BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting
DATE OF CONFERENCE: November 20, 2013
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Christine Perron
Kevin Nyhan
Marc Laurin
Matt Urban
Randy Talon
Bob Landry
Steve Liakos
Jim Kirouac
John Butler
Linda Schoffield
Maggie Baldwin
Jason Tremblay
Joe Adams
Michael Pouliot
Tony Weatherbee
Steve Johnson
Doug Gosling

Army Corps of Engineers
Rich Roach

EPA
Mark Kern

NHDES
Gino Infascelli
Lori Sommer

NH Fish & Game
Carol Henderson

NH Natural Heritage Bureau
Melissa Coppola

Dubois & King
Mark Whittemore

Normandeau Associates
Adele Fiorillo

GM2 Associates
Jen Mercer
Darren Blood

Pease Development Authority
Maria Stowell
Andrew Pomeroy
Bill Hopper

The Smart Associates
Jenn Riordan

Jacobs Engineering
Sean Tiney

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

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

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

NOTES ON CONFERENCE:

Finalization of October Meeting Minutes

The October 16, 2013 meeting minutes were finalized.

Orford, non-federal, 26181

Mark Whittemore from Dubois & King gave a brief overview of the project. The project is a bridge replacement located on Archertown Road over Archertown Brook. The bridge (Br No. 095/118) is a structural metal plate arch constructed in 1990 and severely damaged by Hurricane Irene in 2011. The project was previously presented at the August Natural Resource Agency meeting. Per the request of several attendees at the August Natural Resource Agency meeting, Dubois & King has taken additional measurements of the bankfull width upstream of the Orford bridge in order to reassess the bankfull width of 34' that was used in the previous presentation to the Agencies.

Five measurements were taken from 50' to 200' upstream of the bridge. Bankfull width varies from 26' to 35', with the larger widths further upstream. Based on this data, a bankfull width of between 30' and 34' appears to be a reasonable width to use. Dubois & King was towards the conservative side of this range in the original determination of 34'. The recommended bridge span, per the stream crossing guidelines, would correspondingly be 38' to 43' (1.2 times bankfull width plus 2'). Approval for an "Alternative Design" using a 28' span was requested.

Christine Perron asked when the permit application would be submitted. M. Whittemore indicated that it would likely be in the next two to three months.

Lori Sommer asked if the voided slab option would provide more room for animal passage. M. Whittemore responded that a 1' to 2' wide shelf for animal passage would be provided on both sides of the channel through the proposed bridge. It was further explained that the photographs of the different bridge types that were shown were representative of the look of the bridge but not necessarily of the span length. Both the voided slab and the proposed precast concrete rigid frame would provide the same opportunity for animal passage.

Carol Henderson asked if the intent was to maintain a natural stream bottom. M. Whittemore responded yes, that the proposed bridge would maintain the natural streambed.

Those in attendance expressed agreement that the proposed 28.0' span was acceptable as an Alternative Design (Env-Wt 904.09) under the NHDES Stream Crossing Rules.

This project was previously reviewed on the following date: 8/21/2013.

New Ipswich, X-A000(403), 14465

Linda Schoffield provided an overview of the project. The project will address the bridge that carries NH Route 123/NH Route 124 over the Souhegan River. Bridge work will consist of replacing the 1950s upper deck while leaving the historic 1815 stone arch in place. In addition to the bridge work, the Department proposes roadway and drainage improvements that would result in wetland impacts. A temporary detour is proposed from Mill Street to Ypya Rd for emergency vehicles and school buses only. The project is scheduled to advertise in May 2014, with the detour constructed during the first construction season in late fall and early winter. Some drainage work would also be done during this first season. Work is expected to be complete by 2016.

Wetlands impacts are primarily associated with the proposed drainage improvements at existing drainage locations, with the exception of a few locations where outfall locations will be adjusted. The majority of the impacts would occur on the bank of the Souhegan River with minimal impacts occurring directly in the channel.

Rich Roach asked if there would be any additional impervious surface added as a result of the proposed work, and if increased detention of stormwater runoff was proposed. Jim Kirouac and Maggie Baldwin explained that there would be some increase in impervious surface but the increase was not substantial. M. Baldwin explained that small elements of stormwater treatment would be provided via catch basins and stone aprons. No sedimentation or detention ponds were proposed due to the lack of space and the presence of a historic district. M. Baldwin and J. Kirouac reiterated that the outlet areas would not be changing as a result of this project and that drainage patterns would not be substantially altered. Randy Talon commented that the proposed stone aprons would prevent future erosion and sedimentation at the existing outfalls. R. Roach commented that the Department should attempt to provide treatment if possible. The Design team agreed to look into this further.

