

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: October 20, 2021

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Andrew O’Sullivan
Matt Urban
Mark Hemmerlein
Rebecca Martin
Marc Lauren
Tobey Reynolds

ACOE

Mike Hicks

EPA

Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict

NHB

Jessica Bouchard

NH Fish & Game

Carol Henderson

Federal Highway

Absent

The Nature Conservancy

Pete Steckler

Consultants/ Public

Participants

Gregory Goodrich
Jason Hilton
Hannah Beato
Peter Walker

Dave Cloutier

Sam White

Joshua Lund

John Stockton

Anna Giraldi

Jim Bouchard

Sam Cheney

Ron Kleiner

Kyle Fox

Chris Fournier

Trevor Ricker

Tucker Gordon

Bob Landry

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

Finalize Meeting Minutes.....	2
Jaffrey #16307, (X-A001(234)).....	2
Tamworth, #41434 (X-A004(636)).....	5
Merrimack, #29174	6
Rumney, #27162.....	9

NOTES ON CONFERENCE:**Finalize Meeting Minutes**

Finalized and approved the September 15, 2021 meeting minutes.

Jaffrey #16307, (X-A001(234)).

The project proposes improvements to the five-way intersection of US 202 (Main Street/Peterborough Street) with NH 124 (Turnpike Road), Stratton Road, and Blake Street in the Town of Jaffrey. The goal of the meeting was to discuss issues related to the stream geomorphic assessment (SGA) of the Contoocook River since the project proposes a new crossing over an impounded section of the river. This meeting also included discussion of the proposed new bridge and the recommended approaches to conducting the geomorphic assessment.

Prior to the start of the presentation, Bob Landry (VHB) shared that Tobey Reynolds is the NHDOT Project Manager, and that Mr. Landry's role is to assist Mr. Reynolds with project management. This process of a consultant providing direct support to a NHDOT Project Manager is new for NHDOT.

Pete Walker (VHB) started the presentation by briefly reviewing the need for the project, which are related to the existing geometric issues of the downtown transportation network. The purpose of this Project is to address the traffic congestion and safety deficiencies associated with the current configuration of the US 202 “dog-leg” intersections of Main Street with Peterborough Street and Main Street with River Street. The proposed action involves construction of a new 140-foot span bridge over the Contoocook River to connect two roundabouts on the west and east sides of the river.

Mr. Walker noted that a Public Hearing was held in October 2019. In September 2020, the Federal Highway Administration (FHWA) issued approval of the National Environmental Policy Act (NEPA) Categorical Exclusion (CE) and Final Section 4(f) Evaluation. Permit applications are anticipated to be submitted in the fall of 2022.

Although the proposed crossing is in an urbanized area, the river does have a narrow riparian buffer at the proposed bridge crossing location. VHB intends to follow the procedures in Env-Wt 900 to advance the design of the new bridge, but conducting an SGA has proved challenging since the river at the crossing is impounded, and since an appropriate reference reach may not be present. He turned the presentation to Dave Cloutier to provide more detail. Dave Cloutier (VHB) completed a desktop review of the crossing location, as well as downstream and upstream profiles. A substantial challenge has been identifying an appropriate reference reach to determine the appropriate estimate of bankfull width (BFW) of the Contoocook River. A primary source of this challenge is due to human activity (i.e., Contoocook Lake Dam, Mountain Brook Reservoir Dam, Contoocook River Dam, and the mill race through downtown) that has altered the natural geometry of the river. The width of water at the proposed new crossing is not representative of BFW as it is impounded by the downstream dam. In addition, neither the upstream nor downstream channel have a good reference point for an area of low human activity. The upstream reach is characterized by dams and impoundments, and the downstream reach is heavily incised, sediment-starved and characterized by bare bedrock.

The desktop review identified a relatively undisturbed downstream reach of channel where a stream geomorphic assessment might be conducted. This reach is located between the two downstream crossings of Nutting Road. Although this reach *might* be an appropriate reference reach, VHB noted that due to the distance downstream (approximately 1,700 feet) and difference in valley form VHB believes that it may not be representative of the river at the crossing location. Based on desktop review, the BFW estimates at this downstream reach are approximately 45 to 75 feet. Top of bank (TOB) at the crossing location was delineated during the NEPA phase of the project, and the bank-to-bank width at the crossing location ranges from 83 to 98 feet. (Mr. Walker noted that TOB-to-TOB width per the NHDES definition is not the same measurement as BFW but rather an approximation which can overestimate the BFW.) Mr. Cloutier also calculated BFW for the crossing location using regional regression equations from Massachusetts, Maine and Vermont (New Hampshire does not have a published regression equation). The range of these estimates is 45 to 60 feet.

