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Final Categorical Exclusion / Programmatic 4(f) Evaluation

U.S. Department of Transportation
Federal Highway Administration

NH ROUTE 16
Bridge Replacement &
Roadway Rehabilitation

March 2017

Ossipee
14749
X-A000(490)

Final
Categorical Exclusion/
Programmatic 4(f) Evaluation

Prepared by:

McFarland Johnson

53 Regional Drive • Concord, NH 03301

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PART I: FINAL CATEGORICAL EXCLUSION

Introduction

This project will address three bridges that are listed on the NHDOT Red List of Bridges: Lovell River Bridge (Bridge No. 152/268); Bearcamp River Bridge (Bridge No. 137/297); and Bearcamp Relief Bridge (Bridge No. 137/299). In addition, the condition of a 3.4-mile section of NH Route 16 will be addressed, beginning approximately 1,000' south of the Lovell River Bridge and ending approximately one mile north of the Bearcamp Relief Bridge (*Figure 1*).

In accordance with the National Environmental Policy Act of 1969 (42 USC 4332(2)(c)), as implemented in 23 CFR 771.117(d)(3), this Categorical Exclusion/Programmatic Section 4(f) Evaluation addresses the construction of the above noted project. This document has been prepared using a systematic, interdisciplinary approach to assess the engineering considerations and environmental effects of the subject project.

Statement of Purpose and Need

Project Purpose

The purpose of this project is to maintain the safety, integrity, and continuity of NH Route 16, a vital north-south corridor in eastern New Hampshire, by addressing deficiencies in the bridges that carry NH Route 16 over the Lovell River, Bearcamp River, and Bearcamp Relief and by addressing the condition of the roadway along a 3.4-mile section of NH Route 16.

Project Need

The need for this project is evidenced by the following:

1. The Lovell River Bridge deck is in poor condition. The bridge is considered structurally deficient, with a Federal Sufficiency Rating (FSR) of 40.6 on a rating scale of 0 to 100.
2. The Lovell River Bridge currently restricts heavy loads with a load rating of C-2. This rating requires Single Unit and Combination certified vehicles to cross the bridge only when they can cross with no other trucks on the bridge.
3. The southern approach of the Lovell River Bridge is regularly flooded at approximately the Q10 storm (the flood-flow expected to occur at a frequency of once every 10 years).
4. The deck and superstructure of the Bearcamp River Bridge are in poor condition. The bridge is considered structurally deficient, with an FSR of 11.4.
5. The deck and superstructure of the Bearcamp Relief Bridge are in serious condition. The bridge is considered structurally deficient, with an FSR of 10.6.
6. The condition of pavement, guardrail and drainage structures within the project limits is deteriorating, with much of the existing infrastructure dating to 1955.

Existing Conditions

Setting

The project area consists of a 3.4-mile section of NH Route 16 in the Town of Ossipee in Carroll County. Ossipee shares a boundary with seven other towns: Effingham, Wakefield, Wolfeboro, Tuftonboro, Mountonboro, Tamworth, and Freedom. According to the US Census Bureau, Carroll County is currently the third-least populous county in the state. However, the NH Office of Energy and Planning lists Carroll County as one of three NH counties that will experience the largest percent increase in population between the years 2000 and 2030. Natural resources are an important factor in this projected growth, not only drawing tourists that support the

local economy, but also attracting people seeking to reside in the area in primary or vacation homes. Ossipee is located at the eastern limit of the Lakes Region and the southern limit of the White Mountains, which are two of the most popular destinations in New Hampshire for residents and out of state tourists.

Ossipee has a population of 4,345 (US Census of 2010) and a population density of 59.2 people per square mile. The town is divided into three village precincts: West Ossipee, Center Ossipee, and Ossipee Corner. The project is located in West Ossipee. The project includes areas zoned by the town as Rural and Roadside Commercial, and a variety of small businesses are located within the project area along NH Route 16.

NH Route 16 is a vital north-south transportation corridor, traveling a total of 150 miles along the eastern side of New Hampshire between Portsmouth and Wentworth's Location. This roadway is the primary route from southeastern New Hampshire and the Seacoast region to the Lakes Region and White Mountains. NH Route 16 is classified as Rural Principal Arterial through Ossipee. In general, the roadway through the project area consists of two 12-foot travel lanes and 4-foot shoulders. In 2017 and 2037, projected daily traffic is 11,000 and 14,000 vehicles per day, respectively. Traffic consists of approximately 5.4% trucks. The posted speed limit is 45 mph.

Description of Bridges

Lovell River Bridge

The Lovell River Bridge was constructed in 1950 and consists of steel I-beams with a concrete deck. The bridge is a single span with a length of 58' and a curb-to-curb width of 31'. See Photo 1.

Photo1: Lovell River Bridge

The most recent bridge inspection rated the condition of the deck as poor and the substructure and superstructure as satisfactory. The bridge is considered structurally deficient, with a Federal Sufficiency Rating (FSR) of 40.6 on a rating scale of 0 to 100, in which 100 would represent an entirely sufficient bridge and zero would represent an entirely insufficient or deficient bridge.

The bridge is posted with a C-2 load rating, which requires Single Unit and Combination certified vehicles to wait to cross the bridge until they can cross with no other trucks on the bridge.

Bearcamp River Bridge

The Bearcamp River Bridge is a 5-span I-beam concrete bridge constructed in 1955. The overall length is 392' and the curb-to-curb width is 28'. See Photo 2. The bridge has 4 piers, two of which are located in the river.

The most recent bridge inspection rated the condition of the deck and superstructure as poor and the substructure as fair. The bridge is considered structurally deficient, with an FSR of 11.4. The bridge currently has no load restrictions.

Photo 2: Bearcamp River Bridge

Bearcamp Relief Bridge

The Bearcamp Relief Bridge is a 4-span I-beam concrete bridge, also constructed in 1955. The overall length is 168' and the curb-to-curb width is 28'. See Photo 3.

The most recent bridge inspection rated the condition of the deck and superstructure as serious and the substructure as fair. The bridge is considered structurally deficient, with an FSR of 10.6. The bridge currently has no load restrictions.

Photo 3: Bearcamp Relief Bridge

The Bearcamp River and Bearcamp Relief Bridges are considered "sister" bridges due to their close proximity (the bridges are 600' apart) and nearly identical design. The bridges were designed by NH Highway Department bridge engineers Harold Langley and Robert Prowse. Both bridges have a combined simple/continuous beam design with H-pile bents of double batter pile design. The bridges also have a combined open-grid shoulder/steel curb/open-grid sidewalk assembly and steel angled railings. The open-grid shoulder and sidewalk allow salt and water through the bridge deck, which has contributed to substantial section loss and deterioration, particularly on the exterior girder and metal coping.

Proposed Action

The proposed alternative will involve the following components:

- Lovell River Bridge replacement, with traffic maintained on a temporary detour bridge.
- Bearcamp River Bridge and Bearcamp Relief Bridge replacement using slide-in bridge construction methodology.
- Roadway rehabilitation along 3.4 miles, resulting in approximately a ½-inch raise in grade of pavement, except in the vicinity of the Lovell River and Bearcamp River bridges, where the raise in grade will be higher as described below.
- Shoulder widening along 400 linear feet at the Newman Drew Road intersection and 340 linear feet at the Deer Cove Road intersection.
- Guardrail and minor drainage upgrades along 3.4 miles of NH Route 16.
- Construction of a stormwater treatment swale.

Lovell River Bridge

The proposed Lovell River Bridge will be a single span with a length of 97' and rail-to-rail width of 34'. The span will cross the river at an angle of approximately 15° rather than perpendicular to the channel. The bridge will consist of integral abutment steel girders with a concrete deck and steel bridge rail. Abutments will be stub abutments on piles.

A temporary bridge will be constructed to the west of the existing bridge to maintain traffic during construction. While the existing bridge already passes the 100-year storm, NH Route 16 south of the bridge is regularly flooded at approximately the Q10 storm. By increasing the bridge length and raising the elevation of the southerly approach slightly, hydraulic modeling shows the road south of the bridge flooding at some point between the 50- and 100-year storms. The same low point in the roadway will be maintained.

Bearcamp Bridges

The Bearcamp River Bridge will be 410' long with 3 spans on a 16.5° skew, consisting of steel girders on pile-supported stub abutments. The new bridge will have only two piers, which will not be located in the river. The bridge will match the existing low chord elevation. The width of the bridge will be 34' rail-to-rail. Steel bridge rail will be used.

The Bearcamp Relief Bridge will be 185' with 3 spans with no skew. The bridge will be precast concrete NEXT-Beams on pile-supported stub abutments. The bridge will match the existing low chord elevation. The width of the bridge will be 34' rail-to-rail. Steel bridge rail will be used.

The proposed bridges will be located on the same alignment as the existing bridges. The new bridge abutments for both bridges will be constructed behind the existing abutments of each bridge. There will be little or no grade

change at the Bearcamp Relief Bridge. The elevation of the approach roadway on each side of the Bearcamp River Bridge will be raised approximately 3' to match the elevation of the new bridge.

The two Bearcamp bridges will be replaced using construction methodology called Slide-in Bridge Construction, which replaces the bridges in their current location and eliminates the need for temporary bridges. Slide-in Bridge Construction will involve constructing the new superstructure on temporary supports adjacent to the existing bridges, most likely on the upstream side of the bridges. Portions of the new piers may also be constructed while the existing bridge remains open to traffic. The road will then be closed for a one-weekend (60-hour) period for each bridge to allow time to remove the existing bridge, complete construction of the substructure, and move the new superstructure into place.

The two closures of NH Route 16 will be scheduled to coincide with periods of low traffic volumes, such as in April/early May or mid-September (*Exhibit 1*). During each closure, a detour plan will be implemented. The signed detour will utilize state routes: NH Route 153 to the east of the project and a westerly detour using NH Routes 28, 171, 109 and 25 (*Exhibit 2*). All local roads will remain open to traffic. Advance notice of a scheduled detour will be given to motorists via signage, message boards, and social media.

Roadway Work

Two existing culverts will be replaced as part of this project. One is a 36" corrugated metal pipe (cmp) that carries a perennial stream under NH Route 16 (see Photo 4). This pipe will be replaced with a 36" reinforced concrete pipe (rcp). The second culvert is a 24" rcp located under NH Route 16 between two palustrine wetlands. This pipe will be replaced in-kind.

Photo 4: 36" cmp

The proposed roadway rehabilitation includes reclaiming the top approximately 12" of the pavement and gravel, with approximately 4.5" of this material to be placed back on the roadway and new stone and pavement added, resulting in an approximate grade raise of 0.5". Shoulder leveling will tie the new pavement into existing roadway slopes.

The project will include shoulder widening at the intersection of two local roads with NH Route 16. At the Newman Drew Road intersection, approximately 400 linear feet of the northbound shoulder will be widened to provide a bypass shoulder that will allow northbound traffic to maneuver around vehicles turning left onto Newman Drew Road. At the Deer Cove Road intersection, approximately 340 linear feet of the southbound shoulder will be widened to provide a bypass shoulder that will allow southbound traffic to maneuver around vehicles turning left onto Deer Cove Road.

All existing guardrail in the project area will be upgraded as needed.

A treatment swale is proposed south of the Bearcamp River at Station 171+50 to 173+20, Right, at the toe of the existing slope. The swale will be 6' wide, approximately 150' long, and at a grade of 0.5%, treating runoff from approximately 0.37 acres of impervious surface.

Summary

The estimated cost to design and construct this alternative is $18 million, with the construction cost of each bridge replacement as follows:
Lovell River Bridge $1.9 million
Bearcamp River Bridge $4.43 million
Bearcamp Relief Bridge $2.12 million

This alternative fully meets the purpose and need of the project, minimizes impacts to natural resources and private property, and has the lowest overall cost of the alternatives studied. With the use of Slide-in Bridge Construction, an accelerated bridge construction technique, this alternative also minimizes the project's impacts to traffic by reducing the duration of bridge construction.

Other Alternatives Considered

"No-Build"

This alternative would provide no improvements to NH Route 16 or the Bearcamp River, Bearcamp Relief, and Lovell River bridges; therefore, the condition of the bridges and roadway would continue to worsen and the bridges would eventually require load restrictions. For these reasons, this alternative does not meet the purpose and need of the project and it was not considered for further study.

Lovell River Bridge Alternatives

Rehabilitation

This alternative would entail replacing the bridge deck of the Lovell River Bridge. The approximate cost would be $960,000.

This alternative would address the condition of the existing bridge but would not address the load rating or flooding concern along the southern approach. Therefore, this alternative would not fully meet the purpose and need of the project and was not selected.

Bearcamp River/Relief Bridge Alternatives

Rehabilitation

Rehabilitation of the Bearcamp River and Bearcamp Relief bridges would entail the following:

- Remove concrete deck, steel grates and supporting members and guardrail and replace with concrete deck and crash tested rail;
- Replace exterior girders and install new cross frames in exterior bays;
- Repair and paint interior girders and cross frames;
- Replace bearings;
- Repair concrete pile caps and abutments;
- Jacket piles with FRP wrap to counteract section loss (fiber-reinforced polymer).

The existing bridges are not wide enough to accommodate alternating one-way traffic during rehabilitation. Therefore, a temporary detour bridge would need to be constructed to the west of the existing bridges. Due to the length of time the temporary detour would be in place for the rehabilitation, FEMA would require that the detour be constructed to meet the 100-year flood elevation to avoid increases in flood elevation since impacts that occur for more than 180 days are not considered temporary. A temporary detour would result in impacts to seven properties, and would result in the temporary loss of 20 of 24 parking spaces at O'Keefe's Discount Store, a business located in the southwest quadrant of the Bearcamp River Bridge.

The cost of the temporary diversion would be approximately $4.1 million. The Bearcamp River Bridge rehabilitation would cost approximately $5 million and the Bearcamp Relief Bridge would cost approximately $2.7 million, making the total cost of addressing the Bearcamp bridges under this alternative approximately $11.8 million.

Although this alternative meets the purpose and need of the project, it has greater environmental and property impacts and higher project costs. Therefore, this alternative was not considered practicable and was not selected.

Replacement using Temporary Detour Bridge

This alternative would involve replacing the Bearcamp River and Bearcamp Relief Bridges with a temporary detour in place to maintain traffic during construction. The new bridges would be as described under the Proposed Action. The temporary detour would be as described under the Rehabilitation alternative above.

The costs associated with this alternative would include the temporary detour ($4.1 million), Bearcamp River Bridge replacement ($4.43 million), and Bearcamp Relief Bridge replacement ($2.12 million), for an overall cost of $10.65 million for replacing the two Bearcamp bridges. This translates into an increase in cost of approximately $3 million over the costs associated with the Slide-in Bridge Construction alternative (Proposed Action).

Although this alternative meets the purpose and need of the project, it has greater environmental and property impacts and higher project costs. Therefore, this alternative was not considered practicable and was not selected.

New Bridge Construction/Retention of Existing Bridges

This alternative would involve constructing new bridges on new alignment either upstream or downstream of the existing bridges, and retaining the existing bridges for use as pedestrian crossings. Due to the poor condition of the existing bridges, rehabilitation would consist of the same work that is described in the Rehabilitation alternative. The new bridges would be as described in the Proposed Action. During construction, traffic would be maintained on the existing bridges; therefore, a temporary detour bridge would not be required.

The Bearcamp River Bridge rehabilitation would cost approximately $5 million and the Bearcamp Relief Bridge would cost approximately $2.7 million. The cost of the new bridges would be approximately $4.43 million for the Bearcamp River Bridge and $2.12 million for the Bearcamp Relief Bridge. Therefore, the overall cost to address the Bearcamp bridges under this alternative would be $14.25 million.

This alternative would result in substantial impacts to natural resources and private properties. Due to the permanent impacts that would be required in the floodplain and floodway, it is assumed that this alternative would result in a rise in base flood elevation, which would have an impact on nearby properties during flood events. This alternative would also increase permanent impacts to wetlands, surface waters, and the protected shoreland. Retaining the existing bridges would result in a large increase in impervious surface. This would necessitate collecting and treating stormwater runoff from a larger area of pavement, requiring a larger area for stormwater treatment that would further increase project costs, property impacts, and maintenance costs. This alternative would also require acquisition of homes and businesses. In addition to these impacts, consideration must be given to the need for pedestrian crossings at these locations. NH Route 16 has no sidewalks in the project area and the bridges are not located in an area with a high demand for pedestrian accommodations. No concerns about pedestrian access have been raised by town officials or residents. For these reasons, the need for pedestrian crossings in this location has not been demonstrated. The substantial increase in environmental and property impacts, as well as higher construction costs and lack of funding for long-term maintenance of two pedestrian bridges, cannot be justified when the need for pedestrian bridges cannot be demonstrated.

For the reasons stated above, this alternative was not considered practicable and was therefore not selected for further study.

Evaluation of Environmental Effects

The effects of the preferred alternative relative to the following social, economic, natural, and cultural resources/issues have been reviewed. Resources/issues that are not discussed in the body of this document were evaluated; however, no impacts were evident, and as such, these resources/issues are omitted from this environmental documentation. Those resources and issues are listed in plain text below. The resources and issues deemed applicable for this project are indicated in **bold** type.

Social/ Economic		*Natural*	*Cultural*
Safety	**Air Quality**	**Wetlands**	**Historical**
Transportation Patterns	**Noise**	**Surface Waters**	**Archaeological**
Community Services	**Farmland Soils**	**Shoreland Protection**	Stonewalls
Business Impacts	**Construction Impacts**	**Floodplains/Floodways**	Aesthetics
Land Acquisition	Displacements	**Water Quality**	
Environmental Justice	Neighborhoods	**Groundwater**	
Utilities	Land Use	**Wildlife/Fisheries**	
Hazardous Materials	Energy Needs	**Endangered Species**	
Contaminated	Tax Base	**Natural Communities**	
Properties	Scenic Byways	**Invasive Plants**	
Recreation		Wild & Scenic Rivers	
Conservation Lands		NH Designated Rivers	
Public Lands		Forest Lands	
		Coastal Zone	

Social and Economic Concerns

Safety/Transportation Patterns

NH Route 16 is classified as Rural Principal Arterial through Ossipee. In general, the roadway through the project area consists of two 12-foot travel lanes and 4-foot shoulders. In 2017 and 2037, projected daily traffic is 11,000 and 14,000 vehicles per day, respectively. Traffic consists of approximately 5.4% trucks. The posted speed limit is 45 mph.

The accident rate along this section of NH Route 16 was raised as a concern by residents attending the Open House held in Ossipee on July 19, 2016. Between 2005 and 2014, there were 101 reported vehicular accidents within the limits of the project. Of this total, 2 accidents involved fatalities, 19 involved injuries, and 80 involved property damage only. Each automobile accident has an associated expense and incurs a societal cost as it relates to increased insurance premiums, emergency response, clean-up, and property damage. According to the National Highway Traffic Safety Administration, the average fatal automobile accident has a societal cost of approximately $3 million. The average "injury only" accident costs $63,000, and the average property damage only accident costs $2,300. Using these estimators, the societal cost of accidents for the accident study period was approximately $7,381,000. The majority of these accidents involved collision with another vehicle (57%) or a fixed object such as guardrail or trees (19%). Approximately 12% of reported accidents involved collision with an animal.

Many factors can influence accident rates, including roadway design, traffic speeds, traffic density, vehicle mix, and speed variation. Accident rates tend to increase with traffic density. Studying and addressing all safety concerns within the project limits is beyond the scope of this project. The proposed project will not result in changes in roadway capacity or vehicle speeds. No changes in alignment or lane configuration are proposed. No widening is proposed except at the intersection of NH Route 16 with two local roads: Newman Drew Road (see

Photo 5), and Deer Cove Road, both of which are intersections that were raised as concerns at the Open House. At Newman Drew Road, approximately 400 linear feet of the northbound shoulder will be widened to provide a bypass shoulder that will allow northbound traffic to safely maneuver around vehicles turning left onto Newman Drew Road. At the Deer Cove Road intersection, approximately 340 linear feet of the southbound shoulder will be widened to provide a bypass shoulder that will allow southbound traffic to maneuver around vehicles turning left onto Deer Cove Road.

Photo 5: Newman Drew Road Intersection, view north (Google StreetView)

The Lovell River Bridge is currently posted with a C-2 load rating and is the only posted bridge along the NH Route 16 corridor from Portsmouth to Conway. The new bridge at this location will eliminate the load posting, improving travel by commercial vehicles in this region.

During construction, minor travel delays and periods of alternating one-way traffic are anticipated. A temporary bridge will be constructed to the west of the existing Lovell River Bridge to maintain northbound and southbound traffic while the new bridge is constructed. At the Bearcamp River and Bearcamp Relief Bridges, the existing bridges will remain open until the new superstructures are ready for sliding into place. Periods of alternating one-way traffic will be necessary during construction of the substructures and approaches. Once the new superstructures are constructed adjacent to the existing bridges, NH Route 16 will be closed for two 60-hour periods (one for each bridge) between Friday evening and Monday morning. These closures will allow time to slide the new bridges into place and to prepare each bridge for traffic.

The two closures of NH Route 16 will be scheduled to coincide with periods of low traffic volumes, such as in April/early May and mid-September (*Exhibit 1*). During each closure, a detour plan will be implemented. The signed detour will utilize state routes: NH Route 153 to the east of the project and a westerly detour using NH Routes 28, 171, 109 and 25 (*Exhibit 2*). All local roads will remain open to traffic. Advance notice of a scheduled detour will be given to motorists via signage, message boards, and social media.

Community Services/Business Impacts

Tri-County Transit provides public transportation in the Ossipee area. The project will have no impact on the schedule, stops, or fares of this transit service. This service provides a route from West Ossipee to Wolfeboro, stopping at McDonald's to the north of the project and the Indian Mound Shopping Center and Hannaford to the south of the project before continuing to Wolfeboro. Service along this route is only offered on Thursdays. Therefore, the proposed weekend road closures at the Bearcamp bridges will have no impact on the transit service.

The Town of Ossipee is divided into three fire precincts: Center Ossipee, Ossipee Corner, and West Ossipee. Town wide EMS and ambulance service is provided by a private provider, CarePlus/North Conway Ambulance, with all three fire precincts assisting at the first responder level. The project area is located in the West Ossipee Fire Precinct. The West Ossipee Fire Department operates out of two locations. The Central Fire Station is located at 2380 Route 16, north of the project area, and the Jewell Hill Station is located at 11 Jewell Hill Road, within the limits of the project and south of the Bearcamp River. Police coverage is provided by Ossipee's full-time Police Department, located in Center Ossipee.

Construction of the proposed project is not expected to obstruct the emergency response of fire or police within the town. During the two proposed weekend closures of NH Route 16, emergency responders could continue to

utilize local roads. Specifically, Newman Drew Road is a 2.25-mile roadway that bypasses the Bearcamp bridges, travelling parallel to NH Route 16 on the west side of the river from just south of the Bearcamp River Bridge to just west of the NH Routes 16/25 intersection in West Ossipee. This road will remain accessible to local traffic and emergency response vehicles throughout the duration of construction.

The project includes areas zoned by the town as Roadside Commercial, a district intended to "accommodate commercial uses along roads in a way that protects the scenic qualities of the area, allows compatibility with residential land uses and avoids the concentration of commercial uses as allowed in the Commercial District." Businesses are located within the limits of the project and to the north and south of the project area. Most businesses are service-related and include restaurants, gas and convenience stores, automotive sales and parts, and retail shops. Access to businesses will be maintained throughout construction. The two proposed weekend closures of NH Route 16 will be scheduled to occur during off-season periods to minimize impacts to businesses. Additionally, during final design of the project, stakeholder meetings will be held with interested businesses and the Greater Ossipee Chamber of Commerce. The purpose of the stakeholder meetings will be to keep the community informed of the project scope and schedule, to provide adequate lead time for businesses to adjust their marketing practices to accommodate the construction period and the two proposed weekend road closures, and to provide an informational handout with tips and guidance for businesses. Two businesses in the project area have provided input on the project to date (*Exhibits 29 and 30*) and will be invited to attend stakeholder meetings. Business owners also provided comments at the Public Hearing (*Exhibit 32*).

Land Acquisition

Proposed work will primarily be located within existing State right-of-way. However, bridge replacement activities and the proposed treatment swale will require the acquisition of permanent and temporary easements from six property owners. Permanent easements will total approximately 0.2 acres. Temporary construction easements will total approximately 3.4 acres. No houses or businesses will need to be acquired.

Environmental Justice

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.

The US Department of Transportation has adopted the following EJ principles:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Based on the most recent Census data, the Environmental Justice review for the proposed project shows that minority populations and populations with limited English proficiency within the project area are not meaningfully greater than the surrounding area. Elderly populations and low-income populations are, however, meaningfully greater than the surrounding area (*Exhibit 3*).

The project will not result in disproportionately high or adverse impacts to elderly or low-income populations in or near the project area. This determination is based on the following considerations:

- The proposed project will not require acquisition of homes or businesses.

- Sidewalks are not located along this portion of NH Route 16 currently and no sidewalks are proposed. The project area does not currently have much pedestrian activity and is not located near facilities such as libraries, schools, medical services, or town services.
- Tri-County Transit provides public transportation in the Ossipee area. As described above in Community Services, the project will have no impact on the schedule, stops, or fares of this transit service.
- Public meetings for this project have been noticed in a variety of ways in advance of the meetings, including via letters to abutters. Meetings have been located in accessible town buildings.

For these reasons, this project complies with Executive Orders 12898 and 13166.

Utilities

The project area contains aerial and buried electric, telephone, and cable utilities owned by Eversource Energy, New Hampshire Electric Cooperative, FairPoint Communications, and TimeWarner Cable. The relocation of utility lines and poles will be required in the vicinity of the Bearcamp River and Bearcamp Relief bridges. Relocation of underground utilities may also be necessary. Any necessary relocations will be confirmed and finalized during the Final Design phase of the project. The Department's Utility Section will continue to coordinate with the appropriate utilities. Disruption to service, if any, will be kept to an absolute minimum.

The West Ossipee Fire Department has requested the installation of a dry hydrant at the Lovell River Bridge. A dry hydrant at this location is not anticipated to cause any substantial impacts to natural, cultural, or socioeconomic resources. According to the NHDES Drinking Water and Groundwater Bureau, the dry hydrant will not need to be reported to the DES Water Use Registration and Reporting Program if withdrawals will be less than 20,000 gallons per day (*Exhibit 4*). The NHDES Rivers and Lakes Program was contacted about the dry hydrant and had no concerns (*Exhibit 5*). The NHDOT will continue to coordinate with the Fire Department and appropriate regulatory agencies on the proper placement and permitting for the dry hydrant.

Hazardous Materials/Contaminated Properties

Remediation Sites

The NHDES OneStop GIS database, accessed in May 2016, has records of remediation sites along NH Route 16 within 1,000' of the project (*Figure 2*). These records consist of the following types of sites:

- Leaking Underground Storage Tank (LUST)
- Ether contamination from an unknown source (ETHER)
- Initial Spill Response (IRSPILL)
- Leaking residential or commercial heating oil tanks (OPUF)
- Subsurface wastewater disposal system receiving >20,000 gallon/day (SEPTIC)
- Underground injection control: discharges of benign wastewaters not requiring a groundwater discharge permit or request to cease a discharge (i.e. floor drain closure requests) (UIC)

The files for the majority of these sites have been closed; however, even closed sites could present a potential risk for encountering contaminated soils or groundwater during construction. At this phase of design, the only earth disturbance that is anticipated is located at the Bearcamp bridges, Lovell River Bridge, proposed stormwater treatment swale, shoulder widening at Deer Cove Road, and two culverts that will be replaced. The proposed roadway rehabilitation includes reclaiming the top approximately 12" of the pavement and gravel, with no excavation below roadway fill anticipated.

The northerly approach work associated with the Lovell River bridge replacement and temporary detour bridge will result in earth disturbance within 1,000' of known remediation sites (Figure 2). The sites in the vicinity of this work consist of UIC sites. In addition, the NH Route 16 southbound shoulder opposite Deer Cove Road will be

widened along a distance of 340' from 5' wide to 10' wide. This will entail full depth step box widening, and the additional 5' of shoulder will require work at a total depth of 3.2 feet below existing ground. The shoulder work is located less than 1,000' from known remediation sites, including UIC and OPUF sites and one LUST site (Figure 2). The LUST site is a closed site located at the former Getty Station (Site ID 198907036) approximately 300' northwest of the Deer Cove Road intersection. When it was active, this site had a Groundwater Management Zone that encompassed parcels on both sides of NH Route 16. Groundwater flow direction is to the east-northeast.

As limits of ground disturbance are further refined during the Final Design phase of the project, the NHDOT Contamination Program will review design plans and cross sections to assess potential concerns and determine if further investigation of remediation sites is warranted. If necessary, appropriate measures will be implemented during construction to avoid adverse effects from potential contaminated materials.

There is one active LUST site at the north end of the project area at M&V convenience store (Site ID 199412030). This site is part of a Groundwater Management Zone that also includes the Ski Works parcel on the opposite side of NH Route 16. The site is still actively sampled and a number of monitoring wells are located in the vicinity of NH Route 16. The nearest well to the project has a depth to water of 12.88 feet. Groundwater flows from the north side of Route 16 to the south side. Excavation in the vicinity of this site is not anticipated. As design of the project progresses, coordination between the NHDOT Contamination Program and NHDES may be necessary to confirm that the project will not encounter contaminated soils or groundwater and will not impact monitoring wells.

Asbestos Containing Material

Based on information on file at NHDOT, there is potential for asbestos containing material to exist on the Lovell River Bridge. The as-built plans from the 1950 construction of the bridge indicate that asbestos sheet packing was used between the bearing plates. Contract documents must contain appropriate provisions for proper handling and disposal of asbestos during construction.

Limited Reuse Soils

Statewide analytical data collected by NHDOT, as well as nationwide information, indicates that roadside soils commonly contain metals at concentrations above naturally occurring background conditions, and Polycyclic Aromatic Hydrocarbons (PAHs) exceeding acceptable reuse concentrations. These "Limited Reuse Soils" (LRS) excavated from within the operational right-of-way must be addressed in accordance with applicable NHDES rules and/or waivers. Soils that are anticipated to meet the definition of LRS may be subject to management through a Soils Management Plan.

During final design of the project, it will be determined if LRS will be generated by the project and, if generated, if the material will require reuse on-site, disposal, and/or temporary stockpiling. Any excess materials that result from the project within the operational right-of-way will be addressed in accordance with applicable NHDOT guidance and NHDES rules.

Recreation

The Town of Ossipee is located at the eastern limit of the Lakes Region and the southern limit of the White Mountains, both regions that are popular destinations for New Hampshire residents and out of state tourists. This area of the state provides outdoor recreational opportunities ranging from camping and boating to fishing and hunting to hiking and skiing. Both regions also offer outlet shopping, golf courses, and theme parks. NH Route 16 is the primary route to the Lakes Region and White Mountains from southeastern New Hampshire, with peak seasonal traffic occurring during July and August. Smaller peaks in traffic occur during fall foliage season and ski season. During construction of the proposed project, two 60-hour road closures are proposed to facilitate the

replacement of the Bearcamp River Bridge and Bearcamp Relief Bridge. The timing of these closures will coincide with periods of low seasonal traffic in order to minimize inconvenience to travelers (*Exhibit 1*).

The Bearcamp River is a popular summer destination for canoeing/kaying, tubing, fishing, and swimming, and it is common for boaters to travel down the Bearcamp to Ossipee Lake. A number of local businesses depend on summer income from boat rentals. One such business is Ski Works, which is located within the project area approximately 1.5 miles north of the Bearcamp River Bridge. Boats that are rented from Ski Works can be launched in the Bearcamp at the Ski Works property. A formal cartop boat launch on the Bearcamp River is located north of the project on NH Route 25.

An informal access point to the river is located at the Bearcamp River Bridge. There is a small pull-off in existing State right-of-way just south of the bridge (see Photo 6). Cars often drive to the river from the pull-off down an unmaintained driveway located on private property. There is no easement on this property that formalizes river access. Since this access is on private property and is not publicly owned, it is not protected under Section 4(f). Construction of this project will require the temporary use of this area for staging and access through the acquisition of a construction easement from the landowner.

Photo 6: Informal river access at the Bearcamp River Bridge

Periodically throughout construction, the river in the vicinity of the Bearcamp River Bridge may need to be closed to boaters to maintain an appropriate safety zone during certain construction activities. The need for short-term closures and the timing of these closures will be better defined during final design of the project. Appropriate language will be included in contract documents to require the Contractor to provide public notice in advance of any necessary closures. The potential for closures will also be discussed at a stakeholders meeting held with businesses and community members during final design of the project.

Within the project area, NH Route 16 is a State Designated Bicycle Route; however, advanced bicycle skills are recommended by State bicycle route maps due to the high traffic volumes on this route. Bicycle access through the project area will be maintained during construction, with the exception of the two short-term road closures at the Bearcamp River Bridge and Bearcamp Relief Bridge. Since all local roads will remain open during these closures, bicyclists will have the ability to use Newman Drew Road to continue traveling north or south around the bridges.

Conservation Land/Public Lands

Based on a review of data available from the NH Statewide GIS Clearinghouse (NH GRANIT), conservation lands and lands managed as open space are located in the vicinity of the project (*Figure 3*). The University of New Hampshire owns and manages four woodlots located to the west of the project. None of these properties abut NH Route 16 and none will be impacted by the proposed project. The New England Forestry Foundation owns a group of contiguous parcels, known as the Bearcamp Memorial Forest or Bearcamp Woodlands, located between NH Route 16 and Ossipee Lake. A portion of this property abuts NH Route 16 within the project area. No impacts outside existing right-of-way are proposed in this area; therefore this property will not be impacted by the project. Neither the Bearcamp Memorial Forest nor the UNH woodlots have formal trails or access that will be impacted by the project during construction.

The Conservation Land Stewardship (CLS) Program is responsible for monitoring and protecting the conservation values of conservation easement lands in which the State of New Hampshire has invested through the Land Conservation Investment Program (LCIP). The CLS Program is located within the NH Office of Energy & Planning.

The project has been reviewed by the CLS Program Coordinator, and it was determined that there are no LCIP properties within the project area *(Exhibit 6)*.

The Land and Water Conservation Fund (LWCF) is a program established by Congress in 1964 to create parks and open spaces; protect wilderness, wetlands and refuges; preserve wildlife habitat; and enhance recreational opportunities. The NH Division of Parks and Recreation is the State LWCF Manager. Section 6(f) of the Land and Water Conservation Act requires all property acquired or developed with LWCF assistance to be maintained perpetually in public outdoor recreation use. Any permanent or temporary use of a LWCF property must be reviewed and approved by the LWCF Manager and the National Park Service, and conversion of LWCF property requires mitigation. Based on a review of their LWCF files, the NH Division of Parks and Recreation has advised that there are no LWCF properties present in the project area *(Exhibit 7)*.

The New Hampshire Land and Community Heritage Investment Program (LCHIP) is an independent state authority that makes matching grants to communities and non-profits to conserve and preserve natural, cultural and historic resources. LCHIP has reviewed the project and determined that no LCHIP properties exist in the area (*Exhibit 8*).

Through coordination with local officials, and review of available GIS data, it has been determined that no other types of conservation land or public lands exist in or adjacent to the project area.

Air Quality

The Clean Air Act Amendments of 1990 (CAAA) requires federal actions to be consistent with the State Implementation Plan for achieving and maintaining Federal air quality standards. Transportation conformity must be shown at a both a regional and a project level.

The project is located in an attainment area. Moreover, this project is listed in the Statewide Transportation Improvement Program (STIP) but not as a regionally significant project. In accordance with 40 CFR 93, the FHWA includes a finding of regional transportation conformity through the STIP. For these reasons, a regional analysis of the proposed project is not required.

