Parry	1/29/14	No Reply Received
Durham Department of Public Works	Michael Lynch	1/29/14	No Reply Received
Durham Fire Department	Corey Landry	1/29/14	No Reply Received
Durham Historic District Commission	Peter Stanhope	1/29/14	No Reply Received
Durham Planning and Zoning Boards	Karen Edwards	1/29/14	No Reply Received
Durham Police Department	David Kurz	1/29/14	No Reply Received
Durham Town Administration	Todd Selig	1/29/14	2/11/13 via phone ( <i>Exhibit 5</i> )
Durham Town Council	James Lawson	1/29/14	No Reply Received
Durham Waste Management Department	Mike Everngam	1/29/14	2/10/14 ( <i>Exhibit 6</i> )
Durham Wastewater Department	Dan Peterson	1/29/14	No Reply Received
Durham Water Division		1/29/14	No Reply Received
Durham Zoning Administration	Thomas F. Johnson	1/29/14	2/25/2014 ( <i>Exhibit 7</i> )
McGregor Memorial EMS	Bill Cote	1/29/14	No Reply Received
NHDES Coastal Program	Christian Williams	1/15/14	1/21/14, 11/02/17 ( <i>Exhibit 8</i> )
NH Land and Community Heritage Investment Program	Paula Bellemore	1/29/14	1/25/2017 ( <i>Exhibit 9</i> )
NH DRED Section 6(f) Coordinator	Bill Gegas	7/14/16	8/11/2016 ( <i>Exhibit 10</i> )
NHOEP Conservation Land Stewardship	Steve Walker	1/29/14	2/3/14 ( <i>Exhibit 11</i> )
NHOEP Floodplain Management Program	Jennifer Gilbert	1/29/14, 7/27/16	2/14/14, 7/28/16 ( <i>Exhibit 12</i> )
Oyster River Local Advisory Committee	Eric Fiegenbaum	1/29/14	No Reply Received
Strafford Regional Planning Commission	Cynthia Copeland	2/11/13	No Reply Received

**IMPACT ASSESSMENT SUMMARY**

**1. Right-of-Way**

Is additional ROW required? Yes  No  Acreage 0.21  
 Are improved properties acquired? Yes  No  Acreage \_\_\_\_\_  
 Displacement: Rental Units 0 Residential Properties 0 Non-residential Properties 0  
 Relocation services to be provided? NA  
 Properties available for relocation? NA  
 Public Land (Federal State, or Municipal) Involvement? Yes  No . (See Section 4 below.)  
 Acquisitions of land for hardship or protective purposes? Yes  No   
 If, yes explain? NA

Additional right-of-way will need to be acquired on the south side of US Route 4 to accommodate the widening of the bridge and for future maintenance. The areas to be acquired are strip takes of less than 15 feet of undeveloped portions of the properties directly adjacent to the existing road. These acquisitions are to occur to Parcels 5, 8, 10 and 13, and will total approximately 0.21 acres. No more than 4.8 % of any individual property will be impacted by these acquisitions.

There are also drainage easements proposed for the project that will total 0.64 acres including a 0.35 acre drainage easement on a town owned lot on the northeast side of the bridge (discussed under Section 4, below).

**2. Traffic Patterns/Roadway Access**

Expansion of a roadway by addition of through lanes? Yes  No   
 Describe: The proposed projects will not add any through lanes to US Route 4.  
 Temporary detour required? Yes  No  Length \_\_\_\_\_  
 Temporary bridge required? Yes  No  Impacts? Yes  No

Describe:

The replacement of the bridge and reconstruction of the roadway will increase travel safety for the general public. For the selected traffic control alternative (*Exhibit 3 - Traffic Control Alternative 1*), traffic will be routed through a detour for a period of less than 14 days, but all properties will remain accessible. The detour as planned will be up to 18.2 miles long and will pass through the Dover toll facilities on the Spaulding Turnpike. This routing is calculated to and from residences on US Route 4 located adjacent to the bridge. Through traffic on US Route 4 using the detour to and from the Spaulding Turnpike will add about 4.8 miles of travel time and will be required to pass through the Dover toll facilities.

US Route 4 through traffic to and from the Spaulding Turnpike will be routed as follows:

- NH Route 108 to and from US Route 4 (3.2 miles)
- Spaulding Turnpike to and from Exit 7 (5 miles)

**Total length of detour = 8.2 miles. Total additional travel = 4.8 miles (8.2 miles minus 3.4 miles, the distance from NH Route 108 to and from the Spaulding Turnpike).**

Westbound traffic for residents located on the east side of the bridge will be routed as follows:

- East on US Route 4 to the Spaulding Turnpike, (2.2 miles from western most residence)
- Spaulding Turnpike south to Exit 1, reverse direction at Exit 1, north on Spaulding Turnpike (NH Route 16) (6.6 miles)
- Spaulding Turnpike north to Exit 7 (5 miles)
- NH Route 108 south to US Route 4 (3.2 miles)
- East on US Route 4 (1.2 miles to Bunker Lane)

**Total detour = 18.2 miles**

Eastbound traffic for residents located on the west side of the bridge will be routed as follows:

- West on US Route 4 to NH Route 108 (1.2 miles from Bunker Lane)
- North of NH Route 108 to the Spaulding Turnpike (3.2 miles)
- South on the Spaulding Turnpike to US Route 4 (5 miles)
- West on US Route 4 to bridge area (2.2 miles to western most residence on east side of bridge)

**Total detour = 11.6 miles**

The detour corridor for the project will be along designated State routes. The Department will coordinate with the Towns of Durham and Madbury and the City of Dover to identify appropriate signage for installation along local roads to deter their use by non-local traffic as part of the traffic management for the project.

Considering the makeup of the US Route 4 east-west traffic flow, the Department expects a significant portion of the traffic will seek alternative east-west routes, including but not limited to, NH Route 101, NH Route 9 and NH Route 125 in order to bypass the closure. The Department will deploy Intelligent Transportation Systems (ITS) through the use of Smart Work Zones to communicate in advance of the closure at US Route 4 junctions with NH Route 108 in the Durham and Dover, NH Route 125 in Lee, NH Route 9 in Northwood and on the Spaulding Turnpike south of its crossing over the Little Bay in Newington.

The Department will also include an incentive and disincentive contract clause to financially encourage the contractor to reopen the roadway prior to the closure period stipulated in the construction contract documents.

In advance of the road closure, construction activities will be required along the approaches to the bridge to address the soft soil consolidation, construction staging areas and aerial utility adjustments to support the bridge removal and replacement. These advanced construction activities will be accomplished under the management of existing traffic flow through a combination of, but not limited to, one way traffic configuration, rolling roadblocks and/or short roadway closures during off peak traffic hours and nighttime operations. In addition, after the installation of the replacement bridge, post construction activities will be necessary while under traffic management to complete the final slope stabilization, guardrail installation, final paving, and pavement markings.

The functionality of the affected interchanges and intersections will be studied further during final design. Traffic flow patterns will return to normal upon completion of the project.

Permanent changes to traffic patterns? Yes  No

Describe: NA

Changes in access that pertain to interstate highways? Yes  No

Changes in access that have wide-reaching ramifications? Yes  No

Describe: NA

**3. Cultural Resources (Section 106 or RSA 227-C:9)**

Effects on historical and archaeological properties were determined by the Federal Highway Administration (FHWA) in consultation with the NH Division of Historical Resources (NHDHR), pursuant to a Request for Project Review form submitted in January, 2014, and based on the Section 106 review process established by the National Historic Preservation Act (NHPA) of 1966 and outlined in 36 CFR 800.

Have you identified, and invited, parties to consult in the review pursuant to 36 CFR 800.3(f)? Yes  No

At a public information meeting on October 17, 2013, the Section 106 process was explained and attendees were invited to become consulting parties to the 106 process. The Durham Historic District Commission was contacted on January 29, 2014 about the project, but no response was received. As a result, no consulting parties to the Section 106 process were identified. The studies undertaken for the project (described below) confirmed that there were no National Register Eligible resources that would be affected by the proposed projects. These findings were presented at a public hearing on May 28, 2015.

Historic Resources Investigated? Yes  No   
Comments

National Register Eligible? Yes  No

A Project Area Form was completed on above ground resources that determined there were no resources that were eligible for the National Register. The Area Form encompassed the parcels in the immediate area of the bridge as well as the bridge itself.

Archaeological Resources Investigated? Yes  No   
Comments

National Register Eligible? Yes  No

A Phase 1A Archaeological assessment was conducted by Independent Archaeological Consulting, LLC on March 18, 2014. NHDHR reviewed the Phase 1A Archaeological Sensitivity Assessment. NHDHR's response dated April 29, 2014 concurred with the assessment's findings that no sensitive resources would be impacted by the proposed project. It was noted that testing would be required should two identified areas (Sensitivity Areas 1 and 2) be impacted, and that monitoring during construction is to be required at the adjacent Twombly family cemetery located on Parcel 10 to ensure that no impacts would occur at that location. A Phase 1B assessment was performed on June 24, 2014 by Independent Archaeological Consulting, LLC, within the two sensitivity areas identified in Phase 1A. No cultural resources were located in Sensitivity Area 1. Two positive soil test pits were located in Sensitivity Area 2, containing a total of four artifacts. Three of these items, including plastic and glass, are attributed to modern use of the area and trash disposal.

Findings: No Historic Properties Affected  No Adverse Effect  Adverse Effect

Agency Comments:

A Determination of No Historic Properties Affected was signed on April 6, 2015, that stated: "Based on a review pursuant to 36 CFR 800.4, we agree that no historic or archaeological resources will be impacted by the undertaking and that no further survey work is needed. A Project Area Form was completed on the above ground resources and identified that the area has been significantly altered over the years, including the 1933 concrete slab bridge, which no longer retains integrity. A Phase 1B archaeological investigation occurred along the project area and identified two cemeteries, the Bunker Family Cemetery and the Twombly Family Burial Ground, that will be monitored during construction should impacts occur within 25' of the resource boundaries." (*Exhibit 13 - No Historic Properties Affected Memorandum.*)

**4. Section 4(f) Resources**

Public Parkland Impacts?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Permanent <input type="checkbox"/>
Public Recreational Area Impacts?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Permanent <input type="checkbox"/>
Public Wildlife/Waterfowl Refuge Impacts?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Permanent <input type="checkbox"/>
Historic Properties Impacted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Permanent <input type="checkbox"/>
LCIP Recreational Land?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Temporary <input type="checkbox"/>	Permanent <input type="checkbox"/>

Acquisition required? Yes  No  Area

There are two publically owned parcels in the project area. The parcel on the northeast side of the project area, identified on Town of Durham tax maps as Parcel 23-4 (NHDOT Parcel 4) is owned by the Town of Durham, and the parcel on the northwest side, identified on Town of Durham tax maps as Parcel 21-0 (NHDOT Parcel 1) is currently owned by New Hampshire Fish and Game (NHF&G). FHWA has determined that Parcel 23-4 does not qualify as a Section 4(f) property. Parcel 21-0 is part of the Great Bay Wildlife Management Area and FHWA has determined that it is subject to Section 4(f) (*Exhibit 14 - 4(f) Determination*). All permanent impacts on the northwest side of the project area fall entirely within the right-of-way, and there are no anticipated temporary or permanent impacts to Parcel 21-0. As such there are no Section 4(f) impacts and a Section 4(f) Evaluation is not required.

Non-acquisition use of 4(f) property (23 CFR 771.135(p)):

Noise Level Increase	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Visual Intrusion	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Access Restriction	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Vibration Impacts	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Ecological Intrusion	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

Programmatic 4(f) Evaluation  Full 4(f) Evaluation  *De minimis* 4(f) Finding

For impacts to recreational 4(f) resources, obtain a statement of significance from official with jurisdiction:

Date Requested: \_\_\_ Date Received: \_\_\_

Construction in, across, or adjacent to a river designated as a component of, or proposed for inclusion in, the National System of Wild and Scenic Rivers? Yes  No

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**5. Section 6(f) Resources**

Are there impacts to any properties acquired or improved with funds made available through Section 6(f) of the Federal Land and Water Conservation Fund Act? Yes  No  Temporary  Permanent

Recommendation received from State Liaison Officer (NH Div of Parks & Recreation)? Yes  No

Coordination with the US Department of the Interior necessary? Yes  No

Comments:

The Land and Water Conservation Fund (LWCF) Act allocates funds to protect land for public outdoor recreation. Section 6(f) restricts conversion of these lands for non-recreation purposes. The LWCF coordinator for New Hampshire was consulted to determine whether any lands subject to 6(f) would be affected by the proposed project. The response received August 11, 2016 indicated that there will be no 6(f) properties affected by the proposed project (*Exhibit 10 - Section 6(f) Response*).

**6. Conservation Lands**

Will property obtained through the Conservation Land Stewardship Program be impacted? Yes  No   
 (Contact the CLS Program Coordinator at the NH Office of Energy Planning)

Has an application been made to CORD demonstrating compliance with RSA 162-C:6? Yes  No

Has the Land & Community Heritage Investment Program (LCHIP) been contacted about the project? Yes  No

Will any LCHIP property be impacted by the project? Yes  No

Does any other conservation land exist in the project area? Yes  No

If so, describe impacts and coordination:

The NH Office of Energy and Planning’s Conservation Land Stewardship (CLS) Program has indicated that the project would not impact any CLS-related lands (see *Exhibit 11 - LCIP Response*). The New Hampshire Land and Community Heritage Program (LCHIP) has provided information that Emery Farm, east of the proposed project, has received funding from LCHIP (*Exhibit 9 - LCHIP Response*). This parcel will not be affected by the proposed project. Tax Map Parcel 23-4 (NHDOT Parcel 4), which adjoins the northeast quadrant of the project, is owned by the Town of Durham as preserved open space. The project proposes to use a portion of the town-owned parcel for stormwater treatment, and acquisition of a permanent maintenance easement of the parcel will be managed through the DOT’s Right-of-Way Bureau. As previously noted, Parcel 23-4 is not subject to Section 4(f) or other state or federal programs that require clearance under NEPA.

**7. Wetlands/Surface Waters**

Will this project impact lands under the jurisdiction of the NH Wetlands Bureau? Yes  No

Type of permit required: *Expedited*  *Minimum*  *Minor*  *Major*

Will the project impact Prime Wetlands? Yes  No

Does this project qualify under the ACOE Programmatic General Permit? Yes  No

ACOE Individual Permit, or Section 10 Permit required? Yes  No

Estimated length of permanent impacts to banks \_\_\_\_\_ ft.  
 Estimated length of permanent impacts to channel 50 ft.  
 Estimated volume of impacts in Public Waters 540 cu. yd.  
 If waterfront project, indicate total length of shoreline frontage 644 ft.  
 If wall, riprap, beach, or similar project, indicate length of proposed shoreline impact 745 ft.

Does the project require consideration of stream crossings? Yes  No

Describe:

Bunker Creek is a 1st order tidally influenced stream with a freshwater and tidal watershed measuring 435 acres. Bunker Creek flows into the Oyster River, a Designated River under the New Hampshire Rivers Management and Protection Program directly downstream within ¼ mile of the bridge. As such, the bridge is a Tier 3 stream crossing under DES Wetland Rules Env-Wt 904.04 (a)(2).

Tidal wetlands in the project area include intertidal and subtidal mud flats, vegetated salt marsh, and rocky intertidal habitat along the western approach causeway. Freshwater wetlands proposed to be impacted include vegetated swales on the east and west approaches of the crossing that flow into the salt marshes and mud flats on the north side of US Route 4, and intermittent streams that receive stormwater collected on the north side of US Route 4 that flow south into the Oyster River. The primary function of the vegetated swales is

to provide treatment of stormwater from US Route 4. The intermittent streams currently direct untreated stormwater into the Oyster River. The proposed design will provide improved treatment of stormwater from US Route 4. Proposed stormwater treatment is discussed in Section 10 “Water Quality” of this document.

The NHDOT proposed construction option is on-line with the current roadway that maintains the current location of the bridge over Bunker Creek. The current bridge has a clear span of 15 feet to allow flow of Bunker Creek, which represents the full potential width of Bunker Creek under the bridge. The replacement bridge design will increase the clear span and is designed with a maximum 76-foot span. As construction of the project will be a Design Build contract the span may be less than 76 feet, however the ultimate span length shall be designed to meet environmental parameters for open width and flood passage during high tide and 100 year flood occurrences. The approach roadway and bridge alignment will be shifted northward 7-10 feet, and the approach roadway and bridge will be widened by four feet. Tidal flows would be maintained throughout construction. The area of benthic habitat in the Bunker Creek channel flowing under the new bridge would permanently increase with the proposed widening of the channel to approximately 30 feet. Assuming this width and a wider channel under the bridge, the proposed project could potentially create an additional 1,564 ft<sup>2</sup> of permanent tidal zone habitat.

Nevertheless, the 76-foot wide span will not meet the DES stream crossing guidelines for bridge width, and an Alternative Design Report will be required.

Table 2 Proposed Wetland Impacts

Landform Type	USFWS Classification	Permanent Impacts (sf)	Temporary Impacts (sf)
Scrub Shrub/Palustrine Wetland	PSS/EM1E	1,616	0
Intermittent Stream	R4SB	403	2,679
Estuarine Subtidal Unconsolidated Bottom - Mud	E1UB3	76	497
Estuarine Intertidal Unconsolidated Shore - Mud	E2US3	4,009	1,484
Estuarine Intertidal Rocky Shore	E2RS2	3,000	
Estuarine Intertidal Salt Marsh	E2EM1	5,000	
	<b>Total</b>	<b>14,104</b>	<b>4,660</b>
<b>Non-Wetland Bank</b> <small>(Jurisdictional land adjacent to lakes, ponds, streams and rivers)</small>	N/A	---	---
<b>Upland Portion of the Tidal Buffer Zone</b> <small>(Land within 100' of the highest observable tide line)</small>	N/A	16,855	25,033
<b>Prime Wetland Buffer</b> <small>(Land within 100' of a Prime Wetland)</small>	---	---	---
	<b>Total</b>	<b>30,959</b>	<b>29,693</b>

Describe Mitigation:

Mitigation will be determined during the permitting phase of the project and will likely be in the form of a payment to the New Hampshire Aquatic Resource Mitigation (ARM) fund.

Coordination Required on:

Public Waters Access?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Shoreland Protection?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Lakes Management?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Wild and Scenic River?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
NH Designated River?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>

Comments:

The project will require the following permits:

- As a public water, Bunker Creek is protected under RSA 483-B, the Shoreland Water Quality Protection Act (SWQPA). The project will require a permit under SWQPA for impacts to the protected shoreland of Bunker Creek.
- Consistency finding with the Coastal Zone Management Act
- Individual Army Corps of Engineers Programmatic General Permit
- NHDES Major Impact Wetland Permit

**8. Coast Guard**

- |  |   |   |
|--|---|---|
| Does the project involve work in navigable waters?           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>                                     |
| Does the project impact a historic bridge?                   | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/>                          |
| Does the project require a Coast Guard Permit?               | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/>                          |
| Does the project qualify under the Section 144(h) exemption? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> (if yes, include FHWA confirmation) |

FHWA and/or Coast Guard Comments:

The United States Coast Guard (USCG) issues permits for construction or reconstruction of bridges over navigable waters of the United States, including tidally influenced water bodies such as Bunker Creek. A navigability questionnaire has been completed and submitted to the USCG. It was determined that the new bridge will facilitate boat access by canoes and kayaks to Bunker Creek by increasing clearance at high tide by approximately four feet. A response from the USCG dated February 5, 2014 indicated that the need for a bridge permit would be determined by FHWA. The FHWA determined on August 29, 2016 that the project falls under the Section 144(h) exemption as the waterway is not used, or susceptible to use with reasonable improvement, as a means to transport interstate or foreign commerce, and is used only by recreational boating, fishing and other small vessels less than 21 feet in length. (*Exhibit 15 - USCG Navigability Correspondence*). As such no USCG permit is required.

**9. Floodplains or Floodways**

- |  |   |  |                               |
|--|---|--|-------------------------------|
| Does the proposed project encroach in the floodplain?                | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Acreage <u>0.43 acres</u>     |
|  |   |  | Volume <u>890 cubic yards</u> |
| Does the proposed project encroach in the floodway?                  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Acreage _____                 |
|  |   |  | Volume _____                  |
| Does the proposed project cause an increase in base flood elevation? | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |                               |

Describe:

- |                                  |                              |  |
|----------------------------------|------------------------------|--|
| Coordination With FEMA Required? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| CLOMR Required?                  | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |

Comments from NH Floodplain Management Program:

NH Office of Energy and Planning’s (NHOEP) NH Floodplain Management Coordinator reviewed the current FIRM for the project area (*Exhibit 12 - NHOEP Floodplain Management Program Response*). The Coordinator concluded that based on 2015 Strafford County floodplain mapping the proposed project is located in a special

flood hazard area (Zone AE) and as such development should meet Durham’s floodplain management regulations.

Does the project require compensation for loss of flood storage? Yes  No

Comments from US Army Corps of Engineers: The USACE confirmed on October 10, 2017 that an Individual Section 404 permit would not be required (Exhibit 16 - USACE Correspondence).

Comments (describe):

The proposed project will create a wider clear span over Bunker Creek that will help to reduce flooding potential at the site. The vertical grade of US Route 4 will be raised approximately four (4) feet to accommodate superstructure clearance for the 100 year predicted flood risk occurrence with high tide. Based on these design considerations, it has been determined that the proposed project will not increase flood levels within the community of Durham. Although it is not possible to quantify the change in hydraulic capacity at this stage in design, it is expected that there will be a net increase in capacity and no increase in the base flood elevation.

**10. Water Quality**

- Aquifer present? Yes  No
- Drinking Water Source Protection Area present? Yes  No
- Wellhead Protection Area present? Yes  No
- Public Water Supply present? Yes  No
- Groundwater Impacts? Yes  No
- Surface Water Impacts? Yes  No
- Surface Water Impairments? Yes  No  Listed below
- Outstanding Resource Waters present? Yes  No
- Water Quality Certificate Required? Yes  No

Will the project disturb >100,000 sq. ft. of land (50,000 sq. ft. if within protected shoreland), or any land with a grade of 25% or greater within 50’ of a surface water? Yes  No   
 If yes, project must comply with the NHDES Alteration of Terrain regulations.

**Impaired Waters**

Every two years, New Hampshire DES publishes a list of surface waters that are impaired or threatened by pollutants, a requirement of Section 303(d) of the Clean Water Act. The “303(d) list” identifies waters that require the preparation of a “Total Maximum Daily Load” (TMDL) document that identifies the problem pollutant(s) for each impairment, establishes the targets needed to reach water quality standards (NH Administrative Rules Env-Wq 1700, Surface Water Quality Standards), identifies pollutant sources, and assigns a waste load allocation to each pollutant point source. The 303(d) list assesses water bodies by dividing them into “Assessment Units” (AUs) for the purpose of reporting impairments or threats to that waterbody and for documenting which AUs require preparation of a TMDL. The AUs of the Oyster River within the project area are shown in *Exhibit 17 - Oyster River Assessment Aerial*. The US Route 4 Bridge lies within the Estuarine AU NHEST600030902-01-03, Oyster River. Impairments in the Draft 2016 303(d) list are listed in Table 3.