Mr. Walker summarized the issues related to the SGA. While most of the data required by the NHDES stream crossing rules can be provided, the challenge lies in the fact that SGA is not appropriate for an impounded reach, and that identifying an appropriate reference reach in this case is difficult or perhaps impossible. A full stream geomorphic assessment may therefore not be possible. Based on the analysis to date, VHB believes the BFW at the crossing (if unimpounded) would be expected to be approximately 45 to 60 feet. Therefore, even if the stream type were determined to be a Rosgen E or C channel, the compatible width would be no more than 132 ft. The proposed conceptual design with 140 foot span seems to be an appropriate crossing structure even in the absence of additional SGA data, consistent with Env-Wt 900, and would protect river and floodplain hydraulics, sediment transport integrity, and wildlife connectivity. The new bridge would be designed to allow space for terrestrial wildlife to cross.

Questions and Comments:

Karl Benedict (NHDES) commented that he concurred with the identified issues to establishing a reference reach approach. Mr. Benedict recommended that the team consider submitting the proposed bridge as an Alternative Design. The Alternative Design Report could include a summary of the reference reach characteristics and issues to justify the approach taken for the crossing structure.

Mr. Walker responded that the project is not technically in an Alternative Design because with the 140-foot span the design would be fully compliant. The method to get the span length was different than how it would normally be calculated.

Mr. Benedict clarified that waivers are generally not issued for Env-Wt 900 rules. If there is a different approach, it goes into Alternative Design. He suggested proceeding with Alternative Design and to summarize existing conditions (i.e., history of flooding, dam controlled elevations, organism passage, etc.) and the reference reach approach - covering hydrologic capacity, geomorphic compatibility, and organism passage. Mr. Benedict also requested that VHB verify in the field BFW, ordinary high water (OHW) and TOB.

Andrew O'Sullivan (NH DOT) questioned whether an Alternative Design would be appropriate for this scenario. He agreed with Mr. Walker, and believes that the design as proposed is compliant, although not all of the geomorphic data can be developed given the restrictions of the site and physical limitations.

Mr. Benedict suggested that a memorandum be provided to NHDES explaining why the span is compliant with the known information and to justify why the span is an appropriate crossing structure. Lori Sommer (NHDES) agreed with Mr. Benedict and asked to review a write-up of the justification prior to submission of the stream crossing worksheet. VHB will develop a summary memo to NHDOT and others to review. Mr. Walker noted that a Type, Span and Location Study (TS&L) is due to NHDOT in mid-November 2021.

Mr. Benedict asked about local river management advisory committee (LAC) or shoreland considerations. Mr. Walker responded that LAC issued comments during the NEPA phase. Comments pertained to establishing erosion control and wildlife benches on both sides of the river, which smaller mammals may use.

Ms. Sommer will be looking forward to hearing more details on the project and will be looking into mitigation. Priority resources areas (i.e., 100-year floodplain) will need to be identified.

Ms. Sommer asked if there would be any flood storage loss. Mr. Walker responded yes, and that floodplain and hydraulics will be assessed.

Ms. Sommer also mentioned that VHB should check for any new NHB hits in the project area. She also asked whether there would be a need for sediment/contaminated soils analysis with this impoundment. Mr. Walker responded that VHB is tasked with studying soil and groundwater contamination issues in the project location, including one site adjacent to the proposed bridge. But, there is no plan for unconfined dredging; the bank will be stabilized with traditional rip-rap which may require some removal of native soils, but that would typically occur behind a cofferdam.

Carol Henderson (NHF&G) did not have any comments on the stream assessment and appreciates the passage under the bridge for wildlife. A bench would not be necessary, just flat areas under the bridge that animals could utilize. Ms. Henderson shared that there were no NHB records for this project.

Mike Hicks (USACE) agreed with Ms. Sommer's comments and asked whether historical issues have been discussed. Mr. Walker responded that there is an executed Section 106 Memorandum of Agreement and the stipulations will be completed during final design.

Ms. Henderson asked about the size of the existing bridge. Mr. Cloutier answered that the downstream Main Street Bridge is 33 feet long and was built in 1929.

