

# BUREAU OF ENVIRONMENT CONFERENCE REPORT

**SUBJECT:** NHDOT Monthly Natural Resource Agency Coordination Meeting  
**DATE OF CONFERENCE:** July 20, 2011  
**LOCATION OF CONFERENCE:** John O. Morton Building  
**ATTENDED BY:**

**NHDOT**

Christine Perron  
Kevin Nyhan  
Leah Savage  
Michael Dugas  
Mike Servetas  
Samantha Fifield  
Tim Mallette

**FHWA**

Jamie Sikora

**Army Corps of Engineers**

Rich Roach

**EPA**

Mark Kern

**NHDES**

Gino Infascelli

**NH Fish and Game**

Carol Henderson

**NH Natural Heritage**

**Bureau**

Melissa Coppola

**CLD, Inc.**

John Byatt

**FST, Inc.**

Bill Moore

David McNamara

**The Smart Associates**

Jenn Riordan

**CMA Engineers**

Craig Musselman

Josh Bouchard

**Town of Colebrook**

Kevin McKinnon

Mike Ouellet

**Central NH Regional  
Planning Commission**

Craig Tufts

*(When viewing these minutes online, click on an attendee to send an e-mail)*

**PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:**

*(minutes on subsequent pages)*

Discussion of the June 15, 2011 Meeting Minutes .....	2
Concord, STP-BRF-F-017(11), C-3311 .....	2
Milford-Nashua, NHS-STP-F-X-010-1(24), 10136 .....	3
Manchester, 14966 (non-Federal) .....	4
Littleton, 16282 (non-Federal) .....	5
East Kingston, 16059 (non-Federal) .....	6
Colebrook (Connecticut River Bank Stabilization) .....	8

*(When viewing these minutes online, click on a project to zoom to the minutes for that project)*

## **NOTES ON CONFERENCE:**

### **Discussion of the June 15, 2011 Meeting Minutes**

The June 15, 2011 meeting minutes will be finalized at the August 17, 2011 meeting.

### **Concord, STP-BRF-F-017(11), C-3311**

Becky Hebert, City of Concord Planning Department, and Craig Tufts, Central NH Regional Planning Commission, gave a brief overview of the Merrimack River Greenway Path through Concord. The Feasibility Study for this 12 mile shared use paved path along the Merrimack River was completed in December 2010 and is available at the CNHRPC web site. The first phase of implementing this Path will be to formalize an unpaved walking path along the east side of the Merrimack River from Loudon Road to Manchester Street. The City is presently proposing to formalize existing foot paths that have been established by transients within the 100 foot vegetated buffer, which was placed several years ago under a DOT conservation easement as mitigation for the reconstruction of Exit 13 of I-93. This walking path would not necessarily follow the ultimate Greenway path, which would most likely be established along an existing agricultural access road.

Marc Laurin stated that the easement language requires coordination with the Resource Agencies. Becky stated that the City is proposing to selectively trim vegetation between large trees, with limited pruning of low-lying branches. There is not a lot of understory due to the transient (homeless persons) activity that has occurred there in the past. This clearing for the footpath would generally be 5 feet in width following existing footpaths and using the natural ground surface. Blazes will be placed on trees to establish the trail. Volunteers recently did a cleanup effort and since the area has been used for homeless encampments in the past, the City wants to establish this path as soon as possible. A kiosk and benches may be constructed to establish a trailhead behind 6 Loudon Road and will be constructed outside the vegetated buffer zone. The Conservation Commission has recently acquired all the agriculture land located south of Loudon Road. A conservation easement has been placed on this land by Society for the Protection of NH Forests.

Rich Roach asked how this trail would be established. Becky replied that existing footpaths would be connected. Gino Infascelli stated that the Shoreland Protection laws have recently changed to state that any ground cover within 50 feet shall remain. He suggested that the City discuss this matter with Darlene Forst of the Shoreland Protection Program at DES.

