

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: September 16th 2015

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Matt Urban
Ron Crickard
Anthony Weatherbee
Chris Carucci
Cassandra Burns
Maggie Baldwin
Marc Laurin
Bob Davis
Emily Polychronopoulos
Tim Mallette
Rebecca Martin
Don Lyford
Kevin Nyhan

EPA

Mark Kern

Army Corps of Engineers

Rick Kristoff

NHDES

Lori Sommer

NH Fish & Game

Carol Henderson

**NH Natural Heritage
Bureau**

Amy Lamb

Stantec

Michael Leach
Gerrard Fortin
Tim Adams

Smart Associates

Jennifer Riordan

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:

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NOTES ON CONFERENCE:**Finalization of August 19th Meeting Minutes**

The meeting minutes were finalized. No comments were received.

Berlin, 40716, Non-Federal

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the bridge that carries NH Rte. 110 over Small Brook (194/097). The existing structure is a concrete slab bridge with a 10' span and is 32' wide. Proposed work consists of replacing the concrete deck in kind and installing riprap. The deck has a large longitudinal spill up to 5" deep with leaking evident. The project is scheduled for the winter of 2015-2016.

Lori Sommer asked if the brook had existing riprap on both sides. T. Weatherbee told her that one side had erosion stone. L. Sommer asked if it was currently in the channel and T. Weatherbee said no and showed pictures. T. Weatherbee said that riprap would be placed on the banks in front of the wings and Carol Henderson said that she preferred that there would be no stone placed in the channel.

L. Sommer asked someone to lookup what permit may have been issued to figure out where the erosion stone came from. Matt Urban said he would look into it.

L. Sommer indicated mitigation would not be required.

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

Ellsworth, 40715, Non-Federal

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the existing concrete slab bridge that carries Tricothic Road over Sucker Brook. The existing structure is a concrete slab bridge that has a 17'-0" clear span and 27'-7" deck width. The existing structure is undermined. Proposed work consists of removing a failed undermining repair and installing concrete toe walls and riprap. The upstream SW wingwall will have erosion repaired with riprap.

Lori Sommer asked if both sides required a toe wall and T. Weatherbee said yes. L. Sommer asked if the project would change the hydraulics at the structure and T. Weatherbee said no because the riprap will match the streambed and the concrete mass will be removed.

Carol Henderson asked if cofferdams would be used. T. Weatherbee said yes, they will be used and water will be maintained through a section of natural channel.

L. Sommer said that no mitigation would be required.

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

Wakefield, 40710, Non-Federal

Tony Weatherbee provided an overview of the project. The scope of the project is to rehab the existing dual metal pipe culvert that carries NH Rte. 125 over Hannaford Brook. The existing structure is has a 10'-0" max span and is 23'-0" long. Proposed work consists of installing two concrete inverts.

Carol Henderson recommended that a downstream weir be constructed for fish passage.

Rick Kristoff mentioned that there could be potential downstream historic issues with the dam. He said to review with DHR.

Matt Urban mentioned John Magee's comments about a thalweg 2" deep and 18" to 24" wide. T. Weatherbee said that there have been discussions between Steve Johnson and J. Magee about this topic and there are concerns about the structural integrity of the pipe if this were installed in addition to the increased height of the overall invert lining to accommodate the thalweg.

R. Kristoff said to do any clearing outside of bat season to avoid issues there.

Lori Sommer said that no mitigation would be required.

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

Belmont, 16203, X-A001(183)**Intersection Safety Improvement on NH 106 at Seavey Rd**

This location was identified through the Federal HSIP Program. Eighteen crashes were reported within the nine-year period from 2002 to 2010 inclusive. The most common crash types were rear end crashes on NH 106 due to the lack turn lanes.

NH 106 currently has two 12' lanes with shoulder widths of 6-8' for a total paved width of approximately 38'. The average daily traffic volume for 2012 is 13,000 vpd for NH 106 and 1,600 vpd for Seavey Road. Posted speed is 50 mph.