Jessica Bouchard (NHB) stated that although the NHB data check letter indicated no records in vicinity, the existing data check is expired. VHB will need to conduct a new search to provide with the application in case new NHB records are present.

Peter Steckler (TNC) stated that he does not see terrestrial wildlife passage as a priority for this bridge, due to the limited downstream habitat, which is within the 300 feet of the downtown area of Jaffrey.

Action Items:

- VHB to field verify impounded BFW, OHW, and TOB.
- VHB to submit summary memo to NHDOT with the Type, Span and Location Study (TS&L) due November 2021.
- VHB to conduct a new NHB search to provide with the permit application.

Tamworth, #41434 (X-A004(636))

Stephen Hoffmann introduced the Tamworth 41434 project involving the replacement of the superstructure of the NH Route 113A Bridge over the Swift River (Bridge No. 061/091) in Tamworth, New Hampshire. The existing bridge was constructed in 1956 and consists of a 3-span, concrete deck supported by steel beams founded on concrete piers and abutments. The existing span lengths are 48' between the abutment and piers and 56' between the two piers. The deck is in serious condition and has been included on the State Red List since 2015. The bridge has also been identified as a scour critical bridge, meaning that the estimated scour depths extend below the bottom of the existing pier footings.

Wetlands and surface waters were delineated in May 2020 including the ordinary high water and top of bank of the Swift River. At the location of the NH Route 113A bridge the Swift River is a perennial, fourth order stream, with a watershed size of 25.3 square miles. Based on the watershed size the stream crossing is classified as a Tier 3 crossing under the NHDES stream crossing rules. This segment of the Swift River is also subject to jurisdiction under the NHDES Shoreland Water Quality Protection Act. There are no Priority Resource Areas mapped in the vicinity of the bridge, and there are no mapped FEMA 100-year floodplain or regulatory floodway associated with the Swift River. The NHB DataCheck Results Letter indicated that the proposed project is not anticipated to impact any state listed rare species or natural communities. The USFWS Official Species List indicated that the proposed project is within the range of the northern long-eared bat and small whorled pogonia. Hemenway State Forest is also located in close proximity to the bridge, but no property impacts are anticipated. Additional coordination with NH DNCR will occur.

In addition to the superstructure replacement the proposed project also includes scour countermeasures consisting of A-Jacks concrete armor units being placed around the two existing bridge piers. Each A-Jacks bundle is approximately 3' x 5' and each unit is 1.5' deep/high. The A-Jacks are currently proposed to be installed around both bridge piers on the existing grade. This method is more conducive to the accelerated bridge construction (ABC) schedule and requires less time and less disturbance within the Swift River. Sheet pile cofferdams are not feasible at this location due to the construction schedule and rocky substrate. There is a possibility for using other water diversion methods such as sandbags. The proposed project is anticipated to result in approximately 760 SF / 65 LF of permanent channel impacts and 760 SF / 76 LF of permanent bank impacts associated with the installation of the scour protection. Additional temporary impacts will be required for construction access, and additional permanent bank impacts will be required for the repair/replacement of an existing drainage outlet located on the southern bank. Access will likely be from the southern bank due to right-of-way constraints on the northern side. However, a temporary causeway or other means of access to the northern side may be required and will be evaluated further. Mr. Hoffmann asked for input/suggestions from the agencies on this issue.

Based on the current project schedule, permitting is anticipated to be completed in the Spring of 2022 with final contract plans and advertising in October 2022. Construction would likely begin in Spring 2023.

Discussion / Agency Comments:

Karl Benedict expressed concerns with the placement of the A-Jacks above grade in regard to a reduction in the channel width as well as the long-term permanent impacts associated with the placement of unnatural materials within the stream channel. He requested that the avoidance and minimization procedures be reviewed and to further consider installing the A-Jacks subgrade with natural streambed material overtop. Mr. Benedict also suggested possibly using temporary construction mats to cross the channel with equipment during low flows instead of constructing a causeway. Mr. Benedict also commented that a water diversion plan and bank restoration/planting plan would be required during permitting.

Mr. Hoffmann said that the project team would take a closer look at the possibility of embedding the scour protection to see if this request could be accommodated.

