

**BUREAU OF ENVIRONMENT
CONFERENCE REPORT**

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: November 17, 2021

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Andrew O’Sullivan
Joshua Brown
Matt Urban
Mark Hemmerlein
Marc Lauren
Jonathan Evans
Tom Jameson
Kirk Mudgett
Dillan Schmidt
Meli Dube
Timothy Mallette
Georgie Ravelli
David Scott
Tim Dunn
Cassandra Burns
Corey Spetelunas
Carol Niewola
Kerry Ryan
Bill Saffian

ACOE

Mike Hicks

EPA

Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict
Cheryl Bondi

NHB

Absent

NH Fish & Game

Carol Henderson

Federal Highway

Jamie Sikora

The Nature Conservancy

Pete Steckler

**Consultants/ Public
Participants**

Jennifer Zorn
Brian Colburn
Peter Rice
Tyler Reece
Anna Giraldi
Jim Bouchard
Sam Cheney
Guy Rouelle
Mark Goodrich
Jennifer Doyle-Breen
Richard Devanna
Christine Perron
David Hickling
Paula Bellemore
Susan Francher
Todd Dwyer

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NOTES ON CONFERENCE:

Finalize Meeting Minutes

Finalized and approved the October 20, 2021 meeting minutes.

Peeverly Hill Road Sidewalk Improvement and Complete Streets Project, City of Portsmouth (20258, X-002(061))

Jennifer Zorn (MJ) introduced the project by describing its location between Route 33 and West Road (near Route 1) for an approximate length of 1-mile and currently has no sidewalks, crosswalks, bike lanes, or shoulders and carries approximately 9,000 vehicles per day. The proposed redesign was described, as well the positive affect that is anticipated by providing safe connections to many of the highly used recreation sites in this area of Portsmouth. The project is currently in the NEPA phase and preliminary design and has been reviewed by the public during many public meetings and presentations to the Portsmouth City Council.

The preferred alternative received unanimous vote by the city council after much public input. The preferred alternative includes a reconstruction of Peeverly Hill Road to include two 11' travel lanes, 2' shoulders on each side, 6' sidewalk on the east side, 10' shared-used path on the west side, crosswalks, and water quality treatment measures to comply with the MS4 rules to the extent practicable. The preferred alternative also meets the Complete Streets Ordinance adopted by the City of Portsmouth.

Some impacts to natural resources are anticipated to occur. Impacts will be further refined during final design and the permitting phase of the project. Based upon preliminary design approximately 2,293 square feet of freshwater wetlands impact is expected to occur along the roadway edges due to grading activities. Neither tidal wetlands or prime wetlands are anticipated to be impacted by the project.

Impacts to the road frontage of 305 Peeverly Hill Road (Gardner-Hett Farm) are anticipated. The Gardner-Hett Farm is encumbered by LCIP and is eligible for listing on the National Register. The property owner has been engaged by the city staff and has stated they are willing to accommodate the project. A property along Greenleaf Avenue will be impacted to accommodate a water quality treatment area. This property is encumbered by a City of Portsmouth Conservation Easement. Similar to the Garner-Hett Farm, the owner is willing to accommodate the project and has been engaged by the city staff. Lastly, the project is located in the coastal zone and will require a Coast Zone Consistency Review. Jennifer Zorn stated that based upon the research done so far, a consistency determination is anticipated. The consistency letter will be provided to Jonathan Evans in the near future for his review.

Brian Colburn (MJ) then detailed the four proposed water quality treatment areas (BMPs) and the MS4 criteria these BMPs are attempting to meet. Three BMPs are located along Peeverly Hill Road and one BMP is located on Greenleaf Avenue. The total existing pavement is 4.88 acres and proposed pavement is 5.93 acres, a 1.05-acre difference. The total treatment area anticipated at this time is 3.75 acres.

Regarding the project schedule, Brian Colburn stated that the NHDES permit should be submitted in the summer of 2022. The ad date is 2023.

The following questions and comments were made by participants in the meeting:

Karl Benedict (NHDES) asked that owner permission be provided in the application as well as a summary of the stormwater treatment, especially and explanation of why treating 4.0 acres is not possible.

Lori Sommers (NHDES) requested that the proposed changes to the conservation easement/property be described.

Carol Henderson (NHF&G) had no comments.

Michael Hicks (USACOE) had no comments.

Jeanie Brochi (USEPA) had no comments.

Peter Steckler (The Nature Conservancy) asked for confirmation that the existing culvert carrying Sagamore Creek under Pevery Hill Road is not being impacted. Brian Colburn confirmed that no impact is anticipated to this culvert.

Jonathan Evans (NHDOT) corrected the information on a slide regarding the Northern Long-eared Bat. He stated that the FHWA Programmatic Permit be used to address this matter and not the 4(d) Rule. Jennifer Zorn agreed.

Antrim #14942

Anna Giraldi, Quantum Construction Consultants, LLC, (QCC) presented the project, via Zoom link, which proposes to replace the High Street Bridge over Great Brook. The existing bridge is a 13-foot span Metal Pipe Arch (MPA) founded on stone abutments with concrete caps and built in 1960. The purpose of this project is to correct the structural deficiencies of the existing bridge crossing and provide safe, year-round, vehicular passage on High Street over Great Brook. This project is being funded through the State-Bridge-Aid (SBA) program, and construction is authorized for fiscal year 2023. Anna explained that the bridge has been rated in poor condition and is structurally deficient with a sufficiency rating of 59.1%. The bridge is currently on the NHDOT Municipal Redlist and is in need of replacement.