Carol Henderson stated that the trail should be established as far from the riverbank as possible. She suggested some limited access points to the river similar to the Sewell's Falls trail in Concord. Also, she did not want to see too much cutting of vegetation. Melissa Coppola stated that the existing areas that are not to be incorporated into the formalized trail should be encouraged to reseed naturally. All agreed that whatever meets the requirements of DES Shoreland Protection would be fine with them. The City will coordinate with Darlene Forst and will offer to set up a site walk as appropriate.

*This project was previously reviewed on the following date: 10/20/2010.*

### **Milford-Nashua, NHS-STP-F-X-010-1(24), 10136**

David McNamara described the project, which involves improvements to three separate locations along the NH Route 101A corridor. The improvements are:

- Boston Post Road/Continental Blvd
  - Add 3<sup>rd</sup> eastbound lane from Boston Post Road to Continental Blvd
  - New westbound right turn on 101A to Continental
  - Create a second southbound right turn lane Continental to 101A
- Craftsman Lane
  - Traffic calming
  - New cul-de-sac
  - Relocate connection between Boston Post Road and Craftsman Lane
- 101/101A eastbound ramps interchange
  - Signalize the intersection
  - Add second right turn lane exiting the off ramp
  - Examine signal coordination

Fay, Spofford, and Thorndike has begun the coordination process, sending out letters to the resource agencies. Wetland delineation work was beginning today.

Rich Roach noted that the westbound merge on NH Route 101A, west of the Boston Post Road intersection, appears inadequate and may need to be lengthened.

R. Roach added there didn't appear to be much in the way of water resources at any of the three project locations, other than the Pennichuck Brook, east of Continental Boulevard.

D. McNamara agreed, stating that there may be minor impacts in the area of the brook related to tapering down the new third lane, but it is anticipated that they will be minor, if any at all. It was also noted that there would be an increase in impervious area due to the Boston Post Road project, but the other two would have very small to negligible increases.

D. McNamara stated that the plan was to permit the three locations as one project, but the Amherst project would likely be built separately, with an earlier ad date due to the lack of ROW impacts. C. Henderson suggested that the 101/101A interchange project be permitted separately, as it would likely not need a wetland permit, and therefore didn't need to be held up while a potential wetland permit was being processed for the other project(s). D. McNamara asked for confirmation that a single Categorical Exclusion could be issued for all three projects, then have individual permits issued for each project if the projects were advertised separately. K. Nyhan confirmed. Depending on where the project limits end up near the Pennichuck Brook, a Shoreland Permit may be required as well.

Gino Infascelli noted that FST should check if the Souhegan River is within a quarter mile of any of the projects. The Souhegan is a NH designated river, and would require further review from the agencies as well as the local Rivers advisory committee and town.

D. McNamara asked about potential water quality issues. As this is a NHDOT project, it doesn't require an Alteration of Terrain permit, but would need to comply with the standards of one. G. Infascelli recommended a future meeting with Ridge Mauk to discuss potential concerns, and asked to be kept in the loop in regards to the results of that meeting.

R. Roach did not feel he needed to see the project again. G. Infascelli felt it was fine if the wetland impacts remained minimal, but if they were going to be in the 5,000 sf or greater range he'd like to have another meeting.

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

### **Manchester, 14966 (non-Federal)**

Jon Evans gave a brief overview of the project and the proposed design changes since the project was last presented in July 2010. The project includes five "red-listed" bridges in the vicinity of the Millyard on I-293 at Exit 4 in Manchester. The two main changes are the replacement of the existing I-293 three span mainline bridges over the Piscataquog River with single-span bridges and the addition of a soundwall at the southern end of the project. The original design included the rehabilitation and widening of the existing bridges over the Piscataquog River. The project now proposes to replace the existing bridges with single-span bridges that are approximately 30 feet wider than the existing bridges.

The soundwall at the southern end of the project will result in approximately 2,500 square feet of additional wetland impact, but will cause substantial noise reductions for neighborhoods adjacent to the project. The drainage for the soundwall is currently being designed, since there are some flooding issues in the area.

Rich Roach asked if DOT has future plans to widen I-293 to three lanes and if the soundwall is set far enough back to allow for the widening. Samantha Fifield replied that widening to three lanes is not in the Statewide Transportation Improvement Program (STIP), but the soundwall is being designed to allow enough space for an additional lane.

