

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: August 16, 2017

LOCATION OF CONFERENCE: John O. Morton Building

ATTENDED BY:

NHDOT

Sarah Large
Ron Crickard
Rebecca Martin
Steve Johnson
Doug Locker
Don Lyford
Mark Hemmerlein
Marc Laurin
John Butler

ACOE

Mike Hicks

US Coast Guard

Jim Rousseau

NHDES

Gino Infascelli
Lori Sommer

NHF&G

Carol Henderson

NH Natural Heritage

Bureau
Amy Lamb

**Consultants/Public
Participants**

Scott Bogle
Dave Walker
Julie LaBranche
Gene McCarthy
Jennifer Zorn
Dean Williams
Tracey Boisvert

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

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH:

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NOTES ON CONFERENCE:**Finalization July 19th, 2017 Meeting Minutes**

Sarah Large asked the group if they had any additional comments for the July 19th, 2017 meeting. BOE had received comments from only Gino Infascelli and Amy Lamb. The group did not have any further revisions. The minutes were finalized and posted in a subsequent day.

Rockingham Planning Commission (RPC) Rockingham Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan

Scott Bogle, from the RPC, provided an overview of the MPO Long Range Transportation Plan, the federal and state planning frameworks which the Plan addresses, and the input process that has shaped the draft document. He noted that RPC is looking particularly for input from the Resource Agencies on the natural resource mitigation and monitoring elements of the plan. These are largely covered under four goal areas: Goal 5 – Land Use Integration, Goal 6 – Resource Protection; Goal 7 – Energy; and Goal 8 – Resiliency. The plan is required to address project mitigation. At this point not at a project specific level, though with a general discussion of types of impacts and appropriate mitigation measures. Eventually the plan will include a list of recommended mitigation measures related to proposed projects. He noted that going forward RPC is interested to have more routine interaction with the resource agencies consistent with FHWA's Planning & Environmental Linkages (PEL) model. The goal of the PEL approach is that MPO Long Range Plans be developed in such a way that they can address much of the data collection needed in the initial stages of NEPA reviews. This can reduce duplication of effort, streamline project review and ideally result in better environmental outcomes.

Julie LaBranche, from the RPC, summarized key points from the Existing Conditions and Needs Assessment elements of the Plan related to natural resources, energy and resiliency. For energy she highlighted that the transportation sector is the highest user of energy in the economy, and fossil fuels remain heavily dominant across all modes, with implications for air quality, human health and greenhouse gas emissions. She summarized implications of and the need for retrofitting the existing network and supporting infrastructure, and new projects to protect surface and ground waters, improve stormwater management, and reduce habitat impacts. Regarding needs and recommendations the draft plan draws on approaches out of the State Energy Strategy, the Wildlife Action Plan, and the Land Conservation Plan for NH's Coastal Watersheds.

Regarding resiliency, J. LaBranche summarized best available science showing a sea level rise of approximately 9" since 1900, higher seasonal tides with "sunny day" flooding, and higher storm surge increasing the coastal floodplain. Impacts are not limited to coastal communities. Major storm events have become more frequent and with higher precipitation totals in the past 50 years. Greater severity of storm impacts has been partly due to undersized infrastructure. The planning commissions have been working on a stream crossing inventory to evaluate the capacity of existing infrastructure and ability to handle higher stormwater flows.

RPC in the past several years has completed three key coastal vulnerability assessments – Tides to Storms focused on 7 Atlantic coastal communities, Climate Risk in the Seacoast (C-RiSe) addressing the 10 head-of-tide communities around Great Bay; and the NH Coastal Risk and Hazards Commission Report. J. LaBranche summarized recommendations from CRHC Report for iterative adaptation implementation, including acting early, responding incrementally, revisiting and revising as climate science is refined, coordination on state and local policies and plans, incorporating risk tolerance in design, and making no regrets decisions. Lastly she summarized new research on two other aspects of climate change impact on the transportation system. These included rising groundwater tables in coastal areas driven by rising sea

levels, with implications for road structure integrity and wetlands extent; and the impact of higher temperatures on pavement performance and durability.

Lori Sommer of NHDES asked about the status of the SADES and culvert inventory database. Julie indicated that RPC had completed the inventory for their region and is in process of analyzing the data.

L. Sommer noted that NHDES has recently updated the National Wetlands Inventory (NWI) maps which will be put on NHGRANIT shortly. These now include information on landscape position and water flowpath, getting at wetland function.

Lastly L. Sommer indicated she was interested in municipal based mitigation project inventories, and suggested that land trusts and individual communities be consulted as well.