Anna began the presentation by screen-sharing an aerial photograph of the project location, pointing out Great Brook and the impoundment pond of the downstream dam. The site location was pointed out on a Town tax map as well to give the meeting participants a clearer idea of where in Antrim the site is located. Anna presented site photographs depicting existing conditions, including a photograph of the roadway intersection of High Street and U.S. Route

202, and the existing deteriorated arch culvert. Photographs of the existing sidewalk, stone bridge abutments, upstream stone training walls, the downstream dam impoundment pond, and the existing driveways/service roads were also presented. Anna stated that the upstream stone training walls are approximately several hundred feet long, and the existing bridge has a span of 13 feet.

Anna presented the New Hampshire Fish & Game (NHF&G) Wildlife Action Maps, which indicate the site is not located within an area of Highest-Ranked Habitat. The Natural Heritage Bureau (NHB) had no comments relative to the proposed project, and the NHB DataCheck letter stated that while there was record of an endangered species present in the vicinity of the project, the NHB does not expect it will be impacted by the proposed project. 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 New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau Stream Crossing Worksheet that was prepared for the project. High Street over Great Brook is classified as a Tier 3 stream crossing, with an existing 100-year peak discharge of 1,310 cfs. The existing stream channel has an entrenchment ratio of 1.1-1.3, and has a Rosgen Classification of A2. Anna stated that the proposed bridge structure will have an entrenchment ratio of 1.0, as the abutment walls will be vertical and there is no room for a wildlife shelf and 2:1 side slopes within the bridge. The bridge span will be increased from 13 feet to 15 feet. The openness ratio of the proposed structure was calculated to be 5.35.

The proposed bridge structure will either be a precast rigid frame or a concrete slab bridge, depending on the cost of each structure. The side slopes of the channel are very steep and narrow at the training walls. A wildlife shelf is not practicable for the proposed design, as a wildlife shelf with 2:1 side slopes would require a bridge span of 30 feet, which is not feasible within the constraints of the existing site. A larger bridge span will also increase the volume of the downstream impoundment pond. Riprap is required within the stream channel underneath the bridge and immediately upstream and downstream of the bridge crossing, and is required along the stream banks up to elevation 653 to the limits shown on the plans. The proposed design meets the minimum freeboard requirements of the NHDOT Bridge Manual.

Andrew O'Sullivan, NHDOT, inquired if any Wetland Impact Plans (WIPs) had been drafted, and if any areas of potential effect have been calculated. Anna replied that the impact area for the proposed project is approximately 1,800 – 2,000 SF. WIPs will be included in the Standard Dredge & Fill Wetland Permit Application at a later date.

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, due to potential impacts to private properties surrounding the bridge, easements would need to be obtained and included in the wetland permit application. He inquired if the outlet of the existing culvert is within a 100-year floodplain. Anna confirmed the outlet of the existing culvert is within the 100-year floodplain. Karl added that, because this is a Tier 3 stream crossing within a 100-year floodplain, the project could potentially impact a Priority Resource Area (PRA). He asked if the 13-foot reference reach listed on the stream crossing worksheet was taken outside of the stone training walls lining either side of the stream channel. The locations of the cross-sections used to define the reference reach will need to be included in the wetland permit application to ensure the reference reach was properly defined. Karl inquired if the substrate within the reference reach was truly all boulder as indicated on the NHDES Stream Crossing Worksheet. Jim Bouchard (QCC) replied that the when dam impoundment area downstream of the bridge crossing had previously been de-watered, there were visible boulders within the impoundment pond, and sediment removal occurred.

Additionally, Karl would like to see the Ordinary High Water (OHW) and Top of Bank (TOB) called out on the project plans. He added that this project may qualify as an alternative design. Anna replied that an A2 Rosgen Classification corresponds to a required entrenchment ratio of less than 1.4, and that the proposed bridge span cannot be increased due to potential impacts to the private driveway/service roads next to the bridge. This will be the basis for the alternative design report that will be included with the wetland permit application. Karl concluded noting he would like to see the proposed linear feet of wetland impacts included on the project plans.

Lori Sommer, NHDES, reiterated that the total linear feet of wetland impacts would need to be shown on the plans, and that she was leaning towards mitigation being required for the project due to the proposed riprap within the stream channel. She asked if the total linear feet of riprap being proposed was known. Anna estimated that 60 linear feet of riprap was being proposed on each streambank, totaling approximately 120 linear feet. Lori inquired if riprap had been placed along the streambanks in the past, and if there was existing riprap within the stream channel. Anna replied that it is unknown if riprap had been previously placed within the stream channel, and shared more photographs of the streambank's vertical stone and boulder training walls. Andrew asked Lori if mitigation was required due to the potential impacts to a PRA or if mitigation was required due to the total linear feet of proposed impacts. Lori replied that mitigation was being triggered due to the placement of riprap within the stream channel in an area where riprap had not been placed previously. Anna stated that the riprap was needed for scour protection of the bridge. Riprap will be overlain with streambed material. Lori reiterated that any riprap placed within the stream channel in areas where riprap has not been placed previously will trigger mitigation.

Carol Henderson, NH Fish & Game, inquired if natural streambed material was to be placed on top of the proposed riprap within the stream channel. Anna confirmed that a foot of natural streambed material would be placed on top of the proposed riprap within the stream channel.

Carol stated that while the Datacheck Letter indicated that no endangered species would be impacted by the proposed project there were still records of endangered species within the vicinity of the project. She wanted to make the distinction, that just because NHB has determined there were no potential impacts resulting from the proposed project, that doesn't mean endangered species won't be encountered on site.

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, and if the Northern Long-Eared Bat was the only identified federally-protected species. Anna confirmed that the Northern Long-Eared Bat was identified as the only species of concern by IPaC.