John Byatt discussed the proposed changes to the bridge design. Photos and plans were provided as handouts.

Jenn Riordan discussed the wetland impacts for the project. The proposed bridge design changes will result in a decrease of approximately 2,500 square feet of permanent riverbed impact and an increase in approximately 1,000 square feet of permanent bank impact. There will be approximately 8,000 square feet of temporary impact to the bed and bank during construction. The total amount of permanent bank impact is approximately 9,200 square feet. The total amount of permanent bed impact is approximately 2,000 square feet. The total amount of permanent wetland impact (non-bank/bed) is approximately 19,000 square feet. In total, the amount of permanent wetland impact (including bank/bed impact) is approximately 30,000 square feet.

Jenn Riordan stated that at previous Natural Resource Agency meetings it had been mentioned that impacts to the bed and banks of the Piscataquog River would not need to be mitigated. The banks in the project area consist of the existing highway embankment. The total amount of non-bank/bed impact is approximately 19,000 square feet.

John Byatt explained that the existing piers would be cut at the water surface but would not be completely removed. Kevin Nyhan recommended contacting the Coast Guard to see if this would have any impacts on navigability. Carol Henderson said that it would be NH Fish and Game's preference to remove the piers to the existing ground/river bed. Jon Evans mentioned that there is the potential for brook floater mussels in the project area. Carol Henderson said that some temporary impact would be acceptable if the natural stream substrate was restored long-term. A brook floater survey would need to be done prior to any work in the Piscataquog River and if brook floaters were found, they would be relocated. John Byatt asked if it would be possible to break off large sections of the pier and remove them in wet conditions with a silt boom. Removing the piers in dry conditions would require a much larger amount of temporary impact. Carol replied that this would be acceptable.

Jon Evans asked if mitigation credits could be gained by removing the piers. Rich Roach thought that it could count toward mitigation, although it would need to be discussed with Lori Sommer of NHDES. It was discussed that the in-lieu fee payment for 19,000 square feet of impact would probably be around \$75,000. The cost of removing the piers would be greater than \$75,000, so the project could be self-mitigating.

Kevin Nyhan mentioned that the NHDES stream crossing rules need to be considered during the design of the bridges.

Carol Henderson asked about the timing of construction with regard to bald eagle winter roosting. Jenn Riordan replied that she had coordinated with Kim Tuttle of NHF&G and the main area of concern was along the Merrimack River, near the Exit 4 northbound off-ramp. Construction in this area will be avoided from December through March. *[After the meeting Jenn reviewed the project files for NHF&G coordination. An email from Kim Tuttle, dated April 8, 2010, stated that "in order to avoid impacts to the state threatened bald eagle, an area of concern is the east side of the northbound off ramp. The west side of I-293 is not an issue with respect to bald eagles." An additional email from Kim Tuttle, dated August 6, 2010, further clarified that the construction restrictions are only for the northbound off-ramp.]*

*This project was previously reviewed on 1/20/2010 and 7/21/2010.*

### **Littleton, 16282 (non-Federal)**

This project will involve replacing a failed 48" concrete pipe that carries Carpenter Brook under NH Route 135. In May, the inlet of this culvert became blocked by debris during a rainstorm. This caused the stream to overtop the roadway and wash out the outlet of the culvert. Portions of the southbound lane were washed away and the road is now only open to alternating one-way traffic.

Mike Servatas provided an update on the project. The Department was informed that the damage that occurred in Grafton and Coos Counties during the May 2011 storm event would meet the threshold for FEMA reimbursement. The request now needs to be signed by the President. If signed, it may be possible to get federal funding for replacing the 48" pipe; however FEMA typically only provides funding for replacement in kind. Reimbursement may still be possible if an upgrade is required by rule.

If FEMA funding is not obtained, then the site will need to be stabilized and reopened to two lanes for the winter, and the Department would submit an application for the replacement to occur once funding is available. Materials & Research would be asked for advice on creating a stone slope at the outlet side that would act as a spillway during future high flows.