Lori Sommer asked for clarification on an earlier comment that Sam White had made regarding the pier foundations. Sam clarified that the existing piers were supported by spread footings founded on earth, and that no piles are present under the piers. This lack of redundancy furthers the need for implementation of a scour countermeasure such as A-Jacks. Ms. Sommer indicated that the placement of A-Jacks for scour protection is considered a repair or work to protect existing infrastructure and therefore mitigation would not be required for these impacts. Ms. Sommer also concurred with Mr. Benedict's suggestion of utilizing temporary construction mats.

Carol Henderson commented that it would be beneficial to minimize impacts from narrowing the channel.

Mike Hicks had no comment.

Jessica Bouchard had no comment.

Pete Steckler suggested possibly using a crane to lift equipment and materials across the channel to access the northern side of the river. Mr. Hoffmann explained that this was something that had been suggested but the project team was not sure whether this would be possible.

Merrimack, #29174

Anna Giraldi, Quantum Construction Consultants, LLC, (QCC) presented the project, via Zoom link, which proposes to replace the U.S. Route 3 over Baboosic Brook bridge crossing. Built in 1933, the existing bridge is a 20-foot span concrete arch that is utilized by more than 14,500 vehicles per day. The purpose of this project is to correct structural and hydraulic deficiencies of the existing bridge crossing and provide safe, year-round, vehicular passage on U.S. Route 3 over Baboosic Brook. This project is being funded through the State-Bridge-Aid (SBA) program, and construction is authorized for FY 2023. The existing bridge crossing experiences water velocities between 19-20 fps during high storms, and severe fluvial erosion has occurred on the banks downstream of the bridge crossing. The bridge is currently on the NHDOT Municipal Redlist with a sufficiency rating of 59.7%.

Anna began the presentation by screen-sharing an aerial photograph of the project location and site photographs. Downstream photos of the existing crossing highlighted concrete spalling of the arch and abutments and erosion of the steep embankments along Baboosic Brook. Anna explained the existing bridge is undersized and restricts flow within Baboosic Brook, thereby raising the water surface elevations at several upstream bridges during periods of high flow. NHDOT has previously reviewed and approved the Engineering Study for the project, and the project is currently in the Preliminary Design Phase.

The Natural Heritage Bureau (NHB) had no comments relative to the proposed project, but identified documented instances of endangered species well downstream of the project area within the Souhegan River. The NHB DataCheck letter stated that additional documentation needs to be submitted to New Hampshire Fish & Game (NHF&G) so they can review the project for potential impacts to endangered species. To this end, QCC contacted Kim Tuttle of NHF&G for further coordination and is awaiting a response. Anna presented the NHF&G Highest-Ranked Habitat Maps which demonstrate the project location is not within a designated area of highest-ranked

habitat. Anna further explained that a United States Fish & Wildlife Service (USFWS) IPaC search was conducted for the project area, and a Letter of Consistency was received from the USFWS demonstrating the proposed project would not adversely impact federally-listed endangered species.

Anna presented the NHDES Stream Crossing Worksheet that was prepared for the project. Baboosic Brook has a Rosgen Classification of B5C at the bridge crossing and is moderately entrenched, which correlates to a required entrenchment ratio of 1.4. For the proposed 138-foot span steel girder bridge, QCC calculated an entrenchment ratio of 1.31 just downstream of the bridge and an entrenchment ratio of 1.35 just upstream of the bridge.

The draft preliminary design plans identify the proposed structure, which as stated previously is a 138-foot span steel girder bridge with exposed cast-in-place concrete deck and cast-in-place concrete integral abutments. Anna presented a downstream elevation view of the proposed bridge structure and a site plan depicting proposed work. The streambanks will be re-graded to a 2:1 slope, and will be stabilized with riprap below elevation 168 and stabilized with geocells and native vegetation above elevation 168. Anna explained that riprap is required for protection of the bridge because Baboosic Brook contains very sandy soils. Natural streambed material will be placed on top of the riprap to better simulate existing streambed conditions. A Wetland Impact Plan (WIP) delineating areas of potential impacts was shown. Anna explained that a temporary detour road and bridge would be required to re-route traffic during construction.

Matt Urban (NHDOT) asked if McGaw Bridge Road could be utilized as a detour in lieu of a temporary detour road/bridge. Anna replied that McGaw Bridge Road would not be able to handle the additional 14,500 ADT of U.S. Route 3. Jim Bouchard (QCC) added that McGaw Bridge Road is a tee intersection with Wire Road. Furthermore, it would not be practicable to re-route heavy truck traffic through residential areas off McGaw Bridge Road. Matt agreed with Anna and Jim's assessment.