Mike went on to explain that the Army Corps. of Engineers (ACOE) would be the lead agency for the project, and that he would notify the U.S. Coast Guard about the proposed project via letter. He inquired if the State Historic Preservation Officer (SHPO) has been contacted relative to potential historical impacts. Anna replied that QCC has been coordinating with the NHDOT Cultural Resource Agency and the New Hampshire Division of Historical Resources (NHDHR) to determine potential historical impacts.

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

Peter Steckler of The Nature Conservancy in New Hampshire (TNC) took a holistic look at the project, inquiring if the downstream dam/impoundment pond could possibly be removed. He asked if any coordination has occurred between QCC and the current dam owner, and if the owner had any thoughts of removing the dam in the near future. Jim replied that QCC has reached out to the dam owner's engineering consultant. They are working to meet Letters of Deficiency issued by the NHDES Dam Bureau, and the owner has no interest in removing the dam, due to its historical significance to the Town of Antrim. Peter had no additional questions or comments relative to the presentation.

Ron Kleiner, NHDOT Project Manager for this project, offered no further comment. Anna asked Ron if he believed the bridge span proposed during the presentation was adequate, to which he replied it was.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

Hampstead, #43275 (X-A005(067)I)

Tim Mallette, NHDOT, provided an introduction to the project, describing the 42" corrugated pipe and the importance of how it serves as an equalizer pipe between the Upper and Lower portions of Johnsons Pond as well as operates in harmony with a Beaver colony. He noted

information from previous Natural Resource Agency Coordination meetings (NR meeting) where alternatives and the significance of other culverts influenced by this connecting pipe were discussed, including an inter-agency study which he completed with a Dam Safety Engineer between 2011 and 2012. The study evaluated the causes of flooding in the area. Downstream conditions are stable due to the work financed by a private dam owner. There appears to be significant supporting landscape for habitat independent of the Upper Johnsons Pond Watershed. Peak hydraulic design flow is on the order of 130-150 cfs, splitting near the upper section of the pond, effectively distributing flows in both outlet directions. Condition of the pipe is fair with significant voids in some areas. The preferred alternative will match the downstream town culvert 1:1 in capacity and type with a smooth surface slip-liner which will provide a longer service life. Wetland delineation was performed by Gove Environmental in Oct. 2021. In order to avoid dealing with a dent and to provide a larger work area with less impacts to the pond, 10 ft. of pipe at the inlet will be removed. Temporary impacts are to be mainly in the inlet area.

Discussion / Agency Comments:

Carol Henderson, NHFG, asked if the velocity will increase in the pipe after sliplining. Tim Mallette responded that the velocity will be influenced by the downstream water surface elevation and that under normal flows, the velocity is anticipated to be similar to existing conditions due to the pond level except during storm events when it will increase. Carol asked if the proposed pipe would follow the existing pipe's corrugations. Tim replied that the proposed pipe liner is smooth but baffles can be welded to the invert. Carol stated that baffles are not recommended as debris often gets trapped. Andrew O'Sullivan, NHDOT, asked if the invert will need to be rough even though the pipe is continuously submerged to which Carol replied yes, to accommodate the turtles the pipe would still need to be rough. Tim stated that there has been at least 1-foot of water in the pipe over the last 10-years, even during drought conditions. Carol asked if the bottom of the culvert can be roughened to which Tim replied that to the best of his knowledge, there is no product that can be applied to an HDPE pipe to provide a rough/textured invert.

Karl Benedict, NHDES, indicated that the wetland impact plans will need to be stamped by a Certified Wetland Scientist. Karl stated that according to the 900 rules, the culvert should be classified as a stream crossing due to the presence of a watershed and would like to see impacts to the pond identified, such as due to temporary matting. Meli Dube, NHDOT, stated that a full stream crossing assessment was requested, however, the consultant (Gove Environmental) stated in their report that there is no "defined channel" or "continuous channel" as stated in the definition of a watercourse (Env-Wt 104.48). Meli inquired how this discrepancy should be handled in the application because several pieces of information required for stream crossings are not available for inclusion. Karl responded that including the report by Gove will suffice to cover any other missing data in the application and that an alternative design form should be included. Tim Mallette emphasized the importance of public safety and flood hazards and suggested a holistic approach to address flooding safety factor as well as using temporary matting in the pond.

Comments:

Lori Sommer (NHDES): She would need to see the summary which is to be sent to Karl before she can make any conclusive decisions on mitigation.

Pete Steckler (TNC): No comment at this time

Carol Henderson (NHFG): No further comment at this time

Jamie Sikora (FHWA): No comment at this time.

Keene Dillant-Hopkins Airport, #TBD

Mark Goodrich and Guy Rouelle of Dubois & King presented the need for the proposed fence along the western portion of the Airport. The proposed project has been on the airport's Airport Layout Plan (ALP) and Capital Improvement Plan (CIP) for many years. D&K has coordinated with the FAA regarding alternatives for the location of the proposed fenceline, including its minimum setbacks from the runway and taxiway system. The project is expected to be federally funded through the FAA's Airport Improvement Program (AIP).

The western side of the airport is currently unfenced and includes many acres suitable for animal habitat including brush, wetlands and forest, which presents a hazard to the safe operation of aircraft at the airport. Point in fact, the Airport has had two recent aircraft accidents involving deer strikes and the removal of a moose from the intersection of the runways.

The proposed project includes the installation of an 8' chain link fence along the western side of the airport. The proposed fence line will be placed as close to the runway and taxiway system as permitted by the FAA to limit impacts to natural resources. The project will include approximately 15,000 LF of fence line, of which approximately 4,300 LF of fence will traverse wetlands.

A portion of the proposed fenceline may encroach upon the 100-year floodplain for the Ashuelot River, but not the floodway.