Project-level conformity must demonstrate that a project will not violate National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants (carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide). To determine whether a project may result in any local exceedances of the NAAQS, a microscale analysis is typically completed to determine pollutant concentrations. This analysis generally focuses on carbon monoxide (CO) and particulate matter, the constituents that can be addressed at the project level. Under the CAAA, this analysis is typically only required for projects that are located in a nonattainment or maintenance area. The only such areas in New Hampshire are Manchester and Nashua, which are CO maintenance areas. Therefore, a project-level conformity analysis is not required for the proposed project under the CAAA.

Although a project-level analysis is not required under the CAAA, NEPA requires federal actions to consider project-level impacts on air quality regardless of location. In addition to the six criteria pollutants, consideration must be given to Mobile Source Air Toxics (MSAT), which are seven hazardous air pollutants from mobile sources: acrolein, benzene, 1,3-butadiene, diesel particulate matter, formaldehyde, naphthalene, and polycyclic organic matter.

A qualitative assessment of project-level air quality impacts determined that adverse air quality impacts are not anticipated and quantitative analysis is not warranted. The proposed project entails the replacement of three bridges and minor upgrades to pavement, guardrail, and drainage. The project will not involve widening except for 7400 linear feet of shoulder widening, nor does it involve increases in roadway capacity or substantial alterations to the existing roadway geometry. The project will not change traffic patterns or generate additional

traffic that will result in changes in vehicular emissions after completion of construction. Based on these factors, the project will not contribute to violations of the NAAQS and will not contribute to increases in MSAT emissions. For these reasons, the constructed project will not result in any long-term impacts on air quality.

Noise

The 2011 NHDOT *Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I Highway Projects* requires a noise impact assessment for Type I projects. The FHWA defines Type I projects as those that involve construction of a highway in a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes.

The project will not involve widening except for 740 linear feet of shoulder widening, nor does it involve increases in roadway capacity or substantial alterations to the existing roadway geometry. The proposed shoulder widening is located along an undeveloped parcels and will not be adjacent to houses. For these reasons, the proposed project is not a Type I highway project and a noise impact assessment is not required.

Farmland Soils

The Farmland Policy Protection Act (FPPA), overseen by the Natural Resources Conservation Service (NRCS), was established to minimize the impact that Federal programs have on the conversion of farmland to nonagricultural uses. For the purpose of the FPPA, farmland includes areas where soils are designated as prime farmland soils or farmland soils of statewide or local importance, even if that land is not currently used for farmland. Projects within the existing right-of-way of a public road are not subject to the FPPA.

The project area contains farmland soils. Two areas of farmland soils will be impacted outside existing right-of-way. One area is in the southwest quadrant of the Bearcamp River Bridge and the other area is south of the Bearcamp River on the east side of the road. Impacts are located in area mapped as Sunday loamy fine sand, a soil type considered farmland soil of local importance. The project as proposed will result in 0.16 acre of permanent impact to farmland soils as a result of fill placed for the roadway slope and construction of a stormwater treatment swale. A Farmland Conversion Impact Rating Form was submitted to NRCS (*Exhibit 9*). Based on the assessment criteria, the proposed impacts received a score of 90 out of 260 points. According to the FPPA, sites receiving a total score of less than 160 conform to the FPPA. Further consideration of protection is not required and no additional alternatives need to be evaluated.

Natural Resources

Wetlands/Surface Waters/Shoreland Protection

Description of Wetlands and Surface Waters

Wetland resources were delineated within the limits of the project based on the 1987 US Army Corps of Engineers *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* and the 2012 *Regional Supplement to the Corps Wetland Delineation Manual: Northcentral and Northeast Region*. Wetlands were classified utilizing the *Classification of Wetlands and Deepwater Habitats of the United States*, Lewis M. Cowardin, US Department of the Interior, Fish and Wildlife Service. Ordinary high water (OHW) and top of bank (TOB) were delineated for surface waters based on hydrologic, topographic, and vegetative characteristics.

The wetland areas within the project area consist of a variety of palustrine and riverine systems. Palustrine wetland types that were identified include forested, shrub-scrub, emergent, and open water wetlands. Photo 7 shows an example of palustrine wetland types that occur in the project area. Silver maple floodplain forest is common within the floodplain of the Bearcamp River. Riverine systems range from the Bearcamp and Lovell Rivers to much smaller intermittent and perennial streams.

Photo 7: Palustrine wetlands along NH Route 16

The Bearcamp River is a 26-mile river that originates in the White Mountains to the north of the project. It flows through the project area and outlets into Ossipee Lake approximately 2 miles downstream of NH Route 16. Within the project area, the river has a bankfull width of approximately 145' and a watershed size of 150 square miles. The river bed consists primarily of sand and gravel.

The Lovell River is a 9.5-mile river that originates in the Ossipee Mountains to the west of the project. It flows through the project area and outlets into Ossipee Lake just over 1 mile downstream of NH Route 16. Within the project area, the river has a bankfull width of approximately 45' and a watershed size of 17 square miles. The river bed consists of sand, gravel, and cobble, and large boulders are common in the channel and along the banks.

NH Stream Crossing Rules

The Lovell River and Bearcamp River bridges are Tier 3 stream crossings under the NDHES Stream Crossing Rules (Env-Wt 900). Tier 3 crossings must be designed to comply with the General Design Criteria for all stream crossings (Env-Wt 904.01) and, to the maximum extent practicable, with the Tier 2/Tier 3 Design Criteria (Env-Wt 904.05).

The Lovell River has a bankfull width of 45' based on field measurements. The span recommended by the Stream Crossing Guidelines is 56' in length. The existing span of the Lovell River Bridge is 58' in length. The proposed span is 97' long, with the new abutments placed behind existing abutments and the existing abutments removed. The existing span and proposed span comply with the General Design Criteria. According to NHDES, since the proposed span will require the installation of riprap along the banks, the proposed bridge must be permitted as an Alternative Design (Env-Wt 904.09) under the Stream Crossing Rules. In order to provide passage for wildlife under the proposed bridge, a shelf in the riprap should be considered.

Photo 8: Existing Bearcamp River Bridge spanning the river and portions of floodplain

The Bearcamp River has an estimated bankfull width of 145'. The span recommended by the Stream Crossing Guidelines is 176' in length. The existing 5-span Bearcamp River Bridge is 392' in length. The proposed 3-span bridge will be 410' in length with the new abutments placed behind existing abutments and existing abutments removed. In addition, the new bridge will have two piers instead of four. The two existing piers currently in the river channel will be removed. The two new piers will be located near the top of bank, with riprap around each pier. According to NHDES, since the proposed span will require the installation of riprap along the banks, the proposed bridge must be permitted as an Alternative Design (Env-Wt 904.09) under the Stream Crossing Rules. Ample opportunity for wildlife passage exists at this bridge since it spans portions of the adjacent floodplain (Photo 8).

A third stream crossing will be addressed by this project. A 36" corrugated metal pipe carrying a perennial stream under NH Route 16 will be replaced. With a drainage area of 0.2 square miles, this is a Tier 1 stream crossing. The culvert will be replaced in-kind, as allowed under the Stream Crossing Rules for Tier 1 crossings.

Impacts to Wetlands and Surface Waters

The project will involve work within areas under the jurisdiction of the NH Department of Environmental Services (NHDES) Wetlands Bureau and the Army Corps of Engineers (ACOE). Based on preliminary design of the project, estimated permanent impacts to wetlands and surface waters are summarized below. Impact calculations will be further refined during the Final Design phase of the project.

Total permanent impacts to wetlands: 3,532 sq. ft.
Total permanent impacts to channels: 585 sq. ft. (68 linear feet)
Total permanent impacts to banks: 3,275 sq. ft. (300 linear feet)
Total overall permanent impacts: 7,392 sq. ft. (368 linear feet of bank/channel)

Preliminary impacts were discussed at the NHDOT Natural Resource Agency Coordination Meeting on October 19, 2016. Based on proposed impacts, it is anticipated that a major impact permit will be required from NHDES and that the project will qualify for authorization under the Army Corps NH Programmatic General Permit. Coordination on impacts will continue as design of the project progresses. All appropriate permits will be secured from the NHDES and the ACOE prior to construction.

Mitigation

Based on feedback received at the NHDOT Natural Resource Agency Coordination Meeting, per Env-Wt 302.03, compensatory mitigation will be required for proposed permanent linear impacts to the channel and banks of the Lovell and Bearcamp Rivers. The linear feet of the two existing piers that will be removed from the channel of the Bearcamp River can be counted as mitigation credit. The remaining linear feet of permanent bank and channel impacts will require mitigation since the impacts will be the result of new riprap. At the request of NHDES, The Nature Conservancy will be contacted to determine if there may be appropriate projects in the area that could serve as mitigation for the proposed channel and bank impacts. If an appropriate project is not identified, mitigation will be accomplished with an in-lieu fee payment into the NHDES Aquatic Resources Mitigation Fund. Proposed mitigation must be reviewed and approved by NHDES and the Army Corps prior to submitting the permit application.

Shoreland

Based on the stream order classification system, in which first order streams are the smallest streams, the Bearcamp River is considered a 4th order stream. As such, the river is subject to the Shoreland Water Quality Protection Act (SWQPA) (NH RSA 483-B), which applies to any river classified as 4th order or larger, as well as Designated Rivers, lakes, and ponds. The SWQPA establishes minimum standards for activities within the Protected Shoreland that are designed to protect the water quality of the state's larger water bodies. The Protected Shoreland is defined as all land located within 250 feet of the reference line (natural mean high water level or limit of flowage rights) of public waters. A permit from the NH Department of Environmental Services Shoreland Program will be required for any earth disturbance and tree clearing within the Protected Shoreland. As a public infrastructure project, the project will qualify for permitting under a Shoreland Permit By Notification.

US Coast Guard

Under Section 9 of the Rivers and Harbors Act of 1899, the US Coast Guard has the authority to approve proposed bridge and/or causeway locations and plans to preserve the public right of navigation and to prevent interference with interstate and international commerce.

The FHWA and NHDOT have coordinated with the Coast Guard regarding the proposed bridges. Although the Lovell and Bearcamp Rivers fall under Coast Guard jurisdiction, the Coast Guard concurred that the project is exempt from a Bridge Permit under Section 144h of the Surface Transportation Act. An opportunity to review construction plans prior to construction was requested (*Exhibit 10*). Subsequent to that request, the Coast Guard reviewed the proposed project and determined that construction requirements are not warranted due to the location of the bridges and limited amount of vessel traffic (*Exhibit 10*).

Floodplains/ Floodways

The project lies within the mapped 100-year floodplain and regulatory floodway of the Lovell and Bearcamp Rivers (*Figure 4*, *Exhibit 11*). State Executive Order 96-4 requires NH state agencies to comply with the floodplain management regulations of all communities that participate in the National Flood Insurance Program (NFIP). The Town of Ossipee participates in the NFIP. The floodway is defined by the Federal Emergency Management Agency (FEMA) as "the channel of the river plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights." The 100-year floodplain is defined as the area inundated by 1% annual chance flooding.

According to the Town's floodplain regulations, no encroachments are allowed within the regulatory floodway unless it can be demonstrated that the proposed encroachment would not result in any increase in base flood elevation. Further, encroachments in the 100-year floodplain cannot result in an increase in water surface elevation of the base flood by more than one foot.

The existing Bearcamp River Bridge is 392' long with five spans. Two of the four bridge piers are located in the river. The proposed bridge will be located on the same alignment as the existing bridge and will be 410' long with 3 spans. The new bridge will have only two piers, which will not be located in the river. The existing Bearcamp Relief Bridge is 168' long with 4 spans. The proposed bridge will be 185' with 3 spans. The new bridge abutments will be constructed behind the existing abutments of each bridge. There will be little or no grade change at the relief bridge but the elevation of the approach roadway on each side of the Bearcamp River Bridge will be raised approximately 3' to match the elevation of the new bridge. Both bridges will pass the 100-year storm event.

The Lovell River Bridge is currently a 58' single span. The proposed bridge will be a 97' single span. While the existing bridge already passes the 100-year storm, NH Route 16 south of the bridge is regularly flooded at approximately the Q10 storm. The Department has studied how to address this issue without altering the base flood elevation. By increasing the bridge length and raising the elevation of the southerly approach slightly, hydraulic modeling shows the road south of the bridge flooding at some point between the 50- and 100-year storms. The same low point in the roadway will be maintained.

Floodway Impacts

Lovell River

The project as proposed does not impact the mapped regulatory floodway of the Lovell River.

Bearcamp River

Impacts at the Bearcamp River and Bearcamp Relief bridges are located above the elevation of the regulatory floodway of the Bearcamp River. Due to the outdated FEMA model at the Bearcamp River, hydraulic modeling was not completed for the Bearcamp bridges and impacts to the Bearcamp floodway have been assessed based on the flood elevation used in FEMA mapping. The NH Floodplain Management Program concurred with this approach at a meeting held on October 12, 2016. Given that the low chord elevation of the new bridges will match or be higher than the existing (meaning that the lowest point on the bridges will not be any closer to the water), and that piers will be removed and abutments will be moved back, no increase in base flood elevation is anticipated.

Floodplain Impacts

A discussion of preliminary floodplain impacts and potential mitigation was held on October 12, 2016 with the NH Floodplain Manager and Army Corps of Engineers. Since that meeting, impacts and mitigation were refined and provided to the agencies. The numbers presented below are the most recent calculations based on the current design of the project. The project is still in the preliminary design phase. As final design of the project progresses through 2017, these calculations may change slightly. The project will be reviewed with the regulatory agencies prior to completing permit applications, at which time final calculations of floodplain impacts and mitigation will be confirmed.

The project results in impacts to the floodplain of each river as described below.
Lovell River Floodplain: 540 CY of fill proposed in floodplain
Bearcamp River Floodplain: 655 CY of fill proposed in floodplain
Total proposed floodplain fill: 1,195 CY

Some loss of flood storage within the Lovell River floodplain is the result of raising the grade of the existing approach roadway. A hydraulic analysis was completed at the Lovell River, which confirms that the fill placed within the floodplain does not increase the water elevation beyond the limit set in the Flood Insurance Study. The proposed work at the Lovell River was discussed in detail with the NH Floodplain Manager on July 3, 2014, at which time no concerns were raised with the proposed work and the hydraulic analysis (*Exhibit 12*).

Proposed Floodplain Mitigation

Executive Order 11988 requires federal agencies to consider alternatives that avoid adverse effects and incompatible development in floodplains. If the only practicable alternative must be located in a floodplain, federal agencies shall design or modify the action in order to minimize potential harm to or within the floodplain.

NH Route 16 is an existing roadway located within the floodplain. No areas of roadway widening or alignment shifts are proposed except for approximately 400 linear feet of shoulder widening at Newman Drew Road and 340 linear feet of shoulder widening at Deer Cove Road to address safety concerns. The impact of proposed roadway rehabilitation and bridge replacement activities on the floodplain has been minimized to the greatest extent practicable. Minimization measures incorporated into the project's design include longer bridge spans and steeper-than-convention roadway slopes where feasible.

To further minimize potential harm within the floodplain, mitigation for unavoidable floodplain impacts is proposed as follows.

Design elements resulting in the removal of fill in the floodplain
Moving abutments of Lovell River bridge: -135 CY
Moving abutments of Bearcamp River and Bearcamp Relief bridges: -380 CY
Stormwater swale near Bearcamp River: -100 CY
Steepening roadway slope north of Bearcamp Relief Bridge: -100 CY
Lowering elevation of slope adjacent to Grizzley Road: -75 CY

Compensatory mitigation
Creation of flood storage area at location of temporary detour at Lovell River: -900 CY

As proposed, floodplain mitigation within the Lovell River floodplain compensates for impacts at a ratio of nearly 2:1. In the Bearcamp River floodplain, proposed mitigation compensates floodplain impacts at a ratio of 1:1.

Summary

The project as proposed will not impact the regulatory floodway of the Lovell River or Bearcamp River, and will result in no rise in base flood elevation within the floodway. Floodplain impacts have been minimized to the maximum extent practicable and avoiding impacts entirely is not practicable due to the location of the existing roadway and bridges within the floodplain. Mitigation through design-related elements and the creation of a flood storage area is proposed in order to further minimize harm to floodplains. Impacts are limited to the periphery of mapped floodplains adjacent to NH Route 16 and will not adversely impact the overall functions and values of the floodplain. The project as proposed will not cause flooding in new areas and will not change the elevation of the floodplain. These impacts do not represent a significant encroachment, which is defined as impacts that result in a considerable probability of loss of human life; likely property damage resulting in substantial cost or loss of vital transportation facility; or a notable adverse impact on floodplain values (DOT Order 5650.2 on Floodplain Management and Protection). For these reasons, the proposed project includes all practicable measures to minimize harm to floodplains and conforms to State, Federal, and local floodplain protection standards.

Water Quality/Groundwater

Surface Waters

Section 303(d) of the Clean Water Act requires each state to submit a list of impaired waters to the US EPA every two years to identify surface waters that are impaired by pollutants, not expected to meet water quality standards within a reasonable time, and require the development of a Total Maximum Daily Load (TMDL) study. This list is prepared by NHDES as outlined in the draft *2014 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology*. According to the NHDES draft 2014 303(d) list (most recent available), the Bearcamp River and Lovell River are impaired surface waters due to pH. Weetamoe Brook, located ¼ mile south of the project, is impaired due to dissolved oxygen.

The acidity, or pH, of freshwater streams can be influenced by bedrock composition, organic material in the water, and acid deposition. In New Hampshire, acid deposition, combined with the low prevalence of calcium-rich bedrock, results in lower pH in freshwater systems across large areas of the landscape.

All aquatic species require a certain range of dissolved oxygen for survival. Dissolved oxygen concentrations in freshwater will vary naturally by season, temperature, and water depth, but can also be influenced by ecosystem disturbances that result in changes in water depth, water temperature, and/or photosynthetic activity. Extended periods of dissolved oxygen saturation can result from high temperatures or excessive photosynthetic activity and can lead to fish mortality.

Runoff from the project area is not currently treated in any formalized treatment areas. In accordance with the NHDES Alteration of Terrain (AOT) Administrative Rules Env-Wq 1500, activities that result in terrain alteration shall not cause or contribute to any violations of the surface water quality standards established in Env-Wq 1700. Per a Permit Exemption signed by NHDES and NHDOT in 2011, NHDOT projects are not required to obtain an AOT Permit but must still comply with AOT regulations. Therefore, permanent stormwater treatment measures must be considered when the project area is greater than 100,000 sq. ft. of land (or more than 50,000 sq. ft if within a protected shoreland) or there are impacts to any land with a grade of 25% or greater within 50’ of a surface water. The entire project area is greater than 100,000 sq. ft. and compliance with AOT regulations will be required.

The project will not change the existing roadway alignment or profile, except for the change in profile at the Bearcamp River Bridge and southern approach of the Lovell River. The only areas of widening will be at the intersection of NH Route 16 with two local roads: Newman Drew Road where 400 linear feet of the northbound shoulder will be widened, and Deer Cove Road, where 340 linear feet of the southbound shoulder will be

widened. This shoulder widening will result in an increase of approximately 3,250 sq. ft. of pavement. There will also be a 2,000 sq. ft. increase in pavement on the new Bearcamp River and Bearcamp Relief bridges because the existing bridges have open-grid shoulders (Photo 9) and the new bridges will have paved shoulders. The total area of increased impervious surface within the project area will be 0.12 ac (5,250 sq. ft).

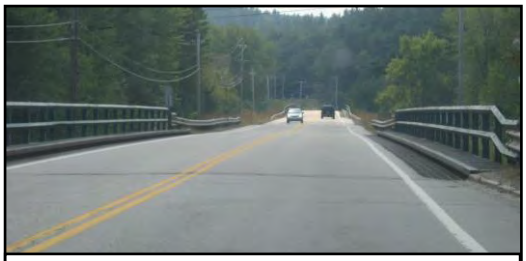


Photo 9: Open grid shoulders of existing Bearcamp River Bridge

Since the pollutant removal efficiency of stormwater treatment practices is less than 100%, NHDOT strives to treat runoff from an area at least twice the size of the area of proposed increased pavement to reduce impacts of additional impervious surface on water quality. A treatment swale is proposed south of the Bearcamp River Bridge at the toe of the existing slope. The swale will be 6' wide, approximately 150' long, and at a grade of 0.5%, treating runoff from approximately 0.37 acres of impervious surface. The swale will treat runoff from an area that is three times the area of increased pavement.

AOT compliance requirements are below in italics:

- *The project must be designed to prevent permanent water quality violations.*
  The proposed treatment swale will treat 0.37 acres (16,117 sq. ft.) of pavement, nearly five times the amount of proposed new pavement. Other than the 5,250 sq. ft. increase in impervious surface due to shoulder widening and new Bearcamp bridges, no other proposed work will change existing runoff.

- *Temporary measures must be employed during construction to prevent water quality violations.*
  All appropriate erosion and sedimentation control practices will be implemented during construction.

- *Wetlands cannot be utilized for stormwater treatment.*
  The proposed treatment swale will not utilize or impact existing wetlands.

- *Invasive plants must be addressed through contract provisions.*
  Invasive plants are located in the project area and appropriate best management practices will be implemented during construction to prevent their spread. Further details can be found in the Invasive Species section of this document.

- *The project cannot result in adverse impacts to State or Federally Threatened or Endangered species or exemplary natural communities.*
  The project will not adversely impact state-listed rare species or exemplary natural communities. Impacts to the federally-listed northern long-eared bat have been reviewed in accordance with the *Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat (*Version 3, May 2016) and appropriate Avoidance and Minimization Measures will be incorporated into the project. Further, although potential adverse effects to northern long-eared bat cannot be avoided, the project's impacts are in accordance with the parameters of the *Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-eared Bat*, which has determined that projects meeting these parameters are not likely to jeopardize the species. Further details can be found in the Endangered Species/Natural Communities section of this document.

For the reasons stated above, the project is expected to fully comply with AOT regulations and will not cause or contribute to surface water quality impairments.

Groundwater

The project is located within Wellhead Protection Areas; however, the associated wells are not within 1,000' of the project area. The project is also located within a Groundwater Classification Area (Class GA2). The NH Groundwater Classification Protection Act (RSA 485-C) was enacted to protect and preserve valuable groundwater resources. Classifications of GA2 are applied to groundwater within high-yield stratified drift aquifers identified for potential use as a public water supply. Zones of stratified drift with a saturated thickness greater than 20 feet and a transmissivity greater than 1,000 feet squared per day are classified as GA2. Also classified as GA2 are zones of bedrock with average well yields greater than 50 gallons per minute. GA2 areas have no land use restrictions and no active management until the local community initiates reclassification to the GAA or GA1 class.

The NHDES Drinking Water and Groundwater Bureau has reviewed the proposed project. Recommendations for protecting drinking water quality include the incorporation of stormwater treatment, reduction of road salt, and prevention of spills of fuel and other contaminants during construction (*Exhibit 15*). The project will incorporate stormwater treatment, as described above. Within the 3.4-mile project area, the only areas of proposed widening are two areas of shoulder widening over a total length of 740 linear feet. There will also be a 2,000 square foot increase in pavement due to the additional pavement on the two Bearcamp bridges. The short distance of shoulder widening and additional pavement on the bridges is not expected to result in a measureable increase in road salt usage through the project area. Standard precautions will be taken during construction to avoid impacts to drinking water from fuel spills and other contaminants.

Construction Water Quality

Stormwater discharges from construction activities resulting in earth disturbance greater than one acre in size must obtain coverage under an EPA National Pollutant Discharge Elimination System (NPDES) permit. In New Hampshire, such discharges are generally permitted under the Construction General Permit (CGP). Coverage under the CGP requires submittal of a Notice of Intent (NOI) and preparation of a Storm Water Pollution Prevention Plan (SWPPP). Since the proposed project is expected to disturb more than one acre of land, an NOI and SWPPP will be required prior to the start of construction.

Wildlife/Fisheries

The 2015 NH Wildlife Action Plan (WAP) provides the framework for conserving Species of Greatest Conservation Need and their habitats in New Hampshire. The WAP includes a habitat-based statewide map that identifies "Highest Ranked Wildlife Habitat," which shows where habitat exists in the best ecological condition. In the vicinity of the proposed project, the areas of Highest Ranked Habitat are associated with the Bearcamp River and Lovell River corridors (*Figure 5*). These corridors connect high quality habitat around Ossipee Lake to the east with high quality habitat in the Ossipee Mountains to the west. Based on the Highest Ranked Habitats that have been mapped in the project area and surrounding region, maintaining or improving wildlife connectivity at the Bearcamp and Lovell River bridges should be a high priority, especially given that NH Route 16 is a high volume, high speed roadway separating these two areas of important habitat. As proposed, both bridges will be replaced with longer spans with abutments placed further back from ordinary high water. The Lovell River Bridge will require riprap in front of the new abutments. Opportunities to provide a wildlife-friendly shelf in the riprap for wildlife passage under the bridge will be considered during final design of the project. The proposed Bearcamp River Bridge will span the river as well as a portion of the adjacent floodplain, providing ample opportunities for wildlife passage along the river. The Bearcamp Relief Bridge is also located within the Bearcamp floodplain and provides additional opportunities for wildlife passage under NH Route 16.

NH Fish & Game reviewed the proposed project and reported that the Bearcamp River supports wild landlocked salmon, wild brook trout, and brown trout, and the Lovell River supports wild landlocked salmon and wild brook trout. These species could be traveling through the project area in late September and October to spawn

upstream, so any work in the water during that time could impact these species. The accelerated bridge construction techniques that are proposed will limit work in the water and will therefore reduce any potential impacts to migrating fish (*Exhibit 16*).

The Magnuson-Stevens Fishery Conservation and Management Act requires the federal government to identify Essential Fish Habitat (EFH) and make conservation recommendations to agencies whose actions could damage it. The Bearcamp River is EFH for all life cycle stages of Atlantic Salmon (*Salmo salar*). An EFH Assessment Worksheet was prepared to demonstrate that the project's impacts on EFH will not be substantial. This Assessment was submitted to the National Marine Fisheries Service (NMFS). The NMFS concurred that the project will have minimal adverse effect on EFH; no conservation recommendations were provided for the project (*Exhibit 17*).

Endangered Species/Natural Communities

The New Hampshire Natural Heritage Bureau (NHB) reported known records of one rare plant species and five exemplary natural communities in the vicinity of the project (*Exhibit 18*). The US Fish & Wildlife Service (USFWS) *Information for Planning and Conservation System* (IPaC) web tool was utilized to request an official species list for federally listed species or critical habitats that could occur in the project area (*Exhibit 19*). According to the official species list, the northern long-eared bat and small whorled pogonia may occur in this area. The US Endangered Species Act (ESA) requires Federal agencies to work to conserve federally endangered and threatened species and to avoid jeopardizing the existence of any listed species. In addition, the project must comply with the Bald and Golden Eagle Protection Act. Species and communities of concern are described in more detail below.

Northern Long-Eared Bat

According to the USFWS Official Species List, northern long-eared bat may occur in this area of the state. The Natural Heritage Bureau did not report any known winter hibernacula or maternity roost trees in the vicinity of the project. NH Fish & Game also has not indicated that known hibernacula or maternity roost trees exist in the vicinity of the project. According to the US Fish & Wildlife Service, suitable summer habitat for northern long-eared bat consists of a variety of forested habitats. This species generally prefers closed canopy forest with an open understory. Potential roost trees include live trees or snags, at least 3" in diameter, with exfoliating bark, cracks, crevices, or cavities. Potential roosting habitat does exist in the project area.

The project will involve clearing approximately 2.64 acres within potential suitable summer habitat for northern long-eared bat. An acoustic survey was completed throughout the project area and results of that survey indicate the possible presence of northern long-eared bat at one survey site. All clearing required for this project will be within 300' of the edge of the existing road surface. However, since tree clearing and bridge removal may take place during the active season for bats, potential adverse effects to northern long-eared bat cannot be avoided and the project has a finding of "may effect, likely to adversely affect" (LAA). The project adheres to the criteria and conditions of the *Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat (*Version 3, May 2016), as outlined in the *Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-eared Bat* (December 2016). All applicable avoidance and minimization measures (AMMs) for a Programmatic LAA finding, as summarized in the Range-wide Programmatic Consultation Project Submittal Form, will be implemented during construction (*Exhibit 20*). The USFWS concurs that the project will result in a LAA finding and that the project conforms to the *Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat* (*Exhibit 22*).

Small Whorled Pogonia

According to the NHB document, *Rare Plants, Rare Animals, and Exemplary Natural Communities in New Hampshire Towns* (July 2013), there are two known populations of small whorled pogonia in Ossipee. This species most often occurs in hemlock-beech-oak-pine forest and tends to prefer mesic/seasonally damp soils.

Other habitat preferences can include Skerry fine sandy loams or other soils in which a fragipan exists, somewhat poorly drained soils and/or a seasonally high water table, or terraces above streams. Small intermittent streams, ephemeral runoff channels, or old logging roads often provide breaks in the forest canopy that this species seems to prefer.

Although formal surveys for this plant have not been completed, the project area has been reviewed in the field numerous times by a qualified individual. The habitat types that may be impacted by the project primarily consist of mowed roadside, silver maple floodplain forest, scrub-shrub and emergent wetlands, and dry oak-pine upland forest. There is one area at the Lovell River that consists of dense hemlock and red maple with little ground cover. The forested area that will be impacted is located on Adams somewhat excessively drained loamy sand, a soil series not characterized by a fragipan or cemented layer. This area was reviewed on August 4, 2016 and also once in the summer of 2011. No evidence of small whorled pogonia was found on either occasion.

For these reasons, the presence of small whorled pogonia in the project area is not anticipated given the lack of suitable habitat. This determination was confirmed with the USFWS (*Exhibit 23*). The proposed project will have no effect on this species. This determination is included in the Project Submittal Form that has been submitted to the USFWS (*Exhibit 20*). Actions resulting in no effect require no further coordination with or submittals to the USFWS.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits the "take" of bald eagles and golden eagles, including their parts, nests, and eggs. The Act also prohibits impacts from human activities that result in nest abandonment or the interruption of normal breeding, feeding, or sheltering habits. Neither of these species was reported by the NHB, NH Fish and Game, or the USFWS as a potential concern in the project area. No evidence of eagle nests has been observed in or near the project area. The project as proposed is not expected to result in any impact to these species.

Rare Plant

The NHB reported a known population of a state and federally threatened sensitive plant species that is located to the west of the project along the west side of Newman Drew Road (*Exhibit 18*). The location is approximately 1,300' from the project limits and will not be impacted by work as proposed. The project has been reviewed with the NHB and no concerns with this plant population have been raised.

Exemplary Natural Communities

Photo 10: Kettle hole bog

Exemplary natural communities are protected under the NH Native Plant Protection Act (RSA 217-A) and are designated by the NHB as high quality examples of natural community types. The NHB has identified five exemplary natural communities between NH Route 16 and Ossipee Lake (*Exhibit 18*). Only one of these communities, a kettle hole bog system, is directly adjacent to the project area (Photo 10). This natural community is sensitive to changes in hydrology and increase in nutrient input and sedimentation. There is one existing culvert that outlets directly into the kettle hole bog; this project is not proposing repairs or replacement of this culvert. Further north, an existing 36" culvert carries a perennial stream under NH Route 16. Replacement of this culvert is proposed. From the outlet of this culvert, the stream flows into another 36" culvert located under the rail line and eventually drains into the kettle hole bog system. The NHB did not have concerns with the proposed culvert replacement since the pipe is not being upsized and drainage patterns will not be altered to direct more roadway runoff into the kettle hole bog (*Exhibit 21*). The NHB did note that any opportunities to increase treatment of stormwater in the vicinity of the kettle hole bog system would be beneficial to this natural

community system. Further review of the roadway in this area revealed that a slight horizontal curve will be superelevated such that most of the runoff will not sheet flow into the wetland but will instead flow across the road into existing swales and then through the existing culvert into the wetland. For this reason, the NHB has no further concerns (*Exhibit 21*).

The other exemplary natural communities reported by NHB are associated with the Bearcamp River and would be sensitive to changes in hydrology. Since the proposed Bearcamp River Bridge will not result in hydrologic changes, the NHB has no concerns with these natural communities (*Exhibit 21*).

Appropriate erosion and sediment control measures will be implemented during construction to avoid adverse impacts to these natural communities.

Invasive Plants

An invasive plant is a non-native plant that is able to persist and proliferate outside of cultivation, resulting in ecological and/or economic harm. Under the statutory authority of NH RSA 430:55 and NH RSA 487:16-a, the NH Department of Agriculture, Markets & Food and NHDES prohibit the spread of invasive plants listed on the NH Prohibited Species List. The project area contains purple loosestrife (*Lythrum salicaria*), bush honeysuckle (*Lonicera* sp.), and Japanese knotweed (*Fallopia japonica*), all of which are invasive plants listed on the NH List of Prohibited Invasive Species (AGR PART 3802.01).

If invasive plants cannot be avoided during construction, all appropriate Best Management Practices will be summarized in an Invasive Species Control and Management Plan and implemented during construction to avoid spreading these plants to new sites. NHDOT Standard Specifications designate invasive plants as Type I or Type II based on the complexity of control measures that are required to prevent the spread of the plants during construction. In general, Type II plants require a greater level of control due largely to their ability to spread from stem or root fragments. Of the plants identified in the project area, purple loosestrife and Japanese knotweed require Type II control measures and honeysuckle require Type I measures.

Cultural Resources

The Department has coordinated with the NH State Historic Preservation Office (SHPO) and the Federal Highway Administration (FHWA) to locate and identify properties listed in or eligible for the National Register of Historic Places within the project area. The Department also reached out to local officials and the Ossipee Historical Society. A Public Informational Meeting was held for this project on January 15, 2013 and an Open House was held on July 19, 2016. Public input on potential and known historic resources was sought at both meetings.

The project was reviewed by SHPO and FHWA at NHDOT Cultural Resource Agency Coordination Meetings held on October 11, 2012, April 21, 2016, July 14, 2016, and August 11, 2016.

Section 106 of the National Historic Preservation Act offers those with a demonstrated interest in historic resources, including town officials and Historical Societies, an opportunity to become more involved in an advisory role during project development as “Consulting Parties.” Input was solicited through a letter to Town officials and the Ossipee Historical Society, as well as during the Public Informational Meeting and Open House. A project handout was prepared for the Open House, describing the Section 106 process and seeking input on resources in the project area. To date, no one has requested consulting party status and no concerns about historic resources have been raised. A Public Hearing was held for the project on December 8, 2016 and no comments or concerns regarding historic resources were provided.

Description of Historic Resources

Historic Resources (Extant Architectural)

Bearcamp River Bridge (137/297) and Bearcamp Relief Bridge (137/299)

The Bearcamp River Bridge is a 5-span I-beam concrete bridge constructed in 1955. The overall length is 392' and the curb-to-curb width is 28'. The Bearcamp Relief Bridge is a 4-span I-beam concrete bridge, also constructed in 1955. The overall length is 168' and the curb-to-curb width is 28'.

The two bridges are considered "sister" bridges due to their close proximity (the bridges are 600' apart) and nearly identical design. The bridges were designed by NH Highway Department (later renamed to the NH Department of Transportation) bridge engineers Harold Langley and Robert Prowse. Both bridges have a combined simple/continuous beam design with H-pile bents of double batter pile design (Photo 11). The bridges also have a combined open-grid shoulder/steel curb/open-grid sidewalk assembly and steel angled railings (Photo 12).

Photo 11: Bearcamp River Bridge pile bent

The bridges possess several design features of interest:

- The combined simple/continuous beam design was designed to function as simple beams under dead load and continuous beams under live loads and may have been used rarely by the NH Highway Department.

- The H-pile bents of double batter pile design and the combined open-grid shoulder/steel curb/open-grid sidewalk assembly, although common to mid-20th century steel deck bridge design, had limited use in NH and an unknown number of intact examples remain.

- This bridge design is thought to be the first of its type designed by the NH Highway Department and played a role in the development of a specialized bridge type in NH. The design was practical and cost-effective, allowing the Highway Department to minimize the size of the members and cost of materials (steel) while still being able to carry the required loading.