Mike Hicks from ACOE asked whether RPC will evaluate current permit constraints with the changing landscape. Dave Walker indicated that the Plan focuses at the regional scale and does not get into this level of detail, though that would be a next step as part of the PEL approach.

Mark Hemmerlein of NHDOT noted that GIS data on the closed drainage system networks for the highway system is being worked on internally, and will be made available to the RPCs and MS4 groups. The department will also be integrating the stream crossing data from the RPCs. Glenn Davison, GIS Manager at DOT, is heading this up.

Amy Lamb of the NH Natural Heritage Bureau noted that NHNHB is working on a data sharing agreement with Fish & Game which will eventually be useful in this context.

RPC will send electronic copies of the plan's Current Trends & Future Conditions chapter and Implementation Strategies chapter to the group for comment. The public comment period on the plan will start in early September, with public hearing at the MPO meeting on October 12, 2017.

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

Randolph, #41564 (Non-federal)

The purpose of this project is to place a concrete invert with cutoff walls in the bottom of the existing metal arch pipe.

Steve Johnson gave an overview of the bridge which is a 15'-10 metal pipe arch spanning over Moose River carrying US 2. The drainage basin for Moose River is 1.97 square miles. The existing structure was originally built in 1966 and has reached the end of its design life. There were no NHB records in the area. This project will provide a fish weir at the downstream side due to the 2-3" perched outlet.

Slides were shown giving the location of the pipe, the upstream and downstream elevations, and downstream channel. A map was also provided showing the proposed impacts of the project which included rip rap at either end of the pipe and temporary impacts provided for the cofferdam and stream diversion.

The design of the fish weir was discussed and was stated to be designed with angular stone so the weir could withstand high flows. Sarah Large asked if mitigation would be needed for the proposed

impacts. Lori Sommer expressed not concerns with mitigation. It was addressed that there was no need for mitigation since the fish weir was self-mitigating.

Carol Henderson asked about the cofferdams. Steve Johnson indicated that the stream flow would be directed with cofferdams through a smaller pipe during construction. She suggested that Steve continue to consult with J. Magee for review of the fish weir design. Also, since monitoring of fish weirs is a condition of many Wetlands permit, Carol asked whether the reports of the fish weir monitoring were available for review. S. Large responded yes there are a few 2016 / 2017 permits with the condition to monitor fish weirs. At this time the Department does not have a specific public location where reports can be viewed. We will follow up at a later date on where these reports can be reviewed.

Mike Hicks asked that, if no trees were to be cut, that it was stated in the application. We discussed coordination with the ACOE via Sarah Large starting prior to the meeting, streamlining the process.

The time of construction was also asked about. Steve indicated that the project would be anticipated for winter and would last one month to a month and a half.

Gino Infascelli asked if the center of the invert would be shallower to allow for adequate depth during low flows. Steve Johnson stated that the invert would follow the existing slope and profile of the pipe.

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

Westmoreland, #41553 (Non-federal)

The purpose of this project is to replace the existing deck, face wings, and remove sediment built up at the inlet of the culvert which is impeding stream flow.

Steve Johnson gave an overview of the existing conditions at the bridge Westmoreland (111/069) which spans over Branch Partridge Brook carrying NH 63. The drainage basin for Branch Partridge Brook is 1.6 square miles. The existing bridge is a concrete box culvert spanning 10'-0" at a height of 5'-6" (note this is a correction from the plan view showing a 4'-6" dimension at the meeting) which was originally built in 1935 and rebuilt in 1978. There were no NHB records in this area.

Slides were shown of the existing upstream and downstream elevations, the current condition of the structure, and the channel. There has been a number of floods over the year that have deposited material in the stream's channel immediately upstream of the bridge that becomes vegetated if not removed immediately that Bridge Maintenance would like to remove to open the channel and structure back up because the sediment is currently directing flow towards the wingwall and causing deterioration. Starting to see rust on the bottom of the deck where the reinforcing is and small patching is needed at the base of the walls. Since it is a concrete box culvert the bottom of the structure is concrete and will not be changed by this project. A slide was shown of the proposed impacts which included temporary impacts to form a cofferdam and permanent impacts to remove the sediment build up, and added rip rap along the banks near the wingwall(s) that currently don't have protection.

Sarah Large asked if Bridge Maintenance knew if there had been rip rap previously placed along the banks of the stream previously? Steve Johnson said that he was unsure and due to the age of the bridge he did not have plans that indicated if rip rap previously was placed there, other than the one bank upstream that was shown clearly having rip rap.