Table 3– Oyster River Water Quality Impairments

Use Description	Impairment
Aquatic Life	Dissolved oxygen saturation*
	Estuarine Bioassessments*
	Light Attenuation
	Nitrogen (Total)*
	Oxygen, dissolved
Fish Consumption	Polychlorinated biphenyls
	Mercury
Shellfishing	Dioxin
	Mercury
	Polychlorinated biphenyls

*\*Development impairments associated with road runoff*

Impairments listed as “development impairments” have the potential to increase because of proposed increased impervious area and have been considered in the design of stormwater treatment design.

Primary Contact Recreation in Oyster River is impaired by Enterococcus bacteria, but is not included in the 303(d) list because a Statewide Bacteria TMDL was issued in September, 2010. The Oyster River is subject to the Statewide Bacterial TMDL, which says that a 50% reduction of bacteria must be achieved in order for the AU to meet water quality standards.

The TMDL Report includes an Implementation Plan that identifies a range of techniques that may be employed to identify and eliminate sources of bacterial pollution. The implementation plan includes both structural and non-structural Best Management Practices (BMPs). Structural BMPs include a variety of means for addressing bacteria in stormwater such as infiltration, filtration, retention, and detention systems. The NH Stormwater Manual (NHDES, 2008) provides details on structural BMPs. Non-structural BMPs are practices that prevent pollution through maintenance and management. Stormwater is a source for Enterococcus, so increased impervious area must be treated to remove potential increases in Enterococcus.

All appropriate control measures will be taken in accordance with the Terrain Alteration Permit Exemption for NHDOT projects dated July 8, 2011 and with the requirements of the TMDL Implementation Plan.

Will the project disturb greater than 1 acre of land? Yes  No

If yes, project must comply with the EPA NPDES Construction General Permit, which requires preparation of a SWPPP.

Existing Impervious Surface in project area: 61,392 sf

Proposed Impervious Surface in project area: 65,121 sf (net increase = 3,729)

Will permanent Best Management Practices be installed for treatment of stormwater runoff? Yes  No

Comments:

**Permanent Stormwater Treatment**

The proposed action includes reconstruction of the existing drainage system through the project corridor, with new drainage structures for improved stormwater conveyance and treatment. The planned increase in impervious area is 3,729 SF, or roughly a 6% increase of the overall impervious area. It is anticipated that a majority of the stormwater runoff will sheet flow from the paved surfaces to proposed vegetated or stone slopes as it does currently; however, the additional impervious area will require stormwater treatment. Conceptual stormwater treatment includes a proposed swale on the north side of US Route 4 on the Town-owned parcel. The existing wetland swale on the north side of US Route 4, just east of the bridge, will be re-established to continue to provide water quality improvement as the water flows to the proposed treatment swale. The area of impervious is proposed to be treated by the swale is 0.17 acres, or twice the proposed increase in impervious surface. In order to collect and treat stormwater from the 0.17 acres, the existing culvert at Station 123+00 would be eliminated and the side slopes near Sta. 124+00 would be re-graded. (NHDOT Parcel 4, depicted on *Exhibit 2 - Post-Hearing Preliminary Plan*).

**Construction Best Management Practices**

Proper best management practices will be used during the construction of the project to minimize water quality degradation. Prior to the commencement of construction, the Project Contractor will be responsible for providing and implementing a professionally prepared SWPPP approved by the NHDOT, consistent with the Construction General Permit (CGP) and the Terrain Alteration Permit Exemption for NHDOT projects dated July 8, 2011. The preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) is anticipated to ensure erosion, scouring or general water quality degradation does not occur from discharges from this project. Best management practices such as sediment fencing and/or silt booms would help protect water quality within the Oyster River, Bunker Creek and adjacent wetlands.

**11. Noise**

Is project a Type I Highway Project? Yes  No   
 Are There Receptors Present? Yes  No  # of Residential 15. # Of Commercial 0.

Year		Range of Noise Levels (dBA Leq)		Noise Abatement		Criterion Impacts	
		Residential (R)	Commercial (C)	# Approaching	# At or Exceeding		
2017	No-Build	55	to 69			Res, Comm	4 Res, Comm
2037	Build	56	to 70			Res, Comm	5 Res, Comm
2037	No-Build	56	to 70			Res, Comm	5 Res, Comm
	Build		to			Res, Comm	Res, Comm

Will completed project increase noise levels 3 dBA or more? Yes  No   
 15 dBA or More? Yes  No

The Federal Highway Administration (FHWA) regulations for assessment and abatement of highway traffic noise in the planning and design of federally-aided highway projects are contained in Title 23 of the United States Code of Federal Regulations Part 772 (23 CFR 772). These regulations state that a “Type I” traffic noise impact analysis is required when there is a substantial alteration of the vertical or horizontal alignment of a roadway. As the proposed action involves changes in the vertical alignment, a Type I traffic noise impact assessment was conducted (Noise Analysis Technical Report, Durham 16236 - HMMH, June 2014).

The proposed project includes a vertical shift in the roadway of up to 4.5 feet and a slight widening of the US Route 4 approach roads and bridge over Bunker Creek. The proposed improvement and roadway widening work is located in proximity to noise-sensitive residential and institutional land use, and the potential exists for increased noise levels and impact in these areas due to the increased roadway elevation and reduced noise

shielding that will result. As a result, this project qualifies as a Type I project under 23 CFR 772. This noise analysis was conducted in accordance with FHWA and NHDOT noise assessment regulations and guidelines.

The noise impact assessment compares Existing (2017) and design-year (2037) conditions for the No-Build and Build Alternatives. The table below summarizes the projected number of dwelling units potentially exposed to noise impacts by the Build and No-build alternatives. Four residential properties (Noise Abatement Criteria Activity Category B) are currently exposed to noise impact in the Existing 2017 case. The 2037 No-Build conditions are predicted to impact the same receptors and one additional residence. Results for the 2037 Build Alternative are identical to that for the No-Build Alternative. Because future noise impacts are predicted under the Build Alternative for this Type I project, noise abatement measures must be considered, in accordance with FHWA guidelines.

**Noise Impact Summary**  
**Projected Number of Impacted Receptors by Alternative**  
**Land Use**

	2017	2037	2037
	Existing	No-Build	Build
Residential	4	5	5
Institutional	0	0	0
Total	4	5	5

*Source: HMMH, 2014*

Are mitigation measures included in project? Yes  No   
 Explain:

Noise abatement by barriers was evaluated for all of the impacted residential noise sensitive land use in the study area along US Route 4. For the 2037 Build Alternative, this study made a preliminary determination of barrier feasibility and reasonableness to provide appropriate noise reduction for the impacted areas. Noise barriers could reduce noise at four of the five impacted residences. However, none of the abatements was found to be reasonable according to NHDOT criteria.

Construction activity may cause intermittent fluctuations in noise levels. Effective control of highway construction noise will be achieved by design considerations, sequence of operations, source control, site control, time and activity constraints, and community awareness, as practicable.

Has the municipality received a copy of the traffic noise assessment? Yes  No

**12. Threatened or Endangered Species/Natural Communities**

State-Listed Threatened or Endangered species in project area? Yes  No   
 Exemplary Natural Community in project area? Yes  No   
 Federally-Listed Threatened or Endangered species in project area? Yes  No   
 Section 7 consultation necessary? Yes  No   
 Impacts subject to the conditions of the Bald and Golden Eagle Protection Act? Yes  No

The NH Natural Heritage Bureau (NHNHB) database has been reviewed for records of rare species and exemplary natural communities near the project area. The species considered include those listed as Threatened or Endangered by either the State of New Hampshire or the federal government (*Exhibit 18a - NHB17-2706*). The NHNHB currently has a recorded historic occurrence for crested sedge (*Carex cristatella*). Additionally, potential habitat for the New England cottontail (*Sylvilagus transitionalis*) is present near the site. The New England cottontail is currently listed as endangered within the state of New Hampshire and is a candidate for listing as federally endangered by the US Fish and Wildlife Service (USFWS). Discussion of the two state-listed species follows and four exemplary natural communities located within the project area follows.

### **Crested Sedge (*Carex cristatella*)**

A survey for the crested sedge (*Carex cristatella*) was performed by a Normandeau Associates botanist on July 1, 2014. Timing of the survey was intended to coincide with peak blooming for the target species and thus increase detection and identification ability. The survey focused on areas suitable to support this species, which is limited to freshwater marshes. This habitat type is very limited within the proposed project area and is composed solely of the delineated roadside swales that have been constructed for stormwater drainage. A general survey of the upper edges of saltmarsh bordering Bunker Creek and the Oyster River was also conducted to account for a potential freshwater wetland fringe that could support the target species.

Dominant species within the freshwater wetlands on site consisted of a variety of plants commonly associated with disturbance, including loosened soft rush (*Juncus effusus* ssp. *solutus*), poison-ivy (*Toxicodendron radicans*), sallow sedge (*Carex lurida*), and broad-leaved cattail (*Typha latifolia*), with lower densities of awl-fruited sedge (*Carex stipata*) and clovers (*Trifolium* sp.).

Crested sedge was not located during the survey. The NHNHB record was historical, last observed in 1950 from an area along Bunker Creek approximately 0.5 miles north of the proposed project area. This occurrence coincided with an alder-dominated freshwater wetland. This type of habitat was not observed during the survey. The freshwater wetlands on site are limited to the roadside drainages and did not support the target species. A freshwater wetland fringe of Bunker Creek was also not observed and therefore unable to support the crested sedge. No areas suitable for this species were observed during the survey. The dominant wetland system present is that of a saltmarsh dominated by cordgrass (*Spartina* sp.).

### **New England Cottontail (*Sylvilagus transitionalis*)**

Habitat suitability for New England cottontail (NEC) in the Project Area was evaluated with aerial photography (April 2013) and a reconnaissance-level survey conducted on October 22, 2013 by a Normandeau Associates wildlife biologist. Suitable habitat was determined not to be present. Any area of open, grassy vegetation or residential development abutting the roadway was immediately discounted. Upon inspection in the field, all the forested areas were confirmed as having an inadequately-dense understory to meet the cover requirements of NEC. There is one shrubby area west of the project area on the south side of US Route 4, immediately west of Riverview Road, where the cover appeared dense enough to meet the requirements of NEC. However, this block of brushy habitat extends for only 150 feet along the roadway, and extends approximately 300 feet southwards away from the road, and is surrounded by residential development. Although NEC have limited area needs, this small block's lack of connection to other suitable habitat blocks and its proximity to domestic pets (cats, dogs) that may harass or actively hunt rabbits likely renders it unsuitable for NEC.

### **Exemplary Natural Communities**

NHNHB has mapped three exemplary natural communities within the project area: subtidal system, sparsely vegetated intertidal system, brackish marsh and high salt marsh. Although there will be temporary impacts to all three of these systems during construction, there will be long term benefits as a result of the reduced flow restriction at the widened bridge span. It is anticipated that any temporary impacts would be restored within one to two years of the completion of construction.

Comments from NH Natural Heritage Bureau:

The NHNHB has commented that rare plant surveys have been completed and none were found within the project area. (*Exhibit 18a – NHB17-2706*). NHNHB provided additional feedback regarding the potential for impact to exemplary natural communities and concluded that although salt marsh will be affected, a payment to the Aquatic Resources Mitigation fund would appropriately compensate for the lost areas of Exemplary Natural Communities. (*Exhibit 18b - NH Natural Heritage Bureau Correspondence*).

Comments from USFWS and/or NOAA:

The US Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) review was consulted to identify any federally listed species that may occur within the project area. IPaC results indicated that small whorled pogonia (*Isotria medeoloides*), Red Knot (*Calidris canutus rufa*) and the Northern Long-Eared Bat (*Myotis septentrionalis*) all have the potential to occur within the project area. (*Exhibit 19 - IPaC Official Species List*) The USFWS New England District list of species by town does not list small whorled pogonia as occurring within Durham (*Exhibit 20 - Federally Listed Endangered and Threatened Species in New Hampshire*). A datacheck with the online bird tracking website ebird.org did not reveal any known occurrences of red knot in or near the project area (*Exhibit 21 - Red Knot Occurrences in Vicinity of Durham 16236*). As such, no impacts to the small whorled pogonia or the Red Knot species are likely to occur.

Northern Long Eared Bat (NLEB) Consultation was undertaken under the May 2016 Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat in place between USFWS and FHWA. The NHDOT has determined that the project may affect, is likely to adversely affect (LAA) the NLEB as the project includes tree clearing that will be conducted during the NLEB active season. The USFWS has concurred with this determination (*Exhibit 22 - Northern Long-Eared Bat Consultation*). The NHDOT will incorporate appropriate Avoidance and Mitigation Measures as specified in the Programmatic Project Submittal Form (*Exhibit 23 - NLEB Project Submittal Form*). An inspection of the bridge in January 2017 did not identify its use by bats, in accordance with the Programmatic Consultation the NHDOT will complete an assessment of the bridge a minimum of 1 (one) year prior to conducting any work on the bridge.

Mitigation (Describe): None required

A review of Critical Habitat as designated by NOAA for the federally endangered anadromous Atlantic Sturgeon indicates that regulated Critical Habitat for Atlantic Sturgeon extends to Great Bay, but does not extend up the Oyster River. As such, no formal Section 7 consultation was undertaken. NOAA's Section 7 Fisheries Biologist Max Tritt provided feedback that there was a concern that Atlantic Sturgeon could incidentally be present in the project area during construction. As a preventative measure, turbidity booms will be used during construction that would exclude Atlantic Sturgeon from work areas adjacent to the causeways, and NOAA's "Atlantic and Shortnose Sturgeon" Fact Sheet<sup>2</sup> will be included in the construction contract documentation. Based on the distance of the project from Critical Habitat for Atlantic Sturgeon; the lack of sufficiently deep water during most portions of the tide cycle for movement of Atlantic Sturgeon in the vicinity of the project area; and with the use of the precautionary measures noted above, FHWA has determined that there will be no effect to Atlantic Sturgeon (*Exhibit 24 - FHWA Atlantic Sturgeon Determination*).

<sup>2</sup> <https://www.greateratlantic.fisheries.noaa.gov/protected/atlsturgeon/docs/sturgeonfactsheetfinal.pdf>

**13. Wildlife and Fisheries**

Does the project impact Highest Ranked Habitat as identified by the Wildlife Action Plan? Yes  No

There is Highest Ranked Habitat identified on each side of the existing bridge. (*Exhibit 25 - Wildlife Action Plan Priority Areas*). Salt marsh and mud flats habitat on the north side of US Route 4 will be impacted by the shifting of the causeway approaches for the bridge to the north. Wetland impacts are summarized by wetland type in Table 2 – Proposed Wetland Impacts.

Does the project impact Essential Fish Habitat? Yes  No   
 If yes, was an EFH Assessment completed? Yes  No

An Essential Fish Habitat (EFH) Assessment was completed in May, 2015 and revised in January, 2017 by a Normandeau Associates Fisheries Biologist. The EFH Assessment determined that the proposed project may have temporary adverse effects on water quality and habitat availability during construction activities for five species and their life stages with designated EFH in the mixing zone of the Great Bay estuary. Specifically, no adverse effects to EFH for any life stage of Atlantic Herring, Atlantic Mackerel, and Atlantic Salmon are expected from the proposed project, but temporary adverse effects to EFH could result for juvenile and adult Bluefish, and all life stages of Winter Flounder.

NOAA provided conservation recommendations to mitigate effects to Essential Fish Habitat, as follows:

- Impacts to salt marsh should be avoided and minimized to the extent possible
- Impacts to the tidal regime should accommodate predicted sea level rise
- Compensatory mitigation should be provided
- A time of year (TOY) restriction from February 15 – June 30 is preferred.

FHWA determined that the project will have no substantial temporary or permanent adverse effect on those species with designated EFH. FHWA has committed to further consultation with NOAA if the requested TOY restriction poses a substantial constraint on the construction of the project.

Does the project involve stream crossings? (Env-Wt PART 900) Yes  No

If yes, describe how the NHDES Stream Crossing Rules will be addressed:

The project area lies within the Designated River corridor of the Oyster River and as a result, the crossing of Bunker Creek is classified as a Tier 3 stream crossing. Env-Wt 904 governs the design considerations for Tier 3 stream crossings. The replacement bridge must be designed:

- (a) In accordance with the NH Stream Crossing Guidelines, University of New Hampshire, May 2009, ([http://www.unh.edu/erg/stream\\_restoration/](http://www.unh.edu/erg/stream_restoration/)); [http://www.streamcontinuity.org/pdf\\_files/nh\\_stream\\_crossing\\_guidelines\\_unh\\_web\\_rev\\_2.pdf](http://www.streamcontinuity.org/pdf_files/nh_stream_crossing_guidelines_unh_web_rev_2.pdf)
- (b) With the bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing;
- (c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage;
- (d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain;

- (e) To accommodate the 100-year frequency flood, to ensure that:
  - (1) There is no increase in flood stages on abutting properties; and
  - (2) Flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability;
- (f) To simulate a natural stream channel; and
- (g) So as not to alter sediment transport competence.

The replacement crossing will increase the width of the opening from 15 feet to a maximum width of 76 feet, which will better accommodate a 100-year flood and will reduce flood stages on abutting properties. A hydraulic investigation conducted in 1998 (US Route 4 over Bunker Creek & US Route 4 over Johnson Creek, McFarland Johnson Inc., 1998) suggested that increasing the span of the bridge to 60 feet would reduce headloss to 0.05 feet during tidal fluctuations. An updated hydraulic investigation will be conducted once the bridge design has been finalized.

Comments from State, Federal, or private agency:

Comments from NHDES and USACE from the Natural Resource Agency Coordination Meetings can be found at [www.nh.gov/dot/org/projectdevelopment/environment/index.htm](http://www.nh.gov/dot/org/projectdevelopment/environment/index.htm), -NHDOT Bureau of Environment Conference Reports from November 20, 2013, February 18, 2015, and September 20, 2017. There was agreement by the USACE, NHDES and NHF&G that the increase in the hydraulic opening of the bridge would be beneficial. It was further agreed that the replacement of the Tier 3 bridge would be self-mitigating, since the proposed bridge would provide a wider channel than the existing bridge. Other comments were related to the nature and duration of temporary wetland impacts, type of wetland to be permanently impacted, and mitigation for impacts to wetland resources (which is assumed to be an in-lieu fee). USACE stated and later confirmed that the project would qualify for a Section 404 Programmatic General Permit (*Exhibit 16 - USACE Correspondence*). NHNHB had questions related to impacts to exemplary natural communities. Additional coordination with NHNHB occurred following the September 20, 2017 meeting. (*Exhibit 18b - NH Natural Heritage Bureau Correspondence*)

**14. Air Quality**

- |  |   |  |      |
|--|---|--|------|
| Is project located in ozone nonattainment area?                  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |      |
| Is project located in carbon monoxide nonattainment area?        | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |      |
| Is project included in conformity determinations?                | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Year |
| Is project exempt from conformity determination?                 | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |      |
| Is project exempt from CO analysis?                              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |      |
| Exemption Code (from most recent conformity document):           |   |  |      |
| Has project changed since the conformity analysis?               | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            |      |
| Is project exempt from NEPA requirement to consider air quality? | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |      |

A conformity determination is not required, as the project is consistent with exempt projects listed in Table 2 of 40 CFR 93.126. Additionally, when completed, the project is not expected to result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative or contribute to violations of the NAAQS. As a result, it can be concluded that this project will not have an adverse impact on air quality. No further air quality review is warranted.

**15. Coastal Zone**

- Is the project located in the Coastal Zone?      Yes     No

Has an Intergovernmental Consistency Review been completed to determine consistency with the Coastal Zone Management Act? (16 U.S.C. 1451-1464) Yes  No

A letter was sent to the NHDES Coastal Program on January 15, 2014 seeking input on the need for an Intergovernmental Consistency Review. The Coastal Program supports the potential for increased tidal flow as a result of the wider span. The Coastal Program coordinator recommended a pre-construction vegetation assessment and pore water sampling be completed to document existing conditions in upstream salt and brackish marshes. Because the project will use federal Highway Planning and Construction program funds, a Coastal Zone Management Consistency Finding will be needed for the project. (*Exhibit 8 - CZMA Correspondence*).

**16. Agricultural Land**

Does the project impact agricultural land? Yes  No  Active farmland? Yes  No   
 Does project area contain prime, unique, statewide or locally important farmland soils? Yes  No   
 Completion of Form AD-1006 or Form CPA-106 Required? Yes  No

There is no active farmland or farmland soils in the vicinity of the proposed project.

**17. Hazardous/Contaminated Materials**

Does the project area include sites from NHDES OneStop GIS Database? Yes  No   
 Are there sites from NHDES OneStop GIS Database within a 1,000 foot radius of the project area? Yes  No   
 Does the project involve a bridge with Asbestos Containing Material? Yes  No   
 ISA completed and attached? Yes  No  Additional investigation required? Yes  No   
 Remediation required? Yes  No

As part of the Initial Site Assessment (ISA) for the Bunker Creek Bridge project, reviews were completed of the New Hampshire Department of Environmental Services (NHDES) OneStop database and of environmental databases using an online environmental database search provider (Environmental Data Resources, Inc.). The results of the data reviews are summarized below.

**NHDES OneStop Database Review**

The review of the NHDES OneStop database was conducted using the NHDES OneStop WEB GIS system. The following databases were reviewed using a 0.5-mile search radius from the Bunker Creek bridge crossing:

- Air Stationary Sources
- Asbestos Disposal Sites
- Aboveground Storage Tank Facilities
- Automobile Salvage Yards
- Hazardous Waste Generators
- Non-Point Sources
- National Pollutant Discharge Elimination System Outfalls
- Remediation Sites
- Underground Storage Tank Facilities

The results of the OneStop database search are included in the summary table below. The three sites that were identified include:

- the Haney Property located at 4 Tirrell Place on the east side of the project area and north of US Route 4, and

- The Lundholm residence located at 104 Piscataqua Road (US Route 4) on the west side of the project area and south of US Route 4.
- the Terry Sharbaugh property located at 25 Riverview Road on the west side of the project area and south of US Route 4.