At this point, Anna concluded the presentation and inquired if there were any questions/comments from the other meeting participants. Andrew O'Sullivan (NHDOT) opened the floor to questions, beginning with NHDES.

Karl Benedict (NHDES) stated that he believed the stream crossing assessment and bridge span were sufficient relative to the NHDES Stream Crossing Rules (Env-Wt. 900). He inquired if the proposed stream simulation materials would be placed only within the stream channel or along the banks as well. Anna replied that the natural streambed materials would be placed within the stream channel, but could be placed along the banks as well if need be. Karl said he would like to see the riprap sizing calculations as justification for selecting the proposed stone size. He believes the project is both geomorphically and hydraulically accommodating.

Lori Sommer (NHDES) inquired about the endangered species referenced in the NHB DataCheck Letter, particularly the documented instance of a Sea Lamprey downstream within the Souhegan River. Anna informed Lori that QCC has reached out to Kim Tuttle and asked what Alteration of Terrain (AoT) related documentation needs to be submitted to NHF&G so they can review the project for potential impacts to endangered species. Anna asked Lori if she felt mitigation would be required for the project. QCC will send Lori the draft project plans for further review, and she will make a determination relative to mitigation upon completion of her review. NHDES would like to see the limits of proposed natural streambed material clarified on the plans. Typically, NHDES likes to see natural streambed material utilized at the Ordinary High-Water Mark (OHW) and above.

Carol Henderson (NH Fish & Game) inquired about the proposed limits of natural streambed material. She stated the proposed project will significantly increase the waterway opening at the bridge crossing, and asked if the existing arch will be removed as part of the project. Anna confirmed that the existing arch will be removed and reiterated the proposed limits of streambed materials. Lori added that she would like to see the length of riprap outside the 138-foot bridge span, to which QCC replied that can be provided. NHF&G is concerned about the presence of the Blanding's Turtle within the project area. Carol recommends re-connecting with Kim Tuttle, and suggests providing her with a project description, site photographs, and project plans so she can make a determination if the proposed project will impact the Blanding's Turtle.

Michael Hicks (Army Corp. of Engineers, ACOE) inquired if a list of federally-protected species within the project area had been identified during the IPaC review of the project. Anna replied that the Northern Long-Eared Bat was identified as a species of concern by IPaC. Mike asked if QCC had identified areas of critical habitat within the project limits to determine if the project would adversely affect federally-listed endangered species within the project area. Jim replied that USFWS had provided QCC with a Letter of Consistency that states the proposed project will not adversely impact the Northern Long-Eared Bat.

Mike inquired if the proposed riprap within the stream channel would adversely impact the floodplain of Baboosic Brook and constrict the stream channel, and if riprap was being proposed below the OHW. Jim replied that standard dredging and filling will occur for riprap installation with placement of streambed material on top. Final installation will replicate the existing channel and not restrict it.

Mike asked if QCC has coordinated with the New Hampshire Division of Historical Resources (NHDHR) and the NHDOT Cultural Resource Agency relative to potential historical impacts. QCC submitted an RPR Form to NHDHR and attended an NHDOT Cultural Resource Agency during the Engineering Study Phase of the project, retained Victoria Bunker Inc. to perform a Phase 1-A Archaeological Survey, and received a Determination of Effect (DOE) Form from NHDHR stating that none of the Individual Inventory Forms were eligible for the National Register.

Jeanie Brochi of the Environmental Protection Agency (EPA) had no comments relative to the project presentation.

Jessica Bouchard (NHB) stated the NHB had no comments relative to the proposed project. Jessica offered clarification on the question Anna had previously asked about the AoT documents that had to be submitted to NHF&G. When a NHB DataCheck Letter is generated, it requests different information depending on which permits are required for the project. Jessica noted that if an AoT Permit is not required for the project, QCC can disregard the request for more information. Anna clarified that an AoT Permit is required for the project, to which Jessica replied that QCC should reach out to Kim Tuttle again for additional clarification on what needs to be submitted.