Matt Urban stated that the Department is evaluating the need for mitigation due to linear impacts to bank and channel associated with proposed stone aprons at drainage outfalls. He further commented that it was not clear if the stone aprons could be considered protection of existing infrastructure, which would eliminate the need for mitigation. R. Roach indicated that, if mitigation would be required, he would like to see the Department look for something in the area to restore, or an area where impervious surface could be reduced.

Carol Henderson asked if any part of the drainage system carried streams. J. Kirouac answered that the drainage system carried only stormwater runoff.

Lori Sommer commented that there should be additional discussion to determine if mitigation would be required. She suggested that the Department set up a meeting to discuss this further with her and Gino Infascelli.

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

Durham, X-A001(202), 16236

Darren Blood provided an overview of the project. The project involves the replacement of the 15-foot single span bridge over Bunker Creek on US Route 4 in Durham. Project limits are just east of Morgan Way and to the west just before Bunker Lane. The bridge is Priority #26 on the NHDOT Red List. The intent of the project is to address geometric deficiencies on the approach to the bridge, including sight stopping distance from Morgan Way. US Route 4 is an urban arterial carrying 18,000 vehicles per day. It is also a major east-west trucking route, and a well-travelled bicycle route. The bridge required repairs by Bridge Maintenance last year and will be repaired again this year once the wetlands permit is received. The bridge is currently funded for replacement in 2019 in the Draft 10-Year Plan. The construction period for the proposed project is dependent on the traffic control method that is employed. Accelerated Bridge Construction is an option being considered along with a temporary bridge to the north.

Jen Mercer provided an overview of design options. The existing roadway section is 12’ lanes and 1’ to 3’ shoulders. The proposed typical roadway section is 12’ lanes and 5’ shoulders. The wider shoulders are proposed for bicycle traffic, winter maintenance, and overall safety. The project area is currently posted for 45 mph and existing conditions do not meet posted speed. Three alternatives have been developed and

presented to the public using a 45 mph design speed: (1) offline alignment to the North; 2) offline alignment to the South; and 3) online alignment, which would hold the existing centerline and widen slightly to both sides. A raise in roadway profile in the vicinity of the bridge is required to improve sight distance at Morgan Way.

There are 2 traffic control options for the online alternative:

1. Temporary Detour bridge alignment to the north (which has additional temporary impacts but these are limited by a 35 MPH Design Speed and a reduced typical roadway section of 12'-2'). The detour comes off the existing alignment approximately 350 feet to the west of the bridge to limit impacts, providing approximately 10' temporary fascia to proposed fascia for construction, then comes back online before Morgan Way.
2. 14 day road closure with US 4 traffic detoured via other State highways to the north (22 miles). Accelerated bridge construction methods required.

Those in attendance at the public informational meeting preferred the online alternative. The Department also recommends the online alignment given that it reduces impacts to adjacent private properties and results in less permanent impact to natural resources.

Adele Fiorillo provided an overview of natural resources documented to date. The landscape in the project area slopes gently from north to the south. The existing roadway slopes are very steep and are armored with rip rap. The existing bridge is a 15-foot bridge span. The project proposes a 30-foot clear span. Bunker Creek enters into the Oyster River just south of the roadway. The project area contains a fringe of salt marsh vegetation to the south; more established salt marsh vegetation to the north; mudflat; and open water (tidal creek channels) of Bunker Creek and the Oyster River. Delineated jurisdictional areas consist of Highest Observable Tide Line (HOTL); freshwater wetlands (limited to roadside swales); and intermittent drainages at culvert outlets.

The Natural Heritage Bureau reported records of exemplary natural communities in and near the project area, an historic record of a state endangered plant (crested sedge), and records of the state endangered New England cottontail. Temporary and permanent impacts from roadway construction are anticipated in the vegetated intertidal/subtidal system. Impacts to crested sedge are not anticipated. A review of the April 2013 aerial photo, as well as the site review in October 2013, indicate little to no suitable habitat present in the project area for cottontail.

Both Bunker Creek and Oyster River have surface water impairments. Both are impaired for Chlophyll A, dioxins, dissolved oxygen, bacteria, impaired biota, turbidity, mercury, nitrogen, and PCB's. There are no TMDLs for Bunker Creek. The only TMDL for Oyster River is bacteria.

Temporary impacts to tidal wetlands, freshwater wetlands, tidal buffer zone, and protected shoreland are anticipated as a result of the construction of the temporary bridge. Permanent impacts to tidal wetlands (mudflat/salt marsh), 100-year floodplain, tidal buffer zone, and protected shoreland will result from the slope grading (1.5:1). It is anticipated that mitigation will be required for permanent wetland impacts.