The project involves construction of left and right turn lanes, a slightly wider throat at Seavey Rd, drainage rehabilitation, addition of guardrail, and stormwater treatment.

Travel lanes will be reduced to 11' and shoulders to 5' to minimize wetland impacts. The proposed right turn lane is 10' wide with a 4' shoulder and new guardrail. Row acquisitions will be required from 5 Parcels, as well as several permanent slope and drainage easements.

Total project area is approx. 3.6 acres. Net new pavement area is 7,425 sf. Proposed treatment is a modified surface sand filter, with underdrain outlets, that captures about 19,000 sf of NH 106 pavement.

Three existing 15” concrete drainage pipes under NH 106 will be replaced with 18” concrete pipes. A deteriorated 36” corrugated metal culvert carrying an un-named brook under Seavey Rd will be replaced in-kind. Concrete headwalls will be constructed on both ends of the new culvert. This is a Tier 2 stream with a drainage area of 236 ac. The next structure downstream is a 30” concrete pipe, which needs its outlet extended and about 100’ of channel adjacent to NH106 reconstructed due to erosion of the banks. There are no reports of flooding associated with these two crossings. There are reports of flooding downstream, so upsizing these two crossings was determined not feasible under this project.

The preferred option at the 30” pipe outfall is to extend the pipe about 8 ft and enclose the 90° bend in a manhole, which would reduce future erosion of the existing bank. A short pipe would exit the manhole parallel to NH 106 so that the flow doesn’t bounce from one bank to the other causing erosion. The reconstructed channel could be stabilized with permanent matting and vegetation. The other option would be to create a larger radius bend, lined with stone to turn the flow. Additional stone would be needed along the reconstructed channel to prevent erosion. Length of impacts are about the same, but the open method would require more stone in the channel and would be more of a hazard to vehicles.

There were no documented NHB records in the area, based on a 2013 search. No impacts to cultural resources are anticipated. There will be some limited clearing in one brushy area at the top of the cut slope along the NB side of NH 106, and two dead trees need to be removed along the SB side of NH 106. Coordination regarding the NELB has not been completed yet.

Permanent wetland impacts are about 6,600 sf, with the majority (5,000 sf) along the southbound right turn lane fill. Temporary impacts related to drainage construction and erosion control measures are 3,000 sf.

Permanent linear impacts are 40 - 50 ft of intermittent stream at the northern 18” pipe outfall, and 90 - 100 ft at the 30” pipe outfall. M. Urban noted that more investigation is needed to determine whether the Tier 2 stream is intermittent or perennial. (Subsequently determined it is intermittent). Regardless of the classification, L. Sommer stated that the linear impacts would require mitigation, and that an ARM fund payment would be acceptable.

Rick Kristoff asked what the treatment filter media will be. C. Carucci responded that it will meet the requirements of the NH Stormwater Manual.

L. Sommer asked if the stormwater treatment area would need regular maintenance. C. Carucci responded that it would only need maintenance if the surface stone layer gets clogged and the practice doesn’t drain. Maintenance would consist of removing and replacing the surface stone layer. M. Hemmerlein noted that the proposed treatment system is similar to one recently installed in the median of I-93.

M. Urban noted that the 36” pipe replacement would have qualified for Routine Roadway Maintenance, but due to other impacts, the project will submit a standard Dredge & Fill Application.

C. Henderson noted that an updated NHB search will be required.

Concord, 16287&16288, X-A001(221)&(222)

Tim Adams began by introducing the scope of the project, project location, and existing conditions including lane configuration and traffic volumes along Interstate 393. T. Adams indicated there are three culverts (one 36” CMP, one 48” CMP, and one 54” CMP) west of Exit 2 on Interstate 393 that are in need of repair. T. Adams noted, although these culverts are two separate projects, they are to be advertised together.