The replacement structure now proposed is a 12' x 6' x 70' concrete box with v-weirs similar to the Rix Brook culvert 3 miles north. Concrete headers and wingwalls would be installed with 2:1 side slopes.

The decision on FEMA funding would not be made until August. If approved, the Department would then need to meet with FEMA on site to determine if FEMA will fund the upgrade. If FEMA agrees to the upgrade, the culvert would be replaced this fall. In order to make the timing of this work, the box culvert needs to be ordered as soon as possible. Therefore, concurrence from the resource agencies was needed before ordering the 12x6 box.

Gino Infascelli asked about the size of the drainage area. Tim Mallette replied that it is just under 2 square miles. M. Servetas added that the Rix Brook culvert is an 8' x 6' box culvert. That stream is similar to Carpenter Brook with a 2.5 sq. mi. drainage area and a 5% slope. The culvert appeared to handle the water from the May storm. G. Infascelli stated that a 12' x 6' box at Carpenter Brook sounded okay to him.

Rich Roach suggested that the Department ask G. Infascelli and Rene Pelletier to attend the meeting with FEMA to explain why the larger structure is necessary. He added that the 12x6 box was acceptable to him.

Carol Henderson asked about baffles. M. Servetas explained that the v-weirs would be placed every 8 feet to collect sediment. C. Henderson said that John Magee reviewed the Rix Brook crossing and noted that the last baffle in that culvert was too high. An effort should be made at the Carpenter Brook crossing to construct the v-weirs appropriately for fish passage.

No one voiced any concern with the moving forward with the 12x6 concrete box.

*This project was previously reviewed on the following date: 6/15/2011.*

### **East Kingston, 16059 (non-Federal)**

Christine Perron provided an overview of the project. This is a culvert replacement project addressing a 72-inch diameter x 32-foot long corrugated metal pipe on NH Route 107A. The pipe is in very poor condition and there are steel plates on the roadway over the pipe to prevent

collapse. This is a Tier 3 crossing with a watershed size of 3 sq. miles. The pipe is on what is considered Powwow Brook, although the stream is not named on the USGS topo map. The brook is part of an extensive wetland system that begins at Hog Hill Swamp to the NE and extends to the Powwow River to the SW. The crossing is located about 1,200' upstream from the river.

A stream assessment was completed on June 8th. There are very deep and wide pools at the inlet and outlet so we were not able to collect much data at the crossing. We did, however, assess a reference reach downstream. The stream has the following characteristics:

Bankfull width = 15.5'

Avg Bankfull depth = 0.7'

Floodprone width over 100'

Slope less than 1%

Featureless channel, with no riffles or pools

Sandy substrate

C Type stream

The recommended structure size according to the stream crossing guidelines is 20 feet, and the structure would need to be a span or 3-sided box according to the stream crossing rules.

Mike Servetas described design alternatives currently under consideration. There are three primary design constraints. First, the roadway width at this crossing is 24 feet, which means that the road will need to be closed during construction. The chosen design would ideally limit the amount of time needed for a road closure. A closure of no more than 5 days is desired. Second, borings were done at the site and found a base of saturated alluvial deposits (peat-like), which would not provide a stable foundation for a 3-sided box or span. Third, when the Powwow River dam releases water, there is a backwater effect up Powwow Brook to this crossing. A replacement structure that is too large would lead to increased flooding upstream.

The two alternatives under consideration are as follows:

- 1) 84" pipe embedded 15", with an adjacent 48" surcharge pipe to provide additional capacity at high flows. Velocity through the surcharge pipe during peak flows would be approximately 5 cfs.
- 2) Twin 72" pipes (the existing pipe would be replaced and a new pipe would be installed adjacent to it). This alternative better attenuates high flows. Velocity would be less than 4 cfs. Tim Mallette, the Hydraulic Engineer, prefers this alternative.

Under both scenarios, the pipes would be 35' in length with headers, and guardrail would be installed on both sides of the road. The pipes would be either smooth bore plastic or concrete. Due to the limited amount of cover, concrete is more likely.

Carol Henderson asked when this work would be completed. M. Servetas said that the goal is to construct this fall to avoid another winter with steel plates on the roadway. Melissa Coppola commented that fall is preferable in order to avoid impacts to the rare plant just downstream.