Melissa Coppola noted that there is a recent report on the New England cottontail that goes into some detail regarding its use of the areas to the north. She also asked how much area beyond the existing rip rap would be impacted. A. Fiorillo responded that there is approximately 10 feet of existing rip rap currently below the HOTL. D. Blood added that, in general, the design holds the slope to the existing toe, but in some locations impacts would go beyond the toe of slope a few feet.

Bob Landry said that the public supports the closing of the road instead of the detour alignment. He also said that the Department is looking at using drilled shafts instead of driving piles due to noise control. Geotechnical borings have not yet been completed but he believes (with information from UNH) that the drilled shafts can be put in place before complete road closure, with temporary lane closures during non-peak travel times. The precast abutments and precast superstructure could then be installed during the 14-day closure (working 16-hour days, not 24 hours a day). However, B. Landry commented that he would like to have the temporary bridge as a back-up traffic control alternative. A 30-foot bridge opening also allows drilling of the shafts to occur all from the east side of the proposed crossing. This reduces the temporary construction impacts associated with providing drill rig platforms.

Rich Roach noted that temporary fill associated with a temporary bridge would be easy to remove and the area would restore and reestablish in a year or two. He stated that a 30-foot bridge span is a good approach and represents some mitigation for the project. There is also potential for mitigation further to the east where a culvert crosses US Route 4 just outside the limits of this project and is causing erosion.

Carol Henderson from NH Fish and Game agrees that the bigger 30' bridge is beneficial. Lori Sommer also agreed with the span length, and stated the need to further discuss mitigation once impacts are quantified.

M. Coppola asked if the project would impact any Fish and Game properties. A. Fiorillo said that no impacts to the properties are proposed.

B. Landry asked if the project could proceed with the 30' bridge design. There were no objections to pursuing the 30' bridge option.

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

Skyhaven Airport, NH SBG 15-04-2012

Sean Tiney provided an overview of the project. The proposed project involves extending and narrowing existing Runway 15-33 and installing Omni-Directional Approach Lights (ODALS). The runway extension will be approximately 200 feet on the Runway 15 end. The existing runway is 100 feet wide by 4,000 feet long. The proposed runway will be 75 feet wide by 4,200 feet long. The ODALS will be installed at the Runway 33 end. The project is expected to be bid in February 2014 and construction is scheduled to begin in April or May 2014.

A mitigation agreement between NHDOT and NHDES was developed and signed on February 2, 2005 and amended on October 9, 2010. Per the agreement, the allowable wetland disturbance due to the construction of planned airport improvements, as well as the wetland disturbance due to the implementation of water quality measures, is 15.84 acres. The planned improvements are identified in the 2001 Skyhaven Airport 20-Year Master Plan. The mitigation for the planned wetland disturbance amount involved land preservation around Champlin Pond. [*The amount of land preservation was not known at the meeting, however the mitigation agreement was reviewed after the meeting and the total amount of preservation through property transfer and easements was 202 acres.]* Since the agreement, there have been a total of 5.44 acres of wetland impacts due to construction previously at the airport, with 10.40 acres of wetlands impacts remaining in the agreement.

The amount of permanent wetland impact for the proposed project is estimated at approximately 1 acre. This does not include any wetland impacts associated with water quality treatment areas, which have not yet been designed.

The project will result in a decrease in impervious surface (approximately 1.3 acres). The existing impervious area is approximately 44.9 acres and the proposed impervious area would be approximately 43.6 acres. This is a result of reconstruction of the runway at a width of 75 feet; currently the runway is 100 feet wide. Although the project will have an overall decrease in impervious area, some of the individual drainage areas will have an increase or decrease due to the shifting of the pavement crown of the reconstructed runway approximately 12 feet to the northeast. There is no net quantity increase in flow of water from the airport as both sides of the runway drain to the same location.

Gino Infascelli raised a concern about filling wetlands to create treatment areas, especially for this project since there will be a net decrease in impervious area. G. Infascelli said that impacts to wetlands for the construction of treatment areas should be avoided if possible.

Mark Kern asked if the mitigation agreement is a state mitigation bank that is exclusive to the Airport. Lori Sommer confirmed this. M. Kern also asked what the current status of the mitigation agreement is and how many acres of impact remain. It was explained that approximately 5.44 acres have been used (this is from the taxiway project) and approximately 10.4 acres remain available. There are no other projects proposed at the Airport for the next 5 years or so. M. Kern also raised the issue that the mitigation ratios from the agreement need to match the federal ratios, although given the amount of impact proposed compared to the remaining amount in the mitigation agreement, this may not be a concern.