MASTER ID	SITE ID	SITE NAME	ADDRESS	TOWN	PROJECT TYPE	PROJECT MANAGER	WORKLOAD PRIORITY	RISK	PERM IT#	TAX MAP	TAX LOT
61696	20060 9067	HANEY PROPERTY	4 TIRRELL PLACE	DURHAM	ETHER	CLOSED	3	8	NA		
57861	20030 2012	TERRY SHARBAUGH	25 RIVERVIEW RD	DURHAM	OPUF	CLOSED	3	8	NA		
67612	20120 9064	JERRY LUNDHOLM	104 PISCATAQUA RD	DURHAM	OPUF	CLOSED	3	8	NA		

The Haney property was listed on the ether contaminated site database. Information in the project file for the property indicated that sampling of an on-site water supply well was performed in 2006 and that no contamination was detected in the samples. The file is listed as closed.

The Lundholm property is listed on the On-Premise Use Facility (OPUF) database as discoloration and petroleum odor were detected from beneath the former tank location during a tank pull of an on-site heating oil underground storage tank (UST). Analysis of Total Petroleum Hydrocarbons performed on a composite soil sample from beneath the former tank location were found to be within State of NH’s Acceptable Guidelines. Based on this information no further action was deemed to be warranted in September 2012 and the file is listed as closed.

The Sharbaugh property is listed on the On-Premise Use Facility (OPUF) database for a spill from an on-site heating oil aboveground storage tank (AST). A Certificate of No Further Action letter was issued for the property on August 6, 2013 and the file is also listed as closed.

Several initial response spills were also identified on the OneStop database for locations along US Route 4 although none of the listed spills were determined to be located in the project area. All of the initial response spill listings were reported to have been immediately cleaned up and the files are listed as closed.

### Environmental Data Resources (EDR) Database Review

An EDR environmental database search for the project area using the search radii from the American Society of Testing and Materials (ASTM) Phase I Environmental Site Assessment standards. The following sites were identified in the EDR report (*Exhibit 27 - Detail Map EDR Report*):

- Bunker Creek on US Route 4, which was listed on the SPILLS 90 database,
- The Lundholm Residence located at 104 Piscataqua Road (south side of Route 4) on the west side of the project area,
- The Haney Property located at 4 Tirrell Place on the east side of the project area and north of US Route 4,
- The Terry Sharbaugh property located at 25 Riverview Road on the west side of the project area and south of US Route 4, and
- A listing for the 24 Riverview Road property located on the west side of the project area and south of US Route 4.

No additional information could be found on the SPILLS 90 database listing for the Bunker Creek listing. However, the spills listing is likely associated with a localized automobile spill along US Route 4.

The Lundholm property is listed on the ALLSITES database associated with an OPUF tank containing fuel oil. The NHDES files contain a tank closure report for the removal of a 500 gallon UST at the property in August

2012. Based on results of laboratory analyses for soil samples collected during the tank excavation, no further action was required at the property.

The Haney property is listed in the EDR report on the ALLSITES database as an ether contaminated site that was closed and required no further action.

The Sharbaugh property is listed in the EDR report on the ALLSITES database and the RCRA NonGen/No Longer Regulated (NLR) database. The ALLSITES database was associated with an OPUF fuel oil listing. The property was listed as closed and required no further action.

The 24 Riverview Road property is listed on the EDR Historical Auto Station database. The property is identified as being occupied by Atlantic Auto Body Repair in 2005 to 2009. Online research indicated that Atlantic Auto Body Repair was founded in 1992 and was an automotive body repair shop. No reported spills or releases were identified for this address or business name.

The EDR report also identified 26 unmappable sites with a total of 30 database listings. Unmappable sites are properties that cannot be located due to insufficient information listed for their addresses. Normandeau reviewed the unmappable sites and determined that none of them are located within the minimum search radii for the individual databases and therefore are not of environmental concern relative to the project area.

**Asbestos**

It is assumed that asbestos is present on the bridge. The presence of asbestos containing materials in the bridge will be confirmed prior to construction through sampling of the deck and membrane materials. If the presence of asbestos is confirmed, appropriate language will be included in contract documents to ensure proper removal, handling, and disposal of all asbestos containing materials.

**Conclusions**

The NHDES OneStop and EDR databases were reviewed for potential hazardous material in the vicinity of the proposed project. A listing was reported for the project area at Bunker Creek and US Route 4. However, since a remediation site was not identified for the location, it is likely that the spill listing was associated with a roadway spill or release that was immediately cleaned up and did not require any further action; therefore, the listing is not likely to be of environmental concern relative to the project area. Three residential properties located in the vicinity of the project area were identified as having past releases. However, all three properties were listed as closed, requiring no further action. The property located at 24 Riverview Road was identified as a potential former auto body repair shop. No reported spills or releases were identified for the address. As such there is no concern with Hazardous/Contamination Materials for the project.

**18. Public Participation**

Initial Contact Letters sent to local officials?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Date <u>Various – see “Contact Letters Sent and Received”</u>
Public Informational Meeting?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Date <u>October 17, 2013</u>
Public Hearing Required?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Date <u>May 28, 2015</u>

Public Information meeting minutes and the transcript from the Public Hearing are available at <https://www.nh.gov/dot/projects/durham16236/index.htm>. Public participation and outreach are summarized above in **Table 1 - “Contact Letters Sent And Replies Received”**.

**19. Social and Economic Impacts**

Is the project consistent with local and regional land use plans? Yes  No

The project is consistent with the goals in Durham’s Master Plan adopted November 18, 2015.

Neighborhood and community impacts? Yes  No

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/> Churches   | <input type="checkbox"/> Handicapped                                      |
| <input type="checkbox"/> Schools    | <input type="checkbox"/> Low Income Housing                               |
| <input type="checkbox"/> Elderly    | <input checked="" type="checkbox"/> Emergency Service Facilities/Vehicles |
| <input type="checkbox"/> Minorities | <input type="checkbox"/> Environmental Justice (Executive Order 12898)    |

The replacement of the bridge and reconstruction of the roadway will make travel safer for the general public. Under the proposed traffic control alternative traffic would be routed through a detour for less than 14 days, but all properties would remain accessible. The detour as planned is summarized under **Section 2 - “Traffic Patterns /Roadway Access.”** For westbound traffic for residents located on the east side of the bridge, the detour would be up to 18.2 miles long, and would pass through the Spaulding Turnpike’s Dover toll facilities. For US Route 4 through traffic to and from the Spaulding Turnpike the detour would be about 4.8 miles of travel time and will pass through the Dover toll facilities. Other detours on state roads are available that will not pass through tolls.

Emergency service providers voiced their concerns at the Public Hearing on May 28, 2015 that emergency services and schools would be adversely affected by the proposed closure. The NHDOT recognizes the short-term closure of US Rte. 4 may affect emergency response time to regional trauma centers in Dover and Portsmouth. The Department will coordinate with the Towns of Lee, Newmarket, Madbury, Durham and the City of Dover regarding emergency routes and assistance for mutual aid response during the roadway closure. The detour corridor for the project will be along designated State routes. The Department will coordinate with the Towns of Durham and Madbury and the City of Dover to identify appropriate signage for installation along local roads to deter their use by non-local traffic as part of the traffic management for the project.

The closure period is anticipated to be during summer break for the local schools, not to interfere with UNH Commencement (typically May) and be no later than one week prior to move-in day for UNH students (typically late August/early September). The NHDOT will coordinate with the City of Dover, Town of Durham and Madbury, UNH, and emergency responders prior to finalizing the optimum closure period.

Impacts to local businesses? Yes  No  Temporary  Permanent

There are no businesses within the immediate project area. Access to all nearby businesses and residences would be maintained during construction. The proposed traffic control plan would temporarily inconvenience commuters between Portsmouth and Concord that must cross the bridge to access their homes and businesses, but at no time would adjacent landowners be denied access to their properties.

**20. Environmental Justice**

Does the area affected by the proposed action contain EJ (minority, elderly, limited English proficiency, and/or low-income ) populations? Yes  No

Are the anticipated project impacts resulting from the proposed action likely to fall disproportionately on EJ populations? Yes  No

Executive Orders 12898 and 13166, signed in 1994 and 2000 respectively, require that an environmental justice evaluation be conducted for all transportation projects that are undertaken, funded, or approved by the

Federal Highway Administration to avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, and social and economic effects on minority populations and low income populations. NHDOT prepared an Environmental Justice Population Analysis for the project that shows higher-than-average low-income population in the surrounding area. However, the Analysis found that this is due to the student population levels at the University of New Hampshire within the census tract. The Analysis provided contact information for community outreach agencies to be included in notification or public outreach that might be undertaken for the project. (*Exhibit 28 - Environmental Justice Population Analysis*).

**21. Construction Impacts**

A series of potential construction-related impacts may occur as a result of the project. These impacts are noted below:

- Through traffic will be detoured along NH 108 and the Spaulding Turnpike during a short term closure of less than 14 days. Apart from this period, two lanes of traffic would be maintained within the project area, although construction activities may need to be accomplished under the management of existing traffic flow through a combination of, but not limited to, one way traffic configuration, rolling roadblocks and/or short roadway closures during off peak traffic hours and nighttime operations. In addition, after the installation of the replacement bridge, post construction activities will be necessary while under traffic management to complete the final slope stabilization, guardrail installation, final paving, and pavement markings.
- A Stormwater Pollution Prevention Plan (SWPPP) will be in place to ensure all negative impacts are minimized and restricted to the construction phase of the project to the extent practicable.
- Appropriate measures will be taken to control and minimize disturbances to adjacent wetland and surface water resources
- Any spillage of oil or oil-based products during construction must be promptly reported to NHDES Spill Response at (603) 223-4381.
- Heavy equipment operation will cause temporary increases in noise and dust levels during construction. All standard measures would be used to ensure that these increases are minimized to the extent practicable. Noise and dust levels should return to normal shortly after completion of construction, with no future implications.
- There are several utilities located within the project area, including Comcast, Fairpoint, and Eversource. In the event that a disruption to services occurs, coordination with appropriate utility companies will be undertaken to ensure that disruptions to services are kept to a minimum.
- The proposed action will inconvenience and disrupt motorists and pedestrians, as well as those people living and working in the area.

**22. Invasive Species**

Does the project area contain invasive species prohibited under RSA 430:55 or RSA 487:16-a? Yes  No

If yes, will an Invasive Species Control and Management Plan be required during construction? Yes  No

Comments:

Disturbance and increased sunlight associated with maintained roadsides provide non-native species with ideal habitat and act as corridors for propagule transport (NHDOT 2008). Prohibited invasive plants found within the project area include multiflora rose (*Rosa multiflora*), in the mown ROW, and European buckthorn (*Rhamnus cathartica*) in the adjacent upland along the forested edge and extending inland. None of the five

NHDOT priority species (Japanese knotweed [*Fallopia japonica*], common reed [*Phragmites australis*], spotted knapweed [*Centaurea stoebe* ssp. *micranthos*], Asian bittersweet [*Celastrus orbiculatus*] or purple loosestrife [*Lythrum salicaria*]) were found within the project area. Depending on the ultimate project footprint, impacts may occur to these invasive species. If these are impacted the Contractor may be directed to prepare an Invasive Species Control and Management Plan.

**23. Field Inspection Comments:**

At the crossing, Bunker Creek is tidally influenced, and has a broad brackish marsh fringe associated with it. There are two constructed ditches along the north side of US Route 4 that drain into Bunker Creek and function as freshwater wetlands. Catch basins placed west of Morgan Way provide additional drainage directly into the Oyster River. Upland portions of the site consist of exurban residential development, with narrow wooded buffers occurring between the residences and the highway.

**24. Coordination**

Meeting	Date	Comments
Public Informational Meeting	10/17/13	Presentation to receive initial public input.
Natural Resource Agency Meeting	11/20/13	Presentation to receive initial input from agencies
Natural Resource Agency Meeting	2/18/15	Presentation to receive further design input from agencies
Public Hearing	5/28/15	Public hearing for formal comment
Finding of Necessity	3/31/17	Public meeting of the projects' Highway Layout Commission on Finding for the Necessity of the Project.
Natural Resource Agency Meeting	9/20/17	Presentation to update agencies on the design and schedule. Discuss environmental impacts and mitigation.

**25. Environmental Mitigation and/or Commitments:**

(List each environmental commitment made for the project, indicating the entity responsible for ensuring successful implementation.)

1. A Stormwater Pollution Prevention Plan shall be prepared for the project. (Bridge Design, Construction, Environment)
2. Construction monitoring of the Twombly Family Burial Ground on Parcel 10 shall occur should construction impacts occur within 25 feet of the boundaries of the resource.
3. All appropriate erosion and siltation control measures shall be utilized during construction to protect the integrity of any adjacent wetlands and streams, including Bunker Creek and the Oyster River. The project contractor shall be required to use standard pollution prevention measures to assure that all negative impacts are avoided and/or minimized to the maximum extent practicable. Upon approval by NHDOT, the project contractor shall be required to adhere to all proposed conditions. (Construction, Environment)
4. Erosion and sedimentation control measures must be installed prior to the commencement of construction and maintained appropriately throughout the project construction. (Construction)
5. The presence of asbestos containing materials in the bridge shall be determined prior to construction through review of as-built plans and sampling of deck and membrane. If the presence of asbestos is confirmed, appropriate language must be included in contract documents to ensure proper removal, handling, and disposal of all asbestos containing materials. (Environment, Design, Construction)
6. If abnormal field conditions are identified during construction that present unanticipated environmental

<p>concerns or would require deviations from any other environmental commitment, work shall be suspended in the immediate area and the Bureau of Environment shall be contacted to provide further guidance. (Construction)</p>
<p>7. The span length of the Bunker Creek Bridge, currently established at a maximum of 76 feet, shall be designed through the Design Build Contract process to meet environmental parameters for open width and flood passage for the 100 year predicted flood risk occurrences. (Bridge Design, Environment)</p>
<p>8. Through traffic is anticipated to be detoured along NH 108 and the Spaulding Turnpike during a short term closure of less than 14 days. (Bridge Design, Construction)</p>
<p>9. A NHDES wetland permit and a NHDES Shoreland permit will be acquired prior to construction. (Bridge Design, Construction, Environment)</p>
<p>10. A NHDES Coastal Zone Consistency Finding will be acquired prior to constructions. (Bridge Design, Environment)</p>
<p>11. A USACE Programmatic General Permit will be acquired prior to construction. (Bridge Design, Construction, Environment)</p>
<p>12. Areas known to contain invasive species found on the NH List of Prohibited Invasive Species (AGR PART 3802.01) are depicted on the project plans. Disturbances of any prohibited invasive species areas shall be conducted in accordance with the Department publication Best Management Practices for Roadside Invasive Plants. (Bridge Design, Construction)</p>
<p>13. Implementation of appropriate Avoidance and Mitigation Measures, as detailed in the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat Project Submittal Form, including posting of an NLEB Awareness flyer. (Bridge Design, Environment, Construction)</p>
<p>14. Prior to commencement of any work on the bridge, the Bureau of Environment shall conduct an inspection to detect the presence or evidence of any use by bats. If bats are found to be present, or if there is evidence of bat usage, work at the bridge shall not commence until after the Bureau of Environment has completed coordination with the US Fish and Wildlife Service to determine the appropriate follow up or mitigative actions. (Construction, Environment)</p>
<p>15. Turbidity booms shall be installed along the causeways approaching the bridge as a preventative measure that would exclude federally endangered Atlantic Sturgeon that may incidentally be present in the project area during construction. (Construction, Environment, Bridge Design)</p>
<p>16. NOAA's Fisheries "Atlantic and Shortnose Sturgeon" Fact Sheet shall be included in the construction contract documentation, to be shared with all project operators, employees and contractors. (Construction, Environment, Bridge Design)</p>
<p>17. FHWA will follow NMFS recommendations and NHDOT shall coordinate with NMFS to determine appropriate time of year restrictions to protect Essential Fish Habitat (Environment, Bridge Design)</p>
<p>18. Intertidal habitat impacts shall be avoided and minimized. Compensatory mitigation will be provided for remaining unavoidable impacts. (Environment, Bridge Design)</p>
<p>19. Contact information for community outreach agencies are to be included in notification or public outreach that might be undertaken for the project. (Bridge Design, Right-of-Way, Environment, Construction)</p>

Note: When appropriate, more detailed descriptions of resources and an explanation of the impact analysis should be attached to this form.

**LIST OF EXHIBITS**

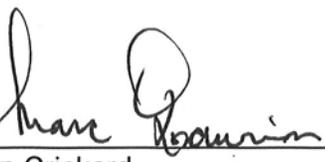
- Exhibit 1 - Project Location*
- Exhibit 2 - Post-Hearing Preliminary Plan*
- Exhibit 3 - Traffic Control Alternative*
- Exhibit 4 - Dover Police Department Response*
- Exhibit 5 - Durham Town Administration Response*
- Exhibit 6 - Durham Waste Management Response*
- Exhibit 7 - Durham Zoning Administration Response*
- Exhibit 8 - CZMA Correspondence*
- Exhibit 9 - LCHIP Response*
- Exhibit 10 - Section 6(f) Response*
- Exhibit 11 - LCIP Response*
- Exhibit 12 - NHOEP Floodplain Management Program Response*
- Exhibit 13 - No Historic Properties Affected Memorandum*
- Exhibit 14 - 4(f) Determination*
- Exhibit 15 - USCG Navigability Correspondence*
- Exhibit 16 - USACE Correspondence*
- Exhibit 17 - Oyster River Assessment Aerial*
- Exhibit 18a - NH17-2706*
- Exhibit 18b - NH Natural Heritage Bureau Correspondence*
- Exhibit 19 - IPaC Official Species List*
- Exhibit 20 - Federally Listed Endangered and Threatened Species in New Hampshire*
- Exhibit 21 - Red Knot Occurrences in Vicinity of Durham 16236*
- Exhibit 22 - Northern Long-Eared Bat Consultation*
- Exhibit 23 - NLEB Project Submittal Form*
- Exhibit 24 - FHWA Atlantic Sturgeon Determination*
- Exhibit 25 - Wildlife Action Plan Priority Areas*
- Exhibit 26 - Essential Fish Habitat Consultation*
- Exhibit 27 - Detail Map EDR Report*
- Exhibit 28 - Environmental Justice Population Analysis*

**AVAILABLE REPORTS**

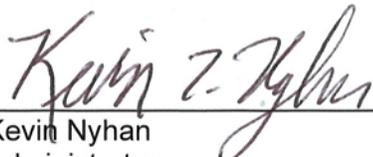
U.S. Route 4 over Bunker Creek & U.S. Route 4 over Johnson Creek Hydrologic/Hydraulic Investigation  
Environmental Data Resources Radius Map Report  
New Hampshire Division of Historical Resources Area Form – Bunker Creek Bridge Project Area  
Durham 16236 New England Cottontail Habitat Survey Report  
Noise Analysis Technical Report Durham 16236 US Route 4 over Bunker Creek Bridge Replacement Durham,  
New Hampshire  
Durham, X-A001 (202), 16236 Public Hearing Transcript May 28, 2015

Prepared by:   
Vicki Chase  
Principal Regulatory Specialist  
Normandeau Associates, Inc.

11/7/17  
Date

Reviewed by:   
for Ron Crickard  
Project Management Section Chief  
NHDOT Bureau of Environment

11/7/17  
Date

Approval Recommended by:   
Kevin Nyhan  
Administrator  
NHDOT Bureau of Environment

11/8/17  
Date

**ABREVIATIONS/ACRONYMS USED IN THIS DOCUMENT**

ACM	Asbestos Containing Materials
CE	Categorical Exclusion
CFR	Code of Federal Regulations
CLOMR	Conditional Letter of Map Revision
CMAQ	Congestions Mitigation & Air Quality
CO	Carbon Monoxide
CORD	Council on Resources and Economic Development
CZMA	Coastal Zone Management Act
dBA	Decibels Adjusted
EJ	Environmental Justice
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
ISA	Initial Site Assessment
LCHIP	Land & Community Heritage Investment Program
LCIP	Land Conservation Investment Program
LWCF	Land & Water Conservation Fund
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHDES	New Hampshire Department of Environmental Services
NHF&G	New Hampshire Fish and Game Department
NHNHB	New Hampshire Natural Heritage Bureau
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PPM	Parts Per Million
ROW	Right-of-Way
SWPPP	Storm Water Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service



PROJECT LOCATION

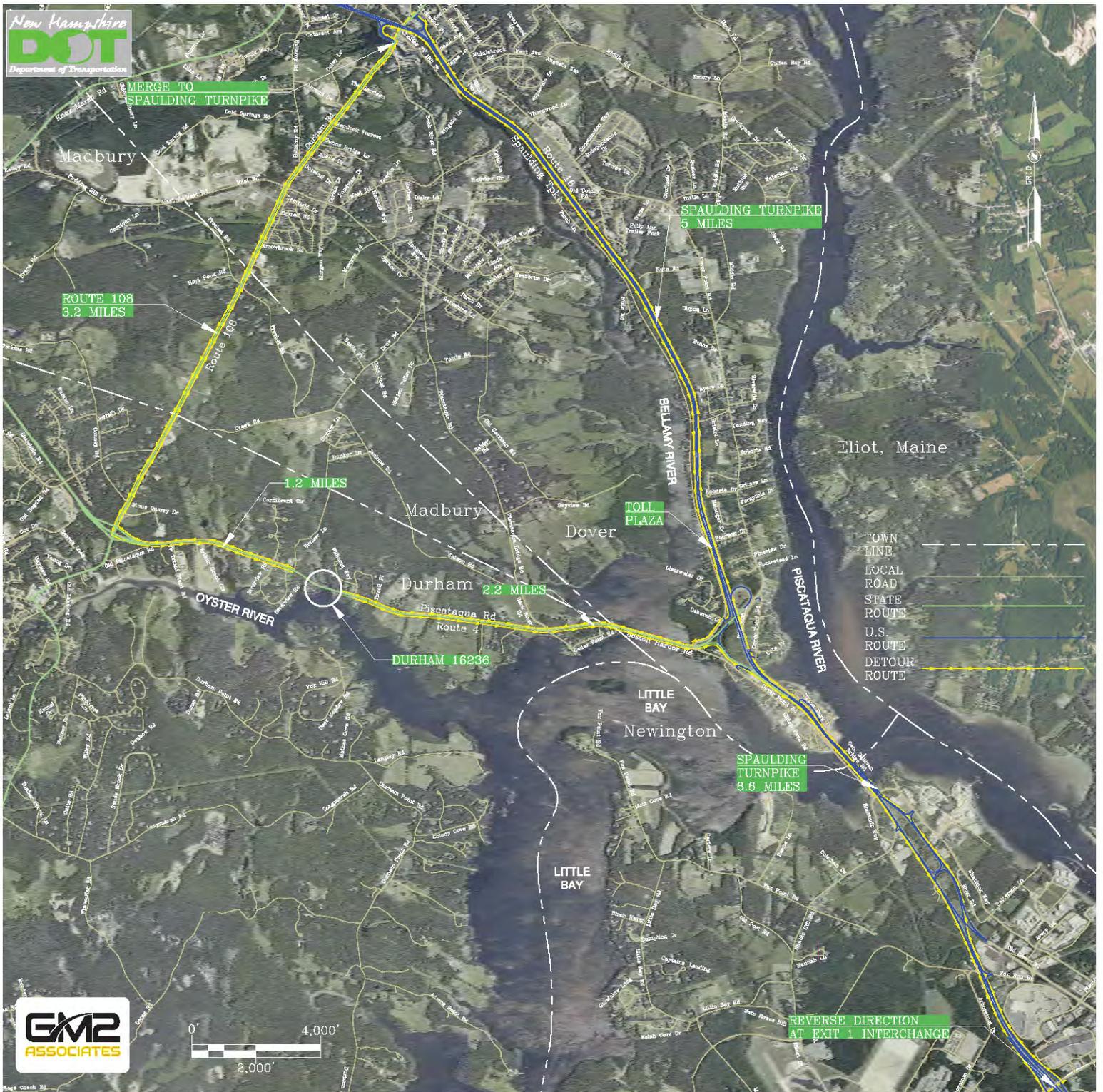


Project No: 23164.001	Drawn By: volase	Date: 11/2/2017	
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NHDOT DURHAM, NEW HAMPSHIRE 16236		
<b>EXHIBIT 1 - PROJECT LOCATION</b>		
SCALE: 1:24,000	 <small>25 Nashua Road Bedford, NH 03110          (603) 472-5191 www.normandeau.com</small>	NOVEMBER 2017



# Exhibit 3



Durham 16236  
Traffic Control Alternative 1  
Detour Option

**From:** Speidel, Marn <M.Speidel@dover.nh.gov>  
**Sent:** Monday, February 03, 2014 3:40 PM  
**To:** Adele Fiorillo  
**Subject:** Normandeu Project No. 23164.000

Good afternoon Ms. Fiorillo,

On behalf of Chief Colarusso and the Dover Police Department, I received and reviewed your January 29, 2014 letter regarding the project to replace the Route 4 bridge over Bunker Creek in Durham, NH. Thank you for the opportunity to review and comment on the project.