Grasshopper Sparrows have been heard at the airport but no nests have been identified. The project will mitigate impacts by including pre-construction, pre-nesting season mowing to ensure the birds aren't present during construction.

The proposed project recognizes the amount of wildlife habitat that exists on the west side of the airport and the airport would like to keep most of it outside of the proposed fence but have worked with the FAA and NHDOT to keep the fence outside of critical protected areas on the airport (i.e., runway object free area and runway visibility zone).

Prior to developing a scope and fee with the airport, D&K would like to inquire from the NRAC what permit and mitigation efforts will be required.

Questions and Discussion:

Lori Sommer commented that the airport had recent permits for wetland impacts for a taxiway extension project, which were mitigated using in-lieu fee. Ms. Sommer would prefer that the

proposed fence project be appended to the existing permit, and any impact fees be addressed through in-lieu fee. Ms. Sommer noted that the wetland impacts would be limited to the impacts from the installation of fence posts, which appear to be less than 10,000 SF of permanent impacts. Ms. Sommer inquired if there are any temporary impacts?

Response: Yes, D&K expects temporary impacts from the installation of the fence, including the use of bog mats.

Karl Benedict (NHDES): Agree with timber/bog mats but these will need to be counted as temporary impacts that may trigger a permit. The impact area needs to be field delineated for wetlands including vernal pools (if present) and a wetlands functions assessment. Looking for mechanism to minimize wetland and T&E impacts. Incorporate recommendations on construction sequence and plans for T&E protections.

Carol Henderson (NHF&G): Include a construction schedule that minimizes any vernal pool impacts. Will need to submit an updated NHB request for this proposed project.

Mike Hicks (USACOE): Bog mats, depending on the number, will likely be a jurisdictional impacts and a permit will be needed for these temporary impacts. Has no concerns about the fence posts providing a significant loss of floodway. The Lead Federal Agency, (assumed to be FAA) would make the impact call on floodways for this proposed project.

Jean Brochi (USEPA): No comments.

Jaime Sikora (FHWA): No comments.

Pete Steckler (The Nature Conservancy): No comments.

Guy Rouelle (D&K): Is pre-construction mowing prior to nesting season acceptable? C. Henderson said it was OK so long as it is pre-season and there are no other T&E species to protect.

Meeting ended 10:50 am.

Woodstock-Lincoln #42534 (X-A004(896))

Jennifer Doyle-Breen, AECOM, introduced the project, impacts, and construction access alternatives goals for the meeting. Andy O'Sullivan, NHDOT BOE, asked about the date of the cover photo, as the water levels appeared higher than he had seen them when at the site. Subsequent to the meeting AECOM checked the photo files; the cover photo was taken on November 4, 2018. J. Doyle-Breen provided an overview of the project site and scope and reminded the group that this project had been previously presented at the February 18, 2020 and May 20, 2020 meetings, and that a site visit attended by Karl Benedict, NHDES, as well as staff from both NHDOT (A. O'Sullivan and Mark Hemmerlein, Bureau of Environment; Bill Saffian, Bureau of Bridge Design, and Steve Glines, Bureau of Construction) and AECOM (J. Doyle-Breen, Todd Dwyer, and Rick Devanna) occurred in May 2020. The project scope is to repair the southern pier, Pier I, of the

bridge that carries NH Route 175 over the Pemigewasset River (195/093) in the Town of Woodstock. Up to 15 feet of scour has occurred since the bridge was built in 1975. Calculations indicate that future scour could increase up to 17.5 feet below the existing streambed if no measures are implemented to stabilize the bridge pier. Natural resources present include the Pemigewasset River watercourse and adjacent Bank, 250-foot Protected Shoreland, Atlantic salmon habitat, and wood turtle. No vegetated wetlands are present. Northern Long-Eared Bat (NLEB) is ubiquitous in the region, however no known hibernacula or roosting trees are known to occur at the project site.

J. Doyle-Breen indicated that at past meetings alternative permanent scour repair measures as well as alternative construction access approaches had been discussed. For the scour repair itself, Alternative I, involving permanent sheetpile and placement of stone and tremie grout in dry conditions, was selected because its footprint is limited to the original footprint of the pile support, it has the smallest footprint and it is the least costly alternative. The construction access is the most challenging part of the project, and much analysis of various access alternatives has occurred since May 2020.

At the May 2020 site visit, the following access alternatives were reviewed, and at that time the potentially preferred access was narrowed to Alternatives B and D.

- Alternative A: Southwest Temporary Road/Upstream Causeway
- Alternative B: Southeast Temporary Road/Downstream Causeway
- Alternative C: Existing Path Widening/Northeast Downstream Causeway
- Alternative D: Existing Path Widening/ Northwest Upstream Causeway
- Alternative E: Existing Path Widening/Northeast Downstream Trestle

J. Doyle-Breen shared graphics illustrating access Alternatives B and D and the envisioned causeways needed for either approach. As shown in the figures, either alternative requires accessing the entire circumference around the scoured pier, which results in a similar amount of stone fill in the river. To minimize stone fill, a substantial portion of the access pathway would be accomplished with construction mats along the northeastern shore for Alternative D. Since both Alternative B and D would involve a similar amount of stone fill in the river, both of these original alternatives include concerns regarding turbidity during construction. Alternative D also posed a concern regarding the need to by-pass flow below the access causeway in the main portion of the river channel. The original Alternative B does not offer the opportunity to use mats and results in a similar amount of rock fill in the river as compared to Alternative D. Alternative B also requires greater disturbance in the 250-foot Protected Shoreland due to the need to construct a new access road.