Jenn Riordan mentioned that although the Natural Heritage report did not list any records, a spotted turtle was found off the end of Runway 15 in May 2013. She sent the sighting report to Kim Tuttle and Mike Marchand at NH Fish & Game. Carol Henderson said that the main concern with turtles is construction during the nesting season (May through July). She said that no equipment should be staged where turtles may be nesting and to be aware of where equipment is placed. Any known nesting sites should be avoided if possible.

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

Carroll, non-federal, 26902

Steve Johnson provided an overview of the project, which involves Bridge 240/174 on US Route 302 over Gibbs Brook in the Town of Carroll. The existing structure is a metal pipe arch with a deteriorated bottom. The watershed size is 1.0 square mile.

The proposed work consists of installing a concrete invert, cut-off walls, and fish weirs. The concrete invert would involve adding approximately 6 inches of concrete to the bottom of the structure and up the sides as high as the watermarks. Since the existing structure is already perched and would be further perched by adding the concrete invert, the Department is proposing to also install multiple fish weirs that would cause water to back up to the structure and eliminate the perched condition.

S. Johnson indicated that the Department considered the project to be self-mitigating; therefore the need for mitigation was not anticipated due to the proposed fish weirs and also because any proposed rip-rap would be for the protection of existing infrastructure.

Rich Roach asked who the Department would be working with on the Design of the Fish weirs. S. Johnson indicated that the Department has worked with John McGee from Fish and Game in the past and that he would be consulted for this project as well, preferably on site. In general, the weir design would likely be

concrete set into the stream with a zigzag formation in the channel, recognizing each stream is unique and may require different designs.

R. Roach asked if the proposed structure would accommodate the 100 year storm and S. Johnson indicated that the structure was already oversized and would easily accommodate 100 year storm events with the proposed concrete invert.

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

Waterville Valley, non-federal, 27265

Steve Johnson provided an overview of the project, which involves Bridge 119/087 on NH Route 49 over Dry Brook in the Town of Waterville Valley. The existing structure is a metal pipe arch with a deteriorated bottom. The watershed size is 0.8 square miles.

The proposed work consists of installing a concrete invert, cut-off walls, and rip-rap. This structure is not perched and would not be perched after the invert lining is complete. In order to accomplish the invert lining, material within the structure would be removed before installing the 6" invert at the bottom of the structure and up the walls to approximately the waterline. Rip-rap is proposed around the headwalls at the cut off wall for scour protection. Since the rip-rap is intended to protect existing infrastructure, the Department does not anticipate the need for mitigation.

Melissa Coppola asked if there would be any tree clearing in or around the exemplary natural community that was identified in the memo from the Natural Heritage Bureau. S. Johnson indicated that there would be no clearing of forested areas and that the only vegetation removal needed to accomplish the work would be immediately around the structure.

Rich Roach asked how the concrete invert would be constructed. S. Johnson explained that the work is done by Bridge Maintenance crews and typically consists of installing a cofferdam upstream and pumping the stream through a smaller pipe running through the existing structure to allow the crews to work in the dry. R. Roach asked if a machine would be used to remove the material within the structures. S. Johnson replied that the material is generally removed by hand because it is often too difficult to use machinery within the structures.

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

Thornton, non-federal, 27263

Steve Johnson provided an overview of the project, which involves Bridge 247/116 on NH Route 49 over Lee Brook in the Town of Thornton. The existing structure is a metal pipe arch with a deteriorated bottom. The watershed size is 2.8 square miles.

The proposed work consists of installing a concrete invert, cut-off walls, and rip-rap. This structure is not perched and will not be perched after the invert lining is complete. In order to accomplish the invert lining, material within the structure would be removed before installing the 6" invert at the bottom of the structure and up the walls to approximately the waterline.

Rich Roach asked if the concrete invert maintains the same corrugated shape as the existing metal pipe. S. Johnson explained that because the concrete is approximately 6" thick, the corrugated shape is lost and the concrete is formed to match the concave shape of the structure.

Rip-rap is proposed around the headwalls at the cut off wall for scour protection. Since the rip-rap is intended to protect existing infrastructure, the Department does not anticipate the need for mitigation.

Gino Infascelli asked if the streambed material removed from within the structure would be replaced or if it was expected to fill back in over time. S. Johnson explained that the Department would be placing the streambed material back into the structure once the invert was complete.

Carol Henderson asked if it would be possible to revisit the site after construction to determine if a perched outlet developed. S. Johnson commented that the Department would be willing to do that.