We do not have any specific response or comment applicable to any of the 9 questions that you outline in your letter.

The Dover Police Department would have concerns with potential traffic impacts during the construction phase, especially in the event that a full closure of the US Route 4 corridor is necessary at any point. However, it is our understanding that construction-related traffic impacts would not be within the scope of Normandeu's involvement.

Please feel free to contact me at (603) 742-4646 if you need anything further.

Regards,  
Marn Speidel

Sgt. Marn E. Speidel  
Traffic Bureau  
Dover Police Department  
46 Locust Street  
Dover, NH 03820  
(603) 742-4646  
E-mail: [m.speidel@dover.nh.gov](mailto:m.speidel@dover.nh.gov)

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**From:** Todd Selig <tselig@ci.durham.nh.us>  
**Sent:** Tuesday, February 11, 2014 3:40 PM  
**To:** Adele Fiorillo  
**Cc:** Michael Lynch  
**Subject:** Re: Route 4 Bridge over Bunker Creek

Dear Adele,

This is an accurate account of our conversation regarding the Route 4 bridge over Bunker Creek. Thank you very much for taking the time to follow up. It is appreciated.

Todd

Todd I. Selig, Administrator  
Town of Durham, NH

T. 603.868.5571 | [www.ci.durham.nh.us](http://www.ci.durham.nh.us)

---

**From:** Adele Fiorillo <[afiorillo@normandeau.com](mailto:afiorillo@normandeau.com)>  
**Date:** Tuesday, February 4, 2014 at 5:18 PM  
**To:** Todd Selig <[tselig@ci.durham.nh.us](mailto:tselig@ci.durham.nh.us)>  
**Subject:** Route 4 Bridge over Bunker Creek

Hello Todd: Thank you for your call in response to the letter that was sent to you requesting comments on the proposed Route 4 Bridge replacement over Bunker Creek in Durham. As we discussed I am sending you this email to document our telephone conversation and to make sure all of your comments and concerns are noted completely and accurately .

1. You recommended that we contact the Strafford County Regional Planning Commission to see if they have any regional planning initiatives and/or comments on the project. We will certainly take this recommendation and contact them.
2. The main goal of the Town of Durham is to maintain the scenic quality of the roadway.
3. The character of the roadway should be maintained as much as possible (widening and straightening only if warranted for safety). I shared with you the intent of the preferred design which is to stay on the current alignment but to add some width for a bike path and to reduce grades to eliminate sight distance issues associated with entering roadways. The Town of Durham would be in support of a bike path.
4. There are no municipal wells in the area. However, a City of Portsmouth water line may be in the vicinity. You were not sure of the location but know that it comes through Wagon Hill Farm, just to the east of the project site on Route 4. We will look into all potentially affected utilities.
5. You know of no hazardous materials in the project area.
6. You know of no non-native plant species in the project area.
7. Peter and Marjorie Smith, abutters to the project, are very interested in bridge and roadway plans.

I believe this covers everything we discussed. If I have omitted anything or you would like to make any wording changes to better reflect your comments please let me know. Thank you again for your call.

Sincerely,

ADELE FIORILLO *Principal Wetland Scientist*  
NORMANDEAU ASSOCIATES, *Inc.*  
30 International Drive - Suite 6, Portsmouth, NH 03801  
603-319-5303 (direct) 603-494-8931 (mobile)  
[afiorillo@normandeau.com](mailto:afiorillo@normandeau.com) [www.normandeau.com](http://www.normandeau.com)

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TOWN OF DURHAM  
15 NEWMARKET ROAD  
DURHAM, NH 03824-2898  
Tel: 603/868-5571  
Fax: 603/868-5572

Exhibit 6

February 10, 2014

Ms. Adele Fiorillo  
Normandeau Environmental Consultants  
30 International Drive, Suite 6  
Pease International Tradeport  
Portsmouth, NH 03801

**Re: US Route 4 Bridge No. 145/116, NHDOT Project 16236**

Dear Ms. Fiorillo:

Thank you for your letter dated January 29, 2014 inviting comments from the Town of Durham Integrated Waste Management Advisory Committee relative to New Hampshire Department of Transportation Project 16236, US Route 4 Bridge No. 145/116.

The Integrated Waste Management Advisory Committee has no objections with this project proceeding as planned.

Again, thank you for taking the time to write and seeking the committee's input relative to this project.

Very truly yours,

Michael H. Everngam  
Chair, IWMAC

**From:** Karen Edwards <kedwards@ci.durham.nh.us>  
**Sent:** Tuesday, February 25, 2014 12:47 PM  
**To:** Adele Fiorillo  
**Subject:** US Route 4 Bridge No. 145/116, NH DOT Project 16236

Dear Adele Fiorillo,

I am writing on behalf of our Zoning Administrator, Thomas Johnson. He received your letter of January 29, 2013. He wanted you to know that there are no significant zoning implications for the above referenced project. If you have any questions, please feel free to contact me.

Karen

*Karen Edwards*  
Town of Durham  
15 Newmarket Road  
Durham, NH 03824  
(603) 868-8064  
[www.ci.durham.nh.us](http://www.ci.durham.nh.us)



TELEPHONE CALL SUMMARY LOG

January 21, 2015

Adele Fiorillo, Normandeau Associates, Inc.  
Christian Williams, New Hampshire Coastal Program

Re: Durham Route 4 Bridge Replacement  
NH DOT Project Number: NH #16236  
Federal Highway Project Number: X-A001(202)

In response to a letter dated January 15, 2015 from Normandeau Associates, Inc., Christian Williams of the New Hampshire Coastal Program telephoned Adele Fiorillo of Normandeau Associates to discuss the New Hampshire Department of Transportation Bridge Project (Durham Project NH #16236) to replace bridge #145/116 over Bunker Creek on US Route 4 in the Town of Durham, NH. The following documents the January 21, 2015 telephone conversation:

1. The proposed bridge span is to be expanded to 64 feet from the current 15 feet to address two geometric deficiencies, the sag vertical curve restricting sight distance on US Route 4 and improving intersection sight distance at Morgan Way. The design will also avoid possible subsurface obstructions (existing bridge footings) and aid in the possible accelerated construction of this crossing. This could potentially avoid the need to install a temporary crossing for construction, thereby reducing construction impacts.
2. Any increase in opening that increases tidal flow is generally supported by the Coastal Program.
3. It is recommended that the basis for the bridge expansion be documented to ensure that the bridge opening is sized appropriately to pass as much tidal flow as possible, or to what extent tidal flow is increased (percentage or other metric).
4. Although the Natural Heritage Bureaus report (Attached) does not indicate the presence of Low Salt Marsh, this is a unique marsh community type in New Hampshire and is present on the upstream side of the bridge.
5. The bridge opening hydraulics should be considered with due regard given to the presence of the Low Salt Marsh.
6. It is recommended that a pre-construction vegetation assessment along with pre-construction pore water sampling be completed to document existing conditions in the upstream salt and brackish marshes. These data can be followed by post construction follow up monitoring by

- the University of New Hampshire, the New Hampshire Department of Environmental Services or other such entity to determine how the increased tidal flow affects the marshes.
7. The increased bridge opening may be a benefit to recreation by allowing for upstream access by kayak or canoe. It would be helpful to document the extent to which the proposed bridge may be a benefit.
  8. If this project is approved under the Army Corps of Engineers General Permit then a consistency review will not be required unless the project is funded by a federal program subject to federal consistency review.
  9. Although federal consistency review may not be required, the Coastal Program works closely with the Wetlands Bureau to review projects once a permit application is filed and may make recommendations such as those listed above.



Adele Fiorillo



Christian Williams

**Vicki Chase**

---

**From:** Williams, Chris <Christian.Williams@des.nh.gov>  
**Sent:** Thursday, November 02, 2017 8:16 AM  
**To:** Vicki Chase  
**Subject:** RE: Durham Bunker Creek Bridge

Hi Vicki,

As a follow-up to my voice message from Tuesday, projects in New Hampshire's coastal zone that require a Clean Water Act Section 404 permit or a Rivers and Harbors Act Section 10 permit from the Army Corps of Engineers (ACOE) are not subject to Coastal Zone Management Act federal consistency review by the New Hampshire Coastal Program (NHCP) if the activity is authorized under one or more ACOE programmatic general permits. This only applies to projects requiring a Clean Water Act Section 404 permit or a Rivers and Harbors Act Section 10 permit from the ACOE and does not apply to other federal licenses or permits. For example, if the project also requires a bridge construction/modification permit from the US Coast Guard (which I don't believe the Bunker Creek project does) it would be subject to federal consistency review by the NHCP. In addition, if the project is funded, wholly or in part, by one or more of the following federal Department of Transportation programs, the project will be subject to federal consistency review by the NHCP:

20.106 Airport Improvement Program  
20.205 Highway Planning and Construction  
20.316 Railroad Rehabilitation and Improvement Financing Program  
20.500 Federal Transit – Capital Investment Grants  
20.505 Metropolitan Planning Grants

Please feel free to contact me should you have any questions.

Regards,

Chris

Christian Williams  
Program Coordinator  
New Hampshire Coastal Program  
Pease Field Office  
222 International Drive, Suite 175  
Portsmouth, NH 03801  
Phone: (603) 559-0025  
Fax: (603) 559-1510  
Email: [Christian.Williams@des.nh.gov](mailto:Christian.Williams@des.nh.gov)

---

**From:** Vicki Chase [mailto:VChase@normandeau.com]  
**Sent:** Tuesday, October 31, 2017 11:07 AM  
**To:** Williams, Chris  
**Cc:** Laurin, Marc; Darren Blood  
**Subject:** RE: Durham Bunker Creek Bridge

Hi Chris, we are wrapping up NEPA for this project - have not yet moved on to permitting. Because of recent changes to the NH USACE PGP, the project will be permitted under one or more USACE general permits. As I understand it, the CZM Consistency finding is programmatically approved for USACE programmatic permits. Under III: Procedures, state Approvals, (ii) Coastal Zone Management Act Federal Consistency Concurrence:

“The NHCP has determined that any project in the NH Coastal Zone that is authorized under the SV (Minimum), PCN (Minor/Major) categories of these GPs is consistent with the NHCP and does not require additional CZMA Federal consistency review”.

Am I correct in assuming that the programmatic approval applies to Durham 16236, the replacement of the US Route 4 bridge over Bunker Creek?

Thanks.

VICKI CHASE  
NORMANDEAU ASSOCIATES, INC.  
603-637-1111 (direct) | 603-731-7653 (cell)

---

**From:** [Paula Bellemore](#)  
**To:** [Vicki Chase](#)  
**Subject:** RE: LCHIP review Durham 16236  
**Date:** Wednesday, January 25, 2017 11:29:50 AM

## Exhibit 9

Hi Vicky,

LCHIP has an active conservation project underway on the Hills land (Emery Farm) east of Bunker Creek (shown outlined in red). NH Fish and Game owns the Palmer Tract abutting the Creek to the west., and an historic oyster reef is located where Bunker Creek enters the Oyster River. See maps embedded below. LCHIP has not funded property directly abutting or within the project area as described, however NH Fish and Game should be consulted regarding any work in this sensitive area. Please let me know if I can be of further assistance.



**Paula**

Paula S. Bellemore, Natural Resource Specialist  
**Land and Community Heritage Investment Program**

13 West Street, Suite 3  
Concord, NH 03301  
603.224.4113

[www.LCHIP.org](http://www.LCHIP.org)

---

**From:** Vicki Chase [mailto:VChase@normandeau.com]  
**Sent:** Sunday, January 22, 2017 3:09 PM  
**To:** Paula Bellemore

**Subject:** LCHIP review Durham 16236

Hello Paula,

Normandeau Associates is assisting NHDOT with permitting for the replacement of the bridge carrying US Route 4 over Bunker Creek in Durham (State Project Durham 16236). We would like to know if this bridge has had any involvement with LCHIP funding. Location map attached.

Thanks,

VICKI CHASE, CWS  
*Principal Regulatory Specialist*  
NORMANDEAU ASSOCIATES, INC.  
25 Nashua Road, Bedford, NH 03110  
603-637-1111(direct) | 603-731-7653 (cell)  
[vchase@normandeau.com](mailto:vchase@normandeau.com) [www.normandeau.com](http://www.normandeau.com)

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**From:** Gegas, Vasilios (Bill) <Vasilios.Gegas@dred.nh.gov>  
**Sent:** Thursday, August 11, 2016 9:53 AM  
**To:** Vicki Chase  
**Subject:** RE: Project review - Section 6(f) Properties  
**Attachments:** Exhibit 1 Project location.pdf

Hi Vicki,

Based on the information provided, there will be no impacts to any LWCF section 6(f) sites as a result of NH DOT project 16236.

Thanks!

Bill Gegas, Program Specialist  
NH Department of Resources and Economic Development  
Division of Parks and Recreation  
172 Pembroke Road  
Concord, NH 03301-5767  
Tel: 603-271-3556  
Fax: 603-271-3553  
[bill.gegas@dred.nh.gov](mailto:bill.gegas@dred.nh.gov)  
[www.nhstateparks.org](http://www.nhstateparks.org)

---

**From:** Vicki Chase [<mailto:VChase@normandea.com>]  
**Sent:** Thursday, July 14, 2016 11:04 AM  
**To:** Gegas, Vasilios (Bill)  
**Subject:** Project review - Section 6(f) Properties

Normandea Associates is assisting the New Hampshire Department of Transportation with environmental permitting for the replacement of the existing bridge carrying NH Route 4 over Bunker Creek in Durham, NH. We would like to confirm that there are no properties purchased or improved with funds made available through Section 6(f) of the Federal Land and Water Conservation Fund Act.

Thank you for your assistance. A location map for the project is attached.

VICKI CHASE, CWS  
*Principal Regulatory Specialist*  
NORMANDEAU ASSOCIATES, INC.  
25 Nashua Road, Bedford, NH 03110  
603-637-1111(direct) | 603-731-7653 (cell)  
[vchase@normandea.com](mailto:vchase@normandea.com) [www.normandea.com](http://www.normandea.com)

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**From:** Walker, Steve <Steve.Walker@nh.gov>  
**Sent:** Monday, February 03, 2014 7:48 AM  
**To:** Adele Fiorillo  
**Subject:** Durham # 23164

Hi Adele, I was combing through old LCIP data files and saw your name and wondered where you had gotten to. I note from GrantieView that there are conservation properties on either side of the bridge. However, neither are LCIP properties nor do we have any others in the project area. Cheers Steve

**Vicki Chase**

---

**From:** Gilbert, Jennifer <Jennifer.Gilbert@nh.gov>  
**Sent:** Thursday, July 28, 2016 10:33 AM  
**To:** Vicki Chase  
**Subject:** RE: Durham 16236, US Route 4 over Bunker Creek  
**Attachments:** Durham\_Normandeau\_072816.pdf

Vicki,  
Yes, Durham was one of four communities in Strafford County that received new FEMA maps and Flood Insurance Study, which became effective on 9/30/15. I have attached a revised memo and map for this project that reflects the new maps, zone, and base flood elevation.

Please let me know if you have any questions or need anything further.

Jennifer

**Jennifer Gilbert, CFM, ANFI**  
Senior Planner  
State Floodplain Program Coordinator  
NH Office of Energy and Planning  
107 Pleasant Street, Johnson Hall, 3rd Floor  
Concord, NH 03301  
Main - 603-271-2155 | Direct - 603-271-1762  
Fax - 603-271-2615 | [www.nh.gov/oep](http://www.nh.gov/oep)  
[www.nh.gov/oep/planning/programs/fmp/](http://www.nh.gov/oep/planning/programs/fmp/)

---

**From:** Vicki Chase [<mailto:VChase@normandeau.com>]  
**Sent:** Wednesday, July 27, 2016 2:15 PM  
**To:** Gilbert, Jennifer  
**Subject:** Durham 16236, US Route 4 over Bunker Creek

Good Afternoon,

Normandeau Associates is assisting the NH Department of Transportation with environmental permitting for the replacement of the US Route 4 Bridge over Bunker Creek. Normandeau had previously contacted you about this project and received the attached response. In the process of reviewing our environmental document for the project, I also reviewed the floodplain maps for Bunker Creek. The FEMA digital data indicates that the bridge falls into an area labelled Zone AE, with base flood elevations identified, with Zone A floodplain surrounding the Zone AE floodplain. The GRANITVIEW floodplain map attached to your letter indicates that the area upstream of the bridge is mapped Zone A, and downstream is mapped Zone AE.

The FEMA digital flood data for Strafford County indicates that the whole area is mapped AE, so perhaps the mapping has been updated. Since we plan to include your correspondence in our NEPA document and in the wetland permit, I want to make sure we have up-to-date information.

Thank you for your assistance.

VICKI CHASE, CWS

*Principal Regulatory Specialist*  
**NORMANDEAU ASSOCIATES, INC.**  
25 Nashua Road, Bedford, NH 03110  
603-637-1111(direct) | 603-731-7653 (cell)  
[vchase@normandeau.com](mailto:vchase@normandeau.com) [www.normandeau.com](http://www.normandeau.com)

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MARGARET WOOD HASSAN  
GOVERNOR

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



[www.nh.gov/oep](http://www.nh.gov/oep)

Exhibit 12

**MEMORANDUM**

**TO:** Vicki Chase  
Normandeau Associates

**FROM:** Jennifer Gilbert, Senior Planner  
State National Flood Insurance Program Coordinator

**DATE:** July 28, 2016

**SUBJECT:** US Route 4 Bridge No. 145/116  
NH DOT Project 16236  
Durham NH

---

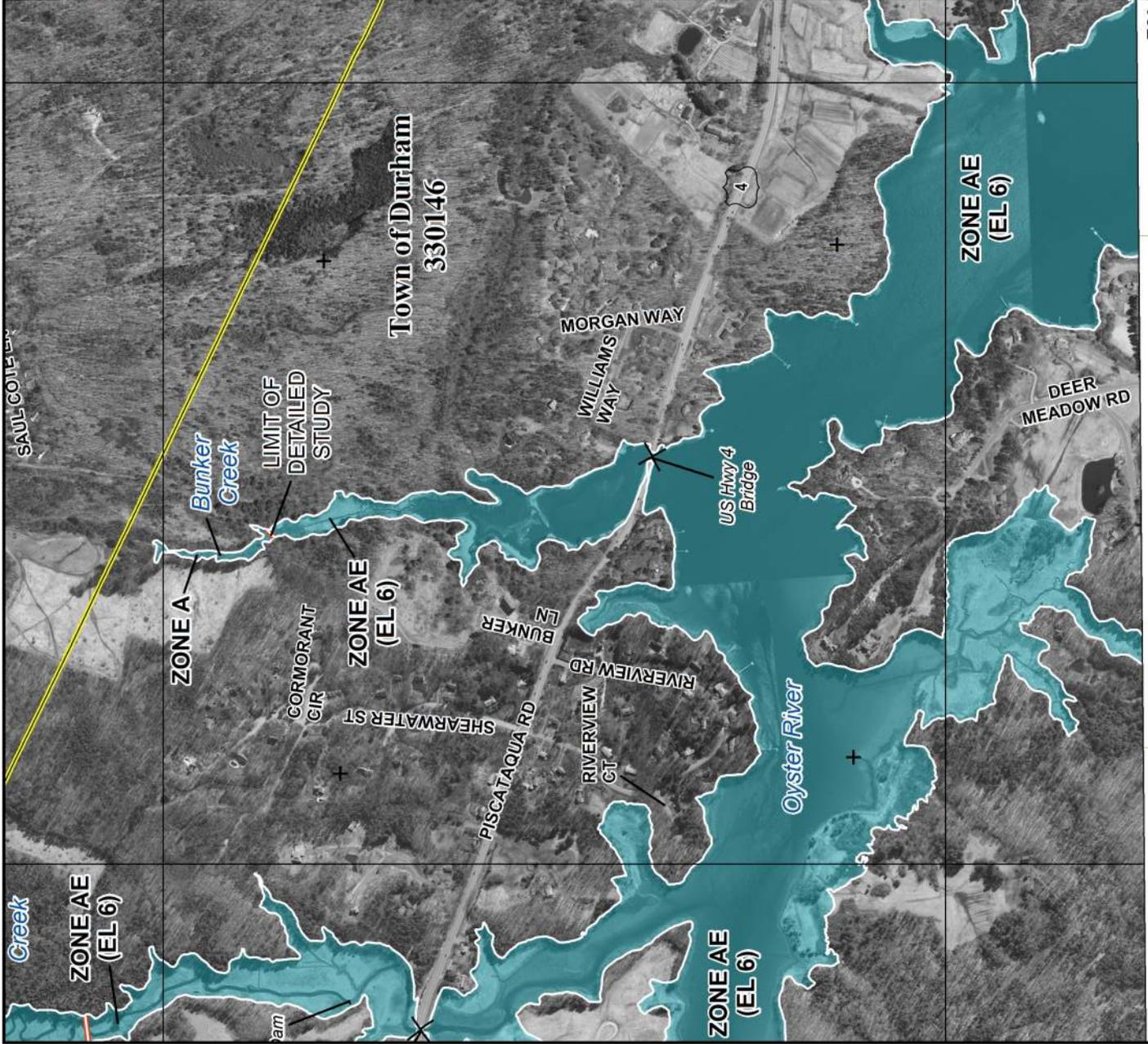
I am writing to update my comments regarding the above-referenced project that I documented and submitted in a memo dated February 14, 2014. This updated memo was needed due to a new flood zone designation in the project area as a result of new Flood Insurance Rate Maps that were issued in Durham on September 30, 2015.