Photo 12: Bearcamp Relief Bridge

It has been determined that the Bearcamp River Bridge and Bearcamp Relief Bridge are eligible for listing on the National Register of Historic Places under Criterion C for their engineering significance and association with important New Hampshire bridge designers.

Complete descriptions of these bridges are on file at the offices of the NH SHPO and NHDOT Bureau of Environment.

It was determined that the Lovell River Bridge, constructed in 1950, is not eligible for listing on the National Register due to its standardized design, unexceptional construction, lack of distinctive architectural/engineering characteristics, and lack of association with significant events or individuals.

Archaeological Resources

A Phase IA/IB archaeological survey has been completed for the project. The Phase IA survey identified seven areas of archaeological sensitivity within the project area. Those areas that are located within the Area of Potential Effect were further reviewed during the Phase IB survey. No resources of concern were identified and no further archaeological work was recommended. The SHPO concurred with the results of the survey (*Exhibit 24*).

Effects on Historic Resources

Effects on historic properties were determined by the FHWA, in consultation with NHDOT and SHPO, based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined at 36 CFR 800.9. It has been determined that the proposed action will have an adverse effect on the Bearcamp River Bridge and Bearcamp Relief Bridge (*Exhibit 25).*

The Advisory Council on Historic Preservation (ACHP) was contacted about the project. In a response dated September 16, 2016, FHWA was notified that the ACHP would not be participating in Section 106 consultation to resolve adverse effects (*Exhibit 26*).

Mitigation for Historic Resource Impacts

Mitigation for the adverse effect was discussed with FHWA and SHPO at the August 11, 2016 NHDOT Cultural Resource Agency Coordination Meeting. Agreed upon mitigation for the replacement of the Bearcamp River and Bearcamp Relief bridges will consist of the following:

- Abbreviated archival documentation for the two bridges (one document to cover both bridges);
- Educational video to highlight the historic features of the bridges and showcase the cutting-edge technology to be used in their replacement.
- Interactive web page consisting of photos of the bridges and surrounding landscape. Certain elements of the bridges and landscape could be clicked on to view a pop-up box describing historical significance and/or proposed construction.

A Memorandum of Agreement has been executed between NHDOT, FHWA, and SHPO to memorialize agreed upon mitigation (*Exhibit 27*).

Construction Impacts

Construction of this project will cause temporary inconvenience to the public and temporary impacts to environmental resources. The following measures will be implemented to minimize or avoid impacts during construction:

- Access to all homes and businesses will be maintained throughout construction.

- Appropriate Best Management Practices, as outlined in "*Best Management Practices for Roadside Invasive Plants*", will be utilized to avoid the spread of invasive plants within or outside of the project limits.

- Standard pollution prevention measures will be employed to assure all negative impacts are avoided and/or minimized to the maximum extent practicable.

- Construction of this project is anticipated to cause temporary increases in noise and dust levels within the project area. Standard measures will be employed to ensure such increases are minimized to the extent practicable and limited to the construction period.

- The Contractor will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP), approved by the Department, prior to the commencement of construction activities.

- The river in the vicinity of the Bearcamp River Bridge may need to be closed to boaters to maintain an appropriate safety zone during certain construction activities. If any short-term closures are needed, the Contractor will be required to provide advance public notice.

Coordination & Public Participation

To ensure consistent communication with all stakeholders as this project progresses, a Communication Plan was prepared. The purpose of the Communications Plan is to describe a wide range of public outreach activities that will be implemented as part of the project. The plan was provided to the Town of Ossipee and is also available on the NHDOT Project Website. The plan includes the following:

- Contact information for the NHDOT Project Team;
- List of project stakeholders;
- List of anticipated communication products and methods that will be developed to inform the stakeholders and the public-at-large; and
- Summary of upcoming meeting dates and overall project schedule.

This Plan will be updated periodically to reflect updates to the schedule and other items that change over the course of this project.

Letters have been sent to various State and local entities to seek input on this project. To date, the only written response received from town officials was from the Planning Board (*Exhibit 28*). Dates are summarized in the table below.

Agency/Organization	Contact	Date Sent	Reply Received
Ossipee Selectmen		9/1/2011	
Ossipee Conservation Commission		9/1/2011, 7/11/2016	
Ossipee Fire Chief		9/1/2011	
Ossipee Planning Board		9/1/2011	10/1/2011
Ossipee Police Chief		9/1/2011	
Ossipee Historical Society		9/1/2011, 7/11/2016	
Conservation Land Stewardship Program	Steve Walker	9/1/2011	9/1/2011
NH Division of Parks and Recreation (LWCF)	Bill Gegas	9/29/2016	10/4/2016
NH Office of Energy and Planning	Jennifer Gilbert	9/1/2011	9/30/2011
LCHIP	Paula Bellemore	10/4/2016	10/5/2016
NHDES Drinking Water & Groundwater Bureau	Paul Susca	9/1/2011	9/6/2011

Feedback has also been received from two businesses and a landowner located in the project area (*Exhibits 29, 30, 31*).

Meetings have been held with various Federal, State, and local agencies, as well as with the general public, throughout the development of this project.

Project review meetings are summarized in the table below. Meeting minutes, if available, can be accessed online by clicking on the meeting name in the table. The Report of the Commissioner (*Exhibit 32*) summarizes testimony provided at the Public Hearing. The Hearing Commission voted to approve the project as proposed (*Exhibit 33*).

Meeting	Date
NHDOT Cultural Resource Coordination Meeting	October 11, 2012
Public Officials/Public Informational Meeting	January 15, 2013
NHDOT Natural Resource Agency Coordination Meeting	January 16, 2013
NHDOT Cultural Resource Coordination Meeting	April 21, 2016
Board of Selectmen Meeting	May 16, 2016
NHDOT Cultural Resource Coordination Meeting	July 14, 2016
Open House/Public Informational Meeting	July 19, 2016
NHDOT Cultural Resource Coordination Meeting	August 11, 2016
NHDOT Natural Resource Agency Coordination Meeting	August 17, 2016
NHDOT Natural Resource Agency Coordination Meeting	October 19, 2016
Public Hearing	December 8, 2016
Stakeholder Meetings	To be scheduled in 2017

The NHDOT project website includes links to additional project and meeting information:
https://www.nh.gov/dot/projects/ossipee14749/index.htm

Summary of Environmental Commitments

The following commitments have been made to ensure that environmental impacts are avoided or minimized and that the project remains in compliance with applicable regulations as the project progresses through Final Design and Construction. The NHDOT Bureau responsible for ensuring successful implementation of each commitment is shown in parentheses.

Commitments to be carried out during Final Design

1) The Nature Conservancy shall be contacted to determine if appropriate wetland mitigation projects exist in the vicinity of the project. If appropriate projects are not identified, mitigation will be in the form of an in-lieu fee payment into the NHDES Aquatic Resources Mitigation Fund. (Environment)

2) A wildlife-friendly shelf in proposed riprap at the Lovell River Bridge shall be considered for wildlife passage. (Environment/Design)

3) All floodway and floodplain impacts shall be reviewed with the Bureau of Environment to determine if further coordination with the Army Corps of Engineers and NH Floodplain Management Program is warranted. (Environment/Design)

4) All appropriate wetland and shoreland permits from the NH Department of Environmental Services and US Army Corps of Engineers must be obtained prior to the commencement of any work within jurisdictional wetlands or the 250' protected shoreland of the Bearcamp River. (Environment/Design)

5) Coordination with the NHDOT Contamination Program shall occur in regard to: 1) proposed work in the Groundwater Management Zone; 2) monitoring wells in the project area associated with the Groundwater Management Zone; 2) depth and extent of excavation adjacent to remediation sites in the vicinity of the Lovell River Bridge and Deer Cove Road; 3) the need for further investigations into the Getty Station north of Deer Cove Road; and 4) the need for further investigations regarding Limited Reuse Soils. (Environment/Design)

6) Right-of-Way negotiations on Parcel 7 (Tax map/lot 038-016) shall not begin until the NHDOT Contamination Program has completed its review of the parcel. (Environment/Right-of-Way/Design)

7) Contract documents shall contain language to ensure proper handling and disposal of Asbestos Containing Material located on the Lovell River Bridge (152/268). (Environment/Design)

8) Appropriate language shall be included in contract documents to require the Contractor to provide public notice in advance of any necessary closures of the Bearcamp River for recreational use. (Environment/Design)

9) All stipulations of the Section 106 Memorandum of Agreement shall be carried out prior to the completion of construction. (Environment)

Commitments to be carried out prior to earth disturbance

10) This project will require a Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) under the NPDES Construction General Permit. There shall be provisions in the contract requiring the Contractor to prepare the SWPPP and NOI. (Environment/Construction)

11) The project area contains plants that are on the NH List of Prohibited Invasive Species (AGR PART 3802.01) (purple loosestrife, bush honeysuckle, and Japanese knotweed). Locations of these plants shall be shown on construction plans. The Contractor shall prepare an Invasive Species Control and Management Plan, for the Department's approval, to summarize all appropriate BMPs to be implemented during construction to avoid spreading the plants to new sites. (Environment/Construction)

Commitments to be carried out during construction

12) The project is located within Wellhead Protection Areas and over an aquifer. Stringent best management practices shall be utilized to prevent adverse impacts to water quality. (Construction)

13) Construction of this project is anticipated to cause temporary increases in noise and dust levels within the project area. Standard measures shall be employed to ensure such increases are minimized to the extent practicable and limited to the construction period. (Construction)

14) Any spillage of oil or oil-based products during construction shall be promptly reported to the US Coast Guard and other agencies as appropriate. (Construction)

15) Access to all homes and businesses shall be maintained throughout construction. (Construction)

16) The wetland located at Sta 143+75 to Sta 149+00 (Right) is an Exemplary Natural Community that is protected under the NH Native Plant Protection Act. No impacts shall occur to this wetland until coordination has taken place between the Bureau of Environment and NH Natural Heritage Bureau and the appropriate permits from NHDES and the Army Corps have been obtained. (Environment/Construction)

17) The Northern Long-Eared Bat Flyer shall be shared with all operators, employees, and contractors working on the project and operators, employees, and contractors shall be made aware of all applicable environmental commitments. (Environment/Construction)

18) All forested habitat within the project area is potential habitat for the northern long-eared bat. Therefore, tree removal shall be limited to what is specified on project plans and clearing limits shall be marked with flagging or fencing to ensure that all construction personnel stay within clearing limits. (Construction)

19) All sightings of dead or sick bats shall be immediately reported to the Bureau of Environment (Rebecca Martin, 271-3226). (Construction)

PART II. FINAL PROGRAMMATIC SECTION 4(f) EVALUATION

Introduction

Section 4(f) of the US Department of Transportation Act of 1966 (amended by 49 U.S.C. Section 303) provides additional protection for historic resources, wildlife refuges, and publicly owned parks and recreational areas. Coordination was established with local and State officials, and it was determined that there will be no publicly owned public parks, recreation areas, or wildlife or waterfowl refuges impacted by the proposed project.

The Department has coordinated with the NH State Historic Preservation Office (SHPO) and Federal Highway Administration (FHWA), as well as local organizations, local officials and the public, to locate and identify National Register of Historic Places listed or eligible properties within the area and has determined how they will be affected by the proposed project. To date, the project has been reviewed with SHPO and FHWA at NHDOT Cultural Resource Agency Coordination Meetings held on October 11, 2012, April 21, 2016, July 14, 2016, and August 11, 2016. It has been determined that the Bearcamp River Bridge and Bearcamp Relief Bridge are considered historic resources under Section 4(f).

Pursuant to Section 4(f), the Secretary of Transportation may approve a program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by Federal, State, or local officials having jurisdiction over the park, area, refuge or site) only if:

1. there is no prudent and feasible alternative to using that land; and
2. the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife or waterfowl refuge, or historic site resulting from the use.

This Section 4(f) Evaluation has been prepared to demonstrate that there are no prudent and/or feasible alternatives that avoid the “use” of the Bearcamp River and Bearcamp Relief bridges. The evaluation also outlines coordination that has occurred and the measures proposed to minimize harm to these resources. Based on an assessment of programmatic criteria, this project qualifies for approval as a Programmatic Section 4(f) Evaluation for FHWA Projects that Necessitate the Use of Historic Bridges.

Existing Conditions/Proposed Action

The purpose of this project is to maintain the safety, integrity, and continuity of NH Route 16, a vital north-south corridor in eastern New Hampshire, by addressing deficiencies in the bridges that carry NH Route 16 over the Lovell River, Bearcamp River, and Bearcamp Relief and by addressing the condition of the roadway along a 3.4-mile section of NH Route 16.

The need for this project is evidenced by the following:

1. The Lovell River Bridge deck is in poor condition. The bridge is considered structurally deficient, with a Federal Sufficiency Rating (FSR) of 40.6 on a rating scale of 0 to 100.
2. The Lovell River Bridge currently restricts heavy loads with a load rating of C-2. This rating requires Single Unit and Combination vehicles to wait to cross the bridge until they can cross with no other trucks on the bridge.
3. The southern approach of the Lovell River Bridge is regularly flooded at approximately the Q10 storm.
4. The deck and superstructure of the Bearcamp River Bridge are in poor condition. The bridge is considered structurally deficient, with an FSR of 11.4.
5. The deck and superstructure of the Bearcamp Relief Bridge are in serious condition. The bridge is considered structurally deficient, with an FSR of 10.6.

6. The condition of pavement, guardrail and drainage structures is deteriorating, with much of the existing infrastructure dating to 1955.

The proposed action will involve the following components:

- Lovell River Bridge replacement, with traffic maintained on a temporary detour bridge.
- Bearcamp River Bridge and Bearcamp Relief Bridge replacement using slide-in bridge construction methodology.
- Roadway rehabilitation along 3.4 miles, resulting in approximately a ½-inch raise in grade of pavement, except in the vicinity of the Lovell River and Bearcamp River bridges, where the raise in grade will be higher as described below.
- Shoulder widening along 400 linear feet at the Newman Drew Road intersection and 340 linear feet at the Deer Cove Road intersection.
- Guardrail and minor drainage upgrades along 3.4 miles of NH Route 16.
- Construction of a treatment swale.

The estimated cost to design and construct this alternative is $18 million, with the construction cost of each bridge replacement as follows:
Lovell River Bridge $1.9 million
Bearcamp River Bridge $4.43 million
Bearcamp Relief Bridge $2.12 million

This alternative fully meets the purpose and need of the project, reduces environmental and property impacts, and has the lowest overall cost of the alternatives studied.

Description of 4(f) Properties

The Bearcamp River Bridge is a 5-span I-beam concrete bridge constructed in 1955. The overall length is 392' and the curb-to-curb width is 28'. The Bearcamp Relief Bridge is a 4-span I-beam concrete bridge, also constructed in 1955. The overall length is 168' and the curb-to-curb width is 28'.

The two bridges are considered "sister" bridges due to their close proximity (the bridges are 600' apart) and nearly identical design. The bridges were designed by NH Highway Department bridge engineers Harold Langley and Robert Prowse. Both bridges have a combined simple/continuous beam design with H-pile bents of double batter pile design. The bridges also have a combined open-grid shoulder/steel curb/open-grid sidewalk assembly and steel angled railings.

The bridges possess several design features of interest:

- The combined simple/continuous beam design was designed to function as simple beams under dead load and continuous beams under live loads and may have been used rarely by the NH Highway Department.

- The H-pile bents of double batter pile design and the combined open-grid shoulder/steel curb/open-grid sidewalk assembly, although common to mid-20th century steel deck bridge design, had limited use in NH and an unknown number of intact examples remain.

- This bridge design may have been the first of its type designed by the NH Highway Department and played a role in the development of a specialized bridge type in NH. The design was practical and cost-effective, allowing the Highway Department to minimize the size of the members and cost of materials (steel) while still being able to carry the required loading.

It has been determined that the Bearcamp River Bridge and Bearcamp Relief Bridge are eligible for listing on the National Register of Historic Places under Criterion C for their engineering significance and association with important New Hampshire bridge designers.

Complete descriptions these bridges are on file at the offices of the NH SHPO and NHDOT Bureau of Environment.

It was determined that the Lovell River Bridge, constructed in 1950, is not eligible for listing on the National Register due to its standardized design, unexceptional construction, lack of distinctive architectural/engineering characteristics, and lack of association with significant events or individuals. Therefore, this bridge is not a Section 4(f) resource.

Impacts to Section 4(f) Properties

Effects on historic properties were determined by the FHWA, NHDOT, and SHPO based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined at 36 CFR 800.9. It has been determined that the proposed action will have an adverse effect on the Bearcamp River Bridge and Bearcamp Relief Bridge (*Exhibit 25).*

Alternatives That Avoid and/or Minimize Impacts to Section 4(f) Properties

No Build

This alternative would provide no improvements to NH Route 16 or the Bearcamp River, Bearcamp Relief, and Lovell River bridges; therefore the condition of the bridges and roadway would continue to worsen and the bridges would eventually require load restrictions or closure. This alternative would not address the factors that cause the bridges to be rated in poor or serious condition and structurally deficient and would not meet the purpose and need of the project.

For these reasons, this alternative results in unacceptable safety concerns and is not feasible and prudent.

Rehabilitation of the Existing Bearcamp Bridges

Rehabilitation of the Bearcamp River and Bearcamp Relief bridges would entail the following:

- Remove concrete deck, steel grates and supporting members and guardrail and replace with concrete deck and crash tested rail;
- Replace exterior girders and install new cross frames in exterior bays;
- Repair and paint interior girders and cross frames;
- Replace bearings;
- Repair concrete pile caps and abutments;
- Jacket piles with FRP wrap to counteract section loss (fiber-reinforced polymer).

The existing bridges are not wide enough to accommodate alternating one-way traffic during rehabilitation. Therefore, a temporary detour bridge would need to be constructed to the west of the existing bridges. Due to the length of time the temporary detour would be in place for the rehabilitation, FEMA would require that the detour be constructed to meet the 100-year flood elevation since impacts that occur for more than 180 days are not considered temporary. A temporary detour would result in impacts to seven properties, and would result in the temporary loss of 20 of 24 parking spaces at O'Keefe's Discount Store.

The cost of the temporary diversion would be approximately $4.1 million. The Bearcamp River Bridge rehabilitation would cost approximately $5 million and the Bearcamp Relief Bridge would cost approximately

$2.7 million, making the total cost of addressing the Bearcamp bridges under this alternative approximately $11.8 million.

The extent of the rehabilitation, especially the need to replace the rail and open-grid sidewalk, both of which are character-defining features of the bridges, would likely affect the historic integrity of the bridges. Additionally, this alternative has higher construction costs and greater environmental and property impacts. For these reasons, this alternative was not considered a prudent and feasible avoidance alternative.

New Bridge Construction/Retention of Existing Bearcamp Bridges

This alternative would involve constructing new bridges on new alignment either upstream or downstream of the existing bridges, and retaining the existing bridges for use as pedestrian crossings. Due to the poor condition of the existing bridges, rehabilitation would consist of the same work that is described in the Rehabilitation alternative. The new bridges would be as described in the Proposed Action. During construction, traffic would be maintained on the existing bridges; therefore, a temporary detour bridge would not be required.

The Bearcamp River Bridge rehabilitation would cost approximately $5 million and the Bearcamp Relief Bridge would cost approximately $2.7 million. The cost of the new bridges would be approximately $4.43 million for the Bearcamp River Bridge and $2.12 million for the Bearcamp Relief Bridge. Therefore, the overall cost to address the Bearcamp bridges under this alternative would be $14.25 million.

This alternative would result in substantial impacts to natural resources and private properties. Due to the permanent impacts that would be required in the floodplain and floodway, it is assumed that this alternative would result in a rise in base flood elevation, which would have an impact on nearby properties during flood events. This alternative would also increase permanent impacts to wetlands, surface waters, and the protected shoreland. Retaining the existing bridges would result in a large increase in impervious surface, which would necessitate collecting and treating stormwater runoff from a larger area of pavement, requiring a larger area for stormwater treatment that would further increase project costs, property impacts, and maintenance costs. This alternative would also require acquisition of homes and businesses. In addition to these impacts, consideration must be given to the need for pedestrian crossings at these locations. NH Route 16 has no sidewalks in the project area and the bridges are not located in an area with a high demand for pedestrian accommodations. No concerns about pedestrian access have been raised by town officials or residents. For these reasons, the need for pedestrian crossings in this location has not been demonstrated. The substantial increase in environmental and property impacts, as well as higher construction costs and lack of funding for long-term maintenance of two pedestrian bridges, cannot be justified when the need for pedestrian bridges cannot be demonstrated.

For the reasons stated above, this alternative is not considered a prudent and feasible avoidance alternative due to the substantially increased construction and maintenance costs, property impacts, and environmental impacts.

Measures to Minimize Harm/ Mitigation

The design of the proposed action has been developed with the intent of minimizing the potential impacts to properties that are eligible for the National Register of Historic Places. However, it was determined that avoidance of impacts to the Bearcamp River Bridge and Bearcamp Relief Bridge was not feasible and prudent. The project as proposed will result in an Adverse Effect due to the removal of these structures (*Exhibit 25*).

Measures to mitigate for the proposed impacts have been documented in a Memorandum of Agreement (MOA) that has been submitted to the Advisory Council on Historic Preservation and signed by NHDOT, FHWA, and SHPO (*Exhibit 27*). The MOA includes the following stipulations:

- Abbreviated archival documentation for the two bridges (one document to cover both bridges);

- Educational video to highlight the historic features of the bridges and showcase the cutting-edge technology to be used in their replacement.
- Interactive web page consisting of photos of the bridges and surrounding landscape. Certain elements of the bridges and landscape could be clicked on to view a pop-up box describing historical significance and/or proposed construction.

Coordination & Public Participation

The Department has coordinated with SHPO and FHWA to discuss alternatives and measures to minimize harm to the Section 4(f) resources.

The Advisory Council on Historic Preservation (ACHP) was contacted about the project. In a response dated September 16, 2016, FHWA was notified that the ACHP would not be participating in Section 106 consultation to resolve adverse effects (*Exhibit 26*).

The Department also reached out to local officials and the Ossipee Historical Society. A Public Informational Meeting was held for this project on January 15, 2013 and an Open House was held on July 19, 2016. Public input on potential and known historic resources was sought at both meetings. A project handout was prepared for the Open House, describing the Section 106 process and seeking input on resources in the project area. To date, no one has requested consulting party status and no concerns about historic resources have been raised.

Pursuant to the provisions of Section 106 of the National Historic Preservation Act (36 CFR 800), a Memorandum of Agreement addressing the chosen alternative has been developed following consideration of comments on the alternatives and this document (*Exhibit 27*).

Letters have been sent to various State and local entities to seek input on this project. Dates are summarized in the table below.

Agency/Organization	Contact	Date Sent	Reply Received
Ossipee Selectmen		9/1/2011	
Ossipee Conservation Commission		9/1/2011, 7/11/2016	
Ossipee Fire Chief		9/1/2011	
Ossipee Planning Board		9/1/2011	10/1/2011
Ossipee Police Chief		9/1/2011	
Ossipee Historical Society		9/1/2011, 7/11/2016	
Conservation Land Stewardship Program	Steve Walker	9/1/2011	9/1/2011
NH Division of Parks and Recreation (LWCF)	Bill Gegas	9/29/2016	10/4/2016
NH Office of Energy and Planning	Jennifer Gilbert	9/1/2011	9/30/2011
LCHIP	Paula Bellemore	10/4/2016	10/5/2016
NHDES Drinking Water & Groundwater Bureau	Paul Susca	9/1/2011	9/6/2011

Meetings have been held with various Federal, State, and local agencies, as well as with the general public, throughout the development of this project. Project review meetings are summarized in the table below. Meeting minutes, if available, can be accessed online by clicking on the meeting name below. The Report of the Commissioner (*Exhibit 32*) summarizes testimony provided at the Public Hearing.

Meeting	Date
NHDOT Cultural Resource Coordination Meeting	October 11, 2012
Public Officials/Public Informational Meeting	January 15, 2013
NHDOT Natural Resource Agency Coordination Meeting	January 16, 2013
NHDOT Cultural Resource Coordination Meeting	April 21, 2016
Board of Selectmen Meeting	May 16, 2016
NHDOT Cultural Resource Coordination Meeting	July 14, 2016
Open House/Public Informational Meeting	July 19, 2016
NHDOT Cultural Resource Coordination Meeting	August 11, 2016
NHDOT Natural Resource Agency Coordination Meeting	August 17, 2016
NHDOT Natural Resource Agency Coordination Meeting	October 19, 2016
Public Hearing	December 8, 2016
Stakeholder Meetings	To be scheduled in 2017

The NHDOT project website includes links to additional project and meeting information:
https://www.nh.gov/dot/projects/ossipee14749/index.htm

Programmatic Applicability

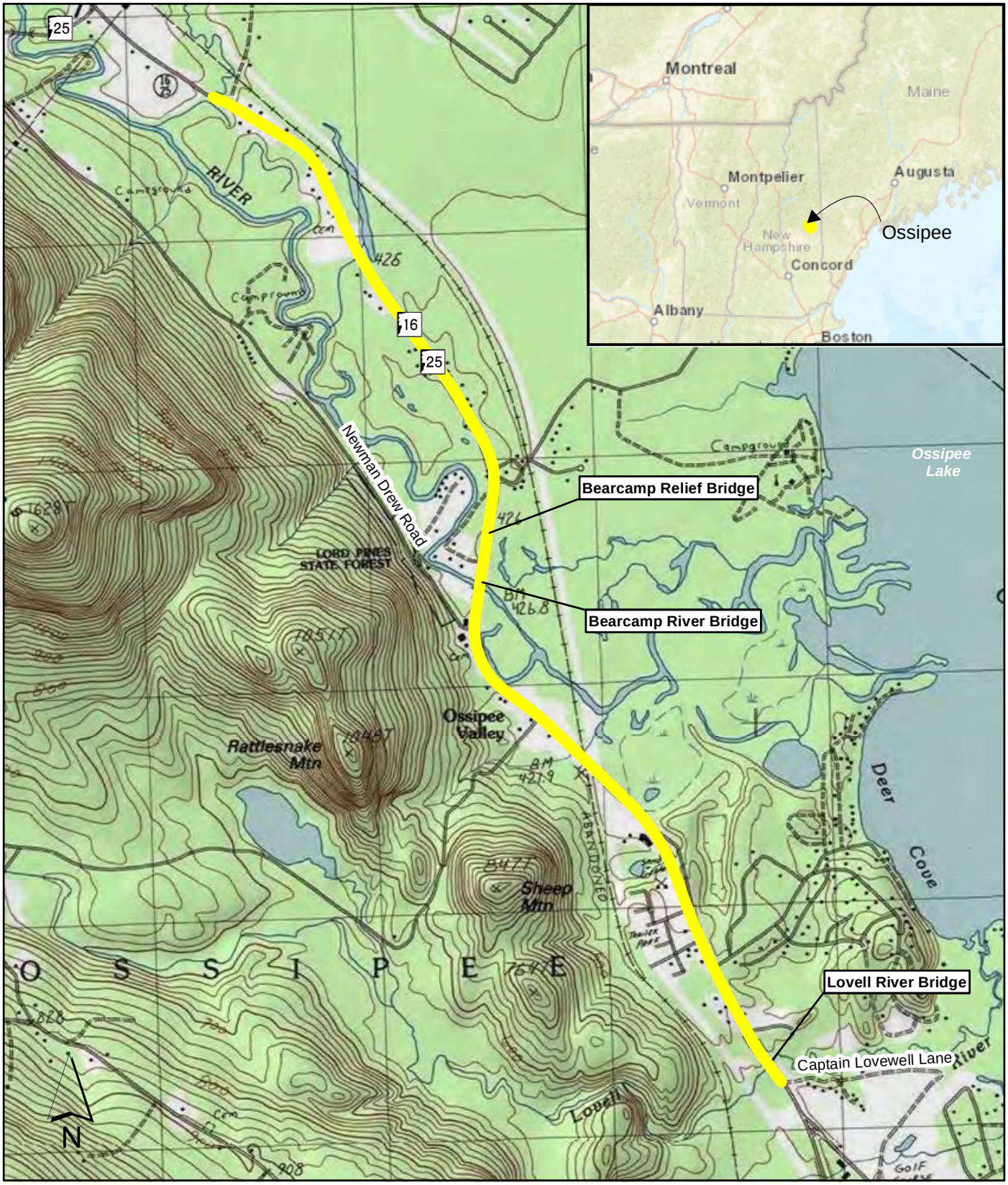
This project meets the following criteria, allowing it to be approved under the Programmatic Section 4(f) Evaluation for Projects that Necessitate the Use of Historic Bridges:

1. The bridge will be replaced with Federal funds.
2. The project will require the use of a historic bridge structure which is on or is eligible for listing on the National Register of Historic Places.
3. The bridge is not a National Historic Landmark.
4. The FHWA Division Administrator determines that the facts of the project match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation.
5. Agreement among the FHWA, the State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) has been reached through procedures pursuant to Section 106 of the NHPA.

Summary Statement

For the reasons demonstrated in this Programmatic Section 4(f) Evaluation, there are no prudent and/or feasible alternatives to the use of the Bearcamp River and Bearcamp Relief Bridges. The Proposed Action includes all possible planning to minimize harm to Section 4(f) properties resulting from such use. All parties involved have agreed with the proposed measures to minimize harm to the cultural resources. A Memorandum of Agreement (MOA) between FHWA, SHPO and NHDOT addressing the proposed action and subsequent mitigation has been developed (*Exhibit 27*).

Figure 1 – Project Location



Approximate Project Limits

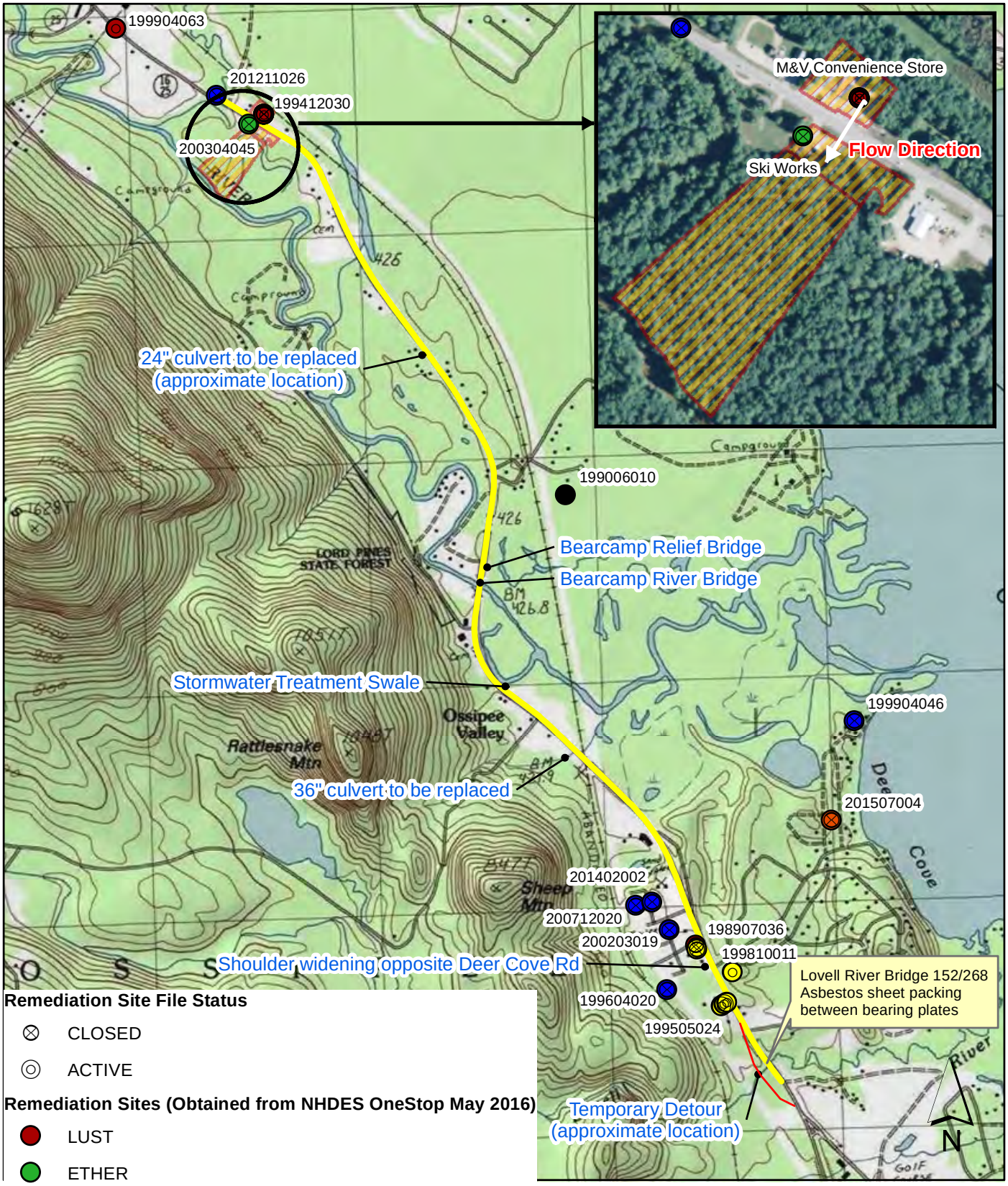
NH Department of Transportation
Ossipee, 14749

Location

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	October 2016	1

McFarland Johnson

Figure 2 – Hazardous Materials



Remediation Site File Status

- CLOSED
- ACTIVE

Remediation Sites (Obtained from NHDES OneStop May 2016)

- LUST
- ETHER
- IRSPILL
- OPUF
- SEPTIC
- UIC
- ProjectLimits
- Groundwater Management Zone

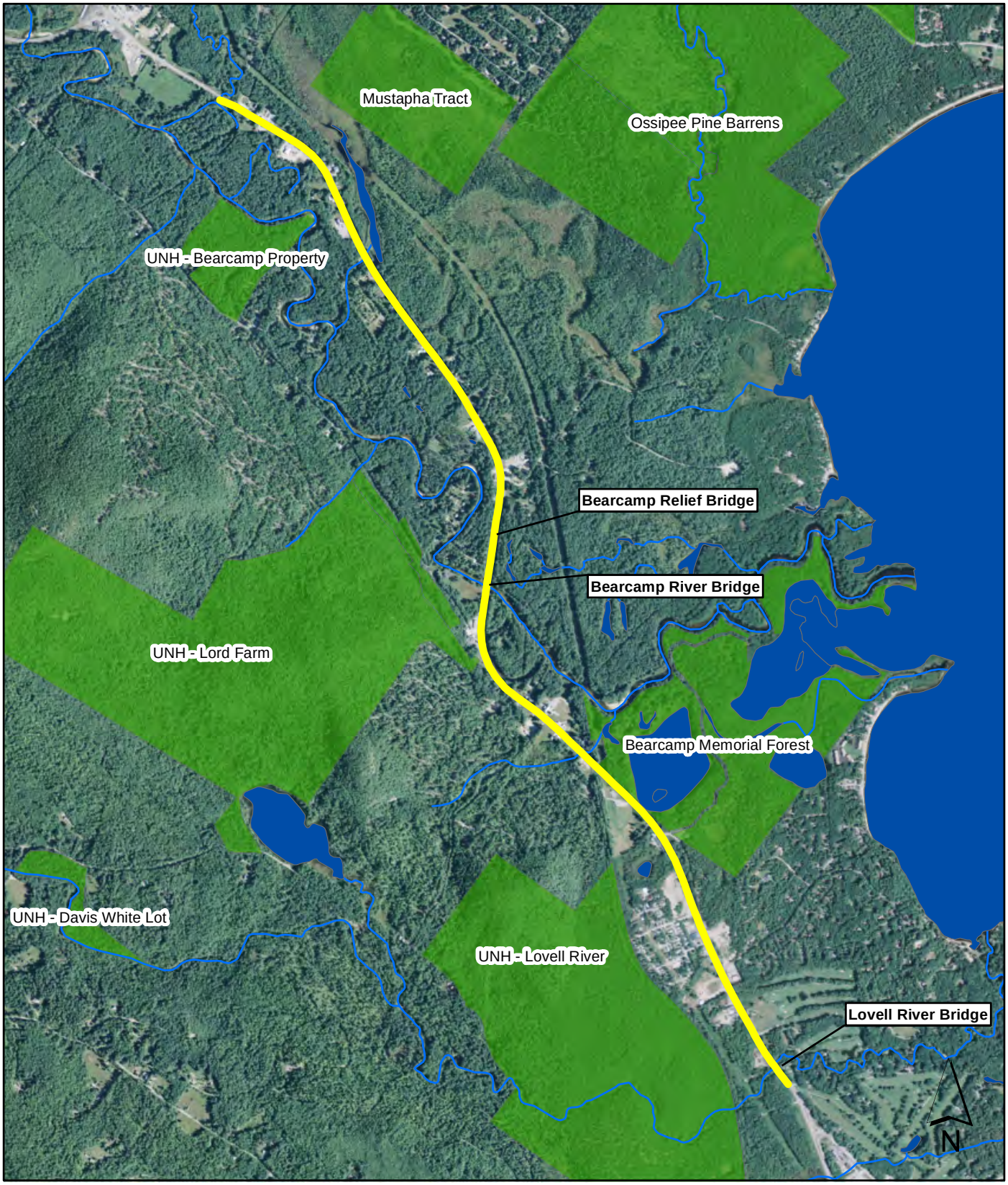
NH Department of Transportation
Ossipee, 14749