C. Henderson stated that this stream is potential habitat for eastern pond mussels, a species of concern, and Fish & Game requested that mussels be moved out of the work area if any were seen during construction. She added that she preferred the twin pipes, partly because she was

concerned that the surcharge pipe would easily get clogged. She further commented that milfoil is known to occur in the Powwow River and may eventually become a concern at this site.

Gino Infascelli commented that twin pipes would make future maintenance easier. He suggested that the permit application include an explanation of the balance that needed to be achieved at this site between upstream and downstream concerns.

Overall, the twin pipe alternative was the preferred alternative by those in attendance.

*This project was most recently presented on the following dates: 1/20/2010, 2/17/2010, 3/17/2010, 5/19/2010, 7/21/2010, 9/15/2010, 12/15/2010 & 5/18/2011.*

### **Colebrook (Connecticut River Bank Stabilization)**

The meeting was started with a presentation which described the project limits, site photos (past and present), photos of the major erosion site, photos of the river at flood stage, current design plan and section, and photos of similar projects on the Connecticut River. The original project was to install six logjam structures along a 700 foot section of riverbank to protect the river bank and to redirect the river to the west. The logjam project was approved for 40,080 square feet of wetlands impacts. Due to high flows and velocities associated with the site, the logjam design proved to be a cost prohibitive design with bids more than twice the Town's budget. As a result, the project has been re-designed with a conventional stone revetment. The stone revetment as designed, has 36,000 sf of wetlands impacts. The two photographs of spring floods in 2009 and 2011 were shown to document the flood elevations observed at the site. The 2009 flood had a high water of approximately elevation 1004 and the 2011 flood had a high water of approximately elevation 1006, with the top of bank at approximately 1008. The 2011 flow was largely snowmelt related, and was not associated with a storm of a significant recurrence interval. Due to the frequency of the river reaching full bank, it is recommended that the revetment continue to the top of bank.

Due to time constraints, the project schedule required the permitting and bidding phases to be concurrent with bid opening in two weeks and construction starting shortly after. This was due to the timing of the Town receiving funding approval from the grant sources (Economic Development Authority (EDA) and a Community Development Block Grant (CDBG)), the need to construct the project this construction season, and the desire for the work occurring during low flow, which is typically June 15 to October 15.

Carol Henderson stated NH Fish & Game completed a similar project on the Connecticut River in the late 90's. The project has similar site conditions to the Colebrook project, was successful, and remains stable. The project included a planting strip at the top of bank, and C. Henderson thought the Colebrook project would be a good candidate for this as well. CMA Engineers stated a 10-15 foot wide planting strip could be included in the project's scope of work.

Rich Roach asked if vanes were considered during the design process to push the river back to the west. CMA Engineers stated they had not, but it would be investigated.

R. Roach stated if the revetment is constructed from the bottom of bank into the bank, instead of building it out from the top of bank, then in his opinion the project is permissible. Also, if the project remains at 36,000 sf or less of impacts, then the project could go through the SPGP process.

Gino Infascelli asked how the revetment would tie back into the existing slopes at the upriver and downriver ends of the revetment and would the revetment create problems downriver. CMA Engineers stated these are potential areas of concern, but the proposed improvements provide protection to a point downstream of existing and potential development. Mike Ouelett stated the land downriver of the project is farmland and is in a conservation easement so it is not developable. R. Roach asked about including a vane at the downriver end of the project to keep the river flow away from the bank. He also asked CMA to have the State's fluvial geomorphologist (Shane Csiki) review the project. CMA Engineers stated they would review the project with S Csiki and would investigate vanes.

Melissa Coppola asked where the ARM funding for plantings has been spent. Kevin McKinnon stated the money has been spent on the other project on the Mohawk River in Colebrook. Josh Bouchard stated the current project is being funded through grants from EDA and CDBG and is not aware of any ARM funding being involved in this project. Mark Kern asked for follow-up regarding this.

Rich Roach closed the meeting stating if the changes discussed at the meeting were made to the design, then he is amenable to the expedited permit for the project.

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