Mike Leach followed with the watershed information provided by the NHDOT’s Summary of Initial Environmental Review. M. Leach indicated these culverts are not on water courses, there is no evidence of a scoured channel, and all three pipes appear to act as equalizer pipes. M. Leach then mentioned the watershed is in a highly developed area and includes portions of Interstate 393 and the State Office complex associated with the NHDES.

M. Leach reviewed the species of concern within the project limits. M. Leach indicated the Bald Eagle, Blanding’s Turtle, Northern Leopard Frog, and the Wood Turtles are all within the defined project limits. M. Leach also mentioned the Northern Long-Eared Bats are not a concern for the clearing limits. M. Leach indicated Stantec has formal documentation provided by NHDOT that this project will have “No Effect” on the NLEB population.

T. Adams continued with discussing the site area of each culvert at the inlet and outlet. T. Adams discussed the 36” CMP culvert which is still in fairly good condition and the need for remedial measures. T. Adams indicated the current recommendation is to slipline the existing CMP culvert and construct new headwalls at the inlet and outlet. T. Adams mentioned that NHF&G agreed that a smooth lined culvert in this location is acceptable and no additional measures are needed for pipe treatment. T. Adams indicated one possible solution is a UV cured-in-place liner that minimize the effect relative to the cross sectional area of the existing culvert.

T. Adams then discussed the project need for the 48” culvert. T. Adams reviewed the culvert is experiencing structural failure by loss of invert, loss of sidewalls, and collapsed crown. T. Adams also mentioned there is severe material corrosion in the pipe as well. T. Adams also indicated the headwalls are in poor condition and there is a slope failure immediately above the inlet headwall. Lastly, T. Adams indicated there has been beaver activity reported by the NHDOT and preventative measures will be taken to protect the inlet with the repairs.

T. Adams followed with discussing the project need for the 54” culvert. T. Adams indicated this culvert is in similar condition as the 48” culvert and the pipe is experiencing major structural failure. T. Adams also indicated there is a sink hole in the embankment nearby the downstream headwall. T. Adams indicated this will be repaired as part of this contract.

T. Adams then reviewed the design considerations for these culverts which are as follows:

- Maintain existing drainage flow
- Minimize environmental impacts
- Minimize impacts to the public / motorists
- Providing for future maintenance / access to the culverts

T. Adams then discussed the various trenchless technologies that were considered such as slip lining, micro tunneling, pipe ramming, and pipe jack and bore.

T. Adams reviewed some of the alternatives that were considered but not feasible such as open excavation, slip lining (not feasible due to severe deformation of pipe, loss of invert, and vertical misalignment of the 48" and 54" culverts), and pipe ramming. T. Adams then reviewed the preferred alternatives which included pipe jack and bore or micro tunneling. T. Adams indicated both of these methodologies minimize impacts to the environment and the motorists / public. T. Adams also indicated either one of these preferred alternatives have the same environmental impacts at the 48" and 54" culverts.

T. Adams then reviewed some design notes and provided the following notes:

- Temporary access road is to remain in place for maintenance access.
- All surfaces are to have turf establishment with mulch and humus including the access ramps.
- The new 48" and 54" culverts will have a roughened surface along the bottom half of the pipe as requested by the NHF&G.

T. Adams then reviewed the conceptual color plans and the construction impacts associated with each project. T. Adams began with the 54" culvert replacement and discussed the 30' offset from the existing infrastructure must be maintained. T. Adams also indicated on the plan where the existing sink hole is on the embankment. T. Adams continued with reviewing the 48" and 36" culvert access points.

Lori Sommer asked for clarification regarding the pipe jack and bore method. T. Adams indicated a pipe is first hydraulically jacked into the embankment for a certain distance and then the fill is excavated either by hand or by boring. Carol Henderson asked how the existing pipe will be removed. T. Adams indicated the pipe will not be removed but is to be bulk headed at one end and flowable fill will be pumped in the existing pipe. T. Adams noted the existing culverts will be used to maintain the existing water flow until the construction is complete and the existing pipe is then filled.

M. Leach reviewed the wetland impacts including the anticipated permanent and temporary impacts. M. Leach reinforced these impacts are at the conceptual level and will be refined as the design progresses. T. Adams asked if there are any questions.