HAZARDOUS MATERIALS

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	January 2017	2

McFarland Johnson

Figure 3 – Conservation Lands



ProjectLimits

Lakes and Ponds

Streams and Rivers

Conservation Lands

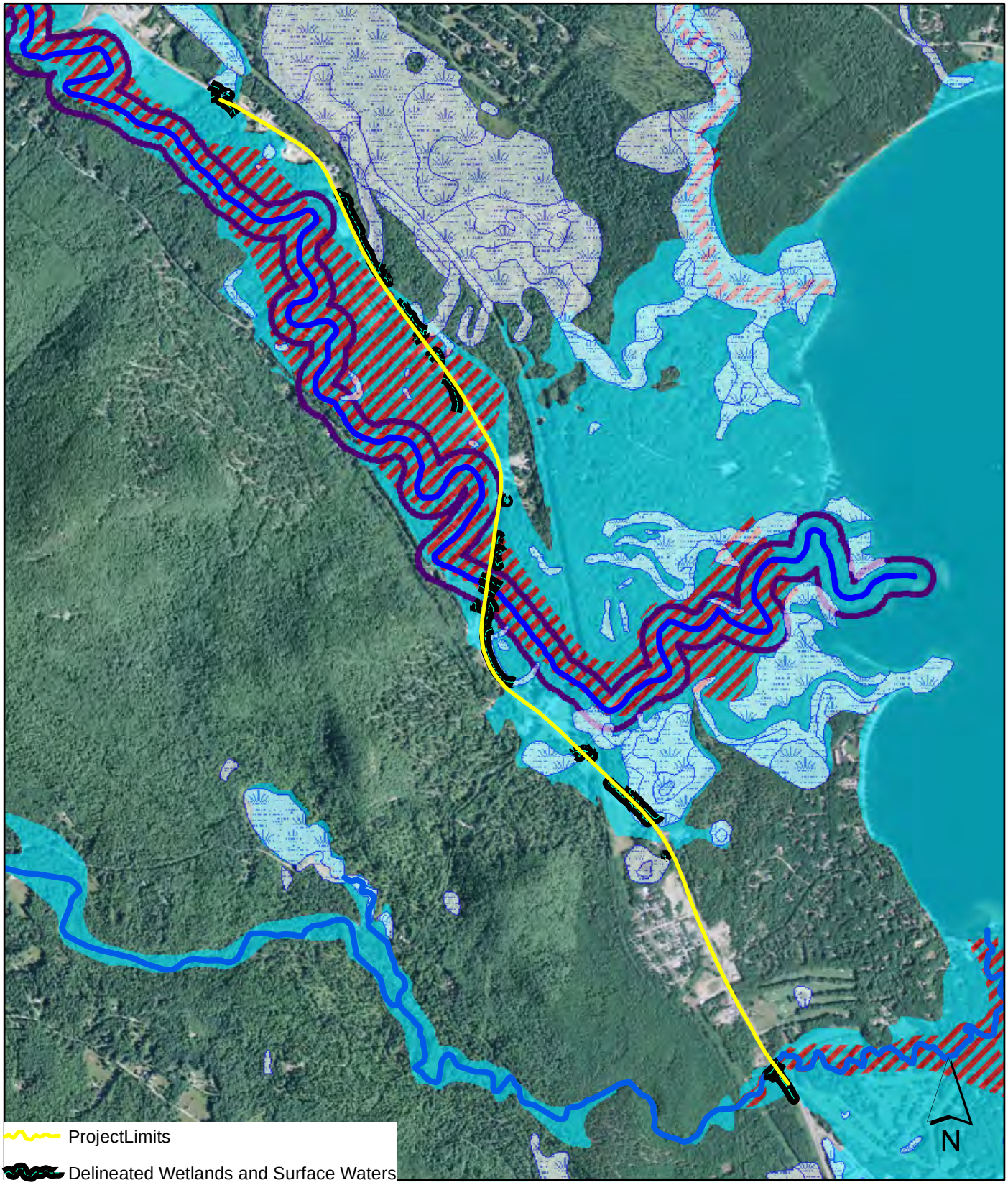
NH Department of Transportation
Ossipee, 14749

Conservation Lands

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	October 2016	3

McFarland Johnson

Figure 4 – Wetland and Surface Water Resources



ProjectLimits

Delineated Wetlands and Surface Waters

LovellRiver

Bearcamp River

National Wetland Inventory

250' Protected Shoreland

1% Annual Chance Flood Hazard

Regulatory Floodway

NH Department of Transportation
Ossipee, 14749

Wetland and Surface Water Resources

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	October 2016	4

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Figure 5 – Habitat Features

ProjectLimits

Essential Fish Habitat

Exemplary Natural Communities (approximate boundaries)

Wildlife Action Plan Tiers

Highest Ranked Habitat in NH

Highest Ranked Habitat in Biological Region

Supporting Landscapes

NH Department of Transportation
Ossipee, 14749

Habitat Features

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	October 2016	5

McFarland Johnson

Exhibit 1 – Seasonal Traffic Fluctuations

OPEN HOUSE
7-19-16

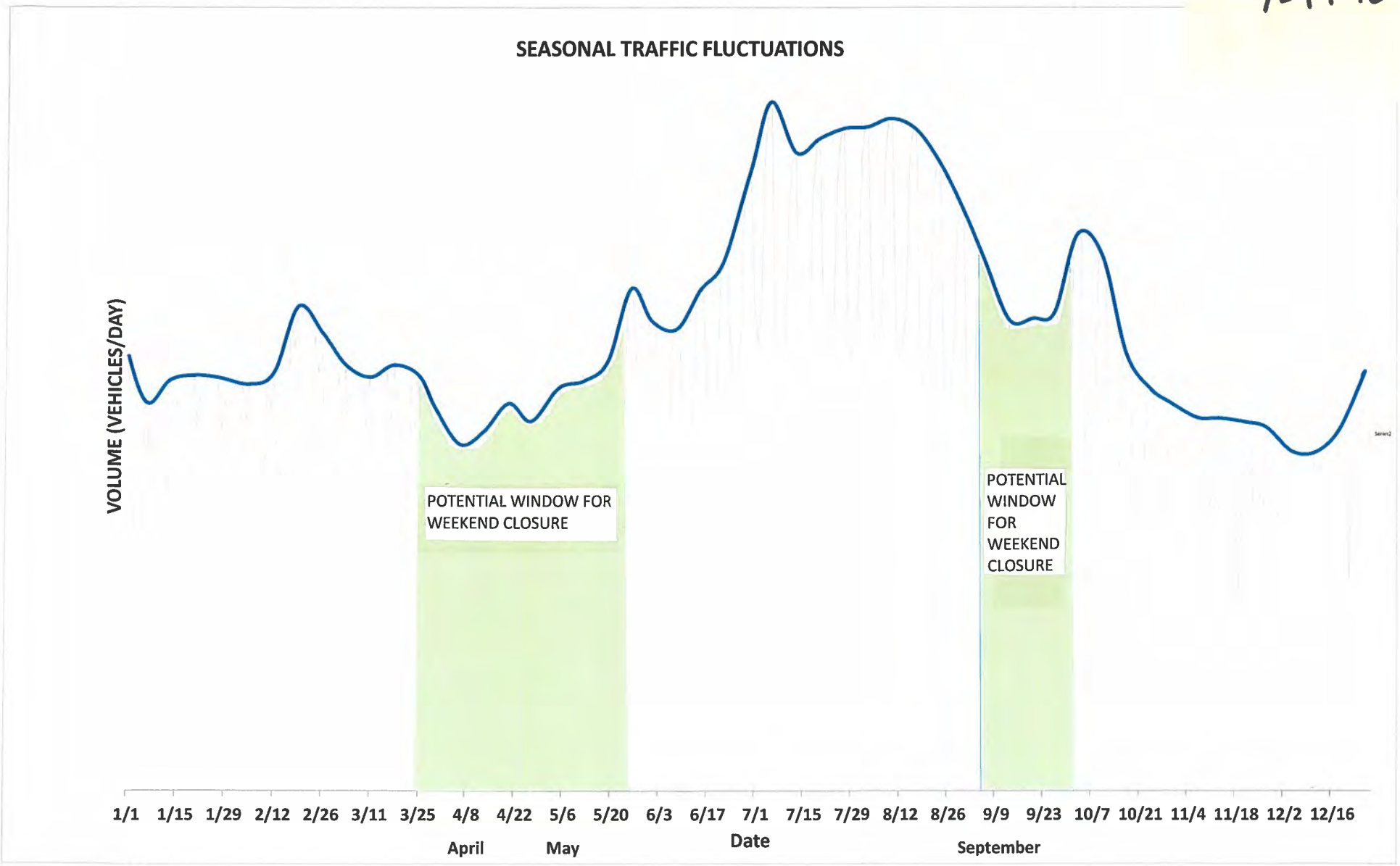
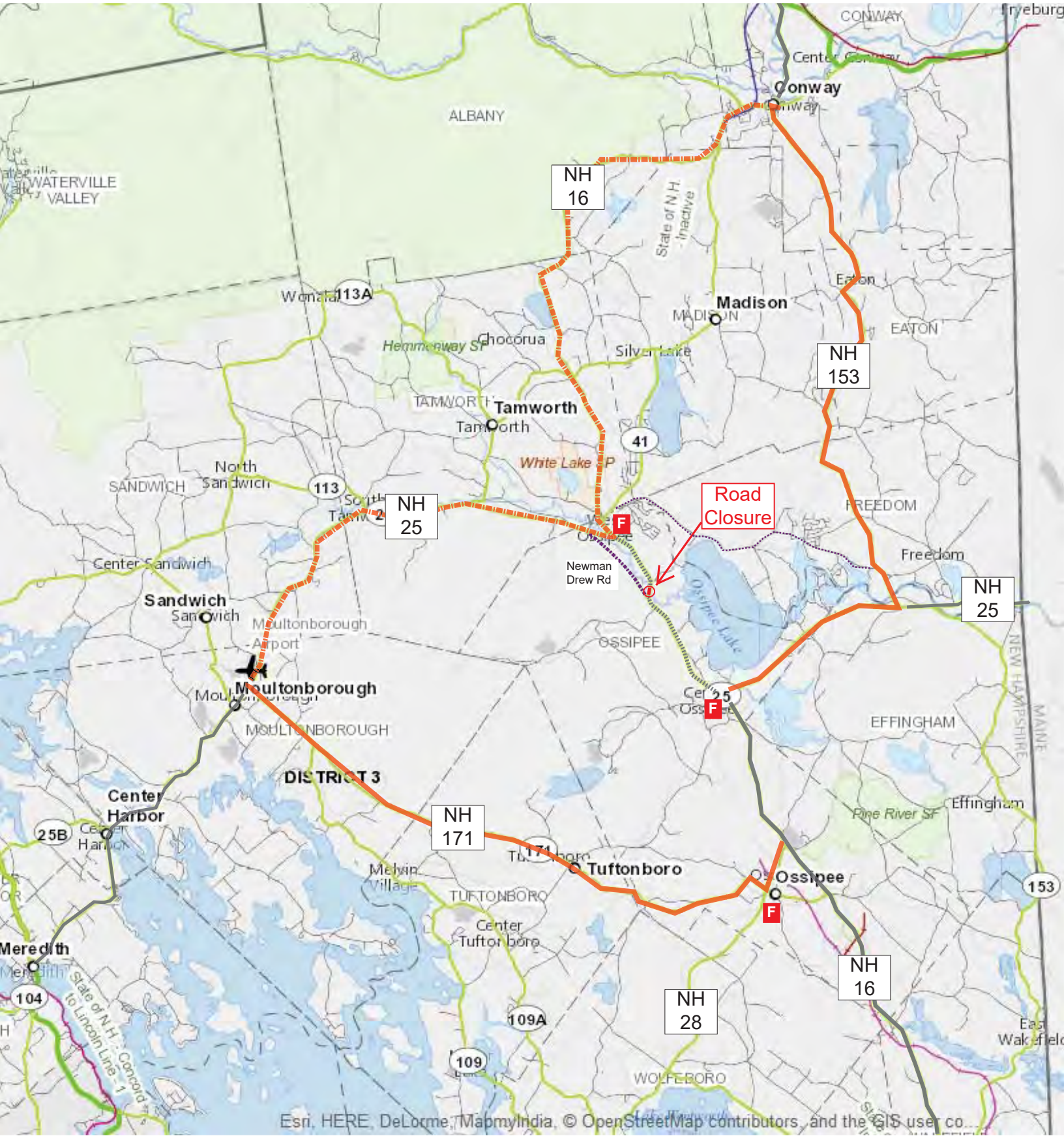


Exhibit 2 – Proposed Detour Routes



NH 16
NH 153
NH 25
NH 171
NH 28
NH 16
Road Closure
Newman Drew Rd
Conway
Madison
Tamworth
Sandwich
Moultonborough
Center Harbor
Tuftonboro
Ossipee
Meredith
ALBANY
WATERVILLE VALLEY
CONWAY
Eaton
EATON
FREEDOM
Freedom
OSSIPEE
EFFINGHAM
Effingham
TUFTONBORO
WOLFEBORO
Chocorua
Silver Lake
White Lake SP
Hemmenway SF
Pine River SF
Ossipee Lake
Moultonborough Airport
Melvin Village
Center Tuftonboro
Center Sandwich
North Sandwich
SANDWICH
MOULTONBOROUGH
DISTRICT 3
State of N.H. - Inactive
State of N.H. - Concord to Lincoln Line - 1
NEW HAMPSHIRE
MAINE
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user co...

Exhibit 3 – Environmental Justice Population Analysis

CJP ✓
KTN ✓

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
INTER-OFFICE COMMUNICATION

DATE: February 7, 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: **Ossipee 14749**

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
Victoria Chase, Project Manager, Highway Design

EJ Population Analysis for Project: Ossipee 14749

STUDY AREA	AVG% Elderly Population	AVG % Minority Population	AVG % Low-income Population	AVG% LEP
Impacted Area – Carroll County, US Census Tract # 9559, Blocks 2 & 3.	**20.16%**	3.33%	**19.94%**	0.0%
Surrounding Area Carroll County, Census Tract #9558 Block 2, Census Tract #9559 Block 1, Census Tract #9556 Blocks 1 & 2.	**12.15%**	2.59%	7.87%	0.0%

REMARKS:

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

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 and elderly population in the impacted area. 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.

Resident/Agency Address	Org/Housing Type	Contact Name/Number
Ossipee Concerned Citizens 3 Dore Street PO Box 426 Ossipee, NH 03814	Senior Center	Contact: Donna Sargent 603-539-6851
Town of Ossipee PO Box 67 55 Main Street Center Ossipee, NH 03814		Kellie Skehan 603-539-4181
Ossipee Public Library 74 Main Street PO Box 638 Center Ossipee, NH 03814		603-539-6390
Tri County CAP 536 Route 25 East Center Ossipee, NH 03814	Low Income	603-539-5094

Exhibit 4 – Correspondence: NHDES Water Use Registration & Reporting Program

Christine J. Perron

From: Herbold, Stacey [Stacey.Herbold@des.nh.gov]
Sent: Monday, September 26, 2016 9:38 AM
To: Rennie, Craig; Comstock, Gregg; David, Owen
Cc: Sales, Tracie; Christine J. Perron; 'Martin, Rebecca'
Subject: RE: NH DOT Project Ossipee 14749- water withdrawal proposed at the Lovell River in Ossipee

Hi Craig, Gregg, and Owen,

Could you let Rebecca know if there are any other requirements from your programs.

(Rebecca, Craig works for Wetlands and Gregg and Owen work for the 401 water quality certificate program. In terms of regulations from my program, unless more than 20,000 gpd are proposed to be withdrawn on a frequent basis triggering the need to report water use to the Water Use Registration and Reporting Program, there are no requirements in the Drinking Water and Groundwater Bureau that would apply.)

Thanks.

Stacey Herbold
Water Conservation Program
Water Use Registration and Reporting Program
NHDES Drinking Water and Groundwater Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095
PH: (603) 271-6685
FAX: (603) 271-0656

It's a no brainer! WaterSense certified products, such as showerheads and toilets, save 20% more water than their similar counterparts and are guaranteed to perform as well or better.

From: Martin, Rebecca [mailto:RMartin@dot.state.nh.us]
Sent: Monday, September 26, 2016 8:15 AM
To: Herbold, Stacey
Cc: Sales, Tracie; Christine Perron
Subject: NH DOT Project Ossipee 14749- water withdrawal proposed at the Lovell River in Ossipee

Good morning Stacey,

We had discussed a project last year proposed for Chichester-Epsom (29533) that included a proposed pull-off for the Epsom Fire Department at Mason Brook. At that time you had referred me to a DES fact sheet about withdrawals from surface waters: http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-1-17.pdf

NH DOT is currently designing a project in Ossipee and it came to my attention last week that the fire department in Ossipee would like to incorporate a dry hydrant for withdrawal from the Lovell River. The town would design and fund this withdrawal point, but it would be included in the DOT contract. I do remember that you had mentioned that if the withdrawal involves a physical disturbance to the bed or banks of the watercourse or water body, a DES wetlands permit is required. Otherwise, it seems that the fire department's proposal would be permissible, if they follow the guidance

included in the fact sheet. Are there any other requirements that we should be aware of or special provisions for the Lovell River? (The Lovell River is not a NH Designated River)

The Ossipee 14749 proposed project includes:
• 3.4 miles of roadway rehabilitation along Route 16 (from the Indian Mound Golf Club to south of the northern Route 25 intersection).
• Replace Lovell River Bridge. Temporary bridge to be constructed. No interruption to traffic.
• Replace Bearcamp River Bridge. Road closure required for 1 weekend. Detour to be implemented.
• Replace Bearcamp Relief Bridge. Road closure required for 1 weekend. Detour to be implemented.
• Slide-In Bridge construction to be used to expedite bridge replacement of the Bearcamp River Bridge and Bearcamp Relief Bridge and to minimize traffic impacts.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

Exhibit 5 – Correspondence: NHDES River & Lakes Program

Christine J. Perron

From: Sales, Tracie [Tracie.Sales@des.nh.gov]
Sent: Monday, September 26, 2016 8:31 AM
To: 'Martin, Rebecca'; Herbold, Stacey
Cc: Christine J. Perron
Subject: RE: NH DOT Project Ossipee 14749- water withdrawal proposed at the Lovell River in Ossipee

Good morning, Rebecca,

Based on the description below of the work you are proposing in Ossipee, the Rivers Program has no concerns as the project is not on a designated river.

Thank you,
Tracie

Tracie Sales
Rivers & Lakes Programs Manager
NH Department of Environmental Services
Phone: (603) 271-2959

From: Martin, Rebecca [mailto:RMartin@dot.state.nh.us]
Sent: Monday, September 26, 2016 8:15 AM
To: Herbold, Stacey
Cc: Sales, Tracie; Christine Perron
Subject: NH DOT Project Ossipee 14749- water withdrawal proposed at the Lovell River in Ossipee

Good morning Stacey,

We had discussed a project last year proposed for Chichester-Epsom (29533) that included a proposed pull-off for the Epsom Fire Department at Mason Brook. At that time you had referred me to a DES fact sheet about withdrawals from surface waters: http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-1-17.pdf

NH DOT is currently designing a project in Ossipee and it came to my attention last week that the fire department in Ossipee would like to incorporate a dry hydrant for withdrawal from the Lovell River. The town would design and fund this withdrawal point, but it would be included in the DOT contract. I do remember that you had mentioned that if the withdrawal involves a physical disturbance to the bed or banks of the watercourse or water body, a DES wetlands permit is required. Otherwise, it seems that the fire department's proposal would be permissible, if they follow the guidance included in the fact sheet. Are there any other requirements that we should be aware of or special provisions for the Lovell River? (The Lovell River is not a NH Designated River)

The Ossipee 14749 proposed project includes:
• 3.4 miles of roadway rehabilitation along Route 16 (from the Indian Mound Golf Club to south of the northern Route 25 intersection).
• Replace Lovell River Bridge. Temporary bridge to be constructed. No interruption to traffic.
• Replace Bearcamp River Bridge. Road closure required for 1 weekend. Detour to be implemented.
• Replace Bearcamp Relief Bridge. Road closure required for 1 weekend. Detour to be implemented.
• Slide-In Bridge construction to be used to expedite bridge replacement of the Bearcamp River Bridge and Bearcamp Relief Bridge and to minimize traffic impacts.

Thank you,

Exhibit 6 – Correspondence: Land Conservation Investment Program

Christine J. Perron

From: Walker, Steve [Steve.Walker@nh.gov]
Sent: Thursday, September 01, 2011 11:50 AM
To: Kevin Nyhan
Subject: RE: Ossipee, X-A000(490), 14749

Hi Kevin, There are conservation areas in the project but none are LCIP. Thanks Stephen

-----Original Message-----
From: Kevin Nyhan [mailto:KNyhan@dot.state.nh.us]
Sent: Thursday, September 01, 2011 10:56 AM
To: Walker, Steve
Subject: Ossipee, X-A000(490), 14749

Good morning Steve,

The NH Department of Transportation is planning a project to address deficient bridges: bridges 137/299 (NH Route 16 over Bearcamp River relief), 137/297 (NH Route 16 over Bearcamp River), and 152/268 (NH Route 16 over Lovell River). Work also includes rehabilitation of the roadway from bridge 152/168, north to bridge 123/324 (NH Route 16 over Chocorua River) (*see attached*).

The Department's Bureau of Environment is conducting an environmental study for the subject project. In an effort to ensure that all issues/resources associated with the project are appropriately evaluated, we request your agency's input. Please review this information and comment on the need for further analysis regarding the Conservation Land Stewardship Program in the project area. Any comments you may have concerning this project, or resources within the project area, will assist in the preparation of the environmental document.

Thank you for your assistance.

Kevin T. Nyhan
Senior Environmental Manager
NHDOT Bureau of Environment
John O. Morton Building, Room 160
7 Hazen Drive, PO Box 483
Concord, NH 03302-0483
Tel. 603.271.1553
Fax. 603.271.7199

<<locus.pdf>>

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
"We are defined not only by what we create but by what we refuse to destroy."

~ Appalachian South Folklife Center
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Exhibit 7 – Correspondence: NH Division of Parks and Recreation

Christine J. Perron

From: DRED: Land & Water Conservation Fund [LWCF@dred.nh.gov]
Sent: Tuesday, October 04, 2016 3:30 PM
To: Christine J. Perron
Subject: RE: NHDOT Project: Ossipee 14749, NH Route 16
Attachments: ossipee 6(f) sites.pdf

Hi Christine,
Although there are several 6(f) sites within the Town of Ossipee, none are within or adjacent to the current project. Based on the information provided, there should be no impacts.
Thanks!
Bill

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
www.nhstateparks.org

From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Thursday, September 29, 2016 8:25 AM
To: DRED: Land & Water Conservation Fund
Subject: NHDOT Project: Ossipee 14749, NH Route 16

Good morning,

I am completing the environmental review of the subject project on behalf of NHDOT. The purpose of the project is to replace 3 bridges and rehabilitate 3.4 miles of NH Route 16, beginning approximately 300' south of Captain Lovewell Lane and ending just south of the NH Route 25 (West Ossipee) intersection (see attached location map). Roadway work will involve pavement, drainage, and guardrail upgrades. No roadway widening is proposed, although work outside existing right-of-way will be required during construction of the new bridges.

I'm writing to find out if there are any LWCF concerns in the area that we should be aware of.

Thanks very much,
Christine

Christine Perron • Senior Environmental Analyst
McFarland Johnson
53 Regional Drive • Concord, NH 03301
OFFICE: 603-225-2978 ext. 128
www.mjinc.com

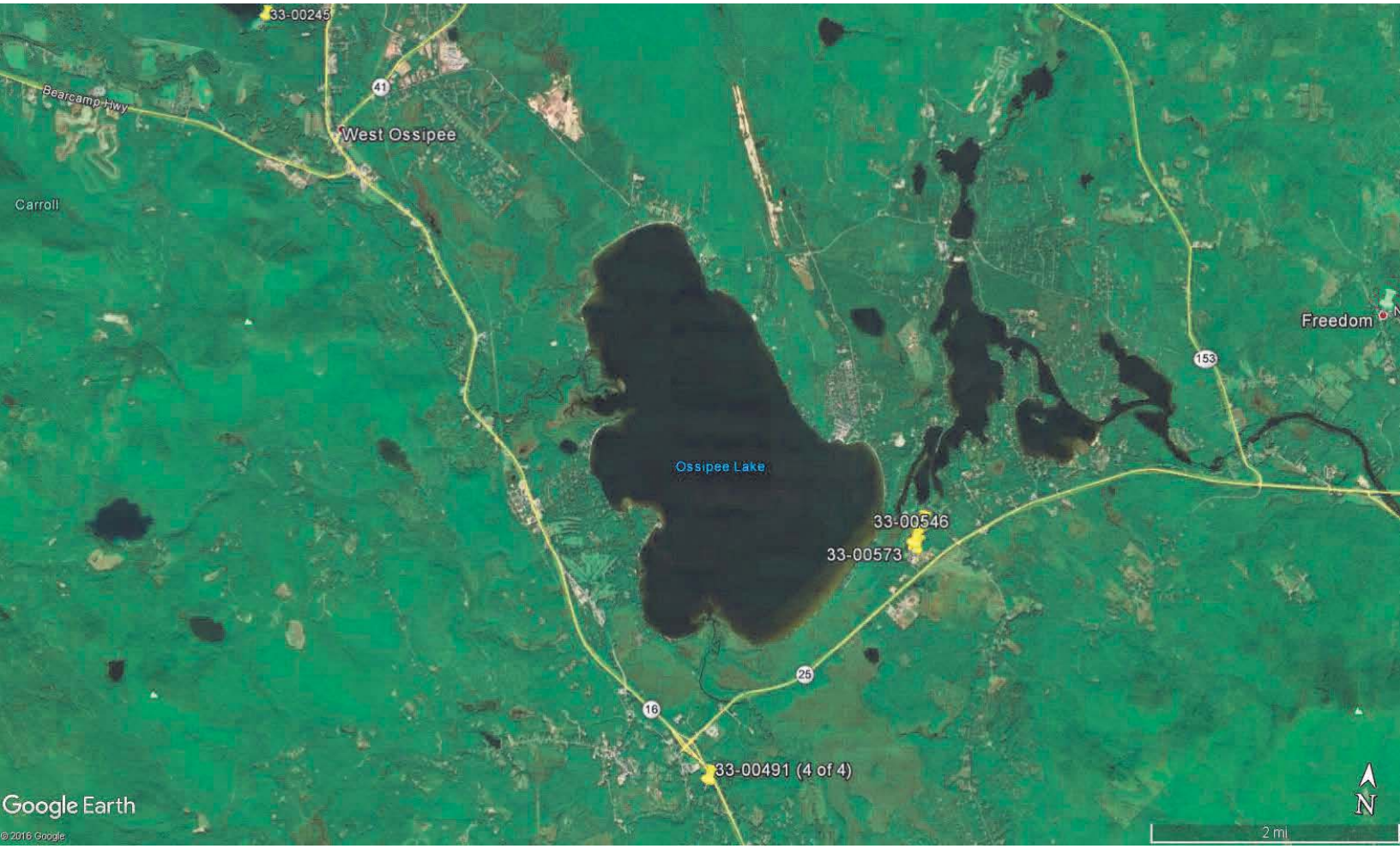

33-00245
Bearcamp Hwy
41
West Ossipee
Carroll
Freedom
153
Ossipee Lake
33-00546
33-00573
25
16
33-00491 (4 of 4)
Google Earth
© 2016 Google
N
2 mi

Exhibit 8 – Correspondence: Land & Community Heritage Investment Program

Christine J. Perron

From: Paula Bellemore [pbellemore@lchip.org]
Sent: Wednesday, October 05, 2016 2:21 PM
To: Christine J. Perron
Subject: RE: NHDOT Project: Ossipee 14749, NH Route 16

Hi Christine,
There are no LCHIP assisted resources in the proposed work area as described, although I note that there are several conservation tracts nearby, as well as the Whittier Covered Bridge which spans Bearcamp River west of Rt. 16.

Paula

From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Tuesday, October 04, 2016 3:41 PM
To: Paula Bellemore
Subject: NHDOT Project: Ossipee 14749, NH Route 16

Hi Paula,

I am completing the environmental review of the subject project on behalf of NHDOT. The purpose of the project is to replace 3 bridges and rehabilitate 3.4 miles of NH Route 16, beginning approximately 300' south of Captain Lovewell Lane and ending just south of the NH Route 25 (West Ossipee) intersection (see attached location map). Roadway work will involve pavement, drainage, and guardrail upgrades. No roadway widening is proposed, although work outside existing right-of-way will be required during construction of the new bridges.

I'm writing to find out if there are any LCHIP concerns in the area that we should be aware of.

Thanks very much,
Christine

Christine Perron • Senior Environmental Analyst
McFarland Johnson
53 Regional Drive • Concord, NH 03301
OFFICE: 603-225-2978 ext. 128
www.mjinc.com

Exhibit 9 – Farmland Conversion Impact Rating

Christine J. Perron

From: Christine J. Perron
Sent: Wednesday, November 02, 2016 2:22 PM
To: 'Whitcomb, Peter - NRCS, Concord, NH'
Cc: Martin, Rebecca
Subject: RE: NHDOT Project - Ossipee 14749, NH Route 16
Attachments: Ossipee 14749 Farmland Conversion Impact Rating_Final.pdf

Hi Peter,

The final Farmland Conversion Impact Rating Form and project maps are attached for your records for the subject NHDOT project. Based on the assessment criteria, the proposed impacts to farmland soils received a score of 90 out of 260 points. According to the FPPA manual, sites receiving a total score of less than 160 do not need to be given further consideration for protection and no additional alternatives need to be evaluated.

Thanks for your time.
Christine

Christine Perron, CWS • Senior Environmental Analyst
McFarland Johnson
53 Regional Drive • Concord, NH 03301
OFFICE: 603-225-2978 ext. 128
www.mjinc.com

From: Whitcomb, Peter - NRCS, Concord, NH [mailto:peter.whitcomb@nh.usda.gov]
Sent: Wednesday, November 02, 2016 1:30 PM
To: Christine J. Perron
Subject: RE: NHDOT Project - Ossipee 14749, NH Route 16

Hi Christine,

I made the change in part IVB, as well (see attached).
Everything else stays the same.

Thank you,
Peter

From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Tuesday, November 01, 2016 10:41 AM
To: Whitcomb, Peter - NRCS, Concord, NH <peter.whitcomb@nh.usda.gov>
Subject: RE: NHDOT Project - Ossipee 14749, NH Route 16

Hi Peter,

The completed form is attached. I updated the acres of impact in Part III. The additional impact area is noted on the attached map. As I mentioned in my previous email, the additional area brings the total area to be impacted up to 0.16 ac.

Thanks,
Christine

From: Whitcomb, Peter - NRCS, Concord, NH [mailto:peter.whitcomb@nh.usda.gov]
Sent: Monday, October 31, 2016 3:23 PM
To: Christine J. Perron
Cc: McCracken, Kimberly - NRCS, Dover, NH
Subject: RE: NHDOT Project - Ossipee 14749, NH Route 16

Hi Christine,

Kim forwarded me your letter and form CPA-106. I have completed Parts II, IV, and V. Note: the form automatically rounded off 0.03 acres to the nearest tenth of an acre. Would you consider changing the total to 0.1 acre? (please see attached). The project area is mapped as 102A – Sunday loamy fine sand, 0 to 3 percent slopes, occasionally flooded. It is Locally Important Farmland. The Relative Value is 60.

Please fill out Parts VI and VII. If the total point score is 160 or less, then the project is in full compliance with FPPA and no further action is required. If the total point score is above 160 points, then alternative design or location should be considered that might reduce the total point score. If this is not possible, then an explanation should be provided in Block 5 at the bottom of the form. Additional information about completing the form and the Farmland Protection Policy Act can be found at the following web site: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/.

Please provide a final copy of the completed AD-1006 to me for NRCS records and retain a copy for your records, regardless of the total point score.

If you have any questions, please feel free to contact me.

Peter

Peter Whitcomb
Assistant State Soil Scientist
Cultural Resources Coordinator
Natural Resources Conservation Service
U.S. Department of Agriculture
The Concord Center, 10 Ferry St, Suite 211
Concord, NH 03301
Phone: 603-223-6024
peter.whitcomb@nh.usda.gov

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request: 10/10/16	4. Sheet 1 of 1
1. Name of Project: Ossipee 14749	5. Federal Agency Involved: FHWA	
2. Type of Project: Bridge Replacement and Roadway Rehab	6. County and State: Carroll County, New Hampshire	

PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS: 10/18/16	2. Person Completing Form: Peter Whitcomb
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐		4. Acres Irrigated: 0 / Average Farm Size: 125
5. Major Crop(s): corn silage, grass legume hay	6. Farmable Land in Government Jurisdiction: Acres: 297,806 % 47	7. Amount of Farmland As Defined in FPPA: Acres: 262,270 % 41.4
8. Name Of Land Evaluation System Used: Carroll County	9. Name of Local Site Assessment System: NA	10. Date Land Evaluation Returned by NRCS: 10/30/16

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	0.16 ac			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0			
C. Total Acres In Corridor	42 ac			
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland	0			
B. Total Acres Statewide And Local Important Farmland	0.16			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	12			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*	60			

PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points	Corridor A	Corridor B	Corridor C	Corridor D
1. Area in Nonurban Use	15	15			
2. Perimeter in Nonurban Use	10	10			
3. Percent Of Corridor Being Farmed	20	0			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	5			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
TOTAL CORRIDOR ASSESSMENT POINTS	160	30	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	60	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	30	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	90	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
Corridor A	0.16	11/1/16	YES ☐ NO ☑

5. Reason For Selection:

The purpose of the project is to replace 3 bridges and rehabilitate 3.4 miles of NH Route 16, beginning approximately 300' south of Captain Lovewell Lane and ending just south of the NH Route 25 (West Ossipee) intersection. Roadway work will involve pavement, drainage, and guardrail upgrades. The elevation of the approach roadway at the Bearcamp River bridge will be raised to match the elevation of the new bridge. The slopes in this area will be widened in order to match the raised roadway elevation. The work in this location will result in one area of fill outside the existing State right-of-way for NH

Signature of Person Completing this Part: Christine J. Perron, McFarland Johnson Inc.