Gino Infacelli and Lori Sommer started to discuss mitigation regarding the removal of the sediment within the stream channel and the rip rapped banks. They both asked about if plantings were possible within the rip rap. S. Johnson expressed that Bridge Maintenance strongly prefers to keep the banks close to the structure free of trees or large plants that could cause the slopes to become unstable or cause potential damage in the future if they grew too large and fell. G. Infacelli recommended shrubs that are more malleable and that don't grow too large.

Lori Sommer confirmed that the removal of the sediment would only be to the bottom of the existing streambed, and as long as the original streambed material was not removed, mitigation would not be required for this. The proposed rip rap is intended to limit the effects of erosion at the southeast abutment once the sediment deposit is removed. It was agreed that as long as there was planting being done within the rip rap starting 10'-0 upstream from the end of the bridge there would be no need for mitigation.

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

Bow-Concord, #13742 (T-A000(18))

This project entails preliminary design of proposed improvements to the I-93 corridor between the I-89 interchange (Town of Bow) and Exit 15 (City of Concord). The 4.5 mile corridor is being evaluated as an entire corridor but also as four separate areas for discussion purposes. These four areas include Exit 1 / I-89 Area, Exit 12 Area, Exit 13 Area and Exit 14/15 Area, which extends to Exit 1 on I-393.

Gene McCarthy, Sr. Project Manager, McFarland Johnson (MJ) presented the proposed concepts within each of the four areas. He provided an overview of the project history and the need for the project based upon the existing conditions of inadequate capacity, inadequate weaving lengths and inadequate deceleration distances, and the need to replace red-listed bridges. The inadequate capacity on I-93 will be addressed by widening the highway to three lanes in each direction, although a fourth auxiliary lane is needed in many areas between closely spaced interchanges. Jennifer Zorn, Environmental Specialist (MJ) presented the natural resource aspects of the project and anticipated impacts within each of the four areas. She also explained that a NEPA Environmental Assessment (EA) is currently being prepared based upon the preliminary design of the concepts. Permit applications would be completed during final design.

The following is a summary of the information shared by Gene McCarthy and Jennifer Zorn for each of the four areas:

Exit 1 / I-89 Area

- Known resources of concern in this area include Bow Brook, the Turkey River, and Cilley State Forest. There are also records of the presence of wood turtle within a portion of Turkey River, east of I-93. All of the potential designs for this area would require limited wetland and waterway impacts. All of the designs being considered include impacts to

Cilley State Forest to some degree. Coordination with NH Department of Natural and Cultural Resources (DNCR) regarding the potential impacts to Cilley State Forest has been initiated. There are three concepts being evaluated to improve or eliminate inadequate weaving. These concepts include C, K and P.

- Concept C proposes moving the exit ramps further west on I-89 to improve the Exit 1 to I-93 weave, but impacts to Cilley State Forest and other undeveloped land (private parcels) with large areas of tree clearing would occur. One red-listed bridge would be replaced. Preliminary cost \$30M.
- Concept K proposes eliminating the Exit 1 to I-93 weave and improving the I-93 northbound to I-89 northbound weave. Four new bridges would be required. One red-listed bridge would be replaced. Preliminary cost \$62.5M.
- Concept P proposes eliminating the Exit 1 to I-93 weave and the I-93 northbound to I-89 northbound weave by removal of loops but requires five new bridges. One red-listed bridge would be replaced. Preliminary cost \$87.6M.

Exit 12 Area

- Known resources of concern in this area include South End Marsh and a wetland mitigation site (owner NHDOT). These resources are not anticipated to be impacted based upon preliminary design. Wetland impacts are currently estimated at less than ¼ acre.
- There are two concepts being evaluated to address deficient deceleration at the exit ramps. Both concepts reconfigure the exit ramps at Exit 12 forming a partial cloverleaf. These concepts include E and F.
- Concept E proposes the use of signalized intersections at the ramp junctions with Route 3A. Preliminary cost \$34.4M.
- Concept F proposes two roundabouts at the ramp junctions with Route 3A. Preliminary cost \$35.5M.

