

**BUREAU OF ENVIRONMENT  
CONFERENCE REPORT**

**SUBJECT:** NHDOT Monthly Natural Resource Agency Coordination Meeting

**DATE OF CONFERENCE:** August 16, 2023

**LOCATION OF CONFERENCE:** Virtual meeting held via Zoom

**ATTENDED BY:**

**NHDOT**

Matt Urban  
Andrew O’Sullivan  
Mark Hemmerlein  
Joshua Brown  
Jon Evans  
Rebecca Martin  
Kerry Ryan  
Arin Mills  
William Saffian  
Chris Carucci

**ACOE**

Mike Hicks

**USCG**

Gary Croot

**EPA**

Absent

**NHDES**

Karl Benedict  
Emily Nichols

**NHB**

Absent

**NH Fish & Game**

Kevin Newton

**Federal Highway**

Jamie Sikora

**US Fish & Wildlife**

Absent

**The Nature Conservancy**

Absent

**NH Transportation &  
Wildlife Workgroup**

Absent

**Consultants/ Public  
Participants**

Stephen Hoffman  
Christine Perron  
Samuel White  
Brett Rusnock

**PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:** *(minutes on subsequent pages)*

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## **Finalize Meeting Minutes**

Finalized and approved the June 21, 2023 meeting minutes.

### **Jefferson, #42558 (X-A004 (910)):**

Stephen Hoffmann introduced the proposed project involving the replacement of Bridge No. 140/097 carrying US Route 2 over Priscilla Brook and the replacement of an existing culvert located approximately 200 feet southeast of the bridge that carries an unnamed stream and tributary of Priscilla Brook under US Route 2 in Jefferson, New Hampshire. The NEPA documentation for the project is being finalized, and the project is moving into the final design/permitting phase. The proposed project was previously discussed at the March 2021 Natural Resource Agency Meeting. Mr. Hoffmann provided a recap of the purpose and need and existing conditions that were previously presented at the March 2021 meeting. Since the prior meeting, additional coordination with New Hampshire Fish and Game has occurred regarding fisheries concerns. Priscilla Brook and the unnamed tributary have documented occurrences of eastern brook trout and have been identified as cold water fisheries. Therefore, due to the presence of a cold water fish species assemblage, a time of year restriction on in-water work between October 1 through March 31 will be implemented. The NHDES Wetlands Permit Planning Tool was accessed and reviewed for Priority Resource Areas (PRAs). Mr. Hoffmann confirmed that there are no PRAs identified in the vicinity of the proposed project. Additional resources in the vicinity of the project include NH Wildlife Action Plan Highest Ranked Habitat in the State. Federally listed species identified by USFWS with ranges overlapping the project area included the federally endangered northern long-eared bat, and the federally threatened Canada lynx.

The proposed bridge structure consists of a 15' x 9' four-sided precast box culvert. The preferred alternative minimized impacts to adjacent properties and driveways and minimized construction costs and duration. The preferred alternative also minimized impacts by maintaining the existing roadway profile. A minimum of two feet of simulated streambed material will be placed within the proposed structure and overtop areas of proposed riprap located within the channel. The proposed structure also includes precast concrete baffles along the bottom of the structure to help hold the simulated streambed material in place during higher flows. The proposed bridge structure also accommodates a two-foot-wide terrestrial wildlife shelf on one side of the structure, in front of the southeast abutment. The proposed structure will provide a larger hydraulic opening that passes the 100-year storm with approximately three feet of freeboard.

The proposed culvert structure consists of a 9' x 6' four-sided precast box culvert. The proposed structure does not meet the 1.2 x bankfull width plus two feet guideline. However, the proposed structure will provide over a 100 percent increase in the size of the existing hydraulic opening. Similar to the bridge location, the size of the culvert was constrained by adjacent properties and driveways. The proposed structure minimized impacts to adjacent properties and driveways, minimized construction costs and duration, and maintained the existing roadway profile, which reduced overall impacts to jurisdictional resource areas. The proposed culvert will be embedded with a minimum of two feet of simulated streambed material. The proposed culvert accommodates the 50-year storm event without overtopping U.S. Route 2.

The proposed project is anticipated to result in 2,241 SF of permanent impacts and 3,529 SF of temporary impacts to stream channels and palustrine wetlands associated with both the bridge and culvert replacement. The proposed project is anticipated to result in a total of 146 LF permanent channel impacts. Impacts are primarily associated with the replacement of the existing bridge and culvert, placement of riprap for scour protection, and required grading for the installation of the larger structures.