DATE: 11/1/16

NOTE: Complete a form for each segment with more than one Alternate Corridor

Clear Form

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

(2) How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?
More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
Site is protected - 20 points
Site is not protected - 0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with $1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?
Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?
Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

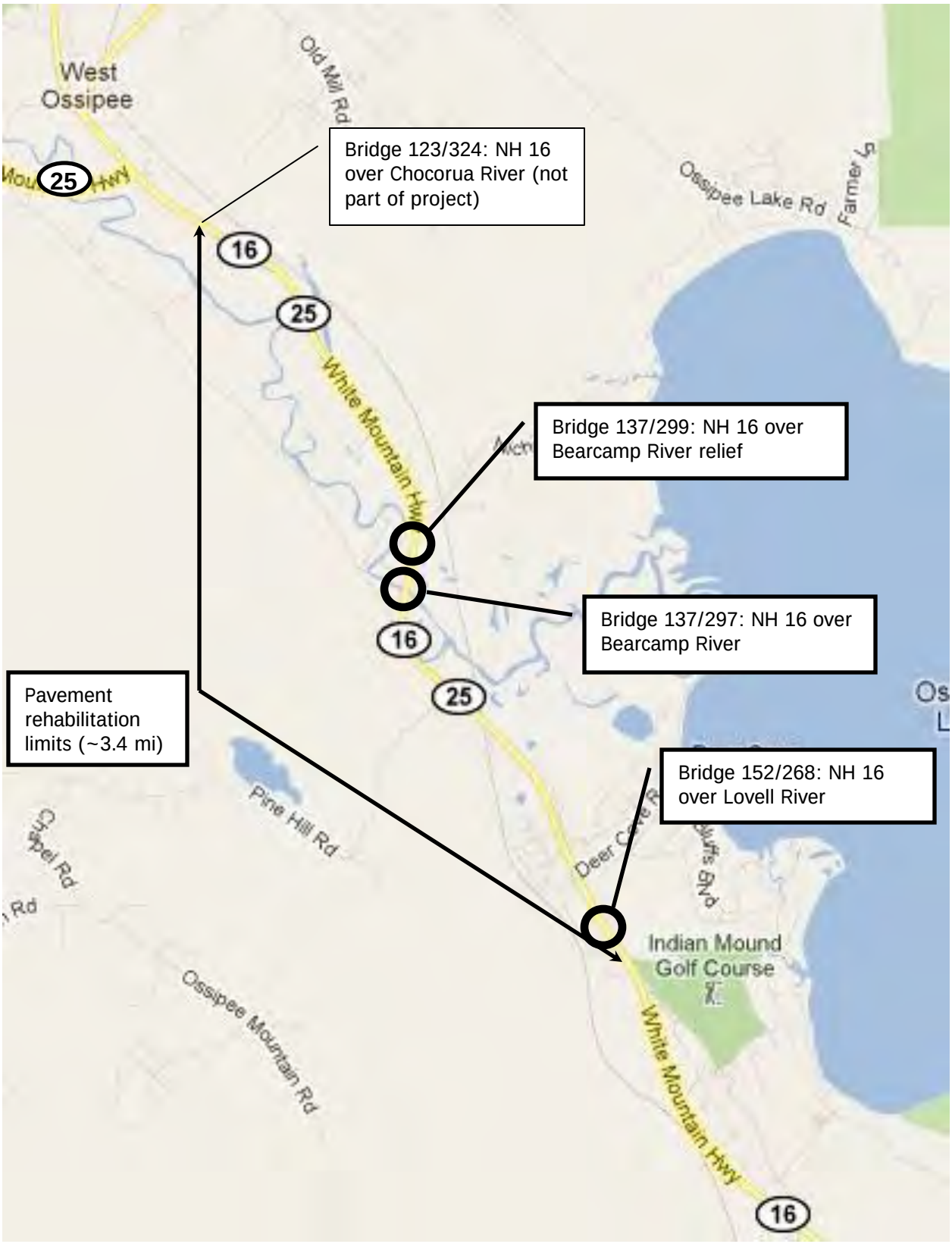
State and Local Roads

NH Department of Transportation
Ossipee, 14749

Permanent Impacts Outside ROW

SCALE :	DATE :	FIGURE :
1 inch = 500 feet	October 2016	1

McFarland Johnson



Ossipee 14749

Exhibit 10 – Correspondence: US Coast Guard

Christine Perron

USSIPEG 17177

U.S. Department of Homeland Security

United States Coast Guard

Commander
First Coast Guard District

One South Street
Battery Park Building
New York, NY 10004-1466
Staff Symbol: dpb
Phone: (212) 668-7165
Fax: (212) 668-7967

16211/NV-857
Lovell River, Bearcamp River, Chocorua River//NH//

6 February 2013

AW 2/12/2013 copy to environ

Mr. Alex Vogt
NH Department Of Transportation
Bureau of Environment
7 Hazen Drive
Concord, NH 03302

Re: NH Route 16 Over Lovell River, Bearcamp River and Chocorua River

Dear Mr. Vogt:

This is in response to your letter we received regarding the referenced project. We have examined the Lovell River, Bearcamp River and Chocorua River at the project locations to determine Coast Guard jurisdiction. Our examination found that the Lovell River, Bearcamp River and Chocorua River at the project locations fall under the Coast Guard Authorization (CGA) Act of 1982.

Although these projects will not require a bridge permits other areas of Coast Guard jurisdictions may apply. The following stipulations must be met:

a. Any spillage of oil or oil based products during construction must be promptly reported to the Coast Guard by calling 1 800 424-8802.

b. As construction plans are developed please contact Mr. John McDonald of our Boston office to coordinate any construction requirements and any other questions or concerns. He can be reached at: john.w.mcdonald@uscg.mil: Phone: 617-223-8364.

If you have any further questions feel free to contact this office at the number above.

Sincerely,

Gary Kassof
Bridge Program Manager
First Coast Guard District
By direction

Copy: Corps of Engineers –NE District

Christine J. Perron

From: Stieb, Jeffrey D CIV <Jeffrey.D.Stieb@uscg.mil>
Sent: Monday, February 13, 2017 1:30 PM
To: Martin, Rebecca
Cc: Rousseau, James L CIV; Bourbeau, David T LT; Bisignano, Christopher J CIV
Subject: FW: NH DOT Project 14749- NH Route 16 Over Lovell and Bearcamp Rivers

Rebecca,

Thank you for the phone call and the photographs of the bridges.

Based on the location and the amount of vessel traffic, the Coast Guard does not have construction requirements for the Lovell River Bridge, the Bearcamp River Bridge and the Bearcamp Relief Bridge on NH Route 16 in Ossipee. As you mentioned, please incorporate the spill reporting requirement into the project contract language.

Should any questions for the Coast Guard arise during the project, please contact us. Thank you for responding to Mr. Kassof's letter.

Regards, Jeff

Jeffrey D. Stieb
Bridge Management Specialist
First Coast Guard District
617-223-8364

From: Martin, Rebecca [mailto:Rebecca.Martin@dot.nh.gov]
Sent: Wednesday, February 08, 2017 1:41 PM
To: Bisignano, Christopher J CIV
Subject: [Non-DoD Source] NH DOT Project 14749- NH Route 16 Over Lovell and Bearcamp Rivers

Dear Mr.Bisignano,

I am writing in reference to a future NH DOT project (FHWA X-A000(490)) to replace three bridges, one over the Lovell River, one over the Bearcamp River, and also the Bearcamp Relief Bridge on NH Route 16 in Ossipee. In addition, the condition of a 3.4-mile section of NH Route 16 would be addressed, beginning approximately 1,000’ south of the Lovell River Bridge and ending approximately one mile north of the Bearcamp

Relief Bridge. There is a new Project Manager (Victoria Chase) working on the project and I am the new Environmental Manager.

NH DOT received a letter from Gary Kassof in 2013 indicating that spills must be reported to the Coast Guard and that the Coast Guard would like to review construction plans for the Lovell River and Bearcamp River bridges. The spill reporting commitment will be incorporated into the project contract language. The letter indicates that bridge permits are not necessary, but that other construction requirements might apply. There was a Public Hearing held for the project in December of 2016. Hearing plans depicting impacts at the bridge sites can be viewed on the NH DOT Project Website:

https://www.nh.gov/dot/projects/ossipee14749/index.htm
<https://urldefense.proofpoint.com/v2/url?u=https-3A__www.nh.gov_dot_projects_ossipee14749_index.htm&d=CwMFAw&c=0NKfg44GVknAU-XkWXjNxQ&r=WuveFHJT1kcXrhFwBprBY72IRNzI6L0p23SQ_uQVB8o&m=TQmbtAqqHUUG38z0x5WsAvA33Sj7u-kHKeCbnYZElUQ&s=4j-aF4EYUtOp0uOZH8u62h23ZXNKwk1plWMT6zGgwSo&e=>

The Lovell River Bridge was constructed in 1950 and consists of steel I-beams with a concrete deck. The bridge is a single span with a length of 58’ and a curb-to-curb width of 31’. The proposed Lovell River Bridge would be a single span on a 15° skew, with a length of 97’ and rail-to-rail width of 34’. The bridge would consist of integral abutment steel girders with a concrete deck and steel bridge rail. Abutments would be stub abutments on piles. A temporary bridge would be constructed to the west of the existing bridge to maintain traffic during construction.

The Bearcamp River Bridge is a 5-span I-beam concrete bridge constructed in 1955. The overall length is 392’ and the curb-to-curb width is 28’. The proposed Bearcamp River Bridge would be 410’ long with 3 spans on a 16.5° skew, consisting of steel girders on pile supported stub abutments. The new bridge would have only two piers, which would not be located in the river. The bridge would match the existing low chord elevation. The width of the bridge would be 34’ rail-to-rail.

The Bearcamp River Bridge and the Bearcamp Relief bridges are proposed to be replaced using construction methodology called Slide-in Bridge Construction, which replaces the bridges in their current location and eliminates the need for temporary bridges. Slide-in Bridge Construction would involve constructing the new superstructure on temporary supports adjacent to the existing bridges, most likely on the upstream side of the bridges. Portions of the new piers may also be constructed while the existing bridge remains open to traffic. The road would then be closed for a one-weekend (60-hour) period for each bridge to allow time to remove the existing bridge, complete construction of the substructure, and

move the new superstructure into place.

As there are new people working on the project here, I wanted to contact you to inquire what stage of construction plans would be appropriate to share. I initially had sent an email to John McDonald, but received a message that email delivery failed. Please let me know if you have any questions about the project.

Thank you,

Rebecca Martin

Environmental Manager

NH DOT Bureau of Environment

7 Hazen Drive

Concord, NH 03302

(603)271-6781

Rebecca.Martin@dot.nh.gov

Exhibit 11 – Correspondence: NH Floodplain Management Coordinator

JOHN H. LYNCH
GOVERNOR

STATE OF NEW HAMPSHIRE
OFFICE OF ENERGY AND PLANNING
4 Chenell Drive
Concord, NH 03301-8501
Telephone: (603) 271-2155
Fax: (603) 271-2615

www.nh.gov/oep

MEMORANDUM

TO: Kevin Nyhan
DOT Bureau of Environment

FROM: Jennifer Gilbert
NH Floodplain Management Coordinator

DATE September 30, 2011

SUBJECT: Ossipee, X-A000(490), 14749

I am writing in reference to your letter dated September 1, 2011 regarding the above-referenced project. I have reviewed and attached a portion of the Flood Insurance Rate Map for the proposed area.

The floodplain area (Zone A) of the Lovell River and the floodplain (Zone AE) and floodway area of the Bearcamp River appear to be located within the project area. State Executive Order 96-4 requires NH state agencies to comply with the floodplain management regulations of all communities that participate in the National Flood Insurance Program (NFIP). Since the Town of Ossipee is a participating community of the NFIP, any development in a special flood hazard area should meet the NFIP requirements contained in the community's floodplain management ordinance. Development is defined under the NFIP as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials."

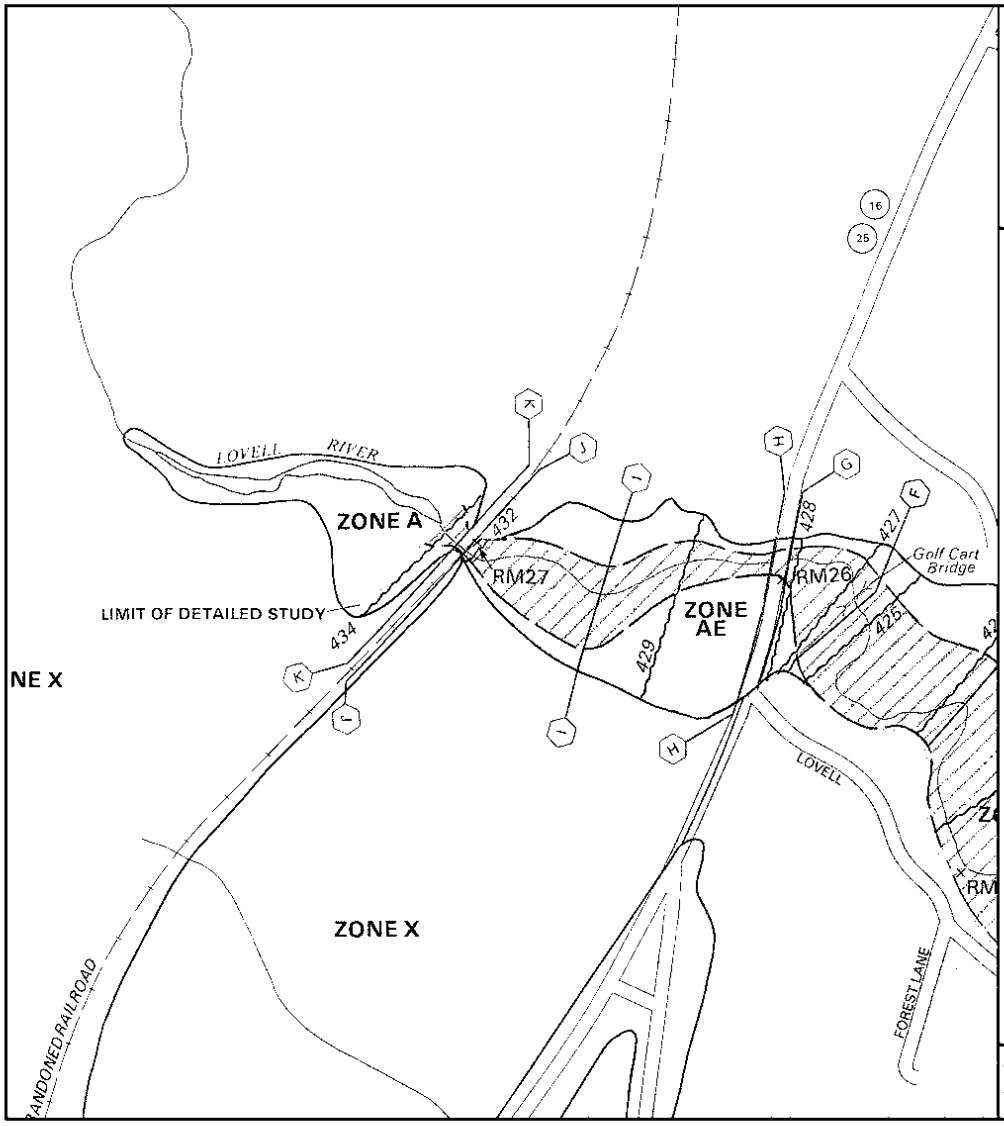
If any development takes place within the floodway area of the Bearcamp River, the following NFIP requirement contained in the community's floodplain ordinance will also apply:

> Along watercourses with a designated Regulatory Floodway no encroachments, including fill, new construction, substantial improvements, and other development are allowed within the floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed encroachment would not result in any increase in flood levels within the community during the base flood discharge.

Coordination with FEMA through a Conditional Letter of Map Revision (www.fema.gov/plan/prevent/floodplain/nfipkeywords/clomr.shtm) will be required if the proposed project causes any increase in the base flood elevation within a floodway area.

If you need further assistance, please contact me at 271-1762 or jennifer.gilbert@nh.gov.

Thank you.



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
OSSIPEE,
NEW HAMPSHIRE
CARROLL COUNTY

PANEL 16 OF 30
(SEE MAP INDEX FOR PANELS NOT PRINTED)

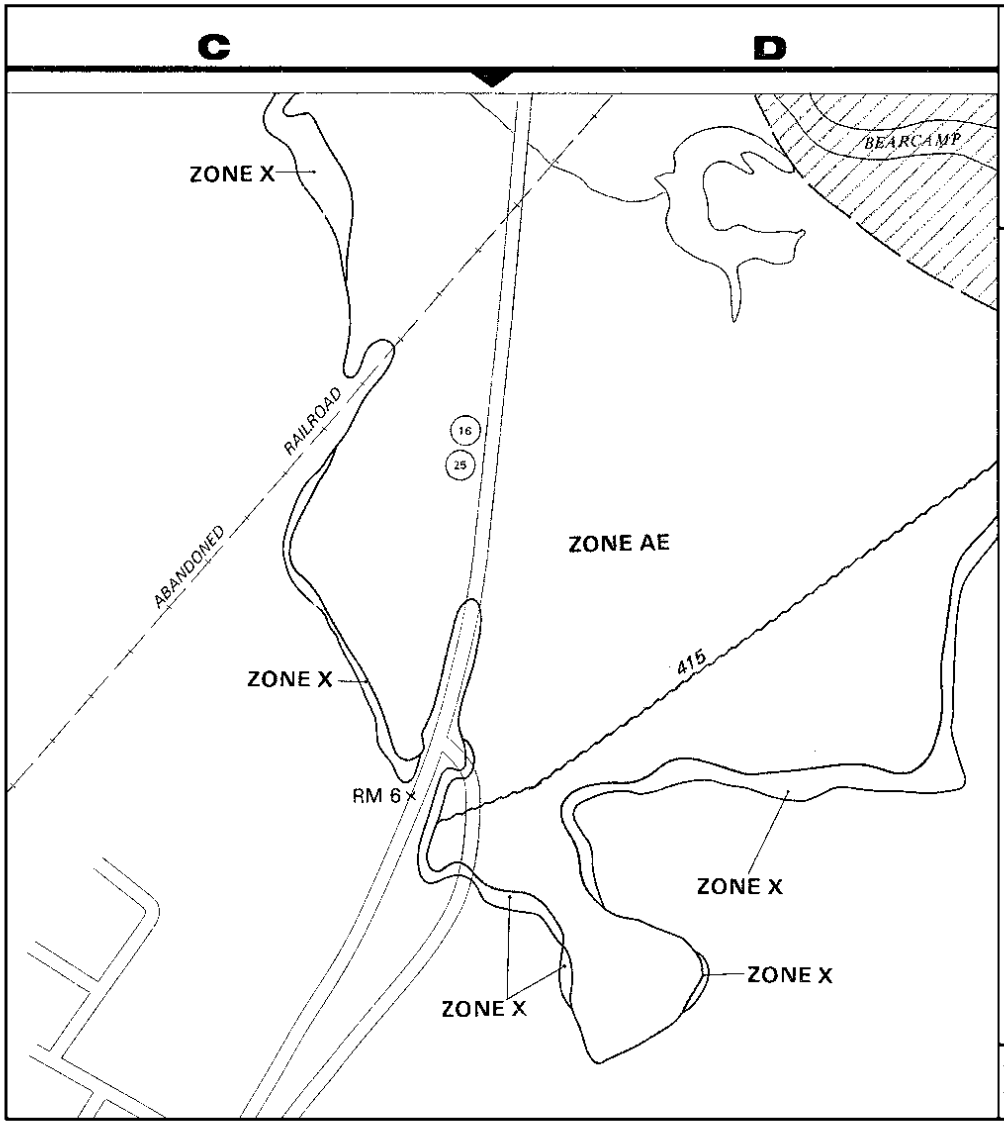
PANEL LOCATION

COMMUNITY-PANEL NUMBER
330016 0016 C

MAP REVISED:
JULY 3, 1995

Federal Emergency Management Agency

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



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
OSSIPEE,
NEW HAMPSHIRE
CARROLL COUNTY

PANEL 16 OF 30
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
330016 0016 C

MAP REVISED:
JULY 3, 1995

Federal Emergency Management Agency

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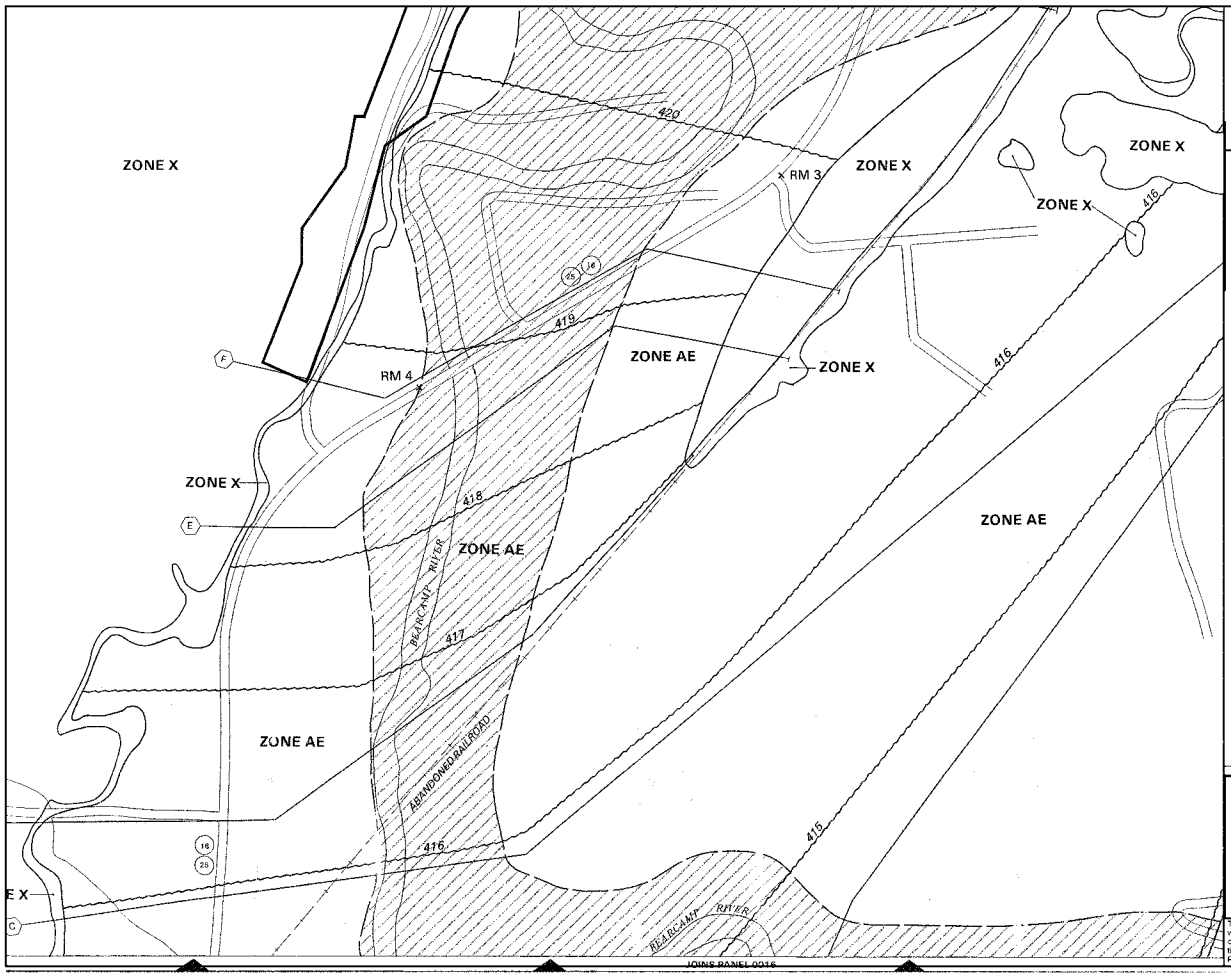


APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
OSSIPEE,
NEW HAMPSHIRE
CARROLL COUNTY

PANEL 8 OF 30
(SEE MAP INDEX FOR PANELS NOT PRINTED)

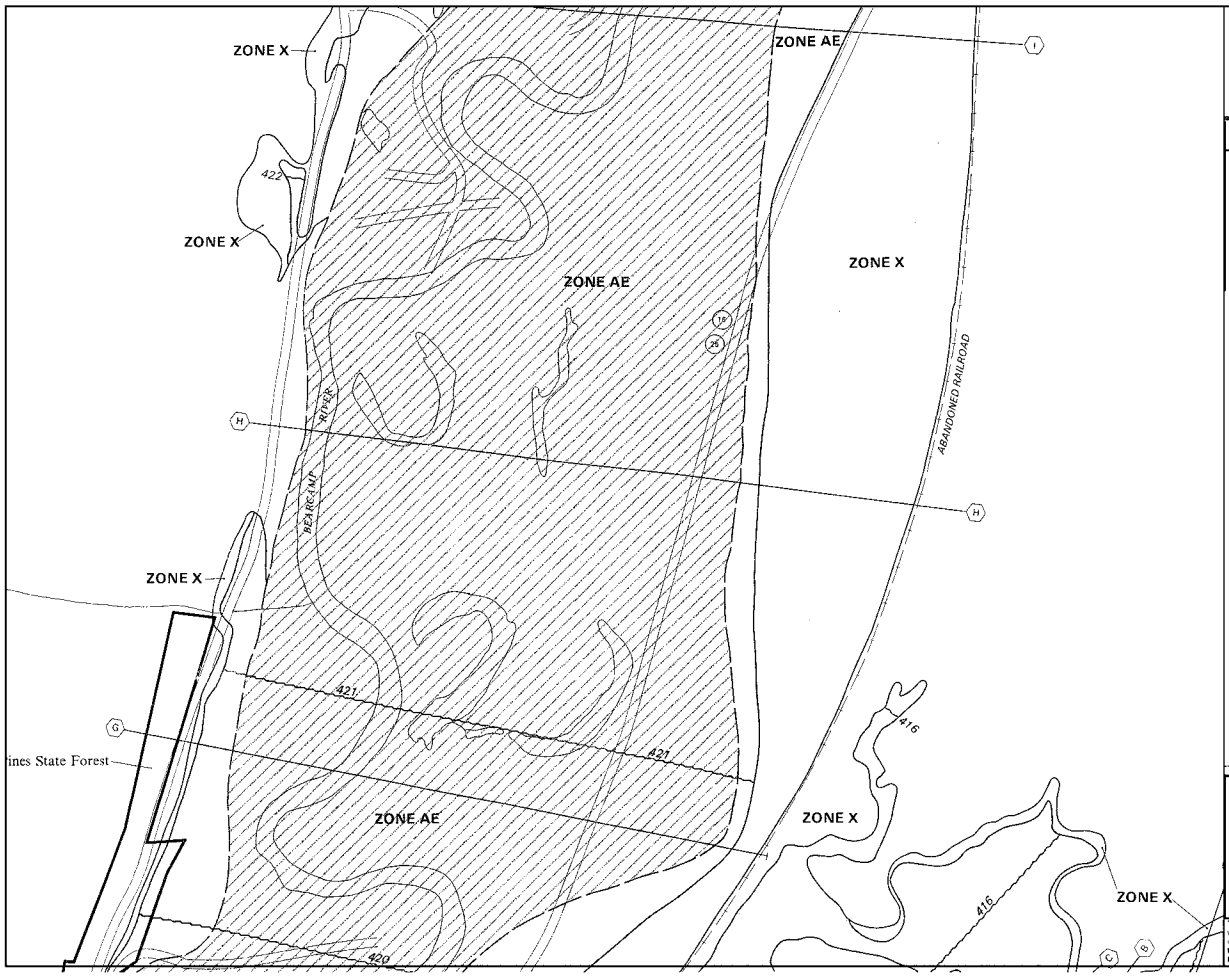
PANEL LOCATION

COMMUNITY-PANEL NUMBER
330016 0008 C

MAP REVISED:
JULY 3, 1995

Federal Emergency Management Agency

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



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
OSSIPEE,
NEW HAMPSHIRE
CARROLL COUNTY

PANEL 8 OF 30
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
330016 0008 C

MAP REVISED:
JULY 3, 1995

Federal Emergency Management Agency

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

Exhibit 12 – Meeting Minutes: Lovell River Floodplain

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENT

Meeting Report

DATE OF MEETING: July 3, 2014

LOCATION: NHDOT Profile Conference Room

ATTENDED BY:
NHOEP Floodplain Management Program – Jennifer Gilbert
NHDOT – Jennifer Reczek, Jason Tremblay, Christine Perron

SUBJECT: Ossipee, 14749
Lovell River Bridge

NOTES:
The proposed project includes the replacement of the existing 58-foot Lovell River bridge on NH Route 16 and adjustments to the roadway profile to minimize overtopping of the roadway. The purpose of meeting was to determine if additional FEMA coordination or documentation would be necessary for work as proposed at this bridge.

Jennifer Reczek summarized the modeling effort for the Lovell River bridge. The latest Flood Insurance Study (FIS) information was obtained from Federal Emergency Management Agency (FEMA) and the flood discharges were utilized for the project. The HEC-2 model was imported into HEC-RAS version 4.1.0. Some features of the HEC-2 model, such as the ineffective flow area and weirs had to be input manually using the printed output of the effective model.

A. Duplicate Effective Model – FEMA Split Flows

The initial HEC-RAS run was performed using the FEMA geometry and the varied flow profiles from the HEC-2 run. The results show minor variation in the water surface elevations at the bridges. To create the DEM, the FEMA geometry was run with the upstream reach flows and the Split Flow Optimization option was used so that the quantity of discharge over the weirs could be quantified.

A comparison of the FIS and DEM river profiles shows some variation along the length of the reach; with most of the water surface elevations remaining within a half foot of the FEMA elevations. The largest variations were concentrated at the bridges. The DEM was then used as a base for rest of the hydraulic analysis. The water surface elevations at the upstream and downstream extents of the Lovell River reach are within 0.1 feet of the published FIS elevations.

B. Existing Conditions Model

The DEM was then revised to reflect the actual conditions of the site. The golf cart bridge was moved approximately 120-feet downstream to reflect its current location. The upstream and downstream bridge sections for the bridge on Route 16 crossing were also shifted and revised to reflect the section at the toe of slope, as indicated in the HEC-RAS manuals. Additionally, the Route 16 roadway surface elevations were adjusted based upon NHDOT field survey, as measured from the bridge. Based on these changes in the model, the water surface elevations increased by up to 0.3 feet upstream of Route 16 and decreased as much as 0.8 feet downstream of Route 16.

C. Replacement Bridge Waterway Analyses

A hydraulic span of 90 feet fully opens the channel at Route 16 and allows for the maximum amount of flood flow to pass beneath the bridge. By raising the roadway outside the limits of the floodway and allowing an increase in the upstream water surface less than or equal to the limit set in the FIS, a condition was achieved whereby the roadway will not overtop until some event greater than the 100-year storm event. This scenario places the roadway low point at 428.5', an increase of 2.1 feet over the existing road, and the bridge low chord at 429.4' at the south end of the new span.

A 90-foot span over the Lovell River would not require any fill in the regulatory floodway. However, raising the approach roadway would require fill in the adjacent 100-year fringe floodplain. The fill in the fringe floodplain is what causes the slight increase in upstream base flood elevation (less than or equal to the limit set in the FIS).

Jennifer Gilbert stated that additional FEMA coordination would be necessary only if there are impacts to the regulatory floodway or changes to the boundary of the floodplain or floodway due to an increase in water surface elevation above what has been calculated in the FIS. Regulations specify that there can be no fill in the floodway unless a no-rise condition can be proven. Fill in the floodplain is "allowed" and is already taken into consideration in the model with the calculated increase in water-surface elevation published in the FIS. Based on the work that is proposed, no additional coordination with FEMA is necessary and a CLOMR is not required.

CC (via email):
Attendees
David Scott, Bridge Design

Exhibit 13 – Correspondence: Floodplain Impact and Mitigation Summary

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

Victoria F. Sheehan
Commissioner

William Cass, P.E.
Assistant Commissioner

REVISED FLOODPLAIN IMPACT SUMMARY

TO (sent via email):
Mike Hicks, Army Corps of Engineers
Jennifer Gilbert, NH Floodplain Management Program

DATE: November 17, 2016

PROJECT: NHDOT Project, Ossipee 14749

SUBJECT: Floodplain/floodway impacts and revised mitigation

Project Description

The project proposes to replace three bridges from the Red List and rehabilitate 3.4 miles of NH Route 16/25, beginning approximately 600' south of Captain Lovewell Lane and ending just south of the NH Route 16/25 bridge over the Chocorua River. The bridges span the Lovell River, Bearcamp River, and Bearcamp River Relief. The Lovell River bridge replacement will require a temporary bridge, which will be constructed to the west of the existing bridge. The two Bearcamp bridges will be replaced using a new construction methodology called slide-in bridge construction, which replaces the bridges in their current location but eliminates the need for temporary bridges. The pavement rehabilitation will result in approximately a ½ inch raise in grade and will also involve guardrail and minor drainage upgrades.

Slide-in Bridge Construction will involve constructing the new superstructure on temporary supports adjacent to the existing bridge. Portions of the new piers may also be constructed while the existing bridge remains open to traffic. The road is then closed for a one-weekend period for each bridge to allow time to remove the existing bridge, complete construction of the substructure, and move the new superstructure into place.

The existing Bearcamp River Bridge is 392' long with five spans. Two of the four bridge piers are located in the river. The proposed bridge will be located on the same alignment as the existing bridge and will be 410' long with 3 spans. The new bridge will have only two piers, which will not be located in the river. The existing Bearcamp Relief Bridge is 168' long with 4 spans. The proposed bridge will be 185' with 3 spans. The new bridge abutments will be constructed behind the existing abutments of each bridge. There will be little or no grade change at the relief bridge but the elevation of the approach roadway on each side of the Bearcamp River Bridge will be raised approximately 3' to match the elevation of the new bridge. Both bridges will pass the 100-year storm event.

The Lovell River Bridge is currently a 58' single span. The proposed bridge will be a 97' single span. While the existing bridge already passes the 100-year storm, NH Route 16 south of the bridge is regularly flooded at approximately the Q10 storm. The Department has studied how to address this issue without altering the base flood elevation. By increasing the bridge length and raising the elevation of the southerly approach slightly, hydraulic modeling shows the road south of the bridge flooding at some point between the 50 and 100 year storm. The same low point in the roadway will be maintained.

The project has been reviewed with the public on several occasions, most recently at an Open House in Ossipee. A NHDOT Public Hearing will be held in late 2016 or early 2017. The NEPA review will be completed in early 2017, and permit applications will be prepared and submitted in mid to late 2017. The proposed impacts will be reviewed at least once more

with the regulatory agencies in 2017 as the design is finalized and permit applications are prepared. The project is currently scheduled to advertise in the summer of 2018, with construction starting in 2019.

Floodway Impacts

Lovell River
The project as proposed does not impact the regulatory floodway of the Lovell River.

Bearcamp River
Impacts at the Bearcamp River and Bearcamp Relief bridges are located above the elevation of the regulatory floodway of the Bearcamp River. Due to the outdated FEMA model at the Bearcamp River, hydraulic modeling was not completed for the Bearcamp bridges. Impacts to the Bearcamp floodway have been assessed based on the flood elevation used in FEMA mapping. The NH Floodplain Management Program concurred with this approach at a meeting held on October 12, 2016. Given that the low chord elevation of the new bridges will match or exceed that of the existing, and that piers will be removed and abutments will be moved back, no increase in base flood elevation is anticipated.