To address concerns associated with the original Alternatives B and D, and after discussion with Steve Glines from the DOT Construction Bureau, a Modified Alternative B was developed, incorporating a three-sided cofferdam to create a relatively dry work area from the Alternative B access point. The graphic included in the presentation illustrates this alternative which still involves some stone fill in the river for access but minimizes exposure of the stone fill to the flow of the river due to the use of temporary sheetpile combined with the permanent sheetpile installed as part of the final scour protection. In addition to the rock fill, geotextile fabric would

be installed in the remainder of area inside the sheetpiles to facilitate equipment access and temporary stockpiling of materials. A new access road would be constructed off of Route 175. Todd Dwyer, AECOM, explained the construction sequencing of the Modified Alternative B, which would occur as follows:

1. Construct access road to toe of slope at river
2. Install sheet piles, including guide piles, on the upstream side of the bridge (these would be installed from the bridge deck)
3. Continue constructing the access road in the riverbed by incrementally placing stone and sheetpiles within reach of machinery and install double turbidity curtain along northern work edge
4. Install northern sheetpiles below bridge using Giken Vibro Pile technology or similar with spliced piles
5. Install the geotextile fabric for the laydown/access area and install the remaining sheetpiles below the bridge
6. Install the stone fill inside the permanent sheetpile cofferdam, grout the voids, and install topping slab

J. Doyle-Breen reviewed the impacts for Alternatives B, D and Modified B. Alternative B involves about half of the amount of stone fill as the original Alternatives B and D. Original Alternative B and Modified Alternative B involve the greatest area of 250-foot Shoreland impact due to the need to construct the new access road. J. Doyle-Breen reviewed the mitigation measures including work during low flow, construction sequencing (as discussed by T. Dwyer) to minimize work in flowing water, turbidity curtain, and revegetation of cleared Shoreland. She also noted that Lori Sommer (NHDES) had previously confirmed that mitigation would not be required for the permanent fill since it will be within the footprint of the original fill placed to protect the bridge pier. Although work would be done under low flow conditions, if a large storm such as a hurricane were forecasted during the construction period, all equipment and material would be removed from the river in advance of the storm. The sheetpiles would remain in place, however the river would be able to overflow the sheetpile and occupy the flood storage area inside the work area once water levels reached and overtopped the sheetpile.

J. Doyle-Breen presented the list of permits required, including NH DES Wetland and Shoreland Permits; US Army Corps of Engineers General Permit regarding repair/maintenance of existing structures and fills, and potentially a Coast Guard Bridge Permit. Due to the presence of Atlantic salmon, an Essential Fish Habitat (EFH) analysis to be reviewed by the National Marine Fisheries Service (NMFS) will be required. The project area is also within the habitat range of NLEB; a bat survey was conducted in 2019, and no signs of bat presence were found. This survey will be re-done. Consultation with the US Fish and Wildlife Service resulted in a “Likely to Adversely Effect” determination for NLEB under the 2018 Federal Highway Administration, Federal Rail Administration, and Federal Transit Administration Programmatic Biological Opinion. There are no archaeological issues with Alternative B Modified.

J. Doyle-Breen summarized by stating that Alternative B Modified offers advantages over the other construction access alternatives due to the smaller amount of rock fill and work outside of the main portion of the channel. Although it does involve dewatering a portion of the river for the 8 – 10 weeks of construction, the work would be done in low flow conditions, and some of the area within the sheetpiles may be dry during low flow conditions. The goal is to reach consensus with those present at the meeting that Alternative B Modified appears to be the best option in a challenging construction work environment, so that the project can move forward with completing and submitting permit applications.

A. O’Sullivan opened the meeting for questions from the agencies. K. Benedict stated that he was in favor of the Modified Alternative B. He inquired if the upstream temporary sheetpile could be angled rather than perpendicular to the flow. Bill Saffian (NHDOT Bridge) responded that since the sheetpile would be placed from the bridge, the reach of the equipment would limit how far the sheetpile could be placed from the bridge. K. Benedict asked about water quality monitoring and whether a 10 NTU differential could be maintained during construction or a mixing zone would be needed. Mark Hemmerlein (NHDOT BOE) stated that because the water levels will be very low, a mixing zone is difficult to implement and may be limited to a 100-foot width. K. Benedict suggested that coordination with Gregg Comstock of the Watershed Bureau should be consulted in regard to appropriate measures to protect water quality.

J. Doyle Breen noted that K. Benedict had previously confirmed that even though the Pemigewasset is a Tier 3 Stream under the wetland regulation definitions, because the project was not a new crossing and involved replacement of fill with no change to hydraulics, then the Stream Crossing Rules would not apply. K. Benedict confirmed this assumption and clarified that the wetland application should discuss hydraulics in a narrative format and explain why the river hydraulics will not change based on the proposed repairs. A. O’Sullivan clarified that the NHDES wetland application would therefore omit standard stream-crossing data typically submitted, such as reference reach comparisons.

L. Sommer asked if the 8 – 10 week construction period included the entire project, including the new access road. T. Dwyer replied that yes this schedule estimate is based on recent experience on similarly sized projects and would include all construction elements.

L. Sommer asked about how the slope would be restored in the area of the access road. T. Dwyer and J. Doyle-Breen responded that the slope would be regraded to pre-existing conditions and revegetated. L. Sommer also asked for confirmation whether the temporary sheetpile would be removed at the conclusion of construction, and T. Dwyer confirmed that it would be removed.

Carol Henderson (NH Fish and Game) stated that she had previously advocated for Alternative B because it involved a shorter causeway in the river and was in favor of Modified Alternative B.

The following agency representatives had no comments: Mike Hicks (US Army Corps of Engineers Regulatory Division), Jeanie Brochi (US EPA), and Pete Stickler (The Nature Conservancy). Jamie Sikora of the Federal Highway Administration asked about the life span of the permanent scour protection proposed; T. Dwyer replied that the design was anticipated to have a useful life of 75 years or greater.