The proposed project is anticipated to be classified as a Major Impact project for the replacement of two Tier 3 stream crossings. The proposed structures are also assumed to require an Alternative Design, due to not meeting the entrenchment ratio x bankfull width sizing requirements, not providing a vegetated bank/wildlife shelf on both sides of the crossing, and not meeting the hydraulic requirement of accommodating the 100 year 24-hour design storm at the culvert location.

The project involves a total of 146 LF of permanent channel impacts, and 2,241 SF of permanent wetland and stream channel impacts. There are no PRA impacts associated with the proposed project. Based on the larger hydraulic openings, improved geomorphic compatibility at both crossings, improved terrestrial wildlife passage at the bridge, and proposed streambed simulation material, Mr. Hoffmann asked for concurrence from NHDES whether the project could be considered self-mitigating.

The proposed project will be constructed using phased construction methods including three phases of signalized, two-way alternating traffic. The proposed phasing further minimized wetland and stream impact by avoiding the need for temporary roadway and bridges on a new alignment.

The permit application is anticipated to be submitted to NHDES in October 2023, with the anticipated advertising date in June 2024.

### **Agency Discussion:**

Karl Benedict confirmed that based on the information provided both proposed structures would require alternative designs. Mr. Benedict also expressed concerns with the proposed culvert only meeting the 50-year design storm and not accommodating the 100-year design storm given the history of flooding/overtopping. Mr. Benedict requested additional information be included in the permit application regarding the alternative analysis, hydraulic capacity, and indicated that this could potentially play into the mitigation considerations. Mr. Benedict also requested additional information on the simulated streambed material including specifications and sizing of the proposed material. If possible, it would be good to stockpile native material. Mr. Benedict indicated that monitoring may be required as a condition of the final permit.

Kevin Newton confirmed that there were no NHB documented occurrences of state listed species, and that coordination with fisheries sounded like it had been completed. Mr. Newton also asked about the baffles in the structures and the depth of streambed material as well as the potential for this material to be blown out. Mr. Hoffmann explained that the intent was for the baffles to be covered with simulated streambed material, and that there is the possibility that this

material could be mobilized during high flow events. The intent of the baffles is to help retain the natural channel substrate within the structures.

Emily Nichols concurred with Mr. Benedict's comments and had no additional comments.

Mike Hicks requested that the current IPaC Determination Keys be used for the northern long-eared bat consultation due to the updated endangered listing status.

Jamie Sikora agreed with Mr. Benedict's concerns regarding the hydraulic capacity of the proposed culvert and the 100-year flood but assumed that the hydraulic analysis demonstrated that the proposed structure would be ok.

Gary Croot confirmed that the US Coast Guard does not have any jurisdictional concerns regarding the proposed project.

**Keene, #40653 (X-A005(496)):**

Stephen Hoffmann introduced the proposed project involving the replacement of the George Street Bridge (Bridge No. 142/092) over Beaver Brook in Keene, New Hampshire. The project is moving into the final design/permitting phase.

Bridge No. 142/092 was originally constructed in 1923, and consists of a 14'-0" reinforced concrete deck founded on concrete abutments. The deck and superstructure are condition rated 4 out of 9, or poor condition, and the substructure is condition rated 3 out of 9, or serious condition. Beaver Brook is a third order, perennial stream, with a watershed of approximately 7.51 square miles. The crossing is classified as a Tier 3 stream crossing under the NHDES stream crossing rules (Env-Wt 900) based on the size of the watershed. A stream assessment and wetland delineation were completed in October 2022. The average bankfull width of Beaver Brook in the vicinity of the crossing location is 17.7 feet. The existing stream channel is deeply incised in the vicinity of the crossing, with nearly vertical six- to eight-foot-high banks and an entrenchment ratio of 1.21. The existing banks adjacent to the bridge have been stabilized and armored with various treatments including concrete blocks (NW quadrant), Gabion walls (NE quadrant), and stacked stone blocks (SW and SE quadrants). According to the NHDES Wetlands Permitting Planning Tool (WPPT), Priority Resource Areas (PRAs), Floodplain Wetlands Adjacent to Tier 3 Streams, are mapped downstream from the George Street Bridge. However, no wetlands were delineated within the project area. The project area consists primarily of developed residential lawns. Therefore, the proposed project is not anticipated to impact any PRAs. FEMA mapped 100-year floodplain and Regulatory Floodway are mapped in the project area. Beaver Brook is identified as an impaired surface water on the NHDES 303(d) List (2020/2022), and is listed as impaired for aquatic life integrity for both pH and benthic macroinvertebrate bioassessments. The NHB DataCheck Results Letter (NHB22-3083) did not identify any documented occurrences of state listed species in the vicinity of the project. The project is within the range of the federally endangered northern long-eared bat.

The purpose of the project is to maintain the safe operation of the George Street bridge and to improve the hydraulic capacity of the bridge. The project is needed due to the poor condition of

the existing deck and superstructure and the serious condition of the existing substructure. Beaver Brook has a history of flooding in the project area.