Peter Steckler of The Nature Conservancy in New Hampshire (TNC) inquired if the intent was for wildlife to pass under the bridge crossing on the proposed wildlife shelf or within the stream channel, and asked how much headroom there was between the top of the wildlife shelf and the bottom of the bridge girders. He inquired if natural rounded cobbles could be utilized within the stream channel instead of angular riprap. Anna replied that the shelf provides approximately 2-3 feet of headroom under the bridge, and the angular riprap is specified/required by NHDOT to protect the bridge structure. Peter asked if the headroom between the top of the shelf and the bottom of the girder could be increased. Jim & Anna stated that there are abutment design criteria

that need to be followed, the designed abutments have already reached the maximum allowable height of 11-12 feet, therefore there is no way to add additional headroom.

Peter explained that deer couldn't utilize the proposed wildlife shelf to pass through the bridge crossing because there wasn't enough headroom. Between the proposed 2:1 slope on the banks and the 2-3 feet of headroom with the wildlife shelf, he believed deer would walk through the stream channel to pass under the bridge. He inquired what the water elevation at the bridge crossing is during existing low flow conditions.

Kyle Fox (Town of Merrimack) replied that during periods of low flow, the water height at the bridge crossing is approximately 2-3 feet. He asked Peter how much headroom the TNC typically likes to see between the wildlife shelf and bridge girders. Peter reiterated that 2-3 feet of headroom isn't tall enough to accommodate white-tailed deer, and stated that angular riprap is not conducive to deer being able to utilize the streambed to pass under the bridge. However, Peter said he understands the structural concerns and need for angular riprap. QCC will explore alternate slope stabilization methods and re-evaluate the limits of riprap to make it easier for deer to pass under the bridge.

Anna asked Jessica what natural streambed material they would like to see utilized for the project. Jessica redirected the question to NHDES, and Karl stated that it should match the natural streambed materials of the reference reach. Matt added that because QCC had designed the McGaw Bridge just upstream of the U.S. Route 3 crossing, there should already be data on what soils are located onsite. Karl concurred and reiterated that as long as the natural streambed materials are consistent with the reference reach there shouldn't be any issues.

Ron Kleiner (NHDOT) is the NHDOT Project Manager for the U.S. Route 3 over Baboosic Brook Bridge Replacement project and did not pose any questions or comments.

QCC will submit additional information and project plans to Lori so she can decide if the proposed project will trigger mitigation. Additionally, QCC will provide Kim Tuttle of NHF&G with a project description, site photographs, and project plans so she can review the project for potential impacts to endangered species.

Rumney, #27162

Chris Fournier (HEB Engineers, Inc.) provided an overview of the Buffalo Road Bridge in Rumney, NH. Buffalo Road is a 21-foot wide paved road that provides access to popular climbing and hiking areas as well as numerous residences and the Town's Transfer Station. The Buffalo Road Bridge #093/082 carries Buffalo Road over an unnamed tributary of the Baker River. The existing crossing consists of one (1) 12-foot 8-inch x 7-foot 8-inch corrugated metal pipe (CMP) culvert. The culvert was installed in 1972 and is in poor condition. The culvert is 66 feet long and is distorted and buckling. Portions of the culvert are rusting, bolts are missing, and cracks and voids have formed along its base. Scour and erosion have undermined the culvert invert at the inlet, leading to some water running under the culvert. The outlet is perched significantly, plunging approximately 6 feet into a pool. The bridge is on the Municipal Red List and is slated for rehabilitation/replacement in Fiscal Year 2023.

Tucker Gordon (HEB Engineers, Inc.) presented the environmental considerations for the proposed project. The Unnamed Baker River Tributary is a Tier 2 stream with a 570 acre watershed. The proposed project would not be located within a Priority Resource Area (PRA). The NHB DataCheck Tool reported no recorded occurrences (see correction below to include the wood turtle) and the USFWS IPaC system reported that the project is within the range of the northern

long-eared bat. As such, a Rule 4(d) Consistency Letter has been generated through the IPaC system. The Section 106 consultation has begun with the submission of an RPR to NHDHR; no response has been received to date. According to the 2020 Wildlife Action Plan, the proposed project area is located within a Highest Ranked Habitat in NH area. Additionally, the project area is a High Priority Invasive Plant Management area. It was noted that the Baker River is a NOAA Essential Fish Habitat; the proposed project would have no impact on this habitat, but the existing crossing is believed to be the only AOP obstruction on the tributary. The reference reach used for the stream has a bankful width of 15 feet, a floodprone width of 21 feet, a resulting entrenchment ratio of 1.4, a width-to-depth ratio of 8, a low sinuosity of 1.09, a slope of ~7%, a Rosgen Stream Classification of A2, and has a flow of approximately 345 cfs during the 100-year storm event.