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

Sandwich, non-federal, 99056Z

Steve Johnson provided an overview of the project, which involves Bridge 059/055 on NH Route 113 over Eastman Brook in the Town of Sandwich NH. The existing structure is a short span open bottom bridge with undermined abutments. The watershed size is 0.9 square miles. This project consists of installing a modified concrete invert with natural stone set in concrete, matching the existing streambed elevation, in an attempt to mimic the natural stream bed. This will be done by pouring concrete around large stones already in place and then placing smaller river stones into the concrete while it is still wet. S. Johnson indicated that the Department considered the proposed invert to be self-mitigating since it was intended to simulate the natural stream bottom. Also, the proposed rip-rap to be placed for scour protection would be placed for the protection of existing infrastructure. For these reasons, the Department does not anticipate the need for mitigation.

Gino Infascelli commented that he did not consider the use of concrete in a stream bed to be stream simulation.

Rich Roach commented that at least the stones in the concrete would add roughness and would catch sediment.

Carol Henderson asked if the technique of adding stone to the concrete invert could be done at other locations. S. Johnson replied that this technique would not be possible in smaller structures due to the lack of adequate space.

R. Roach suggested that DES could add a condition to the permit for this and similar projects to require a re-evaluation of the structure one year after construction to determine if the proposed environmental measures were working. Lori Sommer agreed that this was a good idea, especially for fish weirs, to determine if these measures are effective. C. Henderson agreed that this would be valuable. Kevin Nyhan commented that the Department would be willing to do this. S. Johnson indicated that Bridge Maintenance does monitor these structures after construction and would continue to do so. Providing photo documentation if needed as a condition of the permit would not be an issue.

G. Infascelli reiterated his concern that the proposed measures may not meet the intent of existing rules regarding stream simulation and mitigation. He was also concerned about what would be done if these

measures prove to be ineffective, and was unsure how effectiveness would even be assessed given that there is no baseline biological assessment. R. Roach commented that collecting baseline data would be an expensive, time-consuming undertaking. He would not expect the Department to be responsible for this for these types of projects, and felt that Fish & Game was unlikely to have the resources available to carry it out.

L. Sommer added that she and G. Infascelli have been meeting with the Department on mitigation issues and that this would be a topic for continued discussion.

This project was previously reviewed on the following date: 6/19/2013.

Lee, non-federal, 26883

Steve Johnson provided an overview of the project, which involves Bridge 099/124 on NH Route 125 over a non-designated segment of the Oyster River in the Town of Lee. The existing structure is a metal pipe arch with a deteriorated bottom. The watershed is 5.2 square miles.

The proposed work consists of installing a concrete invert, cut-off walls, wingwalls, and rip-rap. A fish weir was not proposed since the outlet would not be perched as a result of the proposed work. S. Johnson noted that the proposed rip-rap was intended to protect existing infrastructure and therefore the need for mitigation was not anticipated.

Carol Henderson noted that the Natural Heritage Bureau reported a number of wildlife records in the project area and asked why Fish & Game had not been contacted. Matt Urban indicated that the Department was still reviewing the permit application and that coordination with Fish & Game would occur prior to application submittal. C. Henderson suggested that, for future projects, the Department initiate coordination with Fish & Game prior to attending the resource agency meeting.

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

Peterborough, non-federal, 26802

Steve Johnson provided an overview of the project, which involves Bridge 110/115 on NH Route 136 over an unnamed tributary in the Town of Peterborough. The existing structure is a structural plate arch with a deteriorated arch base. The watershed size is 2.4 square miles. The proposed work consists of facing the existing wingwalls and header, installing toe walls at the base of the arch, and installing rip-rap. Material would need to be removed from within the structure to perform the work. The work as proposed is intended to maintain the integrity of the bridge until it can be replaced, which is currently scheduled for the year 2020. S. Johnson explained that the proposed rip-rap was intended to protect existing infrastructure and therefore the need for mitigation was not anticipated.

Lori Sommer noted that all of these projects would need to address the general design criteria in accordance with the DES Stream Crossing Rules. Kevin Nyhan and Matt Urban indicated that the criteria would be addressed in each permit application.

Carol Henderson asked for more details on construction methods and timing. S. Johnson indicated that it would typically take six to eight weeks to construct a project like this. Construction methods depend on the site. Sometimes a cofferdam is required upstream and downstream of the pipe and the stream is piped around the work area in order to work in the dry. At this site, however, the work can be done by blocking off only half the channel at a time. C. Henderson noted that this stream was an important wild brook trout

resource and Fish & Game would prefer that work be completed outside the spawning season, which is September through October. S. Johnson indicated that this project would likely be done in the winter.

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