Floodplain Impacts

A discussion of preliminary floodplain impacts and potential mitigation was held on October 12, 2016 with the NH Floodplain Manager and Army Corps of Engineers. Since that meeting, impacts and mitigation have been refined. The numbers presented below are the most recent calculations based on the current design. The project is still in the preliminary design phase. As final design of the project progresses through 2017, these calculations may continue to change slightly. The project will be reviewed with the regulatory agencies prior to completing permit applications, at which time final calculations of floodplain impacts and mitigation will be confirmed.

The project results in impacts to the floodplain of each river:

Lovell River Floodplain: 540 CY of fill
Bearcamp River Floodplain: 655 CY of fill
Total proposed floodplain fill: 1,195 CY

Some loss of flood storage at the Lovell River is the result of raising the grade of the existing approach roadway. A hydraulic analysis was completed at the Lovell River, which confirms that the fill placed within the floodplain does not increase the water elevation beyond the limit set in the FIS.

Proposed Floodplain Mitigation

Executive Order 11988 requires federal agencies to consider alternatives that avoid adverse effects and incompatible development in floodplains. If the only practicable alternative must be located in a floodplain, federal agencies shall design or modify the action in order to minimize potential harm to or within the floodplain.

NH Route 16 is an existing roadway located within the floodplain. No areas of roadway widening or alignment shifts are proposed within the floodplain except for approximately 400 linear feet of shoulder widening along the northbound side of NH Route 16 at the Newman Drew intersection. The impact of proposed roadway rehabilitation and bridge replacement activities on the floodplain has been minimized to the greatest extent practicable. Minimization measures incorporated into the project's design include longer bridge spans and steeper-than-convention roadway slopes where feasible.

To further minimize potential harm within the floodplain, mitigation for unavoidable floodplain impacts is proposed as follows.

Design elements resulting in the removal of fill in the floodplain
Moving abutments of Lovell River bridge: -135 CY
Moving abutments of Bearcamp River and Bearcamp Relief bridges: -380 CY
Stormwater swale near Bearcamp River: -100 CY
Steepening roadway slope north of Bearcamp Relief Bridge: -100 CY
Lowering elevation of slope adjacent to Grizzley Road: -75 CY

Compensatory mitigation
Creation of flood storage area at location of temporary detour at Lovell River: -900 CY

The table below summarizes the impacts and mitigation listed above.

Floodplain	Impact (CY of fill in floodplain)	Mitigation (CY of fill removed from floodplain)
Lovell River	540	1,035
Bearcamp River	655	655
Overall Project Totals	1,195	1,690

As proposed, floodplain mitigation compensates for all floodplain impacts within the project area. Floodplain mitigation within the Lovell River floodplain compensates for impacts at a ratio of nearly 2:1. In the Bearcamp River floodplain, impacts are mitigated at a ratio of 1:1.

Conclusion

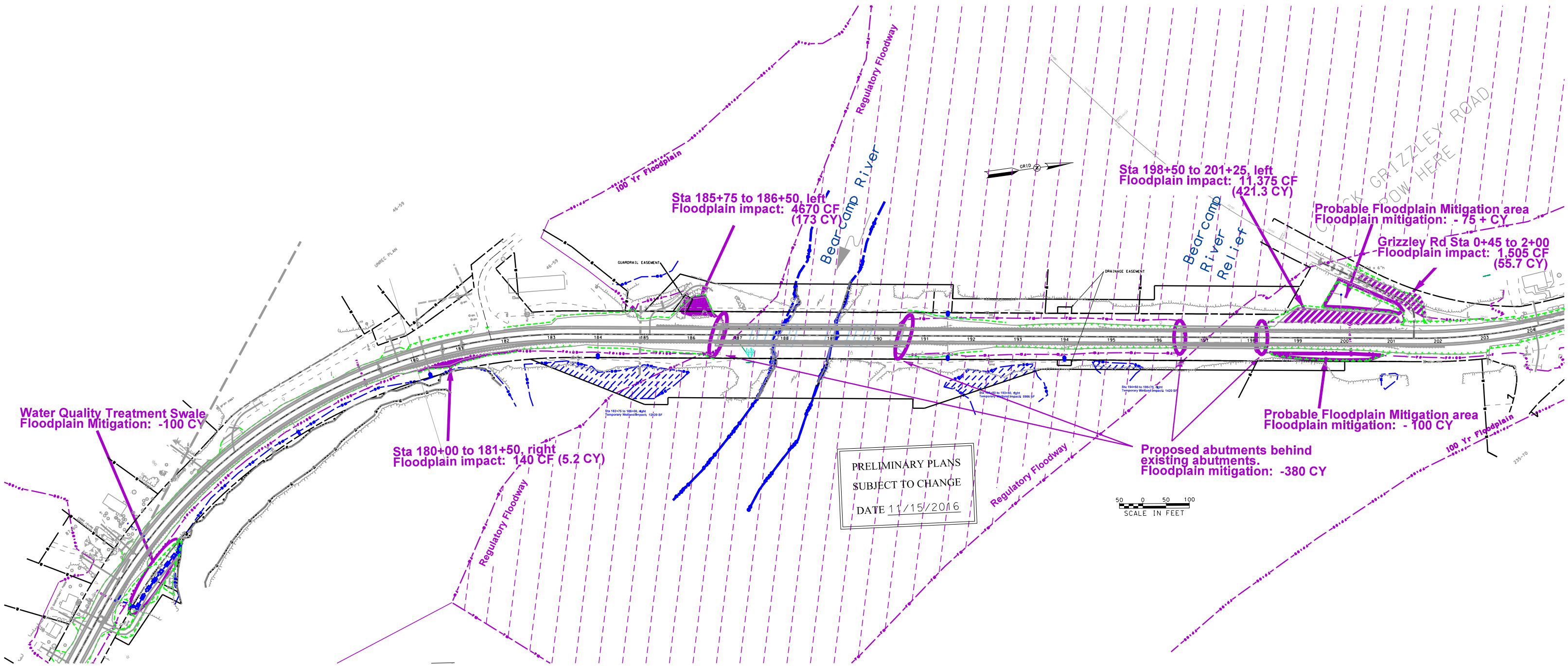
The project as proposed will not impact the regulatory floodway of the Lovell River or Bearcamp River and, therefore, will result in no rise in base flood elevation. Floodplain impacts have been minimized to the maximum extent practicable and cannot be avoided entirely due to the location of the existing roadway and bridges within the floodplain. Mitigation through design-related elements and the creation of a flood storage area is proposed in order to further minimize harm to floodplains.

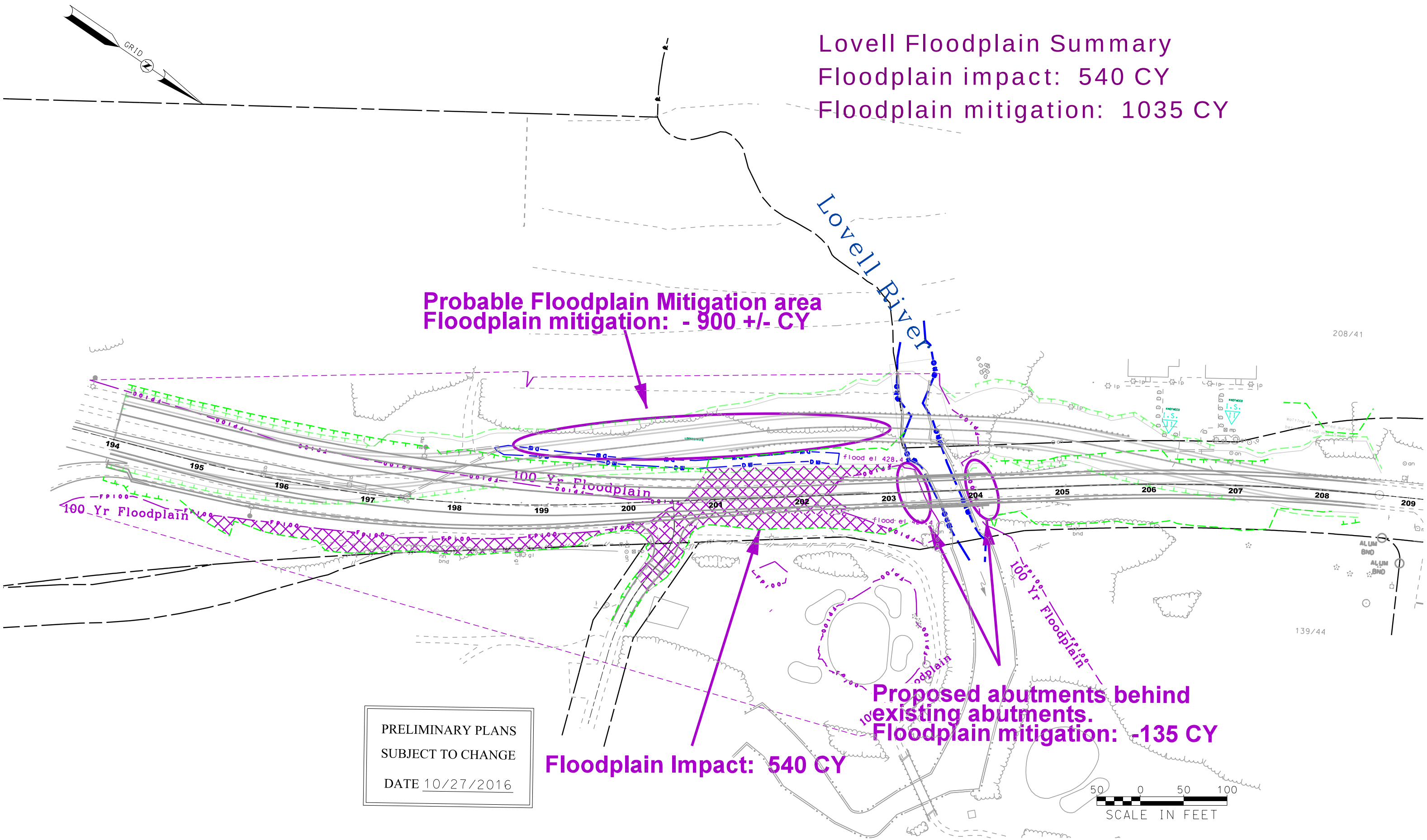
Impacts are limited to the periphery of mapped floodplains adjacent to NH Route 16 and will not adversely impact the overall functions and values of the floodplain. The project will not cause flooding in new areas and will not change the elevation of the floodplain. These impacts do not represent a significant encroachment, which is defined as impacts that result in a considerable probability of loss of human life; likely property damage resulting in substantial cost or loss of vital transportation facility; or a notable adverse impact on floodplain values (DOT Order 5650.2 on Floodplain Management and Protection).

cc:
Victoria Chase, NHDOT Project Manager
Rebecca Martin, NHDOT Environmental Manager
Jason Tremblay, NHDOT Bridge Design
Gerry Bedard, NHDOT Preliminary Design
Kirk Mudgett, NHDOT Final Design
Jamie Sikora, FHWA

Attachments:
Lovell River and Bearcamp River preliminary engineering plans
Location of flood hazard areas within project limits
FEMA flood maps

Bearcamp Floodplain Summary
Floodplain Impact: 655 CY
Floodplain Mitigation: 655 CY




Lovell Floodplain Summary
Floodplain impact: 540 CY
Floodplain mitigation: 1035 CY
Lovell River
Probable Floodplain Mitigation area
Floodplain mitigation: - 900 +/- CY
100 Yr Floodplain
100 Yr Floodplain
100 Yr Floodplain
flood el 428.4
Proposed abutments behind
existing abutments.
Floodplain mitigation: -135 CY
Floodplain Impact: 540 CY
PRELIMINARY PLANS
SUBJECT TO CHANGE
DATE 10/27/2016
50 0 50 100
SCALE IN FEET
GRID
208/41
139/44

Approximate Project Limits

Lovell River

Bearcamp River

1% Annual Chance Flood Hazard

Regulatory Floodway

NH Department of Transportation
Ossipee, 14749

Flood Hazard Areas

SCALE :	DATE :	FIGURE :
1 inch = 2,000 feet	October 2016	1

McFarland Johnson

not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was New Hampshire State Plane Zone (FIPS zone 2800). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by the National Agriculture Imagery Program. This information was photogrammetrically compiled at a scale of 1:12,000 from aerial photography dated 2009.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

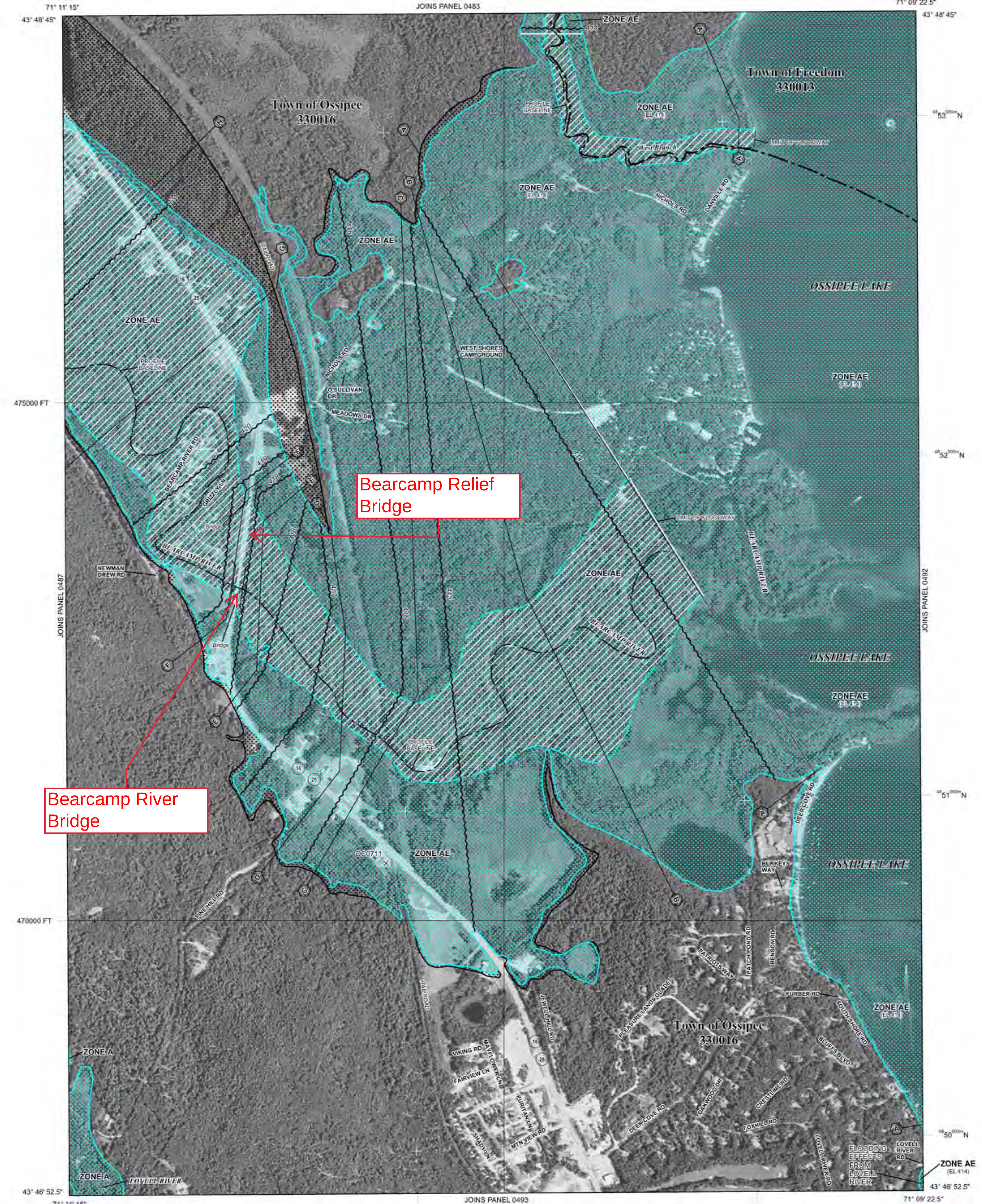
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

Map 33003C0491D



The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
~ 513 ~ Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*
*Referenced to the North American Vertical Datum of 1988
(A)—(A) Cross section line
(23)- - - -(23) Transect line
45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT 5000-foot ticks: New Hampshire State Plane Zone (FIPS Zone 2800), Transverse Mercator projection
$^{47}89^{000m}$N 1000-meter Universal Transverse Mercator grid values, zone 19
DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)
•M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
March 19, 2013

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0491D

FIRM
FLOOD INSURANCE RATE MAP
CARROLL COUNTY, NEW HAMPSHIRE
(ALL JURISDICTIONS)

PANEL 491 OF 825
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

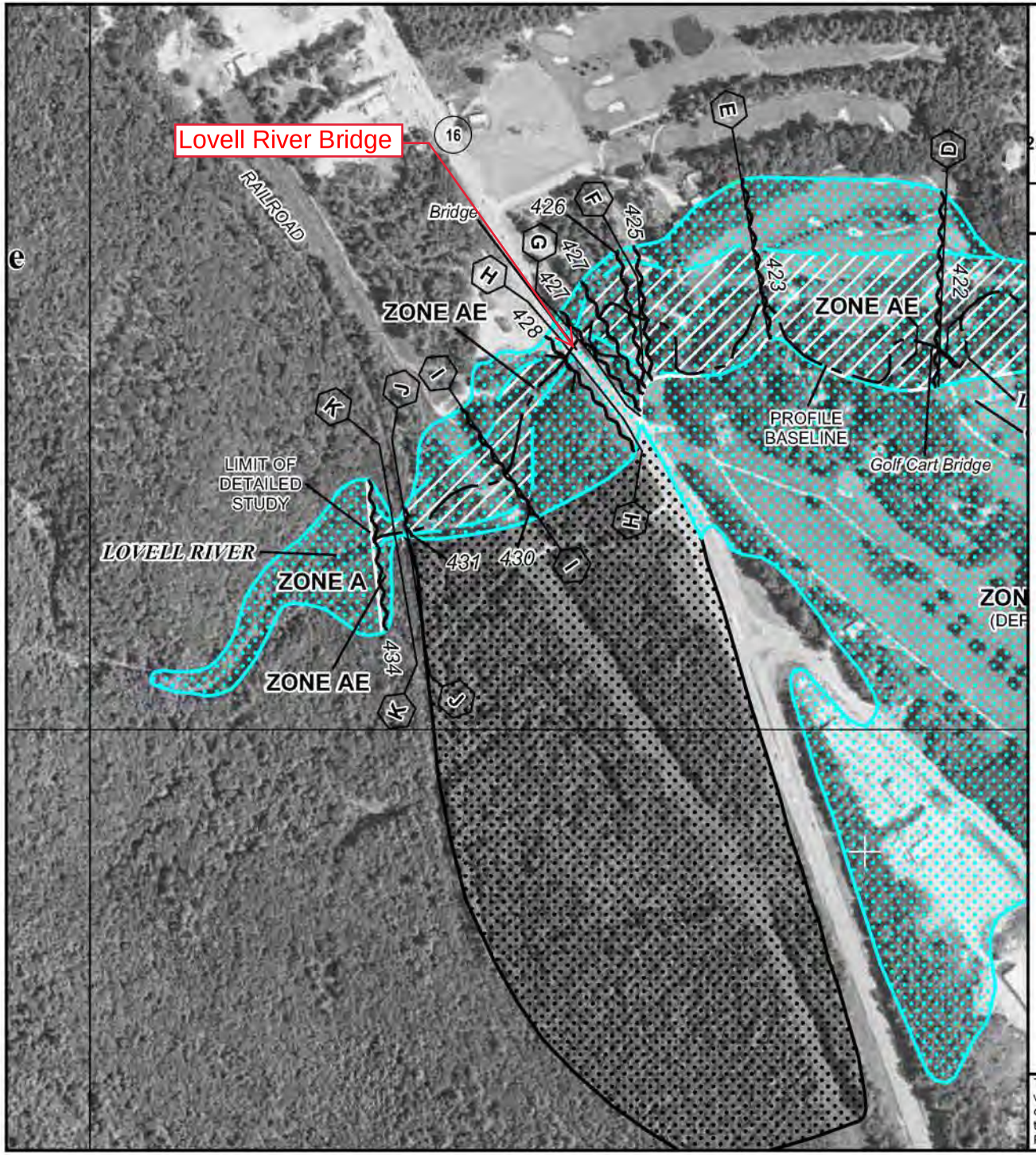
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FREEDOM, TOWN OF	330013	0491	D
OSSIPEE, TOWN OF	330016	0491	D

NATIONAL FLOOD INSURANCE PROGRAM

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
33003C0491D



MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0493D

FIRM

FLOOD INSURANCE RATE MAP

CARROLL COUNTY, NEW HAMPSHIRE

(ALL JURISDICTIONS)

PANEL 493 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSSIPEE, TOWN OF	330016	0493	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
33003C0493D

EFFECTIVE DATE
MARCH 19, 2013

Federal Emergency Management Agency

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

Exhibit 14 – Correspondence: Army Corps of Engineers

Christine J. Perron

From: Hicks, Michael C CIV USARMY CENAE (US) <Michael.C.Hicks@usace.army.mil>
Sent: Friday, November 18, 2016 12:59 PM
To: Christine J. Perron
Cc: 'Jennifer.Gilbert@nh.gov'; Martin, Rebecca; Chase, Victoria; Tremblay, Jason; Bedard, Gerard; Kirk Mudgett (Kirk.Mudgett@dot.nh.gov); Jamie Sikora
Subject: RE: Ossipee 14749 - revised summary of proposed floodplain impacts and mitigation - Bearcamp and Lovell Rivers

Christine,

We should be ok with the flood plain impacts, now.

Thanks,
Mike

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

-----Original Message-----
From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Thursday, November 17, 2016 2:55 PM
To: Hicks, Michael C CIV USARMY CENAE (US) <Michael.C.Hicks@usace.army.mil>
Cc: 'Jennifer.Gilbert@nh.gov' <Jennifer.Gilbert@nh.gov>; Martin, Rebecca <Rebecca.Martin@dot.nh.gov>; Chase, Victoria <Victoria.Chase@dot.nh.gov>; Tremblay, Jason <Jason.Tremblay@dot.nh.gov>; Bedard, Gerard <Gerard.Bedard@dot.nh.gov>; Kirk Mudgett (Kirk.Mudgett@dot.nh.gov) <Kirk.Mudgett@dot.nh.gov>; Jamie Sikora <Jamie.sikora@dot.gov>
Subject: [EXTERNAL] Ossipee 14749 - revised summary of proposed floodplain impacts and mitigation - Bearcamp and Lovell Rivers

Mike,

A revised summary of floodplain impacts and mitigation is attached. To address the concern you raised regarding the 175 CY of fill in the Bearcamp floodplain that remained after accounting for proposed mitigation, NHDOT has identified additional mitigation that can be provided near the Bearcamp Relief bridge. With this additional mitigation, proposed fill within the Bearcamp floodplain is now mitigated at a 1:1 ratio. As previously discussed, mitigation that is proposed within the Lovell River floodplain compensates for impacts within that floodplain at a ratio of nearly 2:1. Therefore, this project will result in no net increase in fill within floodplains.

Please let us know if you need any additional information.

Thanks,

Christine

Christine Perron, CWS * Senior Environmental Analyst

McFarland Johnson

53 Regional Drive * Concord, NH 03301
OFFICE: 603-225-2978 ext. 128

Blockedwww.mjinc.com <Blockedhttp://www.mjinc.com/>

Exhibit 15 – Correspondence: NHDES Drinking Water & Groundwater Bureau

Christine J. Perron

From: Susca, Paul [Paul.Susca@des.nh.gov]
Sent: Tuesday, September 06, 2011 11:30 AM
To: Kevin Nyhan
Cc: Pillsbury, Sarah
Subject: Ossipee, X-A000(490), 14749

Hello, Kevin,

I'm writing in response to your memo dated September 1, 2011 to Sarah Pillsbury regarding the subject project. Thanks for asking for our comments on this. The project area indicated in the highlighted area on the map attached to your memo overlaps with the wellhead protection areas for two community water systems, Bluffs at Ossipee Lake (1842010) and Deer Cove Water (1842060), although none of the associated wells is within 1,000 feet of the project area. Therefore, according to the DES recommendations dated November 1995, DES recommends so-called Level 2 protection measures, consisting of appropriate stormwater treatment (grassed swales, etc.) and the following non-structural measures:

- Providing local officials, the water supplier, and NHDES with site-specific information such as well location, drainage patterns, drainage structures, and protocol for immediately isolating a spill using containment booms, soil berms and shut-off valves where appropriate.
- Reducing salt application, appropriately balanced with safety considerations.

As you know the project is also located over an extensive, high-yield aquifer. My concerns with the project, therefore, also include:

- Increases in paved areas and potentially in salt use. I ask that project design be coordinated with maintenance activities to ensure no increase in salt use, and where appropriate reduced salt use.
- Potential spills of fuel and/or other fluids during construction. I ask that all appropriate measures be taken to prevent, monitor for, and quickly respond to spills during construction. Please ensure that DOT and contractors comply with best management practices as outlined in DES Fact Sheet WD-DWGB-22-6 (see link below). As you are probably aware, these practices are required throughout the state regardless of whether high-value aquifers or other important groundwater resources are present.

http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/documents/dwgb-22-6.pdf

Again, thanks for the opportunity to comment on this project.

Paul Susca
Supervisor - Planning, Protection & Assistance
Drinking Water and Groundwater Bureau
New Hampshire Department of Environmental Services
PO Box 95
Concord NH 03302-0095
(603) 271-7061
(603) 271-0656 (fax)

Exhibit 16 – Correspondence: NH Fish & Game Department

Christine J. Perron

From: Martin, Rebecca [Rebecca.Martin@dot.nh.gov]
Sent: Thursday, November 03, 2016 12:27 PM
To: Magee, John
Cc: Christine J. Perron
Subject: RE: Ossipee 14749: NHB review: NHB15-1905
Attachments: Re: Ossipee 14749: NH DOT Essential Fish Habitat Consultation; RE: Ossipee 14749: NH DOT Essential Fish Habitat Consultation

Hi John,

We have received the results of the EFH assessment for the Bearcamp River. NOAA has concurred that the proposed project would have minimal adverse effect on EFH for Atlantic salmon in the Bearcamp River.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
Rebecca.Martin@dot.nh.gov

From: Magee, John [mailto:john.magee@wildlife.nh.gov]
Sent: Monday, March 14, 2016 1:42 PM
To: Rebecca A. Martin
Cc: Christine Perron
Subject: RE: Ossipee 14749: NHB review: NHB15-1905

Thank you Rebecca. It sounds like the very short time needed to remove the existing bridge and put in place the new bridge will reduce any potential impacts to migrating fish.

John

John Magee
Fish Habitat Biologist
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301
P 603-271-2744
F 603-271-1438

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Monday, March 14, 2016 1:37 PM
To: Magee, John
Cc: Christine Perron
Subject: RE: Ossipee 14749: NHB review: NHB15-1905

Good afternoon John,

Thank you for the information. I doubt the major work would end up being during the summer due to traffic issues with tourists using the roadway and preventing summer closures. This is an interesting project because an Accelerated Bridge Construction method is being proposed, a bridge slide-in. Essentially the new bridge will be constructed next to the existing structure and once complete during a weekend closure the old bridge would be taken down and the new one would be slid into place. We will be working with McFarland Johnson for the environmental review of this project (Christine Perron is copied on this message). We have begun coordination with NOAA regarding EFH and we will copy you when we prepare the EFH assessment.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Magee, John [mailto:john.magee@wildlife.nh.gov]
Sent: Thursday, March 03, 2016 10:28 AM
To: Rebecca A. Martin
Subject: RE: Ossipee 14749: NHB review: NHB15-1905

Hi Rebecca. Thanks for your patience; it took a few days to make sure our regional fisheries biologists could provide information on this. We recommend the work be completed before September 1. Is that possible? Our concern is that we would like to reduce impacts to migrating salmonids (brook trout and landlocked salmon in particular) that are known to travel through that area of the River in late September and October to spawn upstream.

Thank you,

John

John Magee
Fish Habitat Biologist
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301
P 603-271-2744
F 603-271-1438

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Friday, February 19, 2016 9:47 AM
To: Magee, John
Subject: RE: Ossipee 14749: NHB review: NHB15-1905

Good morning John,

I spoke with one of the bridge designers last week. The bridges are being replaced, so there will be new abutments behind the existing abutments.

The project includes replacement of 3 bridges and approximately 3.2 miles of road rehabilitation on NH Route 16. The majority of the road rehabilitation will likely be reclaim, leading to a 10 inch raise in the roadway, with areas of full box reconstruction at the bridges and in the area of the roadway near the Bearcamp River that is depicted on the Flood Insurance Rate Map (FIRM) as being within the floodway. The project limits are from south of the Lovell River bridge that will be replaced, to the bridge over the Chocorua, that will not be included in the project.

The Lovell River Bridge replacement will be a standard bridge replacement with a temporary bridge constructed west of Route 16. The west side of the roadway was selected because the state has right-of-way in this area and the golf course is located on the east side of the roadway. The Lovell bridge is adjacent to a portion of roadway that currently experiences frequent flooding (approximately at a 10 year storm). Therefore, the roadway is being elevated in this area by approximately 2 feet. The flooding will not be eliminated, but will be less frequent (approximately at a 50 to 100 year event). The span is now 58’ and the new span will be approximately twice as long. The goal of the design was to find a balance between reducing the roadway flooding and avoiding creation of a situation that caused flooding in other areas in the floodplain.

The Bearcamp River bridge and the Bearcamp flood relief bridge are proposed to be completed with an accelerated bridge construction method, a bridge slide. The new bridges will be built in parallel to the existing bridge. Over the

course of two weekend closures for 60 hours each, the existing bridges will be demolished and the new bridges will be slid in place. This will be the first project for NH DOT with bridge slide-ins. The method was selected because it reduces impacts and costs less than a traditional approach. Rehabilitation of the bridges was considered, but due to their current state of disrepair, almost the entirety of the bridges would need to be replaced. The area east of Route 16 has several wetlands and utilities that would be heavily impacted if a temporary or permanent divergence in this direction was selected. The area west of Route 16 would have many right of way and business impacts. The bridge slide construction method reduces impacts and costs less than a traditional approach. The Bearcamp River bridge is a 5 span IBC bridge and is around 392' long and 28' wide, the proposed replacement will be similar in length, but 3 spans and 34' wide. This will mean no more piers in the river after the replacement. The Bearcamp River Relief bridge is a 4 span IBC bridge that is 168' long and 28' wide, the proposed replacement will be slightly longer, 185' and 34' wide and 3 spans.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Magee, John [mailto:john.magee@wildlife.nh.gov]
Sent: Monday, February 01, 2016 12:04 PM
To: Rebecca A. Martin
Subject: RE: Ossipee 14749: NHB review: NHB15-1905

Hi Rebecca. Is any work to the abutments planned? Specifically, any work that could potentially affect the Rivers' substrate?

There are wild landlocked salmon and wild brook trout in the Lovell River, and the Bearcamp River has landlocked salmon, brown trout and wild brook trout.

Thank you,

John

John Magee
Fish Habitat Biologist
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301
P 603-271-2744
F 603-271-1438

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Thursday, January 28, 2016 1:09 PM
To: Magee, John
Cc: Tuttle, Kim
Subject: Ossipee 14749: NHB review: NHB15-1905

Good afternoon John,

I have taken over the environmental review of a proposed NH DOT project in Ossipee on NH Route 16. The purpose of the project is to replace three red listed bridges along NH 16/25. The bridges carry NH 16/25 over the Lovell River, over the Bearcamp River and over the Bearcamp flood relief area (see attached). The roadway will also be resurfaced beginning at the Lovell River Bridge and extending north 3.2 miles to the Chocorua River Bridge in West Ossipee. The major impact areas will be at the three bridge replacement sites (see attached). The treatment for the resurfacing of the 3.2 miles of roadway has not been determined at this time, but the treatment being considered with the greatest impact would be a reclaim and a raise in the roadway by 8 inches. The project team is also proposing to replace and/or rehabilitate some of the drainage.

The NHB search did not indicate records of rare wildlife in the project area. However, coldwater fisheries are located in the project area. The Bearcamp River has been identified as Essential Fish Habitat for Atlantic Salmon. The project team is considering a standard replacement for the Lovell River Bridge, but is thinking of an accelerated bridge construction method called bridge slide for the Bearcamp and Relief bridges. In this method of construction the new bridges would be constructed next to the existing and a very short (one weekend in the spring or fall when traffic is less) closure would be utilized to remove the old bridge and slide the new one in place. As they are still in the early stages of design, any guidance you might have to assist with developing a design that is sympathetic to the EFH would be appreciated.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]
Sent: Friday, July 17, 2015 8:31 AM
To: Rebecca A. Martin
Subject: NHB review: NHB15-1905

Attached, please find the review we have completed. If your review memo includes potential impacts to plants or natural communities please contact me for further information. If your project had potential impacts to wildlife, please contact NH Fish and Game at the phone number listed on the review.

Best,
Amy

Note: Melissa Coppola is still working part-time on reviews, but I am now the reviewer at NH Natural Heritage. Please address future correspondence to me at: Amy.Lamb@dred.nh.gov
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Amy Lamb
Ecological Information Specialist
NH Natural Heritage Bureau
DRED - Forest & Lands
172 Pembroke Rd
Concord, NH 03301
603-271-2215 ext. 323
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

Exhibit 17 – Correspondence: National Marine Fisheries Service

Christine J. Perron

From: Martin, Rebecca [Rebecca.Martin@dot.nh.gov]
Sent: Monday, October 31, 2016 9:02 AM
To: Christine J. Perron
Subject: FW: Ossipee 14749: NH DOT Essential Fish Habitat Consultation

Hi Christine,

I am back, we had a lovely and very busy time! I am slowly working my way through email. We have received a response from Mike Johnson, as expected, minimal adverse effect on EFH. Thank you for all of your hard work!

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Mike R Johnson - NOAA Federal [mailto:mike.r.johnson@noaa.gov]
Sent: Monday, October 17, 2016 1:22 PM
To: Martin, Rebecca
Subject: Re: Ossipee 14749: NH DOT Essential Fish Habitat Consultation

Rebecca,

Based upon the information in the EFH assessment, we have determined that the proposed project would have minimal adverse effect on EFH for Atlantic salmon. In addition, the project area will have minimal effects on other NOAA-trust resources, including those covered under the Fish and Wildlife Coordination Act. Therefore, we have no EFH conservation recommendations to provide to you for this action pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act.

Thanks,

Mike

On Wed, Oct 12, 2016 at 10:27 AM, Martin, Rebecca <RMartin@dot.state.nh.us> wrote:

Good morning Mike,

Please find attached the Essential Fish Habitat (EFH) Assessment Worksheet for the Ossipee 14749 project completed on behalf of FHWA in accordance with the Magnuson-Stevens Fishery Conservation and Management Act. Please let me know if any additional information might be of assistance for your review of the assessment.

I will be on leave for two weeks beginning this Friday, October 14th, if you require additional information during my absence, please contact the Bureau of Environment Project Management Section Chief, Ron Crickard, copied on this email.

Thank you,

Rebecca Martin

Environmental Manager

NH DOT Bureau of Environment

7 Hazen Drive

Concord, NH 03302

(603)271-6781

rmartin@dot.state.nh.us

From: Mike R Johnson - NOAA Federal [mailto:mike.r.johnson@noaa.gov]
Sent: Wednesday, February 03, 2016 8:36 AM
To: Rebecca A. Martin
Subject: Re: Ossipee 14749: NH DOT Essential Fish Habitat Consultation Request

Rebecca,

Thanks for contacting me about the proposed project. I'm not sure why the link to the EFH tables wasn't working. I tried it this morning and it opened without problems. It's possible there was maintenance on the site when you tried, so please try again and see if it's working now. If not, let me know and I'll contact our IT folks who maintain the site (http://www.greateratlantic.fisheries.noaa.gov/hcd/efhtables.pdf).