I have reviewed and attached a portion of the current 2015 FEMA Flood Insurance Rate Map (FIRM) where the proposed area is located. It appears within the study area there is a special flood hazard area associated with Oyster River, which is now designated as Zone AE. According to the revised [2015 Strafford County Flood Insurance Study](#), the base flood elevation in the project areas is 6.4 ft (NAVD 88).

Since Durham is a participating community of the NFIP, any development in a special flood hazard area should meet the community's floodplain management regulations. 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."

If you need further assistance, please contact me at 271-2155 or [jennifer.gilbert@nh.gov](mailto:jennifer.gilbert@nh.gov).

# NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP



NATIONAL FLOOD INSURANCE PROGRAM  
FLOOD INSURANCE RATE MAP  
HAMPSHIRE COUNTY  
320-405



NUMBER	PANEL	SUFFIX
330146	000	E
330146	000	E
330146	000	E

VERSION NUMBER  
2.2.2.1  
MAP NUMBER  
330146000E  
MAP REVISED  
September 30, 2015

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at [www.msc.fema.gov](http://www.msc.fema.gov)



**THE STATE OF NEW HAMPSHIRE**  
DEPARTMENT OF TRANSPORTATION



**JEFF BRILLHART, P.E.**  
ACTING COMMISSIONER

**RECEIVED**

MAR 31 2015

DURHAM  
X-A001(202)  
16236  
RPR5350

**No Historic Properties Affected Memo**

Pursuant to the Request for Project Review signed January 17, 2014, and for the purpose of compliance with regulations of the National Historic Preservation Act and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the NH Division of Historical Resources (NHDHR) and the NH Division of the Federal Highway Administration (FHWA) have coordinated the identification and evaluation of historical and archaeological resources with plans to replace the bridge carrying NH Route 4 (Piscataqua Road) over Bunker Creek (145/116) in the Town of Durham, New Hampshire.

Based on a review pursuant to 36 CFR 800.4, we agree that no historic or archaeological resources will be impacted by the undertaking and that no further survey work is needed. A Project Area Form was completed on the above ground resources and identified that the area has been significantly altered over the years, including the 1933 concrete slab bridge, which no longer retains integrity. A Phase IB archaeological investigation occurred along the project area and identified two cemeteries, the Bunker Family Cemetery and the Twombly Family Burial Ground, that will be monitored during construction should impacts occur within 25' of the resource boundaries.

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

Section 4(f) (to be completed by FHWA)	There Will Be:	<input checked="" type="checkbox"/> No 4(f);	<input type="checkbox"/> Programmatic 4(f);	<input type="checkbox"/> Full 4 (f); or
	<input type="checkbox"/> <b>A finding of <i>de minimis</i> 4(f) impact as stated:</b> 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 <i>de minimis</i> impact. NHDHR's signature represents concurrence with both the no adverse effect determination and the <i>de minimis</i> 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.			

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

for Patrick Bauer, Administrator 3/30/15  
Federal Highway Administrator Date

Jill Edelman 3/16/2015  
Cultural Resources Manager Date

Concurred with by the NH State Historic Preservation Officer:

for Elizabeth H. Muzzey 4-6-15  
State Historic Preservation Officer Date  
NH Division of Historical Resources

**From:** Sikora, Jamie (FHWA) <Jamie.Sikora@dot.gov>  
**Sent:** Thursday, October 13, 2016 12:46 PM  
**To:** Laurin, Marc  
**Cc:** Vicki Chase; Cota, Keith; Landry, Robert; Adams, Joe; Darren Blood  
**Subject:** RE: Durham 16236 - 4(f) Jurisdictional Determination

Marc,

Based upon the information provided, I agree with your assessments regarding the applicability of Section 4(f) for the properties in question. Parcel 23-4 does not appear to qualify as a Section 4(f) property while Parcel 21-0 would as a wildlife refuge.

Jamie

Jamison S. Sikora  
NH Division Environmental Program Manager  
Federal Highway Administration  
53 Pleasant Street, Suite 2200  
Concord, NH 03301  
[Jamie.sikora@dot.gov](mailto:Jamie.sikora@dot.gov)  
(603) 410-4870

---

**From:** Laurin, Marc [<mailto:MLaurin@dot.state.nh.us>]  
**Sent:** Thursday, October 13, 2016 12:01 PM  
**To:** Sikora, Jamie (FHWA)  
**Cc:** Vicki Chase; Cota, Keith; Landry, Robert; Adams, Joe; Darren Blood  
**Subject:** Durham 16236 - 4(f) Jurisdictional Determination

Jamie,

Regarding DOT's proposal to replace the bridge over Bunker Creek Bridge (#145/116) on US Route 4 in the Town of Durham, NH. A traffic control alternative has been selected, and DOT is in the process of completing the NEPA document (non-programmatic Categorical Exclusion) for submission to FHWA. The project involves a minor amount of increased impervious area, and options for stormwater treatment are being considered both east and west of the proposed crossing. Because both treatment options fall on conserved properties, DOT would like to confirm whether or not these parcels will be subject to Section 4(f) so that we can proceed accordingly. A location map and aerial photographs of each parcel are attached.

#### **Tax Map 11 Parcel 23-4.**

This 1.2 acre parcel in the northeast project quadrant has frontage on Williams Way, on US 4, and on Bunker Creek. The parcel is owned by the Town and is identified on the Durham Conservation Commission website as "Williams Way Boat Landing". However, there is no public parking and no boat ramp nor dock on the property. Also, New Hampshire Fish and Game does not identify it as a public access point to Great Bay on its list of Great Bay Public Access Sites, see <http://www.wildlife.state.nh.us/marine/documents/coastal-access-map.pdf>. It appears that the parcel was conserved or deeded to the town when the surrounding subdivision

was constructed. It does not seem that this property would be subject to 4(f), given that for a property to be subject to 4(f) its major purpose must be for park, recreation, or refuge activities, and it must be significant as a park, recreation area, or refuge. While the intent of this parcel may have been to provide public access, there are no facilities for parking or boat access, and given its small size it would not be considered a significant park or recreation area.

### **Tax Map 11 Parcel 21-0**

This parcel measures 18.2 acres and is on the northwest quadrant of the project area, with frontage on US 4 and Bunker Creek. The parcel is owned by New Hampshire Fish and Game, and was deeded to them by the Nature Conservancy. It is part of the Great Bay Wildlife Management Area, a 116 acre property surrounding parts of Great Bay. Given its size and importance to wildlife (particularly shoreland birds and waterfowl) we assume this property would be subject to Section 4(f). There is no known public access to this parcel, but public access is not a requirement for wildlife refuges to be eligible for 4(f).

Let me know if you need further information to determine the 4(f) status of these properties.

Thanks,

Marc



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**New Hampshire Division**

August 29, 2016

53 Pleasant Street  
Suite 2200  
Concord, NH 03301  
603-228-0417

In Reply Refer To:  
HDA-NH

**Exhibit 15**

LTJG Ydania M. Matos  
First Coast Guard District  
Bridge Branch  
1 South St, Battery Park BLDG  
New York, NY 10004

**Subject: Durham, 16236, X-A0001 (202)  
Bunker Creek Bridge Project**

Dear Mr. Matos:

The State of New Hampshire Department of Transportation (NHDOT) is planning the replacement of the US Route 4 Bridge over Bunker Creek, a tidal stream in Durham, NH, and have initiated environmental studies in order to evaluate project alternatives.

The State has requested FHWA consider the need for a Coast Guard permit for this project. We have reviewed the site, and although the subject waterway is navigable for recreational use by canoes and kayaks, it does not presently allow readily usable access to and from the Oyster River as the existing Bunker Creek Bridge is too low at high tide and at low tide the water is too low for this access. The proposed bridge will increase the height of the bridge, which will enable canoe/kayak passage during mid to high tide.

In accordance with Section 144 (h) of Title 23 United States Code, we have determined that this project does not require a U.S. Coast Guard permit as the waterway is not used, or susceptible to use with reasonable improvement, as a means to transport interstate or foreign commerce, and is used only be recreational boating, fishing and other small vessels less than 21 feet in length. We ask your concurrence in applying the Title 23 Section 144 (h) exemption to this project.

Thank you for your consideration of this request. Should you have any questions or require additional information please contact me at (603) 410-4870.

Sincerely,

Jamison S. Sikora  
Environmental Programs Manager

**Laurin, Marc**

---

**From:** Hicks, Michael C CIV USARMY CENAE (US) <Michael.C.Hicks@usace.army.mil>  
**Sent:** Tuesday, October 10, 2017 2:20 PM  
**To:** Landry, Robert; 'Sikora, Jamie (FHWA)'; Chris Bisignano USCG; 'Rousseau, James L CIV'; 'Ydania.M.Matos@uscg.mil'  
**Cc:** Cota, Keith; Laurin, Marc  
**Subject:** RE: Durham, 16326 - Corps Permit, US 4 over Bunker Creek

All,

We are confident that the project will qualify for the GP. We will need to see the bridge plans when you get them.

Thanks,  
Mike

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

-----Original Message-----

From: Landry, Robert [<mailto:Robert.Landry@dot.nh.gov>]  
Sent: Tuesday, October 10, 2017 7:19 AM  
To: 'Sikora, Jamie (FHWA)' <[Jamie.Sikora@dot.gov](mailto:Jamie.Sikora@dot.gov)>; Chris Bisignano USCG <[Christopher.J.Bisignano@uscg.mil](mailto:Christopher.J.Bisignano@uscg.mil)>; 'Rousseau, James L CIV' <[James.L.Rousseau2@uscg.mil](mailto:James.L.Rousseau2@uscg.mil)>; 'Ydania.M.Matos@uscg.mil' <[Ydania.M.Matos@uscg.mil](mailto:Ydania.M.Matos@uscg.mil)>  
Cc: Cota, Keith <[Keith.Cota@dot.nh.gov](mailto:Keith.Cota@dot.nh.gov)>; Laurin, Marc <[Marc.Laurin@dot.nh.gov](mailto:Marc.Laurin@dot.nh.gov)>; Hicks, Michael C CIV USARMY CENAE (US) <[Michael.C.Hicks@usace.army.mil](mailto:Michael.C.Hicks@usace.army.mil)>  
Subject: [EXTERNAL] RE: Durham, 16326 - Corps Permit, US 4 over Bunker Creek

Thank you Jamie, somehow I did not have this in my project file.

Mike is this what you needed for us to fall under the General Permit or is there something else?

Thank you

Robert Landry

NHDOT Bridge Design, Administrator

[Robert.Landry@dot.nh.gov](mailto:Robert.Landry@dot.nh.gov) <<mailto:Robert.Landry@dot.nh.gov>>

603.271.3921

From: Sikora, Jamie (FHWA) [<mailto:Jamie.Sikora@dot.gov>]  
Sent: Tuesday, October 10, 2017 7:09 AM

To: Landry, Robert; Chris Bisignano USCG; 'Rousseau, James L CIV'; 'Ydania.M.Matos@uscg.mil'  
Cc: Cota, Keith; Laurin, Marc; 'Hicks, Michael C CIV USARMY CENAE (US)'  
Subject: RE: Durham, 16326 - Corps Permit, US 4 over Bunker Creek

Attached is what I have on file..

Jamison S. Sikora

NH Division Environmental Program Manager

Federal Highway Administration

53 Pleasant Street, Suite 2200

Concord, NH 03301

[Jamie.sikora@dot.gov](mailto:Jamie.sikora@dot.gov) <<mailto:Jamie.sikora@dot.gov>>

(603) 410-4870

From: Landry, Robert [<mailto:Robert.Landry@dot.nh.gov>]

Sent: Monday, October 09, 2017 10:57 AM

To: Chris Bisignano USCG <[Christopher.J.Bisignano@uscg.mil](mailto:Christopher.J.Bisignano@uscg.mil) <<mailto:Christopher.J.Bisignano@uscg.mil>> >; 'Rousseau, James L CIV' <[James.L.Rousseau2@uscg.mil](mailto:James.L.Rousseau2@uscg.mil) <<mailto:James.L.Rousseau2@uscg.mil>> >; 'Ydania.M.Matos@uscg.mil' <[Ydania.M.Matos@uscg.mil](mailto:Ydania.M.Matos@uscg.mil) <<mailto:Ydania.M.Matos@uscg.mil>> >

Cc: Cota, Keith <[Keith.Cota@dot.nh.gov](mailto:Keith.Cota@dot.nh.gov) <<mailto:Keith.Cota@dot.nh.gov>> >; Laurin, Marc <[Marc.Laurin@dot.nh.gov](mailto:Marc.Laurin@dot.nh.gov) <<mailto:Marc.Laurin@dot.nh.gov>> >; 'Hicks, Michael C CIV USARMY CENAE (US)' <[Michael.C.Hicks@usace.army.mil](mailto:Michael.C.Hicks@usace.army.mil) <<mailto:Michael.C.Hicks@usace.army.mil>> >; Sikora, Jamie (FHWA) <[Jamie.Sikora@dot.gov](mailto:Jamie.Sikora@dot.gov) <<mailto:Jamie.Sikora@dot.gov>> >

Subject: FW: Durham, 16326 - Corps Permit, US 4 over Bunker Creek

Chris or Jim, can you please provide what Mike is asking for to allow us to use our General Permit for the US 4 over Bunker Creek bridge replacement project?

I believe USCG has agreed with the exemption request by FHWA, but I cannot put my hands on it.

Thanks

Robert Landry

NHDOT Bridge Design, Administrator

[Robert.Landry@dot.nh.gov](mailto:Robert.Landry@dot.nh.gov) <<mailto:Robert.Landry@dot.nh.gov>>

603.271.3921

From: Laurin, Marc  
Sent: Monday, October 09, 2017 8:50 AM  
To: Landry, Robert  
Subject: Durham, 16326 - Corps Permit

Bob,

Has discussed here is Mike Hicks response to my inquiry if an Individual Permit would be required for the project. He did not think we needed an IP if USCG authorization was not just on the Exemption Act.

I sent him additional information on Thursday with previous correspondence we had with USCG in 2014.

Please coordinate with the USCG.

Thanks,

Marc

Exhibit 17 - Oyster River Assessment Aerial



**Legend**

- Class A Watersheds
- Assessment\_lines\_2014
- Assessment\_pnts\_2014
- Assessment\_polys\_2014
- 303dImpairedPoints\_2014
- 303dImpairedLines\_2014
- 303dImpairedPolys\_2014
- ORW\_pnts\_2012
- ORW\_lines\_2012
- ORW\_polys\_2012
- TMDLPnts\_2012
- TMDLlines\_2012
- TMDLPolys\_2012
- Public\_Water\_Supply\_Wells
- PWSW Buffers
- Water\_Well\_Inventory
- Water\_Supply\_Intake\_Protection\_Area
- Wellhead\_Protection\_Areas
- URBAN 2010



# Exhibit 18a

NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER



## Memo

**To:** Vicki Chase, Normandeau Associates  
25 Nashua Road  
Bedford, NH 03301-5022

**From:** Amy Lamb, NH Natural Heritage Bureau

**Date:** 8/31/2017 (valid for one year from this date)

**Re:** Review by NH Natural Heritage Bureau

NHB File ID: NHB17-2706      Town: Durham      Location: US Route 4

Description: NHDOT Proposes to replace the bridge carrying US Route 4 over Bunker Creek in Durham

cc: Kim Tuttle

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

**Comments:** Update to NHB16-2208. Note that some rare plant records have been removed since their habitat is not present within the project area. Rare plant surveys have been completed and none were found within the project area.

Natural Community	State <sup>1</sup>	Federal	Notes
Brackish marsh*	--	--	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.
High salt marsh*	--	--	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.
Sparsely vegetated intertidal 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.
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**  
crested sedge (*Carex cristatella*)\*

State <sup>1</sup>	Federal	Notes
E	--	This wetland species, which occurs in bogs, fens, seeps, and wet meadows, would be threatened by changes to local hydrology, including increased nutrient input from

# Memo



NH NATURAL HERITAGE BUREAU  
NHB DATACHECK RESULTS LETTER

stormwater runoff, and sedimentation from nearby disturbance.

## Vertebrate species

	State <sup>1</sup>	Federal	Notes
New England Cottontail ( <i>Sylvilagus transitionalis</i> )	E	--	Contact the NH Fish & Game Dept (see below).

<sup>1</sup>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.

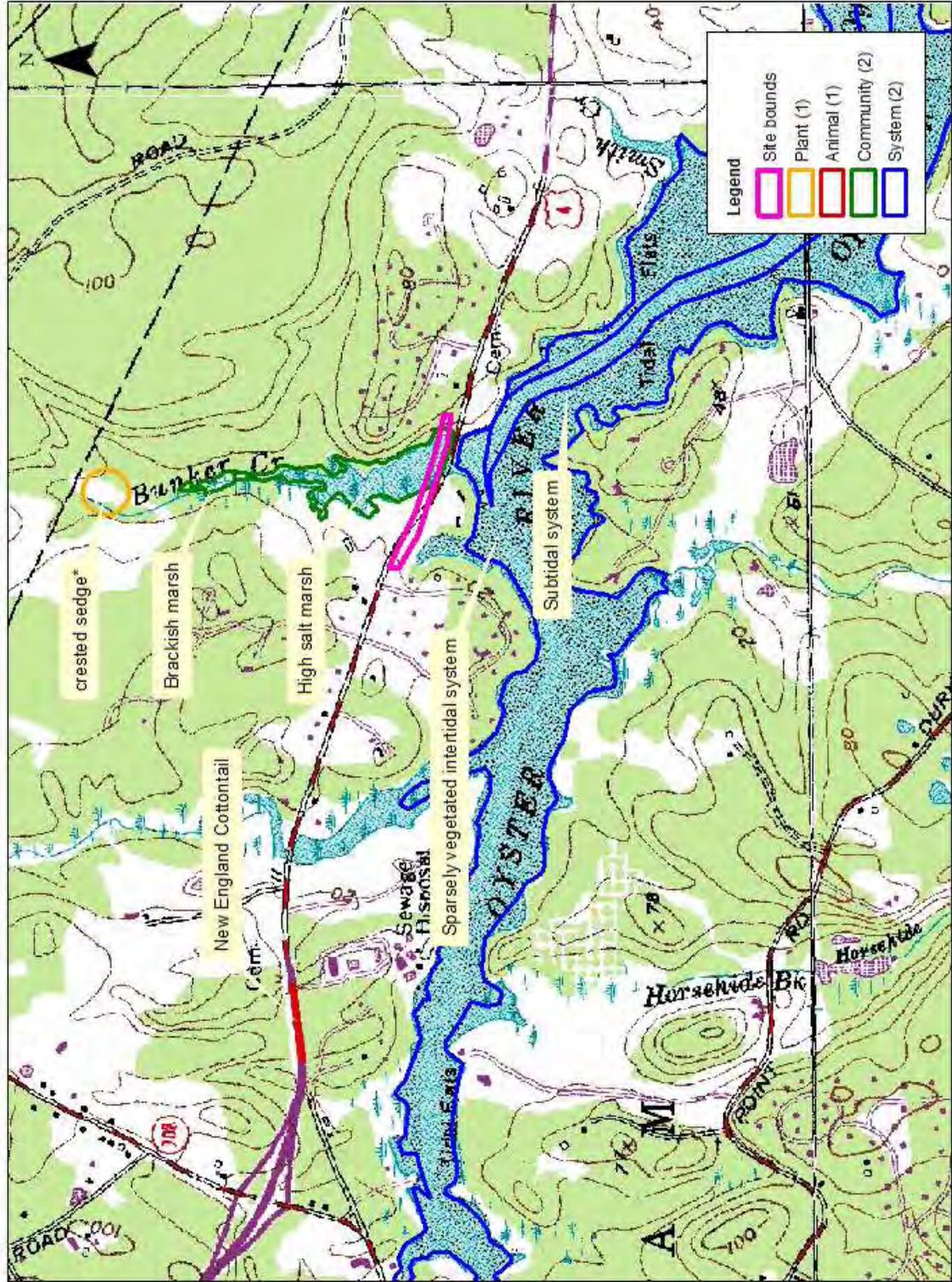
Contact for all animal reviews: *Kim Tuttle, NH F&G, (603) 271-6544.*

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

NHB17-2706



0 0.05 0.10 0.15 0.20 0.25 Miles





## New Hampshire Natural Heritage Bureau - System Record

### Sparsely vegetated intertidal system

#### Legal Status

Federal: Not listed  
State: Not listed

#### Conservation Status

Global: Not ranked (need more information)  
State: Rare or uncommon

#### Description at this Location

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: Extensive *intertidal flats* that are exposed daily at low tide, bordered in places by *intertidal rocky shore* and *coastal shoreline strand/swale* communities.

General Area: 2010: Borders **salt marsh system** landward and **subtidal system** seaward.

General Comments:

Management

Comments:

#### Location

Survey Site Name: Great Bay

Managed By: Moody Point Open Space

County: Rockingham

Town(s): Newington

Size: 3589.5 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs throughout Great Bay from the mouths of its tributaries, through Little Bay, to the confluence with the Piscataqua River.

#### Dates documented

First reported: 1997-06-23

Last reported: 2010-10-13

## New Hampshire Natural Heritage Bureau - System Record

### Subtidal system

#### Legal Status

Federal: Not listed  
State: Not listed

#### Conservation Status

Global: Not ranked (need more information)  
State: Rare or uncommon

#### Description at this Location

Conservation Rank: Not ranked  
Comments on Rank:

Detailed Description: Channels and bay bottoms that vary in width from a few feet to almost a mile across, covered by water even at low tide. Patches of subtidal *eelgrass bed* occur at the edge of the adjacent **sparsely vegetated intertidal system**.

General Area: 2010: Borders a **sparsely vegetated intertidal system**.

General Comments:  
Management  
Comments:

#### Location

Survey Site Name: Great Bay  
Managed By: Portsmouth Country Club

County: Rockingham  
Town(s): Newington  
Size: 3207.7 acres

Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Occurs throughout the Great Bay estuary, from the upper total reaches of tributary streams to the confluence of the bay with the Piscataqua River.

#### Dates documented

First reported: 1997-06-17                      Last reported: 2010-10-13

## New Hampshire Natural Heritage Bureau - Plant Record

**crested sedge (*Carex cristatella*)****Legal Status**

Federal: Not listed  
State: Listed Endangered

**Conservation Status**

Global: Demonstrably widespread, abundant, and secure  
State: Critically imperiled due to rarity or vulnerability

**Description at this Location**

Conservation Rank: Historical records only - current condition unknown.  
Comments on Rank:

Detailed Description: 1950: Specimen collected.