C. Henderson indicated the bottom half of the pipe should be roughened to allow the turtles to pass through the pipe. C. Henderson indicated it is important to implement the roughened surface to help mitigate the number of turtles that pass over the highway. Jerry Fortin indicated the type of proposed pipe can have a roughened surface.

Mark Hemmerlein asked what is the proposed material for the jacked pipe. J. Fortin indicated this is still under review and the anticipated pipe is a fiberglass reinforced concrete pipe with a fiberglass coating. J. Fortin indicated this is a proprietary pipe that will provide the longest serviceable life. An alternative is also a heavy duty concrete pipe.

C. Henderson also mentioned since there are no large trees within the project limits, the Bald Eagles should not be a concern.

C. Henderson asked what is the expected time frame for construction. J. Fortin indicated the construction is expected to last approximately 3 months and will be done during low flow season in 2016.

M. Hemmerlein indicated this project may need an Alteration of Terrain permit and this should be discussed at a later point.

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

Claremont, 25621, X-A003(140)

Cassandra Burns provided an overview of the project, which is located at the intersection of NH Routes 11/103 (Washington Street) and Bowen Street in Claremont. The project is an access management and safety improvement project. A driveway will be constructed between Verizon Wireless and Autozone, on the southeast side of Washington Street, opposite Bowen Street. The median barriers will be extended. One utility pole will be removed and a fire hydrant may be relocated. There will be minor driveway impacts.

The project will have no impacts to wetlands or cultural resources. The Sugar River is located southwest of the project. The proposed driveway will be located near the bank, but all work will be beyond the top of bank. There will be impacts to the Protected Shoreland of the Sugar River and the project will require a Shoreland Permit. Several invasive plant species are located within the project area.

Lori Sommer asked if the proposed driveway area is flat. C. Burns responded that it is flat and not much grading is required.

Minor tree cutting will be required for the proposed driveway. Two mature trees may need to be removed, but this number has not been finalized. The trees located along the bank of the Sugar River will remain. Carol Henderson asked if the tree cutting will occur during the winter. Marc Laurin replied that it depends on the project schedule. DOT will continue to coordinate on the project.

The project will result in a slight increase in impervious surface for the proposed driveway. The area of new pavement has not yet been calculated, but it was initially thought that no stormwater treatment will be required. The area of new impervious surface should be determined and the need for stormwater treatment evaluated. No changes to drainage patterns are proposed and no curbing will be added.

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

Rollinsford, 16284, Non-Federal

Emily Polychronopoulos provided a summary of the project scope and culvert history. There are two twin 96" CMP culverts crossing under NH Route 4 in Rollinsford NH. These pipes have significant deterioration and are in need of immediate repair. These pipes service a large drainage

area of 5.3 square miles into Fresh Creek, which includes Rollins Brook in the watershed and flows into Cocheco River. There is a history of damage that includes the northern most invert being cut at the invert due to high flows cause it to flip upward. Also beavers have a history of being in the area.

The proposed work will be a combined effort between Highway Design, Bridge and Highway Maintenance. This work includes paving concrete inverts approximately 6 inches thick and will require two access roads, one on each side of the road, to complete the work. The access roads will require clearing to be built and will be permanent features for maintenance access. Rip-Rap, stone work will be placed at the inlet and outlet to control water flow. Upstream is a wet meadow, pond and the downstream is a sinuous stream.

The proposed inverts, stone work and the access roads will have approximately 1,643 square feet of permanent impacts and 2,665 square feet of temporary impacts from preliminary estimates.

Carol Henderson, Fish & Game, asked if the top of the culverts are sound. Bob Davis replied confirming that the Bridge Maintenance inspection report indicates that they are indeed sound but that the inverts are critical. The invert, of the pipe, has not only significantly deteriorated, but, has also begun to undermine and migrate around the outside of the pipes.