T. Gordon presented photos of the existing site conditions.

T. Gordon presented proposed alternatives for the project. No-build and repair/rehabilitation (including slip-lining the culvert) were considered but dismissed because they are not feasible and/or would not solve the geomorphic compatibility issues. T. Gordon then presented the two (2) alternatives which are being considered for replacement of the crossing. Alternative A would replace the crossing with a 14-foot span bridge. This alternative would exceed NHDOT and NHDES minimum hydraulic requirements for a Tier 5 roadway and Tier 2 stream. This alternative would have a precast concrete rigid frame superstructure and a concrete spread footing substructure. A 2-foot wide wildlife shelf would be included in this alternative. The construction timeframe would be 6-10 weeks and traffic control would be handled via a road closure with detour. Alternative B would replace the crossing with a 21-foot span bridge. This alternative would meet NH Stream Crossing Guidelines for a Tier 2 stream. This alternative would have a precast concrete rigid frame superstructure and a concrete spread footing substructure. Two (2), 3-foot wide wildlife shelves would be included in this alternative. The construction timeframe would be 8-12 weeks and traffic control would be handled via a road closure with detour.

T. Gordon presented the current status and schedule of the proposed project. The Predesign phase of the project has been completed, including a Hydrologic and Hydraulic Report. The Engineering Study phase is currently in progress, with expected completion in November 2021. The current project schedule has Preliminary Design and Permitting being completed in spring of 2022, with Final Design being completed in fall of 2022, and Construction occurring during the summer of 2023.

Andrew O'Sullivan (NHDOT BOE) asked which alternative is preferred. C. Fournier stated that this decision is ultimately up to the Town and has not yet been made. C. Fournier added that both bridges are a vast improvement over current conditions, and financial constraints of the Town will likely lead them to the 14 ft span.

Karl Benedict (NHDES) commented that he is interested in seeing additional details as design progresses, particularly regarding longitudinal slopes, bed materials, and plantings. T. Gordon responded that the longitudinal profile is fairly steep; by removing the perch, the slope of the stream will be greater than 7% in the area of the crossing. T. Gordon added that step pool systems will be considered as design progresses. K. Benedict agreed that grade control may be necessary. C. Fournier commented that the plan is to provide riprap to flood elevations and vegetative stabilization above the flood line.

Lori Sommers (NHDES) asked if the project will be presented again once the design is finalized. T. Gordon stated that HEB would be available to present again if this is desired. L. Sommers stated she believes it does not need to come back for a resource agency, but advised HEB to bring more details to NHDES for review during subsequent design phases. L. Sommers asked what HEB

believes would make the project require mitigation. T. Gordon stated that it is likely that the proposed project would exceed 200 linear feet of stream impacts which would trigger the need for mitigation. T. Gordon asked if it is possible that both the 14-foot alternate and the 21-foot alternate could qualify for self-mitigation. L. Sommers stated that it is likely that both alternatives could qualify for self-mitigation, but the details will need to be evaluated once they are finalized.

Carol Henderson (NHF&G) asked if there is a large difference in the amount of riprap required for the 21-foot span versus the 14-foot span. C. Fournier responded that the riprap will only be used up to flood line with vegetation above the flood line, and flood elevations vary little between the two alternatives.

Mike Hicks (USACE) asked if all projects still require coordination with the USCG. T. Gordon responded that the proposed project would require the completion of the NHDOT Short Form environmental documentation process, which includes coordination with the USCG.

Jean Brochi (EPA) had no comments.

Jessica Bouchard (NHDNCR) commented that the NHB DataCheck does in-fact have a species listed: the wood turtle. T. Gordon responded that the wood turtle was overlooked when preparing the presentation and apologized. T. Gordon added that the project team will review the NHB DataCheck and coordinate with NHB as required.

Pete Steckler (TNC) asked whether using large boulders locked in place could be a feasible alternative in place of the riprap inside the structure. C. Fournier responded that the proposed plan is to provide angular riprap to protect against scour along the banks with a natural stream material on top in the streambed. C. Fournier added that due to the steep longitudinal slope of the channel, weirs and/or large boulders may need to be added to reduce the velocity of the stream and protect against scour.

This project has not been previously discussed at the Monthly Natural Resource Agency Coordination Meetings.