Regarding the project, based on what you have said we likely would not have concerns about the impacts to EFH. However, since it is technically in a river that has been identified as EFH for Atlantic salmon, the FHWA will need to conduct an EFH consultation and prepare an assessment. I'm guessing that means NH DOT will do this on behalf of FHWA. However, because the impacts are minimal and the net effects will likely be positive, the consultation should be abbreviated and the detail, length, etc. of the assessment should be commensurate with the potential impacts. If you haven't already, go to our regional Habitat homepage where there are links to information on contents of an EFH assessment

(e.g., http://www.greateratlantic.fisheries.noaa.gov/habitat/efh/efhassessment.html). You can forward the assessment to me and I will provide a response via email.

Please let me know if you have any trouble accessing the website links or questions about the consultation.

Thanks,

Mike

On Tue, Feb 2, 2016 at 2:43 PM, Rebecca A. Martin <RMartin@dot.state.nh.us> wrote:

Good afternoon Mr. Johnson,

I am an Environmental Manager with the NH Department of Transportation and I am writing regarding the environmental review of a proposed NH DOT project in Ossipee on NH Route 16. The project does include federal funding from FHWA. The purpose of the project is to replace three red listed bridges along NH 16/25. The bridges carry NH 16/25 over the Lovell River, over the Bearcamp River and over the Bearcamp Flood Relief area. Coldwater fisheries are located in the project area. The Bearcamp River has been identified as Essential Fish Habitat for Atlantic Salmon as a Saco River Tributary. NH Fish and Game has informed me that there are wild landlocked salmon and wild brook trout in the Lovell River, and the Bearcamp River has landlocked salmon, brown trout and wild brook trout.

I had intended to submit the EFH Assessment Worksheet, but there seems to be a problem with the link to EFH tables: http://www.greateratlantic.fisheries.noaa.gov/hcd/efhtables.pdf

"404 - File or directory not found.

The resource you are looking for might have been removed, had its name changed, or is temporarily unavailable."

Do you have access to the new location of the EFH tables? The Guide to Essential Fish Habitat Descriptions is currently pointing to the above link: http://www.greateratlantic.fisheries.noaa.gov/hcd/list.htm

The major project impact areas will be at the three bridge replacement sites (see attached). The one that I expect to be of most interest is the Bearcamp River Bridge.

The current bridge is a 400’ long bridge with 5 spans. Two of the bridge piers are in the River. The proposed replacement is a 3 span structure that will be a slightly longer span to accommodate constructing the new abutments behind the existing. None of the piers will be in the River. An Advanced Bridge Replacement strategy is planned for this bridge with a bridge slide-in. For this method of construction the new bridge will be built adjacent to the existing bridge. During a brief road closure (~60 hours) the new bridge will be slid in place and the old bridge will be removed. The exact methodology has not been refined at this time, but my understanding is that there may be temporary impacts in the River for temporary piers to facilitate the slide-in and for removal of the existing piers.

The Bearcamp Relief Bridge is over an area that it typically dry. I do not anticipate any EFH concerns with this bridge replacement. The current bridge is 185’ long and the proposed replacement will be a slightly longer span to accommodate constructing the new abutments behind the existing. This bridge is also proposed to be replaced using the bridge slide-in method.

The Lovell bridge replacement will be a traditional method of bridge replacement with a temporary bridge and diversion to the west of Route 16. Due to flooding of the roadway in this area, the bridge will be lengthened and the roadway profile will be adjusted to minimize flooding. The current span is 58’ and the proposed span is 100’. This will widen the span and allow a more natural condition and for water to pass more freely.

In addition to the bridge replacements, the roadway will also be resurfaced beginning at the Lovell River Bridge and extending north 3.2 miles to the Chocorua River Bridge in West Ossipee. The treatment for the resurfacing of the 3.2 miles of roadway has not been determined at this time, but the treatment being considered with the greatest impact would be a reclaim and a raise in the roadway by 8 or 9 inches. The project team is also proposing to replace and/or rehabilitate some of the drainage.

The project will remove piers in the Bearcamp River, leading to a reduction in obstructions in the waterway. Although temporary impacts to Essential Fish Habitat are expected, the project is expected to have an overall positive impact on the habitat and allow the River to resume a more natural condition. The project will require a SWPPP and all appropriate Best Management Practices will be employed to reduce potential for surface water impacts. Please let me know if any additional information about the project might be useful at this time.

Thank you,

Rebecca Martin

Environmental Manager

NH DOT Bureau of Environment

Exhibit 18 – NH Natural Heritage Bureau DataCheck Results Letter

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Stephen Hoffmann
53 Regional Drive
Concord, NH 03301

From: Amy Lamb, NH Natural Heritage Bureau
Date: 9/19/2016 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB16-2793 Town: Ossipee Location: 14749 NH Route 16, Lovell River Bridge, Bearcamp River Bridge, and Bearcamp Relief Bridge

Description: 14749 - This project proposes to replace bridges 137/299 (NH Route 16 over Bearcamp River relief), 137/299 (NH Route 16 over Bearcamp River), and 152/268 (NH Route 16 over Lovell River). Work also includes pavement and roadway rehabilitation from bridge 152/268, north to bridge 132/234 (NH Route 16 over Chocorua River), a distance of approximately 3.7 miles.

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

Comments: This is a follow-up to NHB15-1905. Please continue to coordinate with NHB.

Natural Community	State[1]	Federal	Notes
Kettle hole bog system	--	--	These systems are extremely stagnant, and as such are characterized by low nutrient levels, relatively high acidity levels, and accumulations of peat. The primary threats to this system are changes to its hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
Medium level fen system	--	--	Level fens are stagnant, and as such are characterized by low nutrient levels, relatively high acidity levels, and accumulations of peat. The primary threats to this community are changes to its hydrology (especially that which causes pooling), increased nutrient input from stormwater runoff, and sedimentation from nearby disturbance.
Red maple floodplain forest	--	--	Threats are primarily changes to the hydrology of the river, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.
Silver maple - false nettle - sensitive fern floodplain forest	--	--	Threats are primarily changes to the hydrology of the river, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.

Memo

Temperate minor river floodplain system	--	--	Threats are primarily changes to the hydrology of the river, land conversion and fragmentation, introduction of invasive species, and increased input of nutrients and pollutants.

Plant species	**State[1]**	**Federal**	**Notes**
Sensitive species	T	T	Please contact NH Natural Heritage (271-2215 x 323) if project impacts could occur in the area shown on the map.

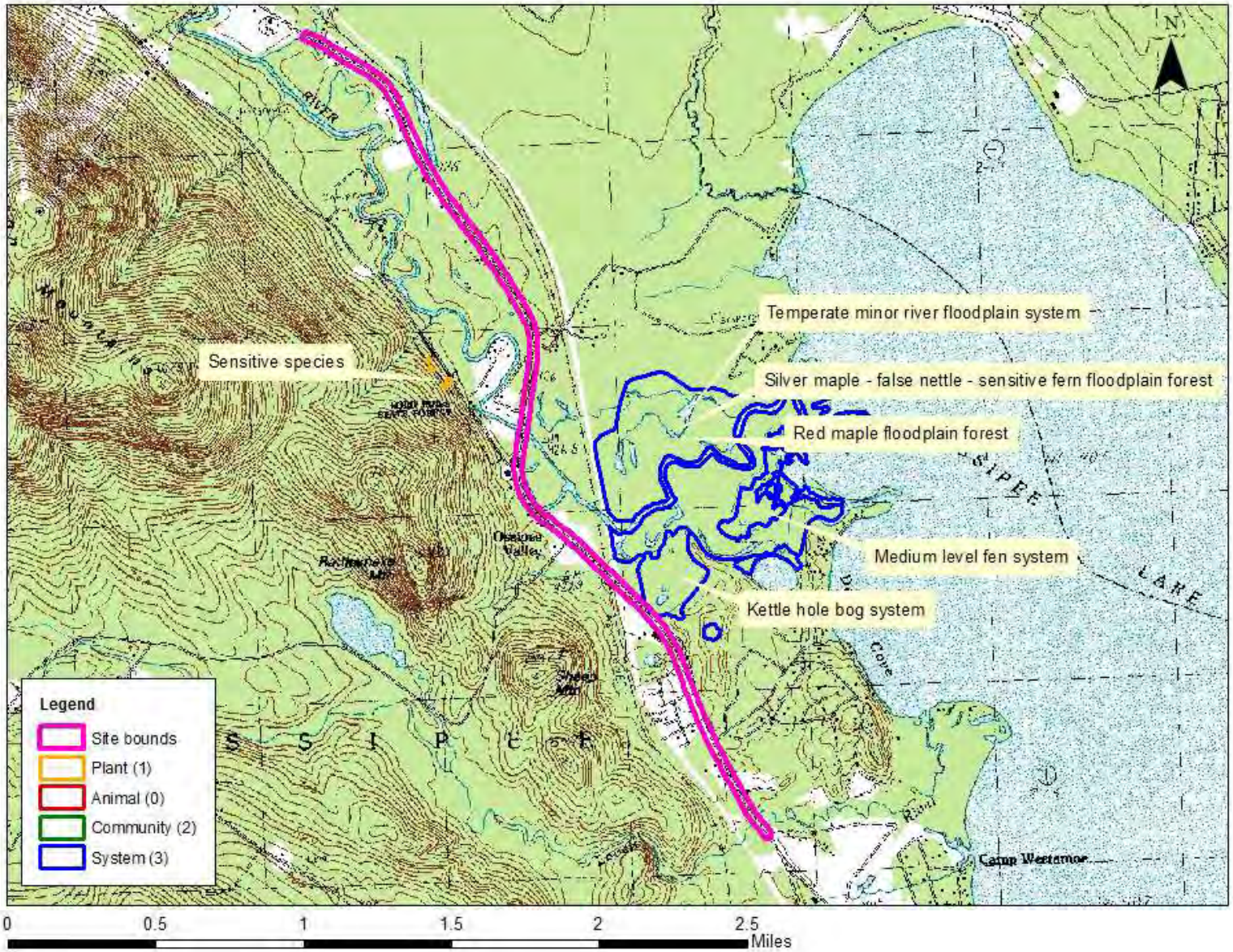
[1]Codes: "E" = Endangered, "T" = Threatened, “SC” = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than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

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 Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Rd.
Concord, NH 03301

NHB16-2793


Temperate minor river floodplain system
Sensitive species
Silver maple - false nettle - sensitive fern floodplain forest
Red maple floodplain forest
Medium level fen system
Kettle hole bog system
Legend
Site bounds
Plant (1)
Animal (0)
Community (2)
System (3)
0
0.5
1
1.5
2
2.5
Miles

New Hampshire Natural Heritage Bureau - System Record

Kettle hole bog system

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2010: Area 1: The large, western-most kettle is more minerotrophic than expected for this type of system. An aquatic bed occurs in the small pond. Large cranberry - short sedge moss lawn intermixes with aquatic bed along the immediate pond edge. Beyond the moss lawn lies a 15 meter-wide band of Sphagnum rubellum - small cranberry moss carpet. Landward of the moss carpet occurs bog rosemary - sedge fen, wire sedge - sweet gale fen, and highbush blueberry - sweet gale - meadowsweet shrub thicket. The north half of the kettle supports a buttonbush shrubland, highbush blueberry - sweet gale - meadowsweet shrub thicket, and sedge meadow marsh. Area 3: The small, southeastern kettle supports a leatherleaf - sheep laurel shrub bog. Area 2: The easterly-most of the three kettles was not visited during this survey. 1998: Area 1: A diverse, moderate-sized peatland around a central kettle or kettle-like pond. The fen system ranges from very acidic at interior pond-border communities (pH 4.1) typical of kettle hole peatlands to weakly acidic border thickets and sedge fens along the upland border with higher pHs (5.1) that indicate more flow-through of runoff in the border region. The pond is bordered by ca. 6 acres of mud-bottom, moss lawn and robust sedge-moss lawn communities. These communities are surrounded by a ring of hairy-fruited sedge - sweet gale fen that may shunt upland runoff towards the marshy north end of the wetland where it drains at high water onto the floodplain forest below. The rare Sphagnum angermanicum was documented in this peatland by Dick Andrus in 1999, one of only 2 sites in the state for this globally rare peat moss. A culvert under the road drains into the kettle from the large (fertilized) grassy lawn area across the road, which may constitute a long-term threat to the peatland's ecological integrity.

General Area: 2010: Three kettles occurring in outwash sands associated with Ossipee Lake. Adjacent upland communities include mixed pine - red oak woodland and stands of white pine. 1998: The Bearcamp River drains the south side of the White Mountains, emptying into the west side of Ossipee Lake at the base of the Ossipee Mtns. The river delta consists of a broad area of floodplain communities surrounded by post-glacial deltaic deposits. These sand plain deposits support a mosaic of pine forests and several peatlands, probably underlain by fine deltaic or lake-bottom sediments. Sand plain pond shore and hairy-fruited sedge - sweet gale fen communities occur along the lakeshore just south of the mouth of the river.

General Comments:
Management Comments:

Location

Survey Site Name: Bearcamp River Delta
Managed By: Bearcamp Memorial Forest

County: Carroll
Town(s): Ossipee
Size: 33.5 acres Elevation: 410 feet

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

Directions: 2010: Driving north on Rte. 16 in Ossipee, turn right (east) on Jewell Hill Road. Trailhead lies immediately to left (north side of Jewell Hill Road). Park on road edge by fire station parking lot.

1998: On NE side of Rte. 16 ca. 3.5 miles north of junction with Rte. 25 east.

Dates documented

First reported:	1998-07-07	Last reported:	2010-08-26

New Hampshire Natural Heritage Bureau - System Record

Medium level fen system

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Rare or uncommon

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:

Detailed Description: 2010: This fen is dominated by wire sedge - sweet gale fen. Dominants may be wire sedge (Carex lasiocarpa), bottle-shaped sedge (Carex utriculata), or a mixture of both. Other communities include large cranberry - short sedge moss lawn, floating marshy peat mat, meadowsweet - robust graminoid sand plain marsh, and highbush blueberry - winterberry shrub thicket. 1998: Hairy-fruited sedge - sweet gale fen.

General Area: 2010: On sediments associated with the Bearcamp River delta and Ossipee Lake. Adjacent upland communities include mixed pine - red oak woodland and stands of white pine. 1998: The Bearcamp River drains the south side of the White Mountains, emptying into the west side of Ossipee Lake at the base of the Ossipee Mtns. The river delta consists of a broad area of floodplain communities surrounded by post-glacial deltaic deposits. These sand plain deposits support a mosaic of pine forests and several peatlands, probably underlain by fine deltaic or lake-bottom sediments. Sand plain pond shore community also occurs along the lakeshore just south of the mouth of the river.

General Comments:
Management Comments:

Location

Survey Site Name: Bearcamp River Delta
Managed By: Bearcamp Memorial Forest

County: Carroll
Town(s): Ossipee
Size: 27.7 acres Elevation: 410 feet

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

Directions: 2010: Driving north on Rte. 16 in Ossipee, turn right (east) on Jewell Hill Road. Trailhead lies immediately to left (north side of Jewell Hill Rd). Park on road edge by fire station parking lot. 1998: NE of Rte. 16, ca. 3.5 miles north of junction with Rte. 25 east. On the western shore of the cove just south of the mouth of the Bearcamp River, and up to ca. 0.3 miles inland.

Dates documented

First reported: 1998-07-07 Last reported: 2010-08-26

New Hampshire Natural Heritage Bureau - Community Record

Red maple floodplain forest

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2010: Red maple (Acer rubrum) dominates the canopy. All three variants of this community type occur at this site. White pine (Pinus strobus) and red oak (Quercus rubra) mix with red maple on the higher floodplain. Common shrubs and herbs are poison ivy (Toxicodendron radicans), Virginia creeper (Parthenocissus quinquefolia), sensitive fern (Onoclea sensibilis), inflated sedge (Carex intumescens), deertongue (Dichanthelium clandestinum), sessile-leaved bellwort (Uvularia sessilifolia), Canada mayflower (Maianthemum canadense), and several others. 1998: Both low/medium and medium/high variants of red maple floodplain forest occur at this site. Specific vegetation was documented at five observation points in an area south of the river. One is a floodplain thicket dominated by Vaccinium corymbosum (highbush blueberry), Viburnum dentatum var. lucidum (northern arrow-wood), Alnus serrulata (smooth alder), and occasional canopy species including Acer saccharinum (silver maple), and Prunus serotina (black cherry). Onoclea sensibilis (sensitive fern) is the dominant herb. It sits on an elevated levee/bank adjacent to the river. The second point observed is transitional between thicket and forest, with dominant species from both. The third and fourth points are closed canopy medium and low floodplain forests, with Quercus rubra (red oak) dominant in the third point and red maple and silver maple dominant in the fourth. Osmunda regalis var. spectabilis (royal fern) is dominant under the red oak canopy, while sensitive fern is dominant under the maple floodlplain. The fifth point observed is an upland/high terrace floodplain forest with a higher species richness, red oak, black cherry, red maple, and white pine in the overstory, and a mix of herbs and ferns in the herbaceous layer.

General Area: 2010: This community occupies the medium to high forested areas on the active floodplain and is one of several communities associated with the exemplary temperate minor river floodplain system. 1998: Mouth of the Bearcamp River along the western shore of Ossipee Lake. This site is primarily high terrace forest with lower terraces in the cradle of meanders, and closer to the river mouth. Vernal pools, sloughs and other saturated soil wetlands are common throughout. Along the southern banks of the river, the Bearcamp Memorial Forest offers substantial buffer to the floodplain areas, but it was uncertain how much forest management (i.e. logging) is occurring on the site. The north side of the river appears to have more floodplain acreage.

General Comments: .

Management Comments: 1998: Recommend alerting landowners to the important floodplain character; advise careful management to protect the area.

Location

Survey Site Name: Bearcamp River Delta
Managed By: Bearcamp Memorial Forest

County: Carroll
Town(s): Ossipee
Size: 205.0 acres Elevation: 410 feet

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

Directions: 2010: Driving north on Rte. 16 in Ossipee, turn right (east) on Jewell Hill Road. Trailhead lies

immediately to left (north side of Jewell Hill Road). Park on road edge by fire station parking lot.1998: From West Ossipee, take Rte. 16/25 south about 3 miles to Bearcamp Memorial Forest sign on left. Park at gated entrance to Memorial Forest Reserve. Hike on trail east to extensive high and low floodplain within meanders near the Bearcamp River's mouth at Ossipee Lake.

Dates documented

First reported:	1998-07-15	Last reported:	2010-08-26

New Hampshire Natural Heritage Bureau - Community Record

Silver maple - false nettle - sensitive fern floodplain forest

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Good quality, condition and landscape context ('B' on a scale of A-D).
Comments on Rank:

Detailed Description: 2010: Silver maple (Acer saccharinum) dominates the canopy (canopy height 70 ft.; average dbh 11 in.; range 8-22). Scattered red maple also occurs in the canopy. Scattered shrubs in the understory are red osier dogwood (Cornus sericea), poison ivy (Toxicodendron radicans), meadowsweet (Spiraea alba var. latifolia), buttonbush (Cephalanthus occidentalis), and speckled alder (Alnus incana ssp. rugosa). Sensitive fern (Onoclea sensibilis) is the most common herb. Less frequent are royal fern (Osmunda regalis var. spectabilis), hop sedge (Carex lupulina), hog-peanut (Amphicarpaea bracteata), tussock sedge (Carex stricta), bluejoint (Calamagrostis canadensis), and several other species.

General Area: 2010: This community occupies the lowest forested areas on the active floodplain and is one of several communities associated with the exemplary temperate minor river floodplain system.

General Comments:
Management Comments:

Location

Survey Site Name: Bearcamp River Delta
Managed By: Bearcamp Memorial Forest

County: Carroll
Town(s): Ossipee
Size: 205.0 acres Elevation:

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

Directions: 2010: Driving north on Rte. 16 in Ossipee, turn right (east) on Jewell Hill Road. Trailhead lies immediately to left (north side of Jewell Hill Road). Park on road edge by fire station parking lot.

Dates documented

First reported: 2010-08-26 Last reported: 2010-08-26

New Hampshire Natural Heritage Bureau - System Record

Temperate minor river floodplain system

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Not ranked (need more information)
State:	Not listed	State:	Rare or uncommon

Description at this Location

Conservation Rank: Excellent quality, condition and landscape context ('A' on a scale of A-D).
Comments on Rank:

Detailed Description: 2010: Red maple floodplain forest is the primary forested community in the system. Also present is silver maple - false nettle - sensitive fern floodplain forest. Other communities in the system are alder - dogwood - arrowwood alluvial thicket in places along the river; buttonbush shrubland, highbush blueberry - winterberry shrub thicket, and short graminoid - forb meadow marsh/mudflat in oxbows; and aquatic bed.

General Area: 2010: Broad floodplain forest associated with the Bearcamp River delta. Immediately adjacent to two other exemplary systems: kettle hole bog system and medium level fen system.

General Comments:
Management Comments:

Location

Survey Site Name: Bearcamp River Delta
Managed By: Bearcamp Memorial Forest

County: Carroll
Town(s): Ossipee
Size: 205.0 acres Elevation:

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

Directions: 2010: Driving north on Rte. 16 in Ossipee, turn right (east) on Jewell Hill Road. Trailhead lies immediately to left (north side of Jewell Hill Road). Park on road edge by fire station parking lot.

Dates documented

First reported: 1998-07-15 Last reported: 2010-08-26

Exhibit 19 – US Fish & Wildlife Service Official Species List

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

Consultation Code: 05E1NE00-2016-SLI-0839 January 25, 2016
Event Code: 05E1NE00-2016-E-01114
Project Name: Ossipee 14749

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). 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: Ossipee 14749

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-0839
Event Code: 05E1NE00-2016-E-01114

Project Type: TRANSPORTATION

Project Name: Ossipee 14749
Project Description: The purpose of this project is to replace three red listed bridges along NH 16/25. The bridges carry NH 16/25 over the Lovell River, over the Bearcamp River and over the Bearcamp flood relief area. The roadway will also be resurfaced beginning at the Lovell River Bridge and extending north 3.2 miles to the Chocorua River Bridge in West Ossipee.

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.

Project Location Map:

Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Carroll, NH

United States Department of Interior
Fish and Wildlife Service

Project name: Ossipee 14749

Endangered Species Act Species List

There are a total of 2 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.

Flowering Plants	**Status**	**Has Critical Habitat**	**Condition(s)**
Small Whorled pogonia *(Isotria medeoloides)*	Threatened		
Mammals			
Northern long-eared Bat *(Myotis septentrionalis)*	Threatened		

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Exhibit 20 – USFWS Programmatic Consultation Project Submittal Form

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 May 2016

In order to use the range-wide programmatic consultation to fulfill Endangered Species Act consultation requirements, transportation agencies must use this submittal form (or a comparable Service approved form) to provide project-level information for all actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate U.S. Fish and Wildlife Service (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: 11/3/2016

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: NH DOT
This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency.

- Name: Rebecca Martin 11/3/2016
- Title: Environmental Manager

- Phone: 603-271-6781
- Email: Rebecca.Martin@dot.nh.gov

4. Consultation code[1]: 05E1NE00-2016-SLI-0839

5. Project name(s): Ossipee 14749

6. Project description:
Please attach additional documentation or explanatory text if necessary

The project proposes to replace three bridges and rehabilitate 3.4 miles of NH Route 16/25. The bridges span the Lovell River, Bearcamp River, and Bearcamp River Relief. The bridge over the Lovell River will be replaced on the same alignment and a temporary bridge will be installed upstream to maintain traffic during construction. The bridges over the Bearcamp River and Bearcamp Relief will be replaced on the same alignment using slide-in bridge construction, which involves building the new bridge next to the existing bridge, closing the road for a 60-hour period per bridge, and sliding the new bridge into place. Pavement treatment proposed will result in a ½" raise in roadway, so widening slopes will not be necessary. The only exception to this is the slope widening that will be necessary at the Lovell River and Bearcamp River bridges to match the approach roadway into the new bridges that will be installed at a higher elevation. The project will include replacement of 2 culverts. Tree clearing will be necessary to complete the proposed work

7. Project location (county, state):
If not delineated in IPaC, attach shape files

8. For other species from IPaC official species list:

✓ No effect – project(s) are inside the range, but no suitable habitat (see additional information attached). A number of field reviews have not resulted in any locations of

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):

[1] 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 but no suitable forested bat habitat; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

No effect – project(s) do not involve any construction activities (e.g., bridge 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) includes maintenance, alteration, or demolition of bridge(s)/structure(s) and indicate(s) no signs of bats from results of a bridge/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 range and suitable bat habitat is present, 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) within suitable bat habitat that involve maintenance of existing facilities (e.g., rest areas, stormwater detention basins) but do not remove or alter the habitat (e.g., mowing, brush removal). *submittal form complete*

NLAA – project(s) within 300 feet of existing road/rail surfaces in areas that contain suitable habitat but do not remove or alter the habitat (e.g., mowing, brush removal). *submittal form complete*

NLAA – project(s) limited to slash pile burning. *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. *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)[2]:

    Acres of trees proposed for removal: 2.64 acres

    b. Bridge/Structure Work Projects

    Proposed work: Bridge replacement- 3

    Timing of work: Year round

    Evidence of bat activity on/in bridge/structure? Y/N N- but no formal inspection was complete, not necessary per 4(d)

    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:

    Verify that all applicable lighting minimization measures will be implemented: ☐

    c. Other (please explain)

[2] Coordinate with the local Service Field Office for appropriate dates.

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: Undecided, but likely during active season

Acres of trees proposed for removal: 2.64 acres

b. Bridge/Structure Work Projects

Proposed work: Removal and replacement of 3 bridges (Bearcamp River, Be

Timing of work: Year round, including the active season.

Verify no signs of a colony: ☑ A formal inspection was not completed, but no evidence of bat utilization was noted during visits.

Verify that work wiill not alter roosting potential in any way: ☐
The bridges will be removed and replaced.

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented[3] unless P/A surveys and/or bridge assessments document that the species are not likely to be present:

General AMM 1(required for all projects):

[3] See AMMs Fact Sheet (Appendix C) for more information on AMMs

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): ☐ N/A - no Indiana Bat habitat in NH.
Tree Removal AMM 6 (required for LAA): ☐ N/A
There is not I-bat habitat in NH.

Tree Removal AMM 7 (required for LAA):

Bridge AMM 1: ☐
Bridge AMM 2 (required for all projects during active season): ☐ Not required- refer to 4(d) rule.
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): ☑
The bridges are being replaced. The new bridges are expected to provide roosting habitat.
Structure AMM 1 (required for all Indiana bat projects, required for NLAA NLEB projects): ☐
Structure AMM 2 (required for all Indiana bat projects, required for NLAA NLEB projects): ☐
Structure AMM 3 (required for all Indiana bat projects, required for NLAA NLEB projects: ☐
Structure AMM 4 (required for all Indiana bat projects, required for NLAA NLEB projects): ☐

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): ☐ N/A

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 ☐ N/A

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

Conservation Bank,
Name:
Location:

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

Exhibit 21 – Correspondence: NH Natural Heritage Bureau

Christine J. Perron

From: Martin, Rebecca [Rebecca.Martin@dot.nh.gov]
Sent: Tuesday, November 01, 2016 8:55 AM
To: Christine J. Perron
Subject: FW: Ossipee 14749 - Exemplary Natural community, NLEB

Hi Christine,

We received a response from Amy- sounds like she is content with the flow of the stormwater away from the bog.

As soon as I have the information about tree clearing I am planning to submit the project under the FHWA Programmatic Consultation as "may affect LAA" NLEB.

Thanks!

Rebecca

From: Lamb, Amy
Sent: Tuesday, November 01, 2016 8:34 AM
To: Martin, Rebecca
Subject: RE: Ossipee 14749 - Exemplary Natural community

Hi Rebecca –

Thank you for looking into this, I appreciate the efforts of DOT to address NHB concerns. Since the road will be configured in a way such that sheet flow will flow to the southwest and into existing swales prior to discharge into the bog, I have no further concerns at this time. If, in the future, work is planned for the culvert or stormwater swales at this location, I would be interested in discussing this further.

Thank you!
Amy

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

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

From: Martin, Rebecca
Sent: Tuesday, November 01, 2016 7:58 AM
To: Lamb, Amy
Cc: Christine Perron
Subject: FW: Ossipee 14749 - Exemplary Natural community

Hi Amy,

I understand that there was some discussion about improvements stormwater treatment in the kettle hole bog area and/or improving the buffer between the roadway and bog. Gerry Bedard looked into the area and it seems that due to the configuration of the roadway in this area, most of the stormwater will actually flow to the opposite side of the road. Do you have any other concerns about the bog?

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Bedard, Gerard
Sent: Wednesday, October 19, 2016 1:31 PM
To: Perron, Christine
Cc: Martin, Rebecca; Chase, Victoria; Mudgett, Kirk
Subject: Ossipee 14749 - Exemplary Natural community

Christine,

When you were discussing exemplary natural communities and showed this slide (below), Amy Lamb (Natural Heritage Bureau) expressed concern about the sheet flow runoff from the road into the wetland, and asked for mitigation measures to at least be considered.

NH 16 in this area has a slight horizontal curve that will be superelevated such that most of the runoff will not sheet flow into the wetland but flow across the road into existing swales and then through the existing culvert into the wetland.

- Gerry

Stream K
Wetland J
Wetland/Stream
EE, FF, GG
Wetland/Stream L
Wetland HH
Wetland JJ

Christine J. Perron

From: Lamb, Amy [Amy.Lamb@dred.nh.gov]
Sent: Friday, October 14, 2016 1:20 PM
To: Christine J. Perron
Subject: RE: NHB16-2793 - RE: NHB review: NHB15-1905: Ossipee 14749

Hi Christine,

Thank you for following up with me. The map delineating the wetlands is very helpful – I need visuals! I think that as long as the pipe is not being upsized, and that drainage patterns will not be altered to direct more roadway runoff into the kettle hole bog (I suspect not since these appear to be natural wetlands/streams), then I wouldn't have concerns about in-kind replacement.

That being said, if there are opportunities to increase treatment of stormwater that flows toward the bog, or to improve the buffer between the road and wetland H, I would be interested in discussing those.

Thank you, and I look forward to reviewing the final design. Let me know if you have any questions or additional thoughts.

-Amy

PS Happy Friday!

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

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

From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Monday, October 10, 2016 3:37 PM
To: Lamb, Amy
Subject: NHB16-2793 - RE: NHB review: NHB15-1905: Ossipee 14749

Hi Amy,

I am following up on some correspondence you had with Rebecca earlier this year on the subject project. Design of the project is progressing and proposed drainage work has been identified. The attached map shows the approximate boundaries of the kettle hole bog system (derived from the NWI GIS layer). We labeled this wetland "Wetland H" when we completed the delineation, as shown on the map.

There is one existing culvert that outlets directly into Wetland H and NHDOT is not proposing repairs or replacement of this culvert. There is another culvert (36" cmp) that carries a perennial stream under NH Route 16 (labeled as "Wetland/Stream EE, FF, GG" on the attached map). From the outlet of this culvert, the stream then flows into another 36" culvert located under an abandoned rail line ("Stream K"). From there, the stream

eventually drains into the kettle hole bog system. NHDOT is proposing to replace the 36” cmp under NH Route 16. Replacement in kind is anticipated, given the second 36” culvert immediately downstream.

The remaining work in the vicinity of the kettle hole bog system will be within the footprint of the existing roadway.

The project is still in preliminary design, so design and impacts will not be finalized until after the Public Hearing when the project is in Final Design. You will have another chance to review the project during the permitting phase when impacts are reviewed at a Natural Resource Agency meeting prior to submitting permit applications.

At this point, we are looking for your feedback on any potential concerns with the proposed culvert replacement that I’ve described above. I will incorporate your feedback into the NEPA document and will also note the exemplary natural communities in an environmental commitment.

Thanks Amy!
Christine

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]
Sent: Monday, February 01, 2016 9:21 AM
To: Rebecca A. Martin
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Hi Rebecca,

No problem, I’m sorry if I wasn’t clear with my question.

As for the bridges, thank you for providing the aerial photos; they indicate that the channels beneath the existing bridges have remained quite natural, and I wouldn’t have concerns about the replacement bridges since they will be even longer spans.

I should also clarify something. When you said that some of the drainage (culverts) was being replaced near the exemplary system, I was thinking that you meant only the **Temperate minor river floodplain system**. My comments about maintaining natural flows through the new culverts was referring to the **Temperate minor river floodplain system,** but not the **Kettle hole bog system** that is adjacent to the road. The **Kettle hole bog system** is sensitive to sediment and nutrient additions, as you noted, so increasing culvert sizes would be detrimental to this system. Are there culverts which outlet into this system that would potentially be replaced as part of this project? I apologize for the confusion.

Thanks Rebecca.

-Amy

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

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

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Friday, January 29, 2016 2:32 PM
To: Lamb, Amy
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Hi Amy,

I am sorry, I misunderstood your inquiry. The Bearcamp River bridge is a 5 span IBC bridge and is around 392' long and 28' wide, the proposed replacement will be similar in length, but 3 spans and 34' wide. The Bearcamp River Relief bridge is a 4 span IBC bridge that is 168' long and 28' wide, the proposed replacement will be slightly longer, 185' and 34' wide.

For culverts, I know that they are quite old (~75 years old) so the present condition is expected to be poor for most of them. I do not yet know the size, type, or resemblance to natural conditions or treatments intended. They will gather this information when design has progressed further, in the meantime, I will offer your comment that it would be best to maintain/create more natural conditions and provide for aquatic organism passage, and err on the side of upsizing culverts. It is helpful to know that increasing the size will not necessarily be a game-stopper. I was concerned that a larger culvert would change the hydrology on the outlet side into the natural community. If you think of other suggestions, avoiding plastic sliplining for example, please let me know.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]
Sent: Thursday, January 28, 2016 3:21 PM
To: Rebecca A. Martin
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Rebecca,

I believe I already addressed the first three paragraphs of your email since they are very similar to your previous message; due to your description of work, I don't have concerns about the rare plant or about the kettle hole bogs near the road that are north of the Lovell River bridge.

However, I was asking about the northerly bridges (Bearcamp River, Bearcamp River Relief) because they appear to be more hydrologically related to the Temperate minor river floodplain system, Silver maple - false nettle - sensitive fern floodplain forest, Red maple floodplain forest, and Medium level fen system. I wanted to clarify whether the bridges would be enlarged at all when they are replaced, or if the replacements would be the same size or smaller. Namely, my question relates to the hydrological implications of increasing/decreasing flow and downstream impacts. (The Bearcamp River Relief bridge is less of a concern in this respect, as it is not connected to a flowing river, but is in the floodplain and so I would want to make sure that hydrology is

maintained here). Preferably, I think the Bearcamp River bridge replacement should provide as natural of a channel as possible to prevent negative downstream effects.

As for culverts, I would want to know their present condition, size, type, and resemblance to natural conditions before providing recommendations. In general, it would be best to maintain/create more natural conditions and provide for aquatic organism passage, and err on the side of upsizing culverts.

Please let me know if the two bridges noted above will be changing in size; perhaps a plan showing present and proposed conditions would be helpful. If you have any more information about the culverts proposed for replacement/rehabilitation, I would be happy to provide comments.

Amy

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

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

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Thursday, January 28, 2016 1:40 PM
To: Lamb, Amy
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Hi Amy,

Thank you for your email. The purpose of the project is to replace three red listed bridges along NH 16/25. The bridges carry NH 16/25 over the Lovell River, over the Bearcamp River and over the Bearcamp flood relief area (see attached Ossipee 14749). The roadway will also be resurfaced beginning at the Lovell River Bridge and extending north 3.2 miles to the Chocorua River Bridge in West Ossipee. The major impact areas will be at the three bridge replacement sites.

The rare plant (Small Whorled Pogonia?) as shown in yellow in the NHB report is identified west of the Bearcamp River and looks to be over 0.25 miles from the bridge replacement over the Bearcamp River, so I do not expect impacts in this area. Do you have any other concerns relative to the species?