Also noted, Bridge Maintenance wants to be able to perform the work this winter so it can be completed before the spring runoff. Later Ron Crickard said that clearing is anticipated for winter so it should not go into the Long Eared Bat season.

There was originally a larger project in this area that this culvert work was pulled out of.

C. Henderson asked us to consider a fish weir because of concern about the water level. Tim Mallette reviewed the hydraulic analysis and has determined that this might be a good location for a fish weir. Matt Urban asked about not needing mitigation and L. Sommer confirmed that mitigation would not be required. C. Henderson asked about the potential for a thalweg. Doug Gosling and Anthony Weatherbee articulated that a thalweg, a notch in the invert, would increase the cover needed for the reinforcing steel in the designed 6 inch concrete invert. This causes concern for bridge maintenance and they would prefer a fish weir built over a thalweg.

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

Northern Long-Eared Bat

Kevin Nyhan provided a PowerPoint presentation summarizing the Department's efforts over the last spring/summer. The Department uses two qualified consultants that are trained in acoustical monitoring: The Smart Associates and McFarland-Johnson, Inc. In addition, Rebecca Martin of the Bureau of Environment is also trained.

NLEB was listed on April 2, 2015 as Threatened under the Endangered Species Act. Along with the listing came a 4(d) exemption, meaning that certain activities that don't have a Federal nexus can proceed without the prohibition of "take." Many Department Operations activities fit into this category. However, many Project Development projects do not, thus having to comply via another mechanism. The first is the

FHWA/FRA Range-Wide Biological Assessment (Range-Wide BA), and the second is Individual Consultation. According to the Range-Wide BA, there are activities that qualify for its use that would result in No Effect, Not Likely to Adversely Affect (NLAA) (without Avoidance and Minimization Measures (AMM))), and NLAA (with AMM). The most significant AMM required by the Range-Wide BA is a time of year (TOY) restriction on tree removal associated with a project. The TOY restriction begins on April 15th and continues until a period in the fall depending upon the location within the State, the presence of hibernacula, or the results of presence/absence surveys. These end dates can be one of the following dates:

- August 31st
- September 31st
- October 31st

This summer NHDOT surveyed 11 projects for the presence/absence of NLEB, a total authorized value of \$135,000. This equates to approximately \$3,800/km since each detector is placed for a period of 2 nights and covers a distance of 1 km. By comparison, MaineDOT found their costs to be between \$3,000-\$4,000/km. K. Nyhan then briefly explained how the data is collected and analyzed.

Results for NHDOT include:

Probable presence:

- Walpole-Charlestown, 14747
- Newington-Dover, 11238
- Salem-Manchester, 14633I, D, H

Susi von Oettingen has recommended that these probable results be further analyzed by a qualified bat biologist to enhance the results/make specific findings. The Department is evaluating this now.

Negative results:

- Durham-Newmarket, 13080
- Keene-Swanzey, 10309
- Plaistow, 10044K
- Dummer-Errrol, 16304
- Bedford, 13953
- Chichester-Epsom, 29533
- Derry, 24861

One project was unable to obtain results due to a malfunctioning microphone, and the survey season was over so additional data was not obtained. However, the Department has decided to wait and see if revised guidelines result in the ability to clear small projects without the need for a survey as this project was a culvert replacement project with very limited clearing (Gilford, 16279). In addition, the Department could do an emergence survey immediately prior to construction (5 days) and if there are no bats seen leaving the trees in the area, they could be cut without restriction.

Lastly, K. Nyhan raised a concern that the Department has been discussing relative to winter clearing. The Department has not been choosing to clear during the winter because of the potential for water quality issues during spring runoff. Moreover, when clearing areas greater than 1 acre in size, special contract provisions are required (Critical Path Method evaluation). No one in attendance had expressed concern about this before. After a brief discussion, K. Nyhan explained that this new Federal requirement would necessitate winter clearing and that the Department would be evaluating ways to minimize the potential for water quality violations. Nevertheless, construction would continue and the onus is on the Department to comply with water quality requirements.