B. Saffian stated that the construction of the new access road may require excavating into the road.

Dummer-Cambridge-Errol #16304B (X-A004(699))

Christine Perron introduced the project, which consists of a 1.3-mile segment of NH Route 16. The proposed project entails shifting NH Route 16 to the west, away from the river, with that shift ranging from 15' to 385'.

The objective of the meeting was to review final details prior to submitting permit applications. Specifically, proposed crossing structures, plantings in the vegetated buffer, final proposed impacts, and mitigation would be discussed.

At the last meeting, the project team was asked to look at adding a terrestrial wildlife crossing since a crossing shelf could not be accommodated in the two stream crossing structures. The design team was able to locate a terrestrial crossing between the two stream crossings. The proposed location will tie into the wetland system that is part of the northern stream crossing. The crossing will consist of a 42" concrete pipe, embedded 6", providing 30" clearance. The total length will be 64'. The crossing provides less than the recommended openness ratio but this is the structure that would fit without substantial increases in wetland impacts, floodplain impacts, and vegetated buffer impacts.

Channel details at the northern and southern stream crossings were reviewed. The proposed structures consist of a 5' wide x 4' high box culvert at the southern stream crossing and a 6'W x 6'H box culvert at the northern crossing. Both structures will be embedded 1 foot with simulated streambed material. A total of 143 linear feet of stream channel will be reconstructed as part of the roadway realignment and stream crossing replacements. Natural streambed material will be placed within bankfull width. Existing streambed material is sandy, mucky material. Proposed simulated streambed material will be round or sub-rounded stone comprised mostly of gravel. The 2:1 side slope along each channel requires stone for stabilization but will be covered and seeded to bankfull elevation. Fascines (bundles of live stakes of willow, dogwood, or other shrubs) will be installed parallel to the top of the bank along each channel and live stakes will be planted behind each line of fascines.

The proposed vegetated buffer was reviewed. The current area of the buffer between existing edge of pavement and the OHW of the Androscoggin is approximately 5 acres, with edge of pavement ranging from 15' to 70' from the river. The buffer that will result from the proposed alignment will be approximately 20.5 acres, with the new edge of pavement ranging from 45' to 450' from the river. From a water quality perspective, the proposed buffer fully meets Alteration of Terrain and Water Quality Certification requirements to achieve treatment with a vegetated buffer for 1.2 acres of pavement, which is more than double the amount of pavement that will be added (0.5 ac). Based on the results of pollutant loading analysis, the proposed project is expected to reduce the total suspended solids (TSS) load by 9.3% or 431 lbs/year and reduce the Total Phosphorus (TP) load by 1.3% or 0.2 lbs/year. The total nitrogen (TN) load shows a slight increase of 0.2% or 0.1 lbs/year. The negligible changes in TP and TN are within the expected accuracy of the modeling procedure and can be considered essentially the same when comparing the pre-development and post-

development conditions. Also, given the size of the Androscoggin River and its watershed, the minimal amount of increase in nitrogen is not expected to impact the water quality of such a large water body. The project is located within a HUC10 watershed that is 162,000 acres in size. The watershed is nearly entirely forested and approximately 34% of the overall watershed area is permanently protected from development, including the entire length of the NH Route 16 project area.

The approach to plantings within the vegetated buffer was reviewed. The disturbed area within the new buffer will be restored by placing excavated muck from the project area to retain the existing seed bank; planting a seed mix for post-construction stabilization; and adding plantings of woody vegetation along the created stream channels and other specific areas. When considering the locations for planting woody vegetation, ecological values need to be balanced with cost considerations, as well as scenic values, including maintaining views of the river in order to meet objectives of existing easements. To help inform the planting approach, tree counts for the waterfront buffer were completed per NHDES Shoreland requirements. This involved counting all trees and shrubs within each 25' grid segment along the river and calculating a score for each segment. Shoreland rules require that each segment have at least 25 points. Only 24 of the 226 grid segments along the entire project currently meet that requirement. The project would be impacting 5 of these segments, leaving 19 compliant segments. Plantings are proposed in 14 separate locations along the river, which would equate to at least 28 newly compliant segments. The locations along the river consist of 10 groupings of shrubs (with each grouping comprised of 30 live stakes of willow, dogwood, or elderberry), 200 linear feet of fascines along the top of the bank at the north and south end of the project, and the previously discussed plantings at the two stream channels. In addition, red maple saplings will be planted along the perimeter of a vernal pool that will be adjacent to the new roadway alignment. A wet meadow seed mix will be used within the proposed flood storage area.

The bank impacts at the north and south ends of the project area were reviewed. At the north end of the project, Impact AN consists of 151 linear feet of bank impact from the regrading required to tie into the new roadway slope. At the south end of the project, Impact B consists of 202 linear feet of bank impact from regrading required to accommodate the raised profile and roadway box materials. At both locations, approximately 200 linear feet of fascines will be installed parallel to the top of bank.

Total impacts were summarized as follows:

PFO	PEMx	Channel-Tributaries (2)	Channel-Andro	Bank-Andro
225,304 sf	752 sf	3,631 sf	385 sf	4,646 sf
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(including 3,273 sf Vernal Pools)		412 lf	156 LF	595 LF

Total Wetland	Total Channel	Total Bank
226,056 sf (5.3 ac)	4,016 sf	4,646 sf
	568 LF*	595 LF

*creating 143 LF, so 425 LF net impact to mitigate

Of the total bank impacts, approximately 184 linear feet (1,691 sq ft) of impact is from drainage outlets that will be installed or removed; 353 linear feet (2,675 sq ft) of impact is from the north and south roadway tie-ins previously discussed; and 58 linear feet (280 sq ft) of impact is associated with the replacement of the northern stream crossing.