The area shown in green as a natural community on the attached NHB report (red maple floodplain forest/temperate minor floodplain system) and the area shown in blue as a Kettle hole bog system is located between Bridge 137/297: NH 16 over the Bearcamp River (Bridge 137/299: NH 16 over the Bearcamp River relief is further north) and Bridge 152/268: NH 16 over the Lovell River. However, the Bearcamp does appear to flow through this wetland system and the bridge over the Bearcamp on NH Route 16 is being replaced. You can see proximity of the NHB record to the bridges in the attached map from the NHB Screening Layer. As the replacements are not in close proximity to the natural community, your email indicates less concern about these replacements.

Two things that have not been refined by the design team that will likely be in close proximity to the natural community are drainage improvements and pavement rehabilitation. The pavement treatment being considered

with the greatest impact would be a reclaim and a raise in the roadway by 8 inches. There was also some conversation about shoulder widening in one area, but I do not know where that would occur. As for drainage, there is some concern that the condition of the crossings may be poor. The team has not decided about treatments for these culverts, but if you have suggestions, particularly for the area around the natural community, I would be happy to share them. For example, would upgrading to a larger pipe be a concern? How about sliplining?

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]
Sent: Thursday, January 28, 2016 1:10 PM
To: Rebecca A. Martin
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Rebecca,

I wanted to clarify something in your email. You state that crossing structures will be upgraded, and that the Rte 16 bridges over the Bearcamp River and Bearcamp River Relief will be replaced; will all structures (culverts and the bridges) be upgraded/upsized in this area? What kind of size increases are proposed?

If the remainder of the work will not be in the vicinity of rare species or the remaining exemplary natural communities, then I have no additional concerns about the remaining hits on the review.

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

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

From: Rebecca A. Martin [mailto:RMartin@dot.state.nh.us]
Sent: Thursday, January 28, 2016 12:51 PM
To: Lamb, Amy
Subject: RE: NHB review: NHB15-1905: Ossipee 14749

Hello Amy,

I was speaking with a member of the design team for the Ossipee project. The major impact areas will be at the three bridge replacement sites (see attached). The treatment for the resurfacing of the 3.2 miles of roadway has

not been determined at this time, but the treatment being considered with the greatest impact would be a reclaim and a raise in the roadway by 8 inches.

The rare plant (Small Whorled Pogonia?) identified west of the Bearcamp River, looks to be over 0.25 miles from the bridge replacement, so well outside of the area of impacts.

As for the kettle hole bog system and temperate minor river floodplain system adjacent to the roadway, which are sensitive to changes in hydrology and nutrient and sediment additions, the Bearcamp and Relief bridge replacements are north of the sensitive system and the Lovell bridge replacement is south of the community (near the golf course). However, the Bearcamp does appear to flow through this wetland system and the bridge over the Bearcamp on NH Route 16 is being replaced. Other than following best management practices to reduce erosion and sedimentation, do you have other recommendations?

The project team is proposing to replace and/or rehabilitate some of the drainage in the area near this system. Other than following best management practices to reduce erosion and sedimentation, do you have other recommendations? Would you be concerned with hydrology if the crossings will be upgraded to larger structures? As they are still in the early stages of design, any guidance you might have to assist with developing a design that is sympathetic to the exemplary natural communities would be appreciated.

Thank you,

Rebecca Martin
Environmental Manager
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03302
(603)271-6781
rmartin@dot.state.nh.us

From: Lamb, Amy [mailto:Amy.Lamb@dred.nh.gov]
Sent: Friday, July 17, 2015 8:31 AM
To: Rebecca A. Martin
Subject: NHB review: NHB15-1905

Attached, please find the review we have completed. If your review memo includes potential impacts to plants or natural communities please contact me for further information. If your project had potential impacts to wildlife, please contact NH Fish and Game at the phone number listed on the review.

Best,
Amy

Note: Melissa Coppola is still working part-time on reviews, but I am now the reviewer at NH Natural Heritage. Please address future correspondence to me at: Amy.Lamb@dred.nh.gov
~~~
~~~

Exhibit 22 – Correspondence: US Fish & Wildlife Service (Northern Long-Eared Bat)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

RE: Ossipee 14749, Bridge Replacement and Rehabilitation of NH Route 16/25 (05E1NE00-2016-F-0839)

December 2, 2016

Rebecca Martin
NH DOT Bureau of Environment
7 Hazen Drive
Concord, NH 03301

Dear Ms. Martin:

The U.S. Fish and Wildlife Service (Service) is responding to your request, dated November 3, 2016, to verify that the proposed Ossipee 14749 Bridge Replacement and Rehabilitation of NH Route 16/25 Project (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*). We received your request and the associated Project Submittal Form on November 3, 2016. 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 (NHDOT) proposes to replace three bridges and rehabilitate 3.4 miles of NH Route 16/25 in Ossipee, New Hampshire. 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 bridges and trees occupied by NLEB 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 the bridge replacements and highway rehabilitation will occur within 300 feet of the existing road/rail surfaces, and all tree clearing related to the proposed bridgework 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, minimization, and compensation 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 NLEB 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.

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 603-223-2541, extension 6418.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Exhibit 23 – Correspondence: US Fish & Wildlife Service (Small Whorled Pogonia)

Christine J. Perron

From: Martin, Rebecca <Rebecca.Martin@dot.nh.gov>
Sent: Tuesday, November 15, 2016 7:12 AM
To: Christine J. Perron
Subject: RE: Ossipee 14749 - small whorled pogonia

Hi Christine,

That is great news. I am glad you were able to connect.

Thank you,

Rebecca

From: Christine J. Perron [mailto:CPerron@mjinc.com]
Sent: Wednesday, November 09, 2016 10:54 AM
To: Martin, Rebecca
Subject: Ossipee 14749 - small whorled pogonia

Hi Rebecca,

I just spoke with Maria Tur – she had tried to reach me a few times via my DOT email and phone number before realizing that I was no longer there.

I confirmed with Maria that FHWA is the lead federal agency for this project. I also confirmed with her that there is no suitable habitat in areas that will be impacted by the project. Maria said that if there is no suitable habitat, then FHWA can make a finding of No Effect and no concurrence from the FWS is needed.

Christine

Christine Perron, CWS • Senior Environmental Analyst
McFarland Johnson
53 Regional Drive • Concord, NH 03301
OFFICE: 603-225-2978 ext. 128
www.mjinc.com

Exhibit 24 – Archaeological Survey Concurrence

RECEIVED
BUREAU OF ENVIRONMENT
NOV 2013
NH DEPARTMENT OF TRANSPORTATION

BUREAU OF ENVIRONMENT, NHDOT
REVIEW REQUEST TO THE NH DIVISION OF HISTORICAL RESOURCES

RECEIVED
NOV 05 2013

Date: November 4, 2013 **Return Prior to:**

Project: Phase IB Archaeological Survey of the Proposed NHDOT Route 16 Ossipee Project, 14749, Ossipee, Carroll County, NH by NE Archaeology Research Center, Inc. October 2013 RPR 3262

Other Parties
Agree with the consultant recommendations.

This request is forwarded to the **NH DIVISION OF HISTORICAL RESOURCES** for review and comment. NEPA and Sec. 106 of the NHPA require consultation with the SHPO to ensure the review of all actions covered by these acts relative to historical and cultural properties. The review should focus on the project's impacts pertinent to this act.

FOR MORE INFORMATION CONTACT: Sheila Charles, scharles@dot.state.nh.us, 603-271-4049
Jill Edelmann, jedelmann@dot.state.nh.us, 603-271-7968

COMMENTS: Please check one. Additional comments should be included below or on a separate sheet.

✓ **CONCUR** w/ recommendations, no further review
Report acceptable

____ **CONCUR WITH CONDITION** *(Indicate major reservations about the project and the specific substantive changes or modifications desired.)*

____ **TECHNICAL COMMENTS** *(No formal position, technical comments may be attached.)*

____ **NO COMMENTS**

** **NON-RECEIPT OF THIS REVIEW IMPLIES CONSENT**

PLEASE COPY AND RETURN THIS SHEET

Date: 11/13/13

Reviewer's signature: Edna Feighner **Title:** R&C Coord.
(Please Type or Print)

J:\FORMS\trDHR Archaeology.doc

Exhibit 25 – Section 106 Determination of Effect

New Hampshire DOT
Department of Transportation

Victoria F. Sheehan
Commissioner

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

William Cass, P.E.
Assistant Commissioner

OSSIPEE
X-A000(490)
14749
RPR 3262

Adverse Effect Memo

Pursuant to meetings and discussions in 2011/2012, and more recently on April 21, 2016, July 14, 2016, and August 11, 2016, 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 three bridges and to rehabilitate a 3.4 mile section of NH Route 16 in Ossipee.

The three bridges are the Lovell River Bridge (152/268), Bearcamp River Bridge (137/297), and Bearcamp Relief Bridge (137/299). The Lovell River Bridge is a single-span (overall length 62 feet in length), steel I-Beam with concrete deck bridge constructed in 1950. The Bearcamp Bridges were both constructed in 1955 and consist of steel I-Beam bridges with concrete decks - that feature a combined simple under dead/continuous under live load beam design with double-batter H-pile bents, angled steel railing, and an open grid shoulder/steel curb/open grid sidewalk assembly. The Bearcamp River Bridge is comprised of five spans, with a total length of 396 feet. The Bearcamp Relief Bridge is four spans and 172 feet in length. The two bridges are approximately 1,000' feet apart and are considered sister bridges, both designed by Harold E. Langley and Robert J. Prowse, prominent engineers within the NH Highway Department (NHHD).

Roadway rehabilitation, outside of the limits of the full depth bridge approaches, will entail pavement reclamation or overlay, guardrail replacement, and drainage upgrades. In areas of pavement reclamation, the roadway elevation will increase by approximately one foot. The condition of all drainage structures and the limits of slope work still need to be assessed. Drainage structures consist of 50 to 60 year old metal or concrete pipes. It is anticipated that most roadway rehabilitation work will be located within existing State right-of-way and easements. However, reclamation may require slope easements and drive easements.

Based on a review pursuant to 36 CFR 800.4, we determined that the Bearcamp River Bridge and Bearcamp Relief Bridge are eligible for the National Register of Historic Places under Criterion C for their engineering significance and association with important New Hampshire bridge designers. This bridge design may have been the first of its type designed by the NHHD and may have played a role in the development of a specialized bridge type in NH. The design was practical and cost-effective, allowing the NHHD to minimize the size of the members and cost of materials (steel) while still being able to carry the required loading. Detailed descriptions of the bridges are on file at the NHDHR in Concord, New Hampshire (OSS0030 and OSS0031).

All necessary phases of archaeological survey have been completed and it was determined that sensitive areas do not exist within areas that will be impacted by the proposed project. The need for further archaeological survey is not anticipated.

Applying the criteria of effect at 36 CFR 800.5, we have determined that the proposed project will have an adverse effect on the Bearcamp River Bridge (137/297), and Bearcamp Relief Bridge (137/299) due to their removal. Alternative

analysis determined that the bridges could not be rehabilitated in place because of the deterioration that has occurred. The features that made the bridges unique, open grid, H-pile bents, etc., were not able to withstand years of salt and debris.

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

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

9/8/16

For Patrick Bauer, Administrator — Date
Federal Highway Administration

9/8/16

Jill Edelmann — Date
Cultural Resources Manager

Concurred with by the NH State Historic Preservation Officer:

9-8-16

for Elizabeth H. Muzzey — Date
State Historic Preservation Officer
NH Division of Historical Resources

c.c. Chris St. Louis, NHDHR; Jamie Sikora, FHWA; Rebecca Martin, DOT; Victoria Chase, DOT; Christine Perron, McFarland Johnson

Exhibit 26 – Correspondence: Advisory Council on Historic Preservation

Preserving America's Heritage

September 16, 2016

Mr. Jamison S. Sikora
NH Division Environmental Program Manager
Federal Highway Administration
53 Pleasant Street, Suite 2200
Concord, NH 03301

Ref: *Proposed Replacement of 3 Highway Bridges along NH Route 16*
Town of Ossipee, Carroll County, New Hampshire
State No. 14749, Federal No. X-A000(490)

Dear Mr. Sikora:

The Advisory Council on Historic Preservation (ACHP) has received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO), affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and it is determined that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the New Hampshire State Historic Preservation Office (SHPO), and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA, and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the notification of adverse effect. If you have any questions or require further assistance, please contact Ms. MaryAnn Naber at 202-517- 0218 or via e-mail at mnaber@achp.gov.

Sincerely,

LaShavio Johnson

LaShavio Johnson
Historic Preservation Technician
Office of Federal Agency Programs

Exhibit 27 – Section 106 Memorandum of Agreement

MEMORANDUM OF AGREEMENT

AMONG NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION,

FEDERAL HIGHWAY ADMINISTRATION,

and the

NEW HAMPSHIRE STATE HISTORIC PRESERVATION OFFICER

Regarding the OSSIPEE, X-A000(490), 14749 project with plans to replace three red list bridges and rehabilitate 3.2 miles of NH Route 16.

WHEREAS, the Federal Highway Administration (FHWA) plans to provide funds for the New Hampshire Department of Transportation (NHDOT) to remove three bridges from the State Red List and rehabilitate 3.2 miles of NH Route 16 in the town of Ossipee, New Hampshire; and

WHEREAS, the undertaking consists of replacing the superstructure and substructure of the following NHDOT bridges: the Lovell River (152/268), the Bearcamp River (137/297), and the Bearcamp Relief (137/299); and

WHEREAS, FHWA has determined that the undertaking will have an adverse effect on the Bearcamp River Bridge (NHDOT Bridge # 137/297) and the Bearcamp River Relief Bridge (NHDOT Bridge # 137/299), both eligible for listing in the National Register of Historic Places, and has consulted with the NHDOT and the New Hampshire State Historic Preservation Officer (SHPO) pursuant to 36 C.F.R. part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f); and

WHEREAS, NHDOT has reached out to the Town and other interested groups via letters and at the Public Informational Meeting and the Public Hearing to seek Consulting Party status; no Consulting Parties have been identified; and

WHEREAS, NHDOT has reached out to various Town officials and historical society representatives for input on proposed mitigation; no requests for involvement were received; and

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

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

STIPULATIONS

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

1. NHDOT will market the bridges for re-use in compliance with 23 USC Section 144. Marketing will occur for a period of 14 days and will include advertising on the NHDOT website. Ownership transfer for the re-use of the bridge(s) will require the use of restrictive preservation and maintenance covenants lasting for ten years to ensure the long-term protection of the character-defining features of the bridge. The award will be based on the applicant's plan for moving the historic bridge(s) and the future use, which most satisfactorily meets the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings." If there are no offers or proposals for use of the bridge(s) by the end of the 14-day period, final bid and construction documents will be completed to specify demolition and disposal of the bridge.

2. NHDOT will see that an abbreviated New Hampshire Property Documentation be completed by a 36 CFR 61-qualified Architectural Historian. The Documentation will include both bridges.

    a. The accompanying Documentation will include archival large-format black-and-white 4x5 photographs of the superstructures, substructures, relationship of the bridges to their setting, and any engineering/aesthetic details. Original and historic construction plans will be included as archival copies or photographed as archival large-format black-and-white 4x5 or 8x10 photographs. A cover page and photo key will be included. The Documentation will also include a site plan, USGS map, photo key and location map, and bibliography.

    b. One digital draft copy of the Documentation will be submitted to NHDOT for review. NHDOT will have 30 days for review. Two archival hard copies will subsequently be submitted to NHDOT in archival folders, including one set of negatives and one set of large-format prints, for review by SHPO. Included in this submission will be two digital PDF copies of the Documentation on CD or flash drive. SHPO will have 45 days for review. SHPO approval of the Documentation must be received prior to demolition of the structure.

3. NHDOT and/or its consultant will develop an educational outreach piece to be included on the NHDOT and/or appropriate website(s). This will include a video that will highlight the history of the Bearcamp River Bridge (137/297) and the Bearcamp River Relief Bridge (137/299) as well as the new slide-in bridge construction method, which will be a first in New Hampshire. The video will focus on the engineering techniques that made these bridges significant. The interactive webpage will be added to the project website and its purpose will be to describe the historical, innovative features of the Bearcamp River bridges, as well as the innovative features of the proposed project.

    SHPO will be consulted once during the design phases of the website and the video, at a time determine appropriate by NHDOT and/or its consultant. SHPO will be provided a link to the website and a final copy of the video on DVD for their files.

I. DURATION

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

II. MONITORING AND REPORTING

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

III. DISPUTE RESOLUTION

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

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

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

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

IV. AMENDMENTS

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

V. TERMINATION

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

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

action it will pursue.

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

SIGNATORIES:

FEDERAL HIGHWAY ADMINISTRATION

By: _____ Date: 1/18/17
for Patrick A. Bauer
NH Division Administrator

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

By: _____ Date: 12/1/16
Elizabeth H. Muzzey
State Historic Preservation Officer

NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

By: _____ Date: 12/28/16
for Victoria F. Sheehan
Commissioner

Exhibit 28 – Correspondence: Ossipee Planning Board

New Hampshire DOT
Department of Transportation

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

JEFF BRILLHART, P.E.
ASSISTANT COMMISSIONER

September 1, 2011

Mr. William Grover, Chair
Planning Board
PO Box 67
Center Ossipee, NH 03814

Re: NH Routes 16 Bridge / Roadway Improvements
Ossipee, X-A000(490), 14749

Dear Mr. Grover,

The NH Department of Transportation is planning a project to address deficient bridges: bridges 137/299 (NH Route 16 over Bearcamp River relief), 137/297 (NH Route 16 over Bearcamp River), and 152/268 (NH Route 16 over Lovell River). Work also includes rehabilitation of the roadway from bridge 152/168, north to bridge 123/324 (NH Route 16 over Chocorua River) (*see attached*).

Engineering studies have been initiated to refine the scope and limits of work necessary for this project. The NHDOT Bureau of Environment is in the process of preparing the environmental documentation for this project. Any comments you or your staff can provide relative to potential impacts on environmental, social, economic or cultural resources, including answers to the following questions, will assist us in the preparation of these documents.

1. Are there any existing or proposed community or regional plans that might have a bearing on this project?
No

2. Are there any natural or cultural resources of significance in the vicinity of the project? (e.g. prime wetlands, floodplains, stonewalls, cemeteries, historical or archeological resources, etc.)

3. Are there any public parks, recreation areas or wildlife/waterfowl refuges in the vicinity of the project? Have Land & Water Conservation Funds been used in the project area?
No

4. Are there any locally or regionally significant water resources ~~or related protection~~ areas in the project vicinity? (e.g. public water supplies, wellhead protection areas, aquifer protection districts, etc.)
Yes

5. Are there any water quality concerns that should be addressed during the development of this project? (e.g. stormwater management, NPDES Phase II, impaired waters, etc.)
Road Salt concern in water protection area

6. Are you aware of any existing or potential hazardous materials or contaminants in the vicinity of the project? Are there asbestos landfills or asbestos containing utility pipes located within the project limits?
MTBE + Gas seepage at MAV & Ski Works

7. Do you have any environmental concerns not previously noted (e.g. noise impacts, farmland conversion, etc.) that you feel the Department should be aware of for this project?

8. Will the proposed project have a significant effect upon the surrounding area? If so, please explain.

No

9. Are you aware of any existing roadside populations of non-native invasive plant species (such as Japanese knotweed, phragmites, or purple loosestrife) in the project area?

No

This letter has been sent to the Departments, Boards, and Committees listed below:

- Board of Selectmen
- Town Engineer
- Public Works
- Planning Board
- Conservation Commission
- Historical Society
- Emergency Management

Please feel free to contact me if you have any questions or require further information regarding this project. Thank you for your assistance.

Sincerely,

Kevin T. Nyhan

Kevin T. Nyhan
Senior Environmental Manager
NH Department of Transportation
Bureau of Environment
271-1553
knyhan@dot.state.nh.us

KTN:ktn
Encl.

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Exhibit 29 – Correspondence: Local Business Owner

From: Victoria Chase [VChase@dot.state.nh.us]
Sent: Friday, July 22, 2016 8:01 AM
To: Christine J. Perron; Jennifer L. Zorn; Jennifer Reczek
Subject: FW: Ossipee Highway projects

From: Victoria Chase
Sent: Friday, July 22, 2016 7:59 AM
To: 'Don'
Subject: RE: Ossipee Highway projects

Good Morning Mr. Meader,
It was good to speak with you yesterday.
I wanted to follow up and confirm some of the details of which we spoke. The duration of construction for the project (14749) is anticipated to be 3 seasons, with work to include pavement reconstruction as well as replacing the Lovell River bridge and the 2 Bear Camp River bridges. The Lovell River bridge will be replaced, with a diversion structure on the westerly side to carry NH 16 traffic, the road will remain open throughout construction.

The Bear Camp River bridges will be replaced with a "Slide-in Bridge Construction" method. Essentially, the new bridge will be constructed aside the existing bridges, and then for one weekend, NH 16 will be closed, the old bridge demolished, and the new bridge will slide in to place. The road will be opened at the end of the weekend. There is a video link on the web page that shows a similar bridge construction method in Oregon. Though this will be the first time this method is used in NH, it has been used elsewhere in the USA for many years.

The anticipated closure of NH 16 for bridge replacement is planned to be a weekend, one for each bridge. Likely one bridge will be done one season and one another season. The closures are planned for the lowest traffic volumes. We believe the periods of April thru before Memorial Day, and After Labor Day before Columbus Day are when the weekend closures will occur. The closure will be located at the Bear Camp Bridges only. This is north of Newman Drew Road. The detours will be signed for regional travelers, along state routes. All local roads will remain open.

We anticipate conducting a public hearing for this project in the fall. You will be notified of the date.

You and I spoke of the stakeholders group. We are gathering business owners, and other people in the area, that will guide us in more detailed conversations about this project. We will work to develop tools for people to better understand what is happening and when, and how to get the word out. I have added you to our list of resources. I appreciate it!

I would encourage you to continue to reference the project web page. I plan to add the plans from the open house meeting, as well as a summary of comments we heard that evening.
Please don't hesitate to contact me, by phone or email if you have questions.
Have a great day,
Thanks for getting in touch.
Victoria Chase

_____

Victoria H. Chase, P.E.
Project Manager, Bureau of Highway Design
New Hampshire Department of Transportation

JO Morton Building 7 Hazen Drive Concord NH 03301
Phone 603.271.2171 Fax 603.271.7025
vchase@dot.state.nh.us www.nhdot.com

From: Don [mailto:dnmeader@roadrunner.com]
Sent: Wednesday, July 20, 2016 5:47 PM
To: Victoria Chase
Subject: Ossipee Highway projects

Dear Ms. Chase: My name is Donald Meader ..... I own & operate the Pizza Barn on Rt. 16 in Ctr. Ossipee, NH.

Due to work commitment I was unable to attend the Open House at the Ossipee Town Hall, held last evening (July 19, 2016) where the Ossipee Highway Projects were presented and discussed. From the reports I have of some who attended there seems to be a bit of confusion about rerouting traffic (specifically NH DOT # 14749) during the bridge construction or reconstruction.

Regardless, it seems that for at least a weekend Rt. 16 would be closed for a distance from Rt. 25 E. to Rt. 25 W. This obviously would impact those businesses along Rt. 16 (as well as residents) who depend on the through traffic for their trade ..... for some, such as myself in the restaurant business, this impact could be devastating ..... depending on the timing of the closure or rerouting.

To see where the Pizza Barn is located simply look at the map of the Ossipee Highway Projects ....the center box indicating #14749 has an arrow pointing precisely to where we are located on Rt. 16 (right side going north).

Most of us need the traffic to and from the north country along Rt. 16 to exist. My enterprise has been in operation for 45 years ..... a benchmark almost unheard of in a non-franchised restaurant. The summer tourist season is the peak few months when we actually make money. A lost weekend then would be extremely difficult to endure. I guess it would depend on what is defined as “road closure” during one of the 3 construction “seasons.” Perhaps you could enlighten me as to when (roughly) this closure would take place.

Also, are there plans in the works to have another public discussion on this very important project?

So as not to be misinterpreted, this is not a voice of non-support. Whatever can be done to facilitate the movement of traffic on this very busy road (especially in the summer) benefits us all.

Not one single business (that I know of) has escaped some type of motor vehicle accident at their entrance ... non fatal, to the best of my knowledge. The “passing” stretches have been reduced with every repaving, which helps, but we’re still talking about the normal flow travelling at 50 miles per hour ..... and a turn off the road for pizza can be (and has been) a wake-up call reminding folks how precarious the moment can be.

Thank you for “listening” to me. I will send a hard copy, along with the map herein mentioned, via snail-mail for your perusal.

Donald Meader
PO Box 267
Center Ossipee, NH 03814

Exhibit 30 – Correspondence: Local Business Owner

Victoria Chase

NHDOT Project manager

Re: Ossipee Highway Project

Dear Ms. Chase:

We are a local business located on Rt 16 in West Ossipee. We have included below some questions and comments in advance of Tuesday, July 19th meeting at Ossipee Town Hall. Look forward to seeing you at the meeting.

Questions and comments.

- What is the deciding factor of road frontage to be taken for expansion? Equal parts where available from East & West ?
- When will the project start & how long will it last? What hours of day will the work take place? Will the work be done in multiple shifts per day? Will work days be Sunday night to Friday morning? Will there be a set completion date?
- How will you minimize traffic disruption & its impact to local businesses? Will traffic go to one lane during bridge work?
- Will our business be disrupted?
- What is the long term vision for Rt. 16? 4 Lanes?
- Will there be an improvement/expansion to the Rt. 16 Bridge by Newman Drew Rd, so boaters can launch/pick-up boats? Will there be parking?
- Will boaters be able to travel under the bridge during the construction?
- The Bear Camp River is a huge recreational area that receives large amounts of kayak/canoe/ tube traffic, during the spring/summer/fall months. This traffic is vital to the local economy, as well as maintaining jobs. There are Canoe/Kayak Rental Businesses that use the Bear Camp River daily. There are Campgrounds that also depend on access to the Bear Camp River. Minimizing disruption is a MUST to the local economy!
- Will Ossipee Project receive same level of funding so projects are completed ahead of schedule? Will Executive Councilor Joe Kenny make same pledge to Ossipee as he did to Conway project?
- NHDES Wetlands/Shorelands …with the amount of use on the Bear Camp River are there guidelines or suggestions to properly remove any debris, ie; trees from the river.

Regards,

John and Shelly Paven

Ski Works 2265 Rt 16

603-539-2246 skiworks@roadrunner.com

cc. Mark McConkey

Exhibit 31 – Correspondence: Landowner

- OSSIPEE 14749 -

Box 174
Center Ossipee, NH 03814

December 9, 2016

Victoria Chase P.E.
NHDOT
Room 200 JOM Building
Box 483 7 Hazen Drive
Concord, NH 03302-0483

RECEIVED
DEC 1 2 2016
NHDOT
Highway Design

Dear Ms. Chase

My name is Charles Kinney and I live at 30 Grizzley Rd. in West Ossipee in view of the Bearcamp River bridges scheduled to be replaced on Rte. 16. I applaud the proposed rebuilding plan and process as there is no contesting the spans need replacing and the method described, though unique, would offer the best alternative.

My only objection is as follows. My land does not abut the State right-of-way, therefore, I will have no contact with anyone regarding the easement process. There are three other property owners here faced with the same issue. The project will require creating work areas to the west of the existing right-of-way including tree removal. There are 10 or more property owners on Grizzley Rd. but only a few abut the highway and most are absentee owners. Any funds received for compensation will not necessarily go to replanting that area. Having owned this property for 31 years a great deal of effort has been given to planting and encouraging our "green screen" to protect the sight, sound, and erosion points of view. Knowing a little about construction I'm aware that a portion of the bids will include remediation of the area and I'm asking for that to include planting reasonable sized, hearty, indigenous trees an/or shrubs. I am hoping to have some contact with UNH Extension Service regarding availability of plants. I have investigated spade relocation of mature trees as a possibility, as well. I do understand there growth will take time but will eventually restore our buffer. Any help or suggestions you could offer regarding this matter would be greatly appreciated.

Respectfully, Charles Kinney

Charles Kinney

Cc: Sen. Jeb Bradley
Sen. Chuck Morse
Rep. Mark McConkey
Jeff Blecharcyzk Inspector NHDES

Exhibit 32 – Report of the Commissioner

REPORT OF THE COMMISSIONER

OSSIPEE 14749, X-A000(490)

NH 16/25

December 8, 2016 – Ossipee Town Hall – 6 PM

Ossipee 14749, X-A000(490) - This project will replace 3 red list bridges and reconstruct approximately 3 miles of NH 16/25, from south of the Lovell River to just south of the Chocorua River Bridge. The Lovell River, Bearcamp River, and Bearcamp Relief bridges will be replaced with this project.

The reconstruction will involve replacing the Lovell River Bridge on existing alignment, with a temporary bridge and diversion west of the existing structure. The Bearcamp and Bearcamp Relief structures will also be replaced in their existing locations, using a slide-in-bridge construction technique. The pavement on NH 16/25 throughout the project will be reconstructed. The typical section will result in a consistent roadway width of 11 foot lanes, and 5 foot shoulders throughout. Shoulders at Deer Cove Road, and Newman Drew Road will be widened to allow vehicles to go around left turning traffic.

The following decisions are the Department's resolution of issues as a result of testimony presented at the December 8, 2016 Public Hearing and written testimony subsequently submitted.

1. Representative Mark McConkey (verbal testimony) thanked us for the shoulder width improvements and proposed boat access. He stated he likes the 5 foot shoulder width, and asked if the lanes could be 10.5 feet instead of 11 feet.

   Response: The Department appreciates the support for the project design. The 11 foot lane proposal will balance traffic safety with property impacts and costs. It is the Department's practice to maintain a minimum lane width of 11' on arterial highways, to better accommodate truck traffic. Furthermore, safety research has shown that narrowing a lane from the standard 12' width to 11', accompanied by widening the shoulder from the standard 4' width to 5', would result in a slight improvement to the safety of motorists. However, at lane widths less than 11' motorist safety could be adversely impacted.

2. Representative Lino Avellani, (verbal testimony) was concerned with the intersection of NH 171 and 28 during the weekend closures of NH 16. He commented that there should be increased enforcement at that intersection during the time when the detour is in place. He wants left turn lanes at the intersections along NH 16/25, and compensation for business owners if business is lost during construction.

   Response: The project will incorporate bridge construction techniques to accelerate construction and reduce the overall duration of the closure. This construction approach will minimize the potential for loss of business

during construction. The project will include notification for the traveling public during construction, and incorporate appropriate safety features as needed for those weekend closures.

The project proposes to widen shoulders at the Newman Drew Road and Deer Cove Road intersections, based on public input. This widened shoulder will allow vehicles adequate room to go around a left turning vehicle. Widening for a left turn lane would have increased ROW, wetland, flood plain and floodway impacts, as well as construction cost, and is not considered reasonable or warranted at this time.

Access to property will be provided throughout construction. Property impacts as a result of the roadway improvements are eligible to compensation, but business impacts due to construction activity are non-compensable. We have developed a Stakeholder group (business owners, Greater Ossipee Chamber of Commerce), and will be working with them to develop tools for businesses to more easily manage the construction period.

3. Tim Otterbach (tax map/lot, 27/29, 27/35) (Grizzley Road) (verbal testimony) was concerned with vibration associated with driving piles during construction and its impact to his home. He inquired as to what recourse he would have for damage that may occur. He also commented that he is a year-round resident and requires access throughout construction.

   Response: The Department will have a Contract Administrator on sight throughout construction. If the owner has concerns during that time, they can contact the Contract Administrator. Complaints regarding vibration will be communicated through the Contract Administrator to the construction contractor, who is responsible to respond to vibration complaints and any associated implications. Mr. Otterbach's home is located several hundred feet from the project work, and though it is recognized he may feel some vibration, no permanent damage is anticipated.

   Access to the Grizzley Road properties will be maintained throughout construction.

4. Charlie Kinney (tax map/lot, 27/25) (Grizzley Road) (verbal and written testimony) was concerned with tree clearing between his property and NH 16. He recognizes some of the trees that will be removed are not on his property. Mr. Kinney requested the intersection of Grizzley Road (an unmaintained class VI road) be relocated northerly along NH 16.

   Response: Clearing limits for the project have not yet been finalized, but the area in question is anticipated to be within a temporary construction easement for the bridge contractor to work within, so clearing is likely. The Department will replant some evergreen plugs, as well as plant a seed mix containing indigenous tree varieties as a buffer along the westerly edge of the temporary construction easement. Over time, this will provide a natural buffer of vegetative growth once the construction project is complete.

The Grizzley Road intersection will be reconstructed in its existing location, and the vertical alignment will be improved to flatten its approach to NH 16/25. Adequate sight distance from Grizzley Road along NH 16/25 will be provided as we progress design for the project.

5. William Mckay (parcel 6) (verbal testimony) noted his well is in his front yard, between his home and NH 16. He asked for clarification of the proposed drainage easement on the northerly edge of his property.

   Response: The location of the well will be verified and shown on the plans. The drainage easement proposed will contain a water quality treatment swale.

6. Donald Meader (parcel 4, 5 and owner of Pizza Barn map/lot, 38/19) (verbal testimony) was concerned that the length of the passing zone on NH 16 was not being increased and culvert work near his properties. He also commented that his property near Pine Hill Road is being flooded due to a culvert that carries a stream under Route 16. He would like this culvert to be properly maintained.

   Response: The passing zone has been reviewed and determined to be adequate. The project will perpetuate the passing zone. Final Design will look at the area on the inlet side of the culvert to make sure that the project work limits will not adversely influence the existing drainage patterns and flows. The culvert is appropriately sized to carry the flow beneath NH 16/25. We will ensure the culvert is clear of any obstruction and functioning as intended. There has been clearing of the land above the culvert over the last few years, and perhaps this clearing has changed the rainfall runoff patterns.

Date: 2/3/17

Victoria F. Sheehan

Commissioner

N.H. Department of Transportation

Exhibit 33 – Finding of Necessity Meeting Minutes

New Hampshire DOT
Department of Transportation

Victoria F. Sheehan
Commissioner

THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

William Cass, P.E.
Assistant Commissioner

FINDING OF NECESSITY MEETING MINUTES

OSSIPEE X-A000(490), 14749

7 HAZEN DR, ROOM 112/113, CONCORD NH

March 8, 2017 **10:00 A.M.**

NAMES OF COMMISSION MEMBERS PRESENT

RON ADAMS
BRAD HARRIMAN
JESSICA WILLIAMS

NAMES OF ADDITIONAL PEOPLE PRESENT AT THE MEETING

Victoria Chase, Project Manager, Bureau of Highway Design
Michael Dugas, Chief of Preliminary Design, Bureau of Highway Design
Gerard Bedard, Preliminary Design Engineer, Bureau of Highway Design
Rebecca Martin, Environmental Manager, Bureau of Environment
Nancy Spaulding, ROW Engineer, Bureau of Right-of-Way
Steven Bernard, Chief ROW Appraiser, Bureau of Right-of-Way
Linda Schoffield, ROW Agent, Bureau of Right-of-Way
Cynthia Sullivan, ROW Agent, Bureau of Right-of-Way
Jason Tremblay, Bridge Engineer, Bureau of Bridge Design
Karen Kimel, Clerk IV, Bureau of Right-of-Way

DESCRIPTION OF SUBJECT MATTER DISCUSSED

Chairman Adams called the meeting to order at 9:59 A.M. for the Ossipee 14749 project.

V. Chase reviewed the Report of the Commissioner item by item.

Chairman Adams called for a motion to approve the project as proposed. The motion was made and seconded. The Commission voted unanimously in the affirmative to approve the project.

Chairman Adams adjourned the meeting at 10:10 A.M.

Minutes Taken By Kar Kimel Dated 3/8/17

Cc: Victoria Sheehan, William Cass, Christopher Waszczuk, Peter Stamnas, All Attendees

Noted By: N. Spaulding