Exit 13 Area

- Known resources of concern in this area include West Terrill Park [a 6(f) parcel] and the Merrimack River. Impacts to West Terrill Park are not anticipated to occur. Permanent impacts (e.g., filling) within the 100-year floodplain/floodway of the Merrimack River are not anticipated. Grading may occur below the top of bank or below Ordinary High Water (OHW) during construction (to be determined in final design). The recent Northern Long-eared bat acoustic survey for the corridor yielded 10,000 acoustic files. The majority of the acoustic files were recorded in the West Terrill Park area.
- There are two concepts being proposed to improve the queuing that occurs daily at the northbound exit ramp. These concepts include A and B.
- Concept A proposes signaling the right turn onto Manchester Street, widening I-93 and replacing one red-listed bridge. Preliminary cost \$28.6M.
- Concept B proposes widening the off-ramp to double the capacity of the right turn onto Manchester Street, widening I-93 and replacing one red-listed bridge. Preliminary cost \$33.1M.
- Additionally, the City of Concord has a proposal in 2025 to widen the Old Turnpike Road intersection with Manchester Street by providing double left turn lanes on the Manchester

Street eastbound approach and double right turn lanes from Old Turnpike Road to Manchester Street.

Exit 14 / 15 Area

- Limited wetland resources are located within this area and impacts, such as filling, within the 100-year floodplain/floodway of the Merrimack River are not anticipated. Wood turtle and Northern Leopard Frog are recorded to occur near Horseshoe Pond.
- There are four concepts being evaluated to improve inadequate weaving and LOS. These concepts include D2, F, F2 and O3.
- Concept D2 proposes to widen I-93, but mostly retain the existing interchange configuration. The one exception is the elimination of the northbound entrance ramp at Exit 14. Exit 15 would retain the existing full cloverleaf configuration, but the additional lanes on I-93 benefits the weaving. Four red-listed bridges would be replaced. Preliminary cost \$86.5M.
- Concept F proposes to widen I-93 and reconfigure Exits 14 and 15. Exit 14 proposes a Single Point Urban Interchange with all four ramps. Exit 15 proposes a cloverstack configuration, which eliminates two loop ramps and four weaving sections. Collector-Distributor (C-D) Roads are proposed between Exits 14 and 15 to isolate ramp movements. This concept impacts Stickney Avenue, an electrical sub-station, the railroad corridor and commercial properties. Four red-listed bridges would be replaced. Preliminary cost \$186.2M.
- Concept F2 proposes the same cloverstack at Exit 15, but it proposes a simple diamond configuration at Exit 14, similar to Concept D2. The northbound entrance ramp is removed which eliminates the impacts that occur with Concept F. Four red-listed bridges would be replaced. Preliminary cost \$124.6M.
- Concept O3 proposes the depression of I-93 and reconstructing Loudon Road to go over I-93 at Exit 14. The reorientation of Exit 14 allows the railroad corridor to be relocated closer to I-93 and opens up adjacent land for redevelopment. Four red-listed bridges would be replaced. Preliminary cost \$163.2M.

Jennifer Zorn detailed a few of the natural resources located within the entire corridor and the level of detail being inventoried and evaluated for the NEPA Environmental Assessment (EA). The following summarizes this portion of the meeting.

- Wetlands and waters throughout the corridor have been delineated and GPS-located. The locations are known as well as the functions and values. These details will be presented in the EA document.
- Surface waters are being reviewed and evaluated. Essential Fish Habitat (EFH) is being evaluated for impacts to Bow Brook, the Turkey River and the Merrimack River. The existing Bow Brook culvert under I-93 is proposed to be extended on both sides to accommodate the I-93 widening. The project will be further evaluated for potential impacts to the Bow Brook below the top of bank and/or OHW.
- Impacts, such as filling, within the 100-year floodplain and floodway of the Merrimack River are not anticipated.
- Potential impacts to threatened and endangered species and/or their habitat within the Horseshoe Pond area is being evaluated.

- Areas of tree clearing would occur throughout the corridor. The largest single area of tree clearing (~13 acres) is proposed by Concept C at the Exit 1 / I-89 Area. The tree clearing is proposed to occur within the Cilley State Forest (north side of I-89) and on privately owned land (south side of I-89). The majority of additional tree clearing would occur along both sides of the existing roadway corridor.
- At this time, Cilley State Forest is the only conservation land within the corridor that would be impacted.

Schedule

Gene McCarthy provided an overview of the project schedule including the following milestones:

- The second public information meeting would be held in the late fall of 2017. The purpose of this PIM is to present the preferred concepts (i.e., preferred alternatives) for each of the four areas that will result in a corridor-wide preferred alternative.
- The public hearing is anticipated to occur in spring of 2018 during the NEPA EA public comment period.
- The earliest construction period is anticipated to begin 2023. Current funding for the project is \$60M. At this time, it is unknown when the full project construction will be completed. Turnpike funding will be used from Exit 14 southerly