General Area: 1950: Alder thicket.

General Comments:

Management

Comments:

**Location**

Survey Site Name: Bunker Creek

Managed By:

County: Strafford

Town(s): Durham

Size: 2.8 acres

Elevation: 20 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: Durham. Head of Bunker Creek.

**Dates documented**

First reported: 1950-07-12

Last reported: 1950-07-12



**Vicki Chase**

---

**From:** Lamb, Amy <Amy.Lamb@dncr.nh.gov>  
**Sent:** Tuesday, October 24, 2017 3:14 PM  
**To:** Vicki Chase  
**Subject:** RE: Durham 16236

Hi Vicki,

Thanks for your responses to my questions. I couldn't find anything specific to the Fish & Game property in the meeting minutes, and did not remember discussing it at the meeting, so thanks for confirming that there would be no impacts there.

Regarding the causeway shift, I did not mean to indicate that the alignment was previously shifted to the south; rather, I should have referred to "the alternative that avoided a northerly shift". It's a bit unfortunate that the impact to private property necessitates saltmarsh impacts, but an in-lieu fee payment of \$195,000 will certainly go a long way towards restoring or conserving tidal wetlands.

Amy

Amy Lamb  
Ecological Information Specialist  
(603) 271-2215 ext. 323

NH Natural Heritage Bureau  
**DNCR** - Forests & Lands  
172 Pembroke Rd  
Concord, NH 03301

Please note that the Department of Resources and Economic Development (DRED) has been reorganized into two new agencies, the Department of Natural and Cultural Resources (**DNCR**), and the Department of Business and Economic Affairs (DBEA).

As of July 1, 2017, NHB is part of **DNCR**. Our physical location remains unchanged.

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**From:** Vicki Chase [mailto:VChase@normandeau.com]  
**Sent:** Friday, October 20, 2017 2:37 PM  
**To:** Lamb, Amy  
**Cc:** Darren Blood; Tom Levins; Butler, John (DOT); Laurin, Marc  
**Subject:** RE: Durham 16236

Thank you Amy for your responses to the material provided to NHHNB following the Natural Resource Agency meeting at NHDOT on September 20, 2017. Our responses to your questions follow.

*"I noticed that the property on the northwest side of the bridge belongs to NH Fish & Game. Does the northerly roadway shift therefore Fish & Game land?"*

Correct, the parcel to the northwest of the causeway is owned by NH Fish & Game. As discussed at the NR Meeting, this parcel has been avoided.

*“Also, since most of the roadway shift is on the causeway itself, which is on State property, how much impact to private property is being avoided by shifting the alignment to the north? It seems like most of the area needed for the previously proposed alignment (southerly shift) would be within DOT right-of-way or public waters. NHB would of course prefer a southerly shift to avoid impacting the salt marsh community.”*

The alignment was shifted to the north to address comments received from the public and abutters during the hearing process. The original alignment was centered on the existing US Route 4 alignment, and a southerly shift was not a proposed action. The current proposed action is nearly entirely contained within the existing DOT right-of-way.

*“In terms of restoration opportunities, it seems like the causeway may actually be fostering the presence of the saltmarsh north of the bridge. Salt marsh is notably absent from the south side of the bridge, where there instead is an intertidal flat. It seems like salt marsh mitigation would be better suited to an area that’s more protected, with lower flows and better sediment retention. I just wonder if a salt marsh created here would be likely to persist. Maybe an ARM payment could help fund a high-priority restoration area instead? I know you have not been involved with the restoration discussion, but I just wanted to pass on my thoughts on this.”*

Yes, those are reasonable observations – there has been some correspondence between Dave Burdick at UNH and NHDOT on the possibility of restoring the south side of the causeway and creating a “living shoreline”, but much more planning would occur if this were pursued. Professor Burdick is providing advice based on his extensive salt marsh restoration experience and 20+ years knowledge of the area. In any case, the project as of now proposes to mitigate via in-lieu fee, on the order of \$195,000.

Please let me know if you need any further information.

VICKI CHASE  
NORMANDEAU ASSOCIATES, INC.  
603-637-1111 (direct) | 603-731-7653 (cell)

---

**From:** Lamb, Amy [<mailto:Amy.Lamb@nh.gov>]  
**Sent:** Thursday, October 19, 2017 3:18 PM  
**To:** Vicki Chase <[VChase@normandeau.com](mailto:VChase@normandeau.com)>  
**Subject:** RE: Durham 16236

Hi Vicki,

I apologize for taking so long to get back to you on this. I’ve looked at this in more detail and have a few comments and questions about the alignment and mitigation options.

I noticed that the property on the northwest side of the bridge belongs to NH Fish & Game. Does the northerly roadway shift therefore Fish & Game land? Also, since most of the roadway shift is on the causeway itself, which is on State property, how much impact to private property is being avoided by shifting the alignment to the north? It seems like most of the area needed for the previously proposed alignment (southerly shift) would be within DOT right-of-way or public waters. NHB would of course prefer a southerly shift to avoid impacting the salt marsh community.

In terms of restoration opportunities, it seems like the causeway may actually be fostering the presence of the saltmarsh north of the bridge. Salt marsh is notably absent from the south side of the bridge, where there instead is an intertidal flat. It seems like salt marsh mitigation would be better suited to an area that’s more protected, with lower flows and better sediment retention. I just wonder if a salt marsh created here would be likely to persist. Maybe an ARM payment could help fund a high-priority restoration area instead? I know you have not been involved with the restoration discussion, but I just wanted to pass on my thoughts on this.

Thanks, Vicki, and please feel free to call if you want to discuss.

Best,  
Amy

Amy Lamb  
Ecological Information Specialist  
(603) 271-2215 ext. 323

NH Natural Heritage Bureau  
**DNCR** - Forests & Lands  
172 Pembroke Rd  
Concord, NH 03301

Please note that the Department of Resources and Economic Development (DRED) has been reorganized into two new agencies, the Department of Natural and Cultural Resources (**DNCR**), and the Department of Business and Economic Affairs (DBEA).

As of July 1, 2017, NHB is part of **DNCR**. Our physical location remains unchanged.

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**From:** Vicki Chase [<mailto:VChase@normandeau.com>]  
**Sent:** Thursday, September 21, 2017 1:05 PM  
**To:** Lamb, Amy  
**Subject:** Durham 16236

Good morning Amy, nice to see you yesterday.

You asked in our meeting for Durham 16236, the replacement of the NH Route 4 Bridge over Bunker Creek, whether there would be any impact to the exemplary natural communities identified in the NHB response. As Darren Blood explained, there is a slight shift of the road (about 7 feet) to the north that results impacts to the tidal wetlands north of the bridge. The attached pdf depicts the toe of slope with the Elevation 3' line outlined, which is approximately where the salt marsh begins. There are several aerals so you can see the area to be affected at different tide stages and seasons.

On the NHB response the "High Salt Marsh" Exemplary Natural Community overlaps the impact area. In my observation, the salt marsh is dominated by *Spartina alterniflora* with a very narrow fringe of *Spartina patens* along the margin of the causeway. So it is probably more accurately identified as low salt marsh. The total area of tidal marsh proposed to be impacted will be ~ 9,000 square feet. There have been discussions between NHDOT and UNH about the possibility of salt marsh restoration on the south side of the causeway as mitigation for the impacts, but I haven't been involved in those discussions. We haven't completed NEPA yet so we are early in mitigation discussions.

Let me know if you have any questions.

VICKI CHASE, CWS  
*Principal Regulatory Specialist*  
**NORMANDEAU ASSOCIATES, INC.**  
25 Nashua Road, Bedford, NH 03110  
603-637-1111(direct) | 603-731-7653 (cell)  
[vchase@normandeau.com](mailto:vchase@normandeau.com) [www.normandeau.com](http://www.normandeau.com)

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## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 COMMERCIAL STREET, SUITE 300  
CONCORD, NH 03301  
PHONE: (603)223-2541 FAX: (603)223-0104  
URL: [www.fws.gov/newengland](http://www.fws.gov/newengland)

Consultation Code: 05E1NE00-2016-SLI-1845

July 13, 2016

Event Code: 05E1NE00-2016-E-02605

Project Name: US Route 4 over Bunker Creek bridge replacement

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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](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



United States Department of Interior  
Fish and Wildlife Service

Project name: US Route 4 over Bunker Creek bridge replacement

## Official Species List

### Provided by:

New England Ecological Services Field Office  
70 COMMERCIAL STREET, SUITE 300  
CONCORD, NH 03301  
(603) 223-2541  
<http://www.fws.gov/newengland>

**Consultation Code:** 05E1NE00-2016-SLI-1845

**Event Code:** 05E1NE00-2016-E-02605

**Project Type:** TRANSPORTATION

**Project Name:** US Route 4 over Bunker Creek bridge replacement

**Project Description:** NHDOT proposes to replace the bridge carrying US Route 4 over Bunker Creek in Durham, New Hampshire.

**Please Note:** The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior  
Fish and Wildlife Service

Project name: US Route 4 over Bunker Creek bridge replacement

**Project Location Map:**



**Project Coordinates:** MULTIPOLYGON (((-70.88988304138182 43.135175107078915, -70.89000105857849 43.13501069178064, -70.88859558105469 43.134313879181285, -70.887211561203 43.133742330335664, -70.88523745536804 43.133280389694185, -70.88374614715576 43.132982866755675, -70.88369250297546 43.1331707761484, -70.8864176273346 43.133734500862325, -70.8871579170227 43.13393023739485, -70.8882200717926 43.13438434373758, -70.88988304138182 43.135175107078915)))

**Project Counties:** Strafford, NH



United States Department of Interior  
Fish and Wildlife Service

Project name: US Route 4 over Bunker Creek bridge replacement

## Endangered Species Act Species List

There are a total of 3 threatened or endangered species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	Status	Has Critical Habitat	Condition(s)
Red Knot ( <i>Calidris canutus rufa</i> )	Threatened		
<b>Flowering Plants</b>			
Small Whorled pogonia ( <i>Isotria medeoloides</i> )	Threatened		
<b>Mammals</b>			
Northern long-eared Bat ( <i>Myotis septentrionalis</i> )	Threatened		



United States Department of Interior  
Fish and Wildlife Service

Project name: US Route 4 over Bunker Creek bridge replacement

## **Critical habitats that lie within your project area**

There are no critical habitats within your project area.

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN NEW HAMPSHIRE**

**Exhibit 20**

<b>COUNTY</b>	<b>SPECIES</b>	<b>FEDERAL STATUS</b>	<b>GENERAL LOCATION/HABITAT</b>	<b>TOWNS</b>
Belknap	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Meredith, Alton and Laconia
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Carroll	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Albany, Brookfield, Eaton, Effingham, Madison, Ossipee, Wakefield and Wolfeboro
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Coos	Canada Lynx	Threatened	Regenerating softwood forest, usually with a high density of snowshoe hare.	All Towns
	Dwarf wedgemussel	Endangered	Connecticut River main channel and Johns River	Northumberland, Lancaster and Dalton
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Cheshire	Dwarf wedgemussel	Endangered	S. Branch Ashuelot River and Ashuelot River	Swanzy, Keene and Surry
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Grafton	Dwarf wedgemussel	Endangered	Connecticut River main channel	Haverhill, Piermont, Orford and Lyme
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Holderness
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Hillsborough	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Manchester, Weare
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Merrimack	Karner Blue Butterfly	Endangered	Pine Barrens with wild blue lupine	Concord and Pembroke
	Small whorled Pogonia	Threatened	Forests	Bow, Danbury, Epsom, Loudon, Warner and Allenstown
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES  
IN NEW HAMPSHIRE**

<b>COUNTY</b>	<b>SPECIES</b>	<b>FEDERAL STATUS</b>	<b>GENERAL LOCATION/HABITAT</b>	<b>TOWNS</b>
Rockingham	Piping Plover	Threatened	Coastal Beaches	Hampton and Seabrook
	Roseate Tern	Endangered	Atlantic Ocean and nesting at the Isle of Shoals	
	Red knot <sup>1</sup>	Threatened	Coastal Beaches and Rocky Shores, sand and mud flats	Coastal towns
	Small whorled Pogonia	Threatened	Forests	Deerfield, Northwood, Nottingham, and Epping
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Strafford	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Middleton, New Durham, Milton, Farmington, Strafford, Barrington, and Madbury
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide
Sullivan	Northeastern bulrush	Endangered	Wetlands	Acworth, Charlestown, Langdon
	Dwarf wedgemussel	Endangered	Connecticut River main channel	Plainfield, Cornish, Claremont and Charlestown
	Jesup's milk-vetch	Endangered	Banks of the Connecticut River	Plainfield and Claremont
	Northern Long-eared Bat	Threatened Final 4(d) Rule	Winter- mines and caves, Summer – wide variety of forested habitats	Statewide

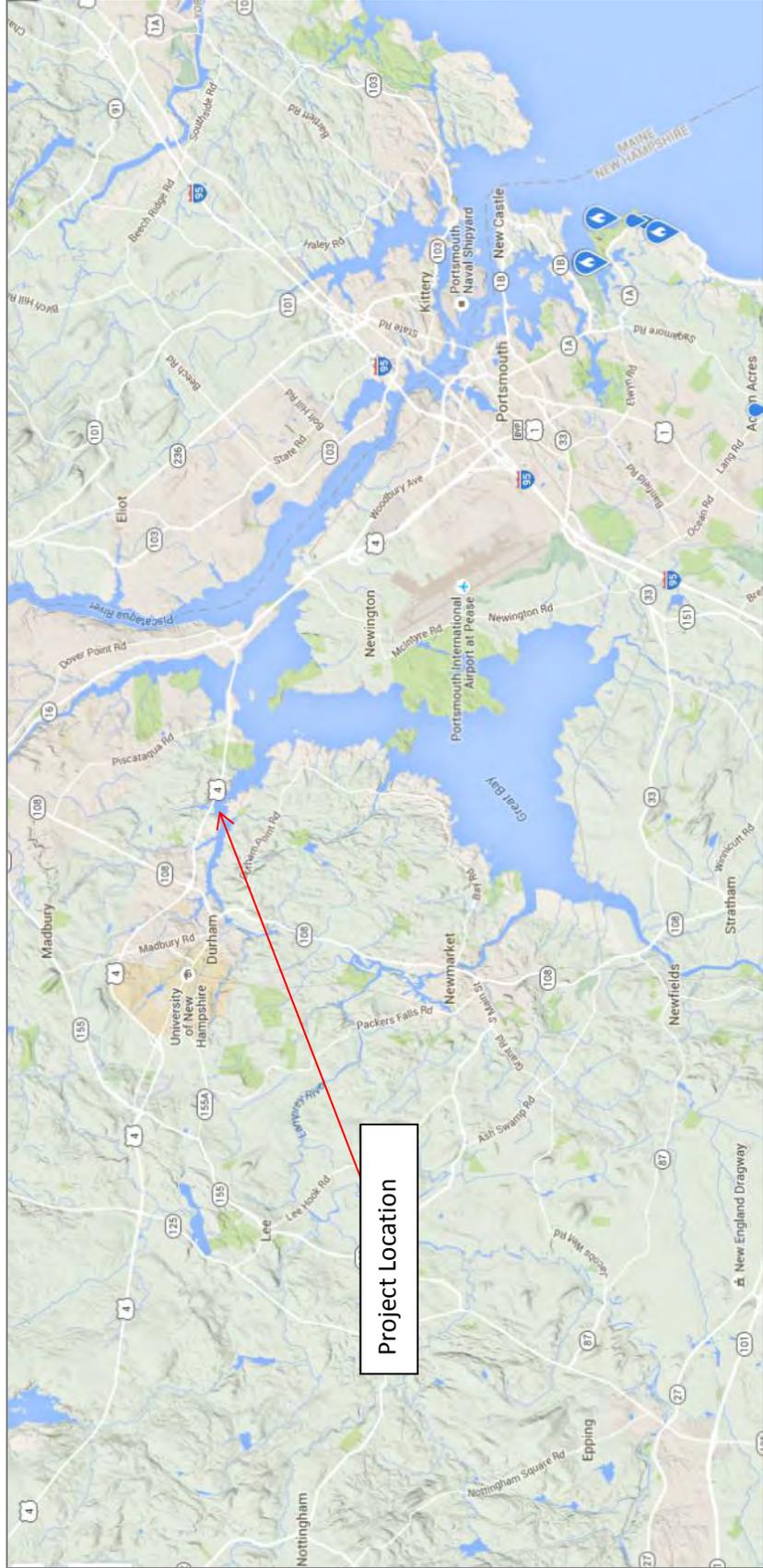
<sup>1</sup>Migratory only, scattered along the coast in small numbers

-Eastern cougar, gray wolf and Puritan tiger beetle are considered extirpated in New Hampshire.

-Endangered gray wolves are not known to be present in New Hampshire, but dispersing individuals from source populations in Canada may occur statewide.-There is no federally-designated Critical Habitat in New Hampshire

# Exhibit 21

## Red Knot Occurrences in Vicinity of Durham 16236 Replacement of US Route 4 Bridge over Bunker Creek



Locations of recorded Red Knot occurrences (shown in blue) from ebird.org. Accessed July 19, 2016



## United States Department of the Interior

## FISH AND WILDLIFE SERVICE



New England Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5087  
<http://www.fws.gov/newengland>

RE: Durham 16236, Replacement of U.S. Route 4 Bridge  
Durham, New Hampshire (05E1NE00-2016-F-1845)

February 24, 2017

Marc Laurin  
NH DOT Bureau of Environment  
7 Hazen Drive  
Concord, NH 03301

Dear Mr. Laurin:

The U.S. Fish and Wildlife Service (Service) is responding to your January 27, 2017, request and Project Submittal Form, received in our office on January 30, 2017, to verify that the proposed Durham 16236 project—replacement of the U.S. Route 4 bridge over Bunker Creek in Durham, New Hampshire (Project)—may rely on the May 20, 2016, Programmatic Biological Opinion (BO) for federally funded or approved transportation projects that may affect the northern long-eared bat (NLEB) (*Myotis septentrionalis*). This letter provides the Service's response as to whether the Project may rely on the BO to comply with section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) for its effects to the NLEB.

The New Hampshire Department of Transportation's (NHDOT) proposed Project requires the complete replacement of a single-span bridge over Bunker Creek. The replacement and associated road widening of Route 4 will occur on the current alignment. NHDOT, as the non-Federal agency representative for the Federal Highway Administration, determined that the Project is *likely to adversely affect* the NLEB, because the proposed action may affect trees occupied by NLEBs during the active season. NHDOT also determined the Project may rely on the programmatic BO to comply with section 7(a)(2) of the ESA, because the Project meets the conditions outlined in the BO, all work related to highway rehabilitation will occur within 300 feet of the existing road surfaces, and all tree clearing related to the proposed roadwork will occur farther than 0.25 mile from documented roosts and farther than 0.5 mile from any hibernacula. The Service reviewed the Project Submittal Form and concurs with NHDOT's determination. This concurrence concludes your ESA section 7 responsibilities relative to this species for this Project, subject to the Reinitiation Notice below.

### Conclusion

The Service has reviewed the effects of the proposed Project, which includes the NHDOT's commitment to implement the impact avoidance and minimization measures as indicated on the Project Submittal Form. We confirm that the proposed Project's effects are consistent with those analyzed in the BO. The Service has determined that the Project is consistent with the BO's conservation measures, and the scope of the program analyzed in the BO is not likely to jeopardize the continued existence of the NLEB. In coordination with your agency, the Federal Highway Administration, and the other sponsoring Federal Transportation Agencies, the Service will reevaluate this conclusion annually in light of any new pertinent information under the adaptive management provisions of the BO.

### Incidental Take of the Northern Long-eared Bat

The Service anticipates that tree removal associated with the proposed Project will cause incidental take of the NLEB. However, the Project is consistent with the BO, and such projects will not cause take of NLEB that is prohibited under the final 4(d) rule for this species (50 CFR §17.40(o)). Therefore, this taking does not require exemption from the Service.

### Reporting Dead or Injured Bats

The NHDOT, the Federal Highway Administration, its State/local cooperators, and any contractors must take care when handling dead or injured NLEBs that are found at the project site in order to preserve biological material in the best possible condition and to protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by this BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any endangered or threatened species must promptly notify the Service's New England Field Office.

### Reinitiation Notice

This letter concludes consultation for the proposed Project, which qualifies for inclusion in the BO issued to the Federal Transportation Agencies. To maintain this inclusion, a reinitiation of this project-level consultation is required where the Federal Highway Administration's discretionary involvement or control over the Project has been retained (or is authorized by law) and if:

1. new information reveals that the Project may affect listed species or critical habitat in a manner or to an extent not considered in the BO;
2. the Project is subsequently modified in a manner that causes an effect to listed species or designated critical habitat not considered in the BO; or
3. a new species is listed or critical habitat designated that the Project may affect.

Marc Laurin  
February 24, 2017

3

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate your continued efforts to ensure that this Project is fully consistent with all applicable provisions of the BO. If you have any questions regarding our response, or if you need additional information, please contact Susi von Oettingen of this office at 603-227-6418.

Sincerely yours,



acting  
for

Thomas R. Chapman  
Supervisor  
New England Field Office

Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA)

Range-wide Programmatic Consultation for  
Indiana Bat and Northern Long-eared Bat

**Project Submittal Form**

*Updated December 2016*

If not using the Assisted Determination Key in the U.S. Fish and Wildlife Service (Service) Information for Planning and Conservation (IPaC) System, transportation agencies must provide this submittal form (or a comparable Service approved form) with provide project-level information for use of the range-wide programmatic consultation covering actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate Service Field Office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User’s Guide.

By submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria and conditions of the range-wide programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this form, the appropriate Service Field Office may review the project-specific information provided and request additional information. For projects that may affect, but are not likely to adversely affect (NLAA) the Indiana bat and/or NLEB, if the applying transportation agency is **not** contacted by the Service with any questions or concerns within 14 calendar days of form submittal, it may proceed under the range-wide programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that may affect, and are likely to adversely affect (LAA) the Indiana bat and/or the NLEB, the appropriate Service Field Office will respond (see recommended response letter template) within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed form.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

1. Date: 1/24/2017

2. Lead agency: FHWA

*This refers to the Federal governmental lead action agency initiating consultation; select FHWA, FRA or FTA as appropriate.*

3. Requesting agency: NHDOT

*This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency).*

Name: Vicki Chase

Title: Principal Regulatory Specialist

Phone: 603 637-1111

Email: vchase@normandeau.com

4. Consultation code<sup>1</sup>: 05E1NE00-2016-SLI-1845

5. Project name(s): Durham 16236 Federal No. X-A001(202)

6. Project description:

*Please attach additional documentation or explanatory text if necessary*

See Attached.