The project requires a NHDES major impact permit, Army Corps Individual Permit, and Section 401 Water Quality Certificate.

Mitigation requirements consist of the following:

Stream Bank:

595 LF

\$ 177,721.74 in-lieu fee

Stream Channel (net)

425 LF

\$ 126,944 in-lieu fee

Vernal pools (2 VPs impacted):

\$500,000 in-lieu fee

Wetlands

226,056 sq ft (5.3 ac)

Land Preservation 20:1 (106 ac)

In-lieu fee \$942,359.55

The total in-lieu fee would be \$1,747,025.29. At a previous meeting, Lori Sommer noted that there should be a discussion about applying a mitigation credit for the proposed vegetated buffer. The 16304A project received a 12% credit, equivalent to the amount of TSS that would be reduced by the buffer. If there is agreement on applying that same thought process to this project, it would equate to a 9.3% credit resulting in an in-lieu fee of \$1,585,551.94.

At the last meeting, it was noted that no preservation opportunities had been identified that aligned with the project schedule. Since that time, a new opportunity has been identified in Shelburne, which entails an effort by the Society for the Protection of NH Forests (SPNHF), The Conservation Fund (TCF), and the Shelburne Conservation Commission to purchase 2,717 acres in Shelburne from Bayroot LLC. The total estimated cost of this preservation effort is about \$2.5 million, with \$1.2 million anticipated from grants. If DOT provided the mitigation funds toward this project in the amount of the in-lieu fee, it would enable the purchase to move forward without private fundraising, ensuring a successful outcome.

A brief overview of the preservation opportunity was provided. There are two tracts that total approximately 2,700 acres that abut the Appalachian Trail corridor, Androscoggin River, and additional tracts slated for future protection. The property is south of the Dummer project but within the Androscoggin watershed. The property is currently managed for timber. The timeline of the anticipated purchase aligns well with the timeline of permitting and funding availability for the Dummer project. Preserving the 2,700 acres would protect 1.6 miles of frontage on the Androscoggin, including floodplain forest consisting, in part, of 20 acres of an exemplary natural community. In addition, 24.3 miles of interior stream frontage would be protected along with at least 25 acres of wetlands consisting of some uncommon natural communities. Two vernal pools have been confirmed on the property and a spring vernal pool survey would likely confirm an additional two to five vernal pools.

Concurrence is being sought on pursuing this preservation opportunity as mitigation for the proposed project. The property far exceeds the preservation threshold of 20:1 and would protect similar resources that will be impacted by the Dummer project. This concurrence would require that the Army Corps agree to mitigating vernal pool impacts based on the amount of the required in-lieu fee of \$500,000 rather than preservation of 10 vernal pools.

Based on the current project schedule, applications will be submitted in January 2022. The project is scheduled to advertise July 26, 2022, which would mean the mitigation payment would be available in the fall of 2022.

A summary of comments and questions from attendees follows:

Karl Benedict (NHDES): Karl thanked the project team for following up on the additional details discussed at previous meetings. He noted that he would further review impact areas once the application is submitted.

Lori Sommer (NHDES): Lori commented that the preservation opportunity in Shelburne is a unique opportunity that she supports completely. It would involve working with an experienced land trust (SPNHF) that would help guide the overall process. She noted that this mitigation would be similar to the recently approved Barnstead permittee responsible mitigation. Andy O’Sullivan noted that the Barnstead mitigation did take longer to coordinate because the Corps and DES have different mitigation requirements. He also noted that a number of requirements would need to be met by the land trust, such as a wetland delineation, property appraisal, and stewardship plan. Lori agreed but reiterated that SPNHF is very experienced with the process. She would like to hear input from Mike Hicks about the opportunity and about the need for a federal mitigation plan.

Regarding the potential mitigation credit for the buffer, Lori would like to give this some more thought and also get input from the Corps.

Lori asked if there would be a DOT hearing for the project. Christine replied that the DOT hearing required for right-of-way purposes was held summer 2020. Lori noted that a DES hearing would be required and should be accounted for in the schedule.

Mike Hicks (ACOE): Mike said that Lori had previously given him information on the preservation opportunity that he discussed with Taylor Bell. Taylor seemed very interested and thought it was a good idea. Mike will discuss with Frank Del Giudice, but overall, he thinks this sounds like is a sound mitigation approach.

Mike noted that the 2020 Section 401 rules had been remanded by a court decision and the Corps is not finalizing any permit decisions until there is further guidance from headquarters. Mark Hemmerlein asked him if the Dummer application should be submitted as planned or if DOT should hold off on submitting until there is better direction on the Section 401 issue. Mike said that it was the DOT’s decision, but he can and will review applications that are submitted during this time and be ready to issue the permit decision once that is allowed. Mark clarified that the DOT would submit the Section 401 request at the same time as submitting the Corps application. Mike agreed.

Regarding the mitigation credit, Mike said that he would need input from Taylor Bell and the EPA. He suggested setting up a meeting to discuss this and the preservation opportunity. Matt Urban asked if the in-lieu fee would be high enough to cover the funds needed to purchase the 2,700 acres if a mitigation credit was applied. Christine confirmed that the lower in-lieu fee would still cover the portion of the preservation effort that SPNHF was anticipating from DOT. There was a question about the former roadbed in the vegetated buffer. Jennifer Reczek confirmed that the pavement would be removed, the roadbed would be regraded to meet slope requirements for the AOT vegetated buffer treatment, and then the area would be seeded.