The proposed structure consists of a three-sided, precast concrete, rigid frame bridge structure with a 22'-0" clear span. Due to the entrenched nature of the stream and low entrenchment ratio, the proposed structure provides a fully compliant span meeting the bankfull width x entrenchment ratio ( $17.7 \times 1.21 = 21.4$ ). The preferred alternative provides an increase in geomorphic compatibility while minimizing impacts to adjacent properties and utilities, an increased hydraulic opening, maintains the vertical profile of the bridge and roadway approaches, and minimizes construction costs and duration. A minimum of one foot of simulated streambed material will be placed within the structure and overtop areas of proposed riprap to provide a more natural channel substrate. The proposed structure also provides a 4'-6" wide terrestrial wildlife shelf through one side of the bridge.

Impacts from the proposed project are limited to channel and bank impacts. The proposed project is anticipated to result in 2,189 SF of permanent impacts, 1,122 SF of temporary impacts, a total of 225 LF of bank impacts, and 103 LF of channel impacts. Mr. Hoffmann noted that the City of Keene is still working with property owners to finalize the proposed bank stabilization treatments. Riprap is currently proposed along the banks in the NW, SW, and SE bridge quadrants, while a Gabion wall is proposed to replace the existing Gabion wall in the NE quadrant. Impacts may change slightly as a result of this final coordination. However, the impacts presented to the resource agencies are a worst-case scenario, depicting the maximum amount of anticipated bank and channel impacts.

The proposed project is anticipated to be classified as a Major Impact project for the replacement of a Tier 3 stream crossing. The proposed structure is also assumed to require an Alternative Design, due to hydraulic requirements and not providing a vegetated bank/wildlife shelf on both sides of the crossing. At the location of the George Street Bridge, Beaver Brook is a third order stream, and therefore, the project is not subject to the NH Shoreland Water Quality Protection Act.

The project involves a total of 228 LF of combined bank and channel impacts. There are no PRA impacts. Based on the larger hydraulic opening, improved geomorphic compatibility, improved terrestrial wildlife passage, and simulated streambed material Mr. Hoffmann asked for concurrence from NHDES whether portions of the project could be considered self-mitigating.

The permit application is anticipated to be submitted to NHDES in October 2023, with the anticipated advertising date in April 2024.

#### Agency Discussion:

Karl Benedict requested that the bank stabilization rules in Env-Wt 514 be fully addressed in the permit application, including the hierarchy of bank stabilization methods. Mr. Benedict also inquired if the upper limits of the banks could be vegetated. Mr. Benedict requested additional information be included in the permit application including the simulated streambed material sizing specifications, and additional information on how the wildlife shelf ties into the existing banks. Mr. Benedict indicated that it could be helpful to see the proposed topography.

Emily Nichols concurred with Mr. Benedict's comments and also requested additional information on the streambed simulation material, self-mitigating features, and natural bioengineering bank stabilization measures to be considered and included in the permit application.

Kevin Newton confirmed that no NHB records were included on the NHB DataCheck Results Letter but indicated that wood turtles have been documented in the Keene area, and that Beaver Brook could provide potential suitable habitat. Mr. Newton asked that the NHFG wood turtle be provided to the contractor during construction. Mr. Hoffmann asked Mr. Newton to send him the updated wood turtle flyer to include in the contract documents.

Mike Hicks indicated that the US Army Corps has multiple flood control projects associated with Beaver Brook in Keene. Mr. Hicks also requested that the current IPaC Determination Keys be used for the northern long-eared bat consultation due to the updated endangered listing status.

Jamie Sikora confirmed that the US Army Corps was originally anticipated to be the lead federal agency, however, federal funding was recently allocated to the project and the FHWA would now be the lead federal agency.

Gary Croot confirmed that Beaver Brook has determined to be non-navigable and the USCG did not have any jurisdiction or concerns regarding the proposed project.

Mr. Hoffmann asked for some additional clarification on the self-mitigating components of the project, and whether existing armored banks should be excluded from mitigation requirements. Mr. Benedict confirmed that the impacts should be calculated as described in the presentation including the portions of the bank that have been modified. As design is finalized take a closer look at the bank stabilization rules and where things fall in the hierarchy and try to naturalize the banks to the maximum extent practicable. At that point NHDES will be able to make a more informed decision on the overall self-mitigating aspects of the proposed project. Mr. Benedict also requested that the existing conditions be clearly described in the application and mitigation approach. Andy O'Sullivan confirmed NHDES was leaning towards self-mitigating with the sloped banks replacing the vertical banks, and with the inclusion of vegetation along the upper portions of the bank.