7. Project location (county, state): Strafford County, New Hampshire

*If not delineated in IPaC, attach shape files*

8. For species **other than Indiana bat and NLEB** (from IPaC official species list):

No effect – project(s) are inside the range, but no suitable habitat (see additional information attached).

May affect – see additional information provided for those species (see attached or forthcoming).

**Please confirm and identify how the proposed project(s) adhere to the criteria of the BO by completing the following (see User Guide Section 2.0):**

---

<sup>1</sup> Available through IPaC System Official Species List: <https://ecos.fws.gov/ipac/>

NO EFFECT

9. For Indiana bat/NLEB, if applicable, select your no effect determination:

- No effect – project(s) are outside the species’ range. *submittal form complete*
- No effect – project(s) are inside the species range with no suitable **summer** habitat; project(s) must also be greater than 0.5 miles from any hibernaculum unless meeting exceptions listed below. *submittal form complete*
- No effect – project(s) do not involve any construction activities (e.g., bridge/**abandoned structure** assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases). *submittal form complete*
- No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/background levels (e.g., road line painting). *submittal form complete*
- No effect - project(s) are outside suitable summer bat habitat and limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance.**
- No effect – project(s) includes maintenance, alteration, or **removal** of bridge(s)/structure(s) and indicate(s) no signs of bats from results of a bridge/**abandoned** structure assessment. *submittal form complete*  
*Otherwise, please continue below.*

MAY AFFECT, NOT LIKELY TO ADVERSELY EFFECT – W/O AMMS

10. For Indiana bat/NLEB, if applicable, select your may affect, NLAA determination (without implementation of AMMs):

- NLAA – project(s) are inside the species range and within suitable bat habitat, but **negative** bat presence/absence (P/A) surveys; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*
- NLAA – project(s) are within 300 feet of the existing road/rail surface and in area that contain suitable habitat (but no documented habitat) that do not involve tree removal, but include percussives or other activities that increase noise above existing traffic/background levels (must also be greater than 0.5 miles of a hibernaculum). *submittal form complete*
- NLAA – project(s) are limited to slash pile burning (**must also be greater than 0.5 miles from any hibernaculum**). *submittal form complete*
- NLAA – project(s) are limited to wetland or stream protection activities associated

with compensatory wetland mitigation that do not clear suitable habitat (must also be greater than 0.5 miles from any hibernaculum). *submittal form complete*

- NLAA – project(s) *anywhere*, including within 0.5 mile of hibernacula, with suitable summer bat habitat present that are limited to the maintenance of existing facilities (e.g., rest areas, stormwater detention basins) with no new ground disturbance or tree removal/trimming. *submittal form complete*

*Otherwise, please continue below.*

#### MAY EFFECT, NOT LIKELY TO ADVERSELY AFFECT – WITH AMMs

11. For Indiana bat/NLEB, if applicable, document your may affect, NLAA determination by completing the following section (**with implementation of AMMs**; use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

- Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum
- Verify that the project is within 100 feet of existing road/rail surfaces
- Verify that no documented Indiana bat and/or NLEB roosts and/or surrounding summer habitat within 0.25 mile of documented roosts will be impacted

Verify that all tree removal will occur outside the active season (i.e., will occur in winter)<sup>2</sup>:

Acres of trees proposed for removal:

b. Bridge/Structure Work Projects

Proposed work:

Timing of work:

Evidence of bat activity on/in bridge/structure? Yes:  No:

- Verify that work will be conducted outside the active season, or if during the active season, verify that no roosting bats will be harmed or disturbed in any way
- Verify that work will not alter roosting potential in any way

---

<sup>2</sup> Coordinate with the local Service Field Office for appropriate dates

- Verify that all applicable lighting minimization measures will be implemented

MAY AFFECT, LIKELY TO ADVERSELY AFFECT

12. For Indiana bat/NLEB, if applicable, document your may affect, LAA determination by completing the following section (use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

- Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum

Project Location:

- 0-100 feet from edge of existing road/rail surface  
 100-300 feet from edge of existing road/rail surface

- Verify that no documented Indiana bat roosts or surrounding summer habitat within 0.25 mile of documented roosts will be impacted between May 1 and July 31

- Verify that no documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31

Timing of tree removal: unknown

Acres of trees proposed for removal: ~0.20 acres

b. Bridge/Structure Work Projects

Proposed work: bridge removal and construction

Timing of work: construction season 2019

- Verify no signs of a colony  
 Verify that work will not alter roosting potential in any way

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented<sup>3</sup> unless P/A surveys and/or bridge/**abandoned** structure assessments<sup>4</sup> **have occurred to** document that the species are not likely to be present:

General AMM 1 (required for all projects):

Ensure all operators, employees, and contractors working in areas of known or **+**

<sup>3</sup> See AMMs Fact Sheet (Appendix C) for more information on AMMs

<sup>4</sup> Structure assessment for occupied buildings means a cursory inspection for bat use. For abandoned buildings a more thorough evaluation is required (See User Guide Appendix D for bridge/abandoned structure assessment guidance).

- Tree Removal AMM 1
- Tree Removal AMM 2 (required for NLAA)
- Tree Removal AMM 3 (required for all projects)
- Tree Removal AMM 4 (required for NLAA)
- Tree Removal AMM 5 (required for LAA)
- Tree Removal AMM 6 (required for LAA)
- Tree Removal AMM 7 (required for LAA)

- Bridge AMM 1
- Bridge AMM 2 (required for all projects during active season)
- Bridge AMM 3 (required for NLAA during active season)
- Bridge AMM 4 (required for NLAA during active season)
- Bridge AMM 5 (required for all projects)

Structure AMMs are required for all Indiana bat projects, required for NLAA NLEB projects.

- Structure AMM 1
- Structure AMM 2
- Structure AMM 3
- Structure AMM 4

- Lighting AMM 1 (required for all projects during the active season)
- Lighting AMM 2 (required for all projects)

- Hibernacula AMM 1 (required for all projects)

14. For Indiana bat, if applicable, compensatory mitigation measures will also be required to offset adverse effects on the species (see Section 2.10 of the BA). Please verify the mechanism in which compensatory mitigation will be implemented and that sufficient information is provided to the Service.

Range-wide In-Lieu Fee Program, The Conservation Fund

State, Regional, Recovery Unit-Specific In-Lieu Fee Program  
Name:

Conservation Bank  
Name:  
Location:

Local Conservation Site(s)  
Name:  
Location:  
Description:

### Bridge/Structure Assessment Form

This form will be completed and submitted to the District Environmental Manager by the Contractor prior to conducting any work below the deck surface either from the underside, from activities above that bore down to the underside, or that could impact expansion joints, from deck removal on bridges, or from structure demolish. Each bridge/structure to be worked on must have a current bridge inspection. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the US Fish and Wildlife Service, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing structures prior to allowing any work to proceed.

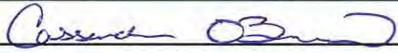
<b>DOT Project #</b> Durham 16236	<b>Water Body</b> Bunker Creek	<b>Date/Time of Inspection</b> January 23, 2017, 3:30 pm
--------------------------------------	-----------------------------------	---

Route:	County:	Federal Structure ID:	Bat Indicators				Notes: (e.g., number & species of bats, if known. Include the results of thermal, emergent, or presence/absence summer survey)
Check all that apply. Presence of one or more indicators is sufficient evidence that bats may be using the structure.			Visual	Sound	Droppings	Staining	
US Rte 4	Stafford						

**Areas Inspected (Check all that apply)**

Bridges		Culverts/Other Structures		Summary Info (circle all that apply)			
All vertical crevices sealed at the top and 0.5-1.25" wide & ≥4" deep	✓	Crevices, rough surfaces or imperfections in concrete	N/A	Human disturbance or traffic under bridge/in culvert or at the structure	High	Low	None

All crevices >12" deep & not sealed	✓	Spaces between walls, ceiling joists	N/A	Possible corridors for netting	None/poor	Marginal	Excellent
All guardrails	✓			Evidence of bats using bird nests, if present?	Yes	No	
All expansion joints	N/A						
Spaces between concrete end walls and the bridge deck	NOT COMPLETELY SEALED						
Vertical surfaces on concrete I-beams	N/A						

Assessment Conducted By: <u>CASSANDRA O'BRIEN</u> Signature(s): <u></u>
District Environmental Use Only: Date Received by District Environmental Manager: _____

**DOT Bat Assessment Form Instructions**

1. Assessments must be completed a minimum of 1 year prior to conducting any work below the deck surface on all bridges that meet the physical characteristics described in the Programmatic Consultation, regardless of whether assessments have been conducted in the past. **Due to the transitory nature of bat use, a negative result in one year does not guarantee that bats will not use that structure in subsequent years.**
2. Any bridge/structure suspected of providing habitat for any species of bat will be removed from work schedules until such time that the DOT has obtained clearance from the USFWS, if required. Additional studies may be undertaken by the DOT to determine what species may be utilizing each structure identified as supporting bats prior to allowing any work to proceed.
3. Estimates of numbers of bats observed should be place in the Notes column.
4. Any questions should be directed to the District Environmental Manager.



Photo 1 North face of bridge view west. Low tide, January 23, 2017



Photo 2 View south under bridge Low tide, January 23, 2017



**Photo 3 East culvert wall with bird's nest. Low tide, January 23, 2017**



**Photo 4 West culvert wall. Low tide, January 23, 2017**



Photo 5 Tree clearing area southeast side of bridge (STA 118+75)



Photo 6 Tree clearing area, north side US Route 4, eastern end of project (STA 122+10)



Photo 7 Proposed stormwater treatment area northeast of bridge (tree cutting proposed) (STA 119)



**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



*Victoria F. Sheehan*  
**Commissioner**  
October 27, 2017

*William Cass, P.E.*  
**Assistant Commissioner**

Max Tritt  
Fishery Biologist  
National Marine Fisheries Service  
17 Godfrey Drive, Suite 1  
Orono, ME 04473

## Exhibit 24

**Re: Atlantic Sturgeon Critical Habitat Assessment for the  
Replacement of the US Route 4 Bridge over Bunker Creek in Durham, NH.  
NHDOT Project No. 16236, Federal Project No. X-A001(202)**

Dear Mr. Tritt:

The New Hampshire Department of Transportation proposes to replace the bridge carrying US Route 4 over Bunker Creek in Durham, New Hampshire. Bunker Creek is a tidally influenced stream flowing into the Oyster River, which in turn flows into Little Bay and the Piscataqua River.

The National Marine Fisheries Service (NMFS) has recently designated Critical Habitat for Atlantic Sturgeon, 50 CFR 226.225, which became effective on September 18, 2017. The limits of Critical Habitat in the Gulf of Maine DPS are defined at 50 CFR 226.225 (d) and include the Piscataqua River. Although not specified in 50 CFR 226.225 (d)(4) the mapped Critical Habitat extends upstream into Little Bay and Great Bay, presumably because these waters receive tidal flow from the Piscataqua River during rising tides.

Comments published with the Critical Habitat mapping state that the identification of Critical Habitat for Atlantic Sturgeon in the Piscataqua River, and portions of the Salmon Falls and Cocheco Rivers, was based on the presence of physical features consistent with habitat requirements for spawning and on the detection of tagged sturgeon in the region. The Comments note that there is no evidence that Atlantic Sturgeon historically spawned or presently spawn on tributaries of Great Bay. Migration up any of these tributaries, if it occurred, would be incidental and not part of historical spawning patterns. The attached **Map 3**, from 50 CFR 226.225, and **Figure 1** locate the Project Area in relation to the mapped Critical Habitat, which does not extend into any of the tributaries leading into Little Bay or Great Bay.

### **Proposed Project**

The Bunker Creek Bridge is located at the mouth of Bunker Creek where it flows into Oyster River, approximately 7,300 feet upstream of where the Oyster River flows into Little Bay. Bunker Creek is a tidally influenced perennial stream with a 435-acre watershed. Salinity in the Oyster River approximately two miles upstream of the project averages 15-30 parts per thousand<sup>1</sup>, and water temperatures range from 0°C in winter to 27°C in summer. The western approach of the existing bridge was built on a 300 foot-long causeway, with intertidal salt marsh and mud flats to the north and south.

The project will involve complete replacement of the existing bridge across Bunker Creek with an alignment shift northward of 7 to 10 feet, and a four foot widening of the driving surface. The clear span of

the bridge will be increased from 15 feet to a maximum width of 76 feet (see **Preliminary General Plan and Elevation**).

To limit disruption to traffic on U.S. Route 4, construction is proposed to occur during the summer months when the University of New Hampshire and local schools are not in session. In response to concerns from NMFS for Essential Fish Habitat of spawning alewife, blueback herring, and rainbow smelt in the project vicinity, construction will be restricted between February 15 - June 30. A fourteen-day closure of US Route 4 is proposed at some point between June 1 - September 1 for the bridge construction.

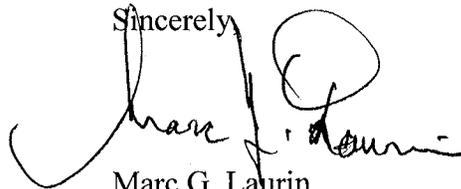
During our September 8<sup>th</sup> telephone conversation you expressed that the NMFS has concern that Atlantic Sturgeon might coincidentally be present in the project area during construction. Based on the depth of water surrounding the causeway it is unlikely that Atlantic Sturgeon would be present near the bridge. With the exception of scour holes on either side of the bridge all of the surrounding estuarine habitat is intertidal with a maximum depth of 6' at high tide. **Figure 2** depicts the project area at low tide and **Figure 3** show the proposed areas of impacts to Bunker Creek.

Nevertheless, to prevent any incidental impacts that could occur to Atlantic Sturgeon that may coincidentally make their way up the Oyster River at high tide during the construction of the bridge, siltation booms will be placed, during low tide when the surrounding tidal mud flats and salt marsh are exposed, from the existing bridge abutments along the causeway within areas of proposed impacts. Additionally, NOAA's Fisheries "Atlantic and Shortnose Sturgeon" Fact Sheet will be included in the construction contract documentation, to be shared with all project operators, employees and contractors.

FHWA NH Division has determined that there will be no effect to Atlantic Sturgeon from the proposed project. Based on the distance of the project from Critical Habitat of the Gulf of Maine DPS of Atlantic Sturgeon; the lack of sufficiently deep water during most portions of the tide cycle for movement of Atlantic Sturgeon in the vicinity of the project area; and with the use of the precautionary measures noted above, no impacts are anticipated to occur to Atlantic Sturgeon as a result of the project.

Please contact me if you need any further information or clarification on the project.

Sincerely,



Marc G. Laurin  
Senior Environmental Manager  
Room 109 – Tel (603) 271-4044  
E-mail – [marc.laurin@dot.nh.gov](mailto:marc.laurin@dot.nh.gov)

Attachments:

Map 3 from 50 CFR 226.225  
Figure 1 - Atlantic Sturgeon Critical Habitat  
Figure 2 - Project Location at High Tide  
Figure 3 - EFH Intertidal Impacts  
*Preliminary General Plan and Elevation*

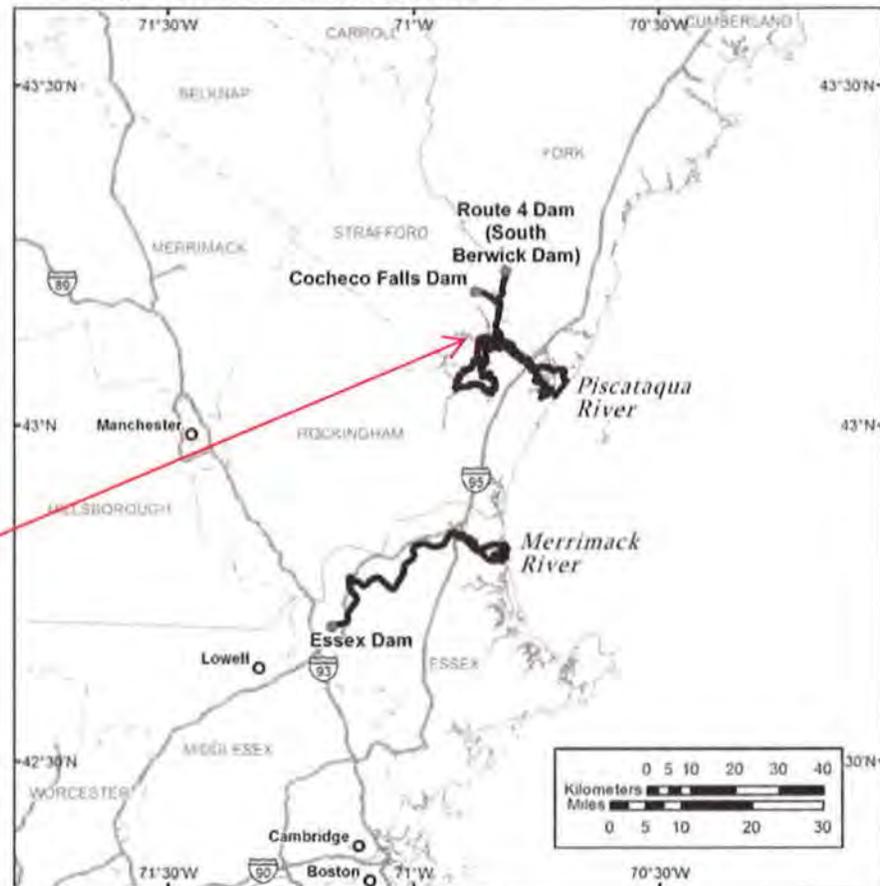
cc. Jamison Sikora, FHWA; Robert Landry, NHDOT; Keith Cota, NHDOT; Joe Adams, NHDOT; Vicki Chase, Normandeau Assoc. ; Darren Blood, GM2 Inc.

s:\environment\projects\durham\16236\sturgeon\20171027lt-tritt.docx

<sup>1</sup> Gregory, T.K., J. Pennock, and P.E. Stacey. 2014. Great Bay National Estuarine Research Reserve System. Centralized Data Management Office. Oyster River Station - Great Bay, NH. <http://cdmo.baruch.sc.edu/get/export.cfm> Accessed Feb. 2014.

### Gulf of Maine Units 4 and 5 Piscataqua River and Merrimack River

Map 3



Project Area

#### Legend

 Critical Habitat Area



This map illustrates Atlantic sturgeon critical habitat. Critical habitat is all of the river within the illustrated Critical Habitat Area; from the ordinary high water mark of one riverbank to the ordinary high water mark of the opposing riverbank. For clarification of the critical habitat definition, please refer to the narrative description.

(e) *Critical habitat boundaries of the New York Bight DPS.* Critical habitat for the New York Bight DPS of Atlantic sturgeon is the waters of:

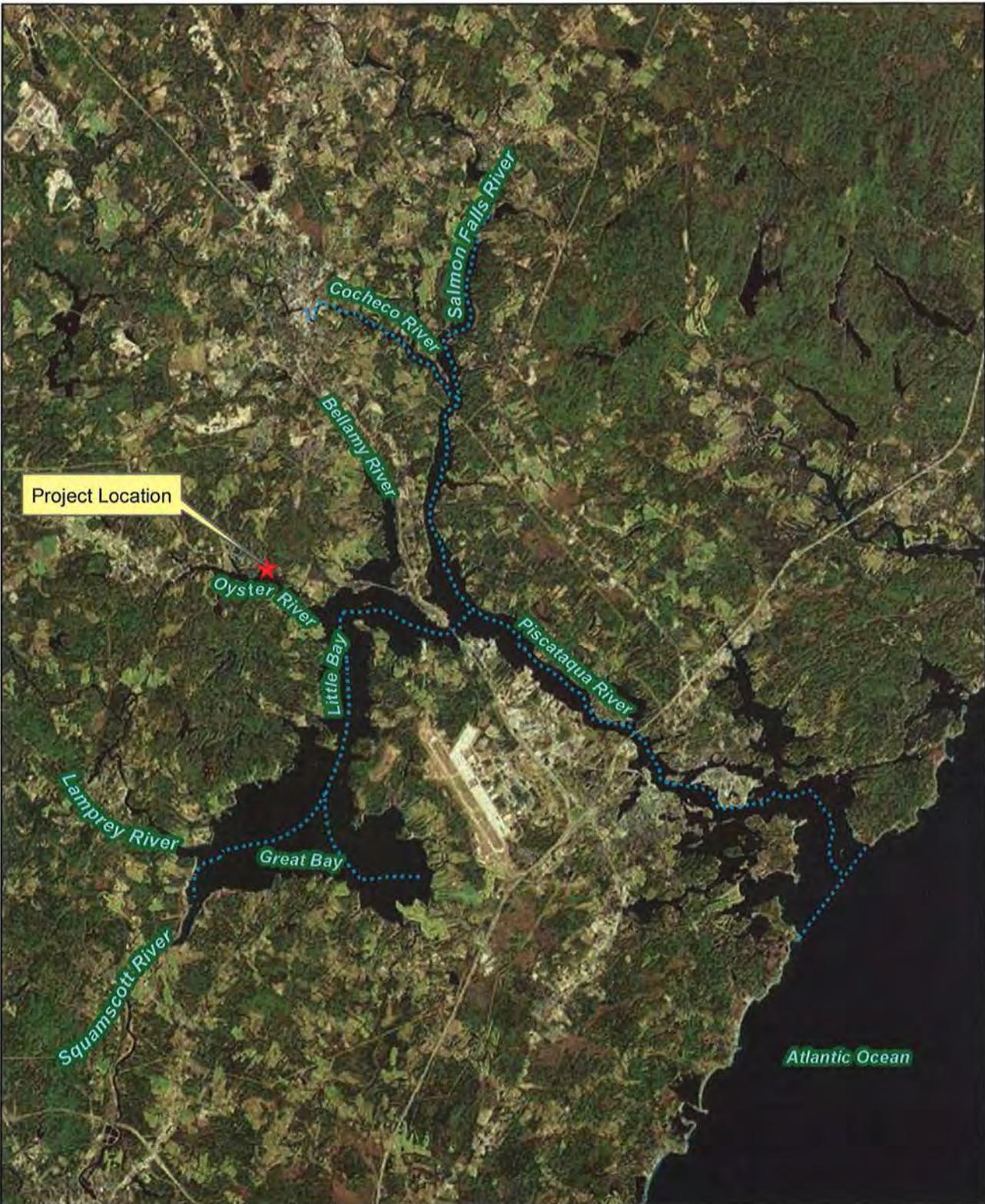
(1) Connecticut River from the Holyoke Dam downstream to where the main stem river discharges at its mouth into Long Island Sound;

(2) Housatonic River from the Derby Dam downstream to where the main stem discharges at its mouth into Long Island Sound;

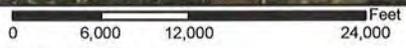
(3) Hudson River from the Troy Lock and Dam (also known as the Federal Dam) downstream to where the main

stem river discharges at its mouth into New York City Harbor; and

(4) Delaware River at the crossing of the Trenton-Morrisville Route 1 Toll Bridge, downstream to where the main stem river discharges at its mouth into Delaware Bay.