Jean Brochi (EPA): Jean noted that she would like to be included in mitigation discussions going forward. She urged caution when considering the permitting schedule and which review timeframes would be started by submitting applications. Mark Hemmerlein noted that DOT planned to follow both sets of 401 rules and would still request a pre-filing meeting even though that requirement was in the revoked rules.

Carol Henderson (NHFG): Carol suggested incorporating wildlife crossing signage and to consider monitoring the plantings post-construction.

Pete Steckler (TNC): Pete suggested considering routine maintenance needs in the planting approach. He also suggested that the terrestrial wildlife crossing not be embedded in order to maximize its openness. Subsequent to the meeting, it was confirmed that soil would not be added to the bottom of the culvert and the approaches into the culvert would be graded to match the culvert invert elevation.

Susan Francher (Forest Legacy Coordinator): Susan noted that she would continue to coordinate with DOT on the proposed impact to 13 Mile Woods.

Exeter, #43254 (X-A005(063))

Tim Mallette, NHDOT provided an overview of the small watershed (262 acres) and Tier 3 crossing for this project that was previously presented at the June 16, 2021 Natural Resource Agency Meeting. The invert of the corrugated metal culvert constructed in the 1990s is mostly gone, with sink holes near both the inlet and outlet. The inlet headwall will be replaced with a prefabricated header with a Hydrobell. The preferred design will improve energy dissipation using a diffuser at the outlet of the smooth plastic slip line. Outlet weirs are proposed to submerge the diffuser at high flows and to dissipate energy transitioning to the wetland channel. The proposed liner combined with a diffuser will have greater hydraulic capacity than the liner with HydroBell alone while lowering the proposed culvert outlet velocity. It is anticipated that the diffuser will increase the peak flow by 35%. The cost is estimated at \$400,000 versus a stream crossing compliant structure at \$1.5 million. Additionally, a cast-in-place liner would provide less service life with no significant improvements to ecological services.

Alex Mann, Maine DOT, discussed the evolution of his diffuser designs that have been installed in Maine. He discussed the benefits documented in technical papers published with UMaine professors and the Transportation Research Board (TRB). Combined with weirs this design should be more beneficial than the existing culvert for accommodating fish passage to move upstream.

Tim discussed the wetland delineation completed in October 2021 by Tighe & Bond. Within the project limits the eastern highway slope of NH 85, including the culvert outlet, is located within the 250 foot shoreland tidal buffer of the Squamscott River and it was determined that the upper limit of tidally influenced freshwater flow is within 15 to 20 feet below the outlet invert. A tidal wetland is approximately 200 feet downstream of the culvert where there is a definitive drop in the channel of approximately 2 ft. The brook upstream meanders as a multi-thread stream through a scrub-shrub/forester wetland with a wide floodplain. The bed consists of silts and fine sand. Downstream the wetland area is scrub-shrub/forested with a larger forest component. The brook is a single-thread stream and the bed consists of sand, gravel and cobble-sized rock (likely riprap within the Right-of Way). The wetlands are designated as Prime by the Town.

A preliminary wetland impact plan was presented. It is estimated that approximately 1,258 of permanent impacts to the wetlands would occur, with 1,284 square feet of temporary wetland impacts and 13 linear feet of channel impacts required in order to stage, access and construct the project.

Discussion / Agency Comments:

Karl Benedict, NHDES, expressed a concern in how the diffuser will meet Env-Wt 904.01 and 904.07 rules and the determination of priority resources areas. Consistency with depth and velocity of the reference reach and connectivity will need to be addressed. He feels it will be a challenge to address these requirements.

Tim stated that there would be improvements with the diffuser rather than just lining the pipe. The technological benefits will be further identified and documented in the wetland permit application to document how it meets the rules.

Karl also commented that the 13 linear feet of stream impacts will need to be identified for both banks and the bed. Also that this length of impacts should be verified as it seems that the impacts to the channel would be a bit more.

Tim stated that the channel impacts identified are preliminary and agreed would be greater. There will likely be at least 19 linear feet of impacts and this will be verified during final design.

Lori Sommer, NHDES, commented that mitigation would be required as there would be impacts to prime wetlands. DOT needs to check with the Town first to see if they have any appropriate mitigation proposals, but an ARM fund payment would be applicable. Also, confusing on how the weir is shown in the presentation, need to show this design in the wetland impact plans.

Tim asked if plantings would be appropriate mitigation. Lori replied that the requirements of Env-Wt 700 for Prime Wetlands would need to be addressed, and plantings would not be mitigation.

Carol Henderson, NHFGD, asked for clarification on the outlet and how it would improve aquatic passage with the narrowing of the opening being a concern.

Tim stated that the diffuser outlet will be wider than the existing pipe. The water will be backwatered through the whole pipe and discharge into a pool at the outlet then transition into the stream at a weir. The diffuser would be submerged allowing for fish passage.

Carol stated that aquatic passage must be addressed, as the brook is a tributary to the Squamscott River and anadromous species may use the stream.

Matt Urban stated that Env-Wt 704.03(b) states that on-site mitigation as practicable could be allowed as it has been used for past projects.

Mike Hicks, ACOE, had no comments

Jean Brochi, USEPA, had no comments.

Pete Steckler, TNC, agreed with Carol on clarifying how aquatic passage would be improved. Will the weir be embedded, how will backwater occur, will water flow over the weir permanently?

Tim responded that the channel will be altered and discharge into the exiting stream further to the north. The diffuser will reduce velocity and there will always be a pool to dissipate the energy. The wetland plans will identify the design better.

Pete asked if just slip lining without the diffuser would be an option. Would it increase velocity?

Tim replied that there is vertical sloughing evident in the wetland downstream of the outlet. Without a diffuser the outlet area would require more stone armor to prevent further scour, slightly increasing the permanent impacts. The culvert outlet velocity would not be reduced as with the diffuser.