Project Location



**Atlantic Sturgeon  
Critical Habitat Rivers**

Data Source: Atlantic Sturgeon Critical Habitat Rivers  
 NOAA National Marine Fisheries Service (NMFS) -  
 Greater Atlantic Regional Fisheries Office (GARFO).  
 Gloucester, MA September 27, 2017. Accessed October 16, 2017.

Date: 10/16/2017  
 Drawn By: vchase  
 Project No: 23164.001

NHDOT  
 DURHAM, NEW HAMPSHIRE  
 16236

**FIGURE 1  
 ATLANTIC STURGEON CRITICAL HABITAT**

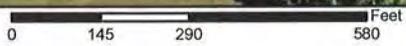
SCALE: 1:150,000

**NORMANDEAU**  
 environmental consultants  
 25 Nashua Road Bedford, NH 03110  
 (603) 472-5191 www.normandean.com

OCTOBER, 2017



Project Location



Date: 10/18/2017  
 Drawn By: VChase  
 Project No: 23164.001

Data Source: 2013 Coastal High Resolution (1 ft.)  
 Aerial Photography - True Color (RGB)  
 Granit WMS Web Server accessed 10/18/2017

NHDOT  
 DURHAM, NEW HAMPSHIRE  
 16236

**FIGURE 2**  
**PROJECT LOCATION LOW TIDE**

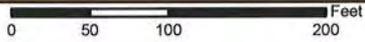
SCALE: 1:3,600



OCTOBER, 2017



proposed limit of work



The project will cause 12,534 square feet of permanent intertidal impact.  
 There will be 1,982 square feet of intertidal habitat created under the proposed bridge.

ImageServices/Coastal\_2013\_1ft\_RGB/ImageServer/WMSserver  
 Service Name: Coastal 2013 1ft RGB

Date: 8/2/2017  
 Drawn By: VChase  
 Project No: 23164.001

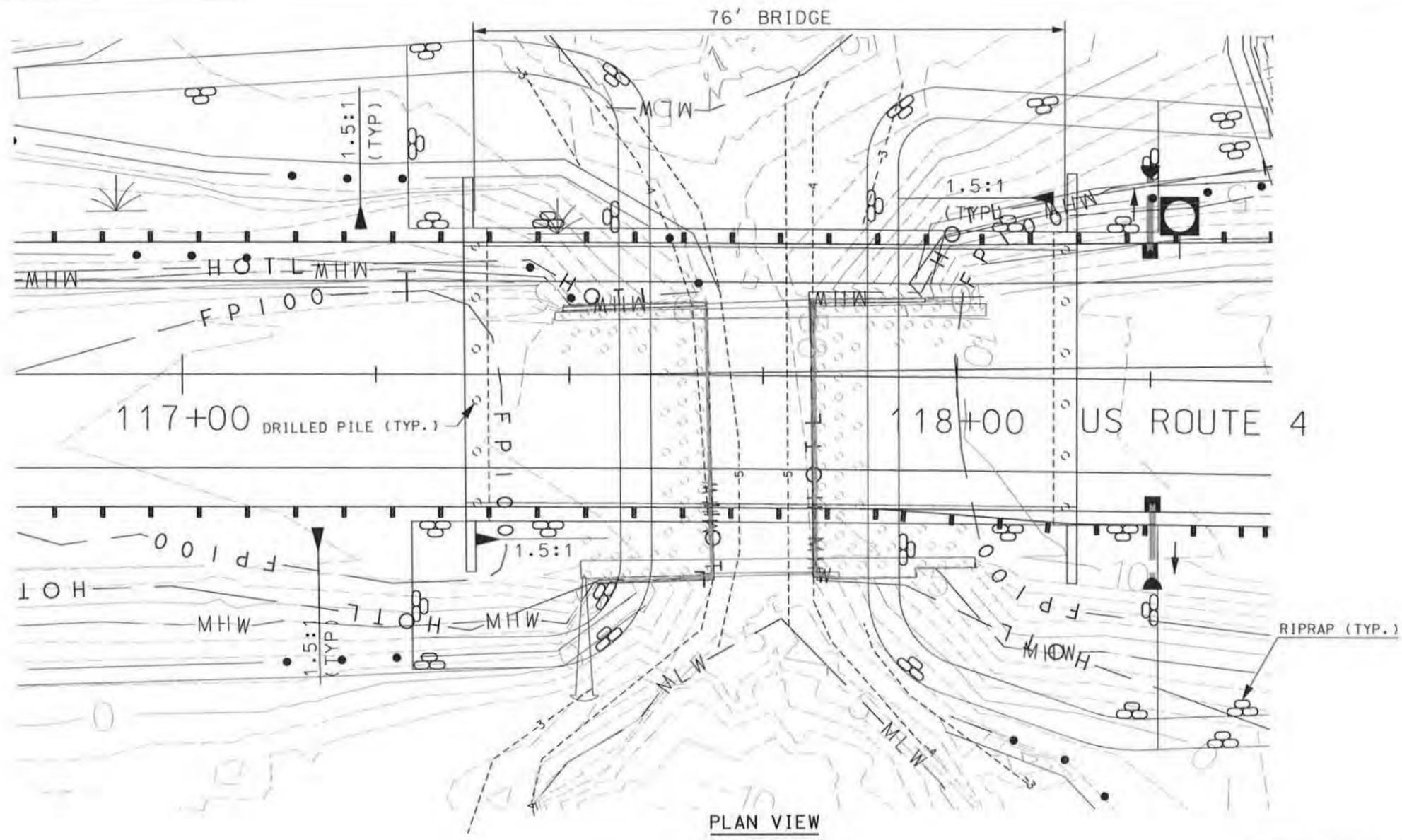
NHDOT  
 DURHAM, NEW HAMPSHIRE  
 16236

**FIGURE 3 - EFH INTERTIDAL IMPACTS**

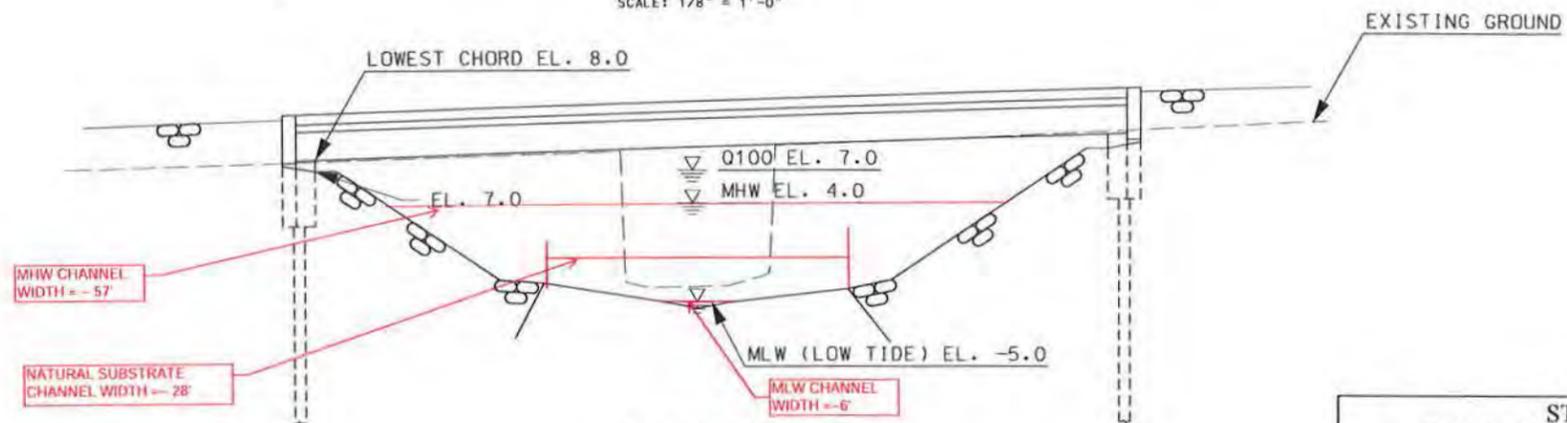
SCALE: 1:1,400



AUGUST, 2017



**PLAN VIEW**  
SCALE: 1/8" = 1'-0"



**ELEVATION**  
SCALE: 1/8" = 1'-0"

PRELIMINARY PLANS  
SUBJECT TO CHANGE  
DATE 8/4/2017

**76' BRIDGE ALTERNATIVE**

**G&M ASSOCIATES**

SUBDIRECTORY	DGN LOCATOR	SHEET SCALE
Prelim	16236GENPLAN	AS NOTED

STATE OF NEW HAMPSHIRE											
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN											
TOWN	DURHAM	BRIDGE NO.	145/116	STATE PROJECT	16236						
LOCATION US ROUTE 4 OVER BUNKER CREEK											
GENERAL PLAN AND ELEVATION											
REVISIONS AFTER PROPOSAL											
DESIGNED	TPL	DATE	07/17	CHECKED	DLB	DATE	07/17	BY	TPL	DATE	07/17
DRAWN	JAM	DATE	07/17	CHECKED	TPL	DATE	07/17	BY	JAM	DATE	07/17
QUANTITIES	---	DATE	XX/XX	CHECKED	---	DATE	XX/XX	BY	---	DATE	XX/XX
ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.		TOTAL SHEETS					
REV. DATE											





Date : 1/30/2017 Drawn By : VChase Project No: 23164.001	<b>Wildlife Action Plan Tiers</b> ■ Highest Ranked Habitat ■ Highest Ranked Habitat in Biological Region ■ Supporting Landscapes	Feet 0 80 160 320 N 	NHDOT DURHAM, NEW HAMPSHIRE 16236
	<b>EXHIBIT 25 - WAP PRIORITY AREAS</b>		
	Data Source: 2015 Wildlife Action Plan, NHFG		SCALE: 1:2,000

NOVEMBER, 2017



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**New Hampshire Division**

October 30, 2017

53 Pleasant Street, Suite 2200  
Concord, NH 03301  
(603) 228-0417

**Exhibit 26**

In Reply Refer To:  
HDA-NH

Mike Johnson  
NOAA Fisheries Regional Office  
Habitat Conservation Division  
55 Great Republic Drive  
Gloucester, MA 01930

**Re: Responses to EFH Conservation Recommendations. NHDOT Replacement of Bridge #145/116, US Route 4/Bunker Creek, Durham, NH, State Project No. 16236 and Federal Project X-A001(202)**

Dear Mr. Johnson:

An Essential Fish Habitat Assessment was submitted by NHDOT to the Habitat Conservation Division of the National Oceanic and Atmospheric Administration (NOAA) Fisheries Office in May, 2015 for the replacement of the US Route 4 bridge spanning Bunker Creek in Durham, New Hampshire. Additional coordination followed this submittal, and a revised EFH Assessment was submitted to NOAA on January 11, 2017. Subsequently on March 15, 2017, additional questions were raised by NOAA. Answers to those additional questions were provided by NHDOT in an August 9, 2017 letter.

EFH Conservation Recommendation for the project were provided by NOAA to the NHDOT and FHWA in a September 1, 2017 email. Responses to these Recommendations are addressed below. During the final design of the project the NHDOT and FHWA will take these into consideration and will continue to coordinate with NOAA on the impacts, through the ACOE and NHWB wetland impact permitting / mitigation process and invites to monthly Natural Resource Agency Coordination meetings, as appropriate.

*1. Impacts to Intertidal Zone:*

Response: The NHDOT will continue to evaluate the final design to further avoid and minimize impacts to the Intertidal Zone. The final design and construction of the Bunker Creek Bridge will be completed as an overall Design-Build project. The Design-Build Team will be directed to evaluate minimization of riprap, and other impacts to the mud flat and salt marsh habitats. The Design-Build Team will be required to make a number of submissions to the NHDOT, who will review each submission for conformance with design standards.

*2. Impacts to the tidal regime and sea level rise:*

Response: The current profile places the lowest steel of the proposed bridge over Bunker Creek at elevation 8.0, which is slightly higher than the estimated Mean High Tide of 4.0 feet with a 3.9 feet (Intermediate Risk) of Sea Level Rise, established by State Regulation SB 452-FN, which was promulgated to be consistent with the November 2016 Coastal Risks and Hazards Commission's final Report and Recommendation "*Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation*". The project will balance competing interests of the final profile of US Route 4 in this area, which were established to minimize impacts to the intertidal habitat located on both sides of the roadway, minimize the profile based on requests by adjacent property owners, and open the bridge span to allow for additional flood conveyance. The High Scenario SLR in the Recommendations would result in greater impacts to adjacent properties, greatly increase impacts to tidal wetlands, and substantially increase project costs and length of construction. The NHDOT has determined that these impacts would be unreasonable and contrary to established regulations.

The lowest steel is at the western abutment while the eastern end of the bridge will have a low steel elevation at 10.35. The low point for the roadway for the remainder of the causeway is at 9.25. This combination will minimize damage to the newly constructed bridge as the high storm surge would overtop the causeway prior to the bridge with 1.1 feet of free board remaining, although with a reduced opening. The NHDOT feels that this will reduce the risk of damage to the bridge in the foreseeable future.

### 3. *Compensatory Mitigation:*

Response: At the September 22, 2017 Natural Resource Agency Coordination meeting, the NHDOT proposed an In-Lieu fee, estimated at \$195,805.44, to the NHDES Aquatic Resource Mitigation fund, or equivalent mitigation effort salt marsh restoration on the south side of the bridge. The In-Lieu fee was determined by applying a higher mitigation ratio multiplier (2x freshwater) for the tidal impacts, and includes tidal buffer and freshwater wetland/stream impacts. No objections to the in-lieu fee were expressed, though further coordination and evaluation of mitigation options, such as living shoreline design, will be assessed during the NH Wetlands Dredge and Fill, and the ACOE Section 404 permitting processes.

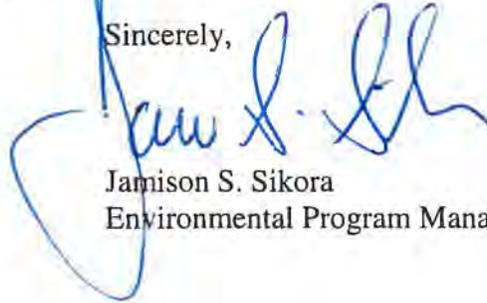
### 4. *Time of Year Window:*

Response: The NHDOT will review traffic numbers between July 1<sup>st</sup> and prior to the opening weekend of the UNH fall semester to identify the best time frame for a 14 day closure of US Route 4 and to determine the constraints that would be imposed with a standard TOY restriction of Feb. 15 to June 30th. Further consultation on the proper erosion and sediment control measures that could be employed for protecting Bunker Creek from turbidity and sedimentation would be further discussed with NOAA if it is determined that the TOY restriction poses a substantial constraint on the construction of the project.

It is FHWA's conclusion of the EFH Assessment that the project will have no substantial temporary or permanent adverse effect on those species with designated EFH. We have enclosed a copy of NHDOT's coordination letter to Max Tritt, Fisheries Biologist with NMFS,

regarding potential impact to the Endangered Atlantic Sturgeon and, determination of no effect by FHWA. You may contact me at (603) 410-4870, or by email at [Jamie.Sikora@dot.gov](mailto:Jamie.Sikora@dot.gov) should you have any questions related to the project.

Sincerely,



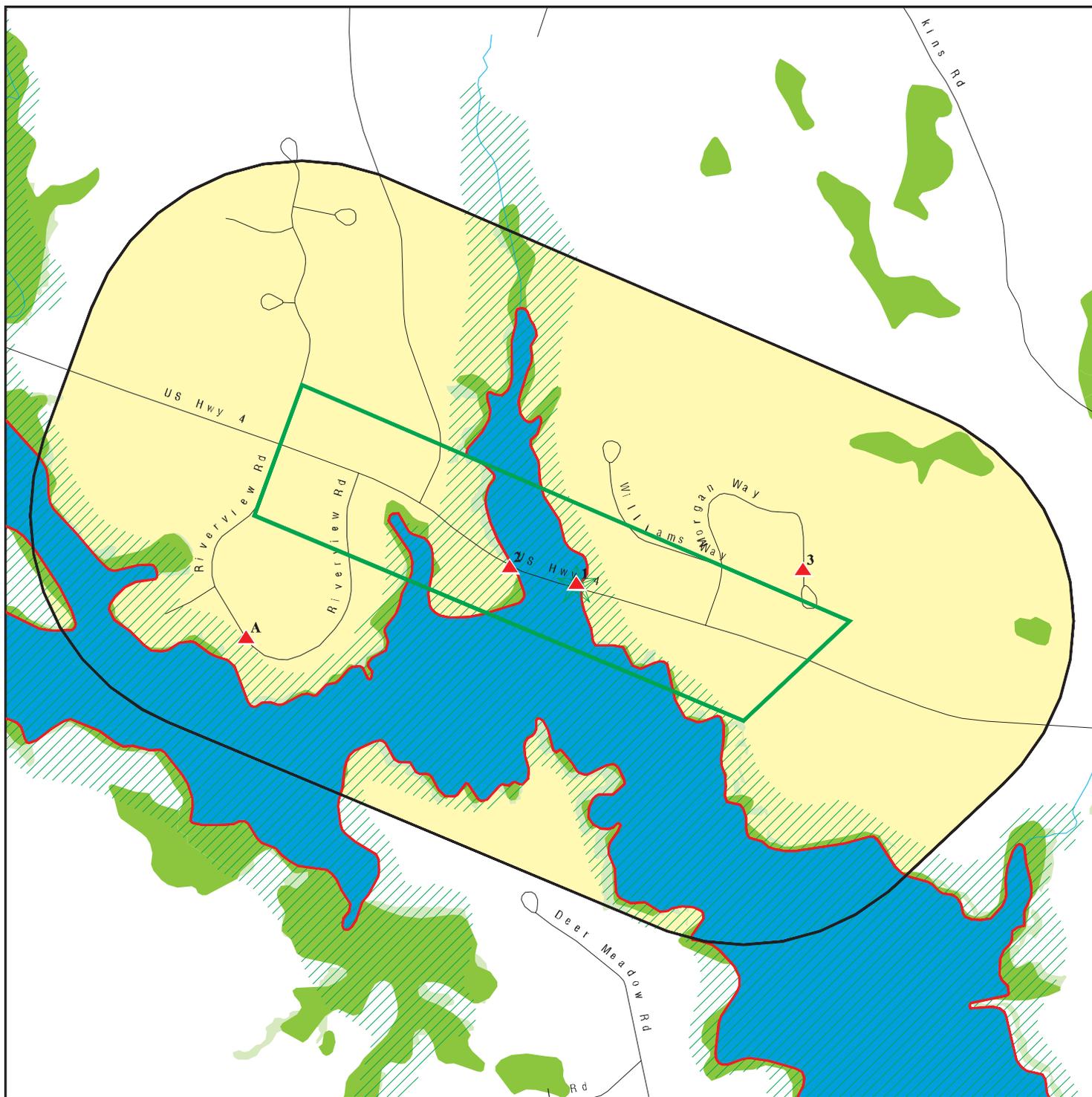
Jamison S. Sikora  
Environmental Program Manager

Enclosure

cc: Ron Crickard, NHDOT Environment, Marc Laurin, NHDOT Environment, Joe Adams,  
NHDOT Robert Landry, NHDOT, Keith Cota, NHDOT, Vicki Chase, Normandeau Assoc.  
Darren Blood, GM2 Inc

Project file 16236

DETAIL MAP - 3921305.2s



-  Target Property
-  Sites at elevations higher than or equal to the target property
-  Sites at elevations lower than the target property
-  Manufactured Gas Plants
-  Sensitive Receptors
-  National Priority List Sites
-  Dept. Defense Sites

-  Indian Reservations BIA
-  County Boundary
-  Oil & Gas pipelines from USGS
-  100-year flood zone
-  500-year flood zone
-  National Wetland Inventory
-  State Wetlands



## Exhibit 27

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Bunker Creek Project  
 ADDRESS: Route 4  
 Durham NH 03824  
 LAT/LONG: 43.1336 / 70.8861

CLIENT: Normandeau Associates  
 CONTACT: Stephen Lee  
 INQUIRY #: 3921305.2s  
 DATE: April 23, 2014 1:34 pm

MGL Chgl  
KTN 1

STATE OF NEW HAMPSHIRE  
DEPARTMENT OF TRANSPORTATION  
INTER-OFFICE COMMUNICATION

Exhibit 28

DATE: February 20, 2014  
FROM: *JA* Jay Ankenbrock, Chief of Labor Compliance, Executive Office  
TO: Michael J. Dugas, P.E., Chief of Preliminary Design  
RE: Environmental Justice Population Analysis, Project: Durham 16236

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 American FactFinder data is used to provide to an EJ Population analysis for the project. If you have questions regarding this analysis, please contact me @ 271-2467.

Encls: EJ Population Analysis

Cc: Peter Crouch, Traffic Systems Engineer, Bureau of Traffic  
Kevin Nyhan, Administrator, Bureau of Environment  
Keith Cota, Bureau of Highway Design

## EJ Population Analysis for Project: Durham 16236

STUDY AREA	AVG% Elderly Population	AVG% Minority Population	AVG% Low-income Population	AVG% LEP
Impacted Area – County Stafford US Census Tract #802.02 Block 2.	4.17%	5.63%	2.46%	0.0%
Surrounding Area – Stafford County, Census Tract # 802.04 Block 1, Census Tract #802.03 Block 2 & Census Tract #805 Block 1.	6.93%	6.93%	22.86%	0.38%
<b>REMARKS:</b> * 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.  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% 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 Coordinator for further assistance.				

**Impacted Area:** The impacted area was defined by the project limits and the area in the immediate vicinity that most closely corresponds to the boundaries of Census Tracts and Block Groups

**Surrounding Area:** All Census Tracts and Block Groups outside of, and immediately adjacent to, the impacted 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. For more information, I have provided a link to the Draft Public Rights-of-Way Guidelines (PROWAG). Although these guidelines will not be enforceable until they have been adopted by the US DOJ and US DOT, the FHWA considers them to be the most current recommended best practices in pedestrian facility design: <http://www.access-board.gov/rowdraft.htm#Text>.

**Outreach Recommendations:** The data used in this study shows higher-than-average low-income population in the surrounding area. However, this is due to the student population levels at the University of New Hampshire within the census tract. Please refer to the figures in *Bold* from the table above. In consideration of this demographic, we are providing contact information for community outreach agencies in the areas of concern. These contacts should be included in your notification list for the project.

<u>Resident/Agency Address</u>	<u>Org/Housing Type</u>	<u>Contact Name/Number</u>
Town of Durham 15 Newmarket Road Durham, NH 03824		Todd Selig 603-868-5571
Durham Public Library Mill Road Durham, NH 03824		Thomas Madden 603-868-6699
DCAT 15 Newmarket Road Durham, NH 03824		Craig Stevens 603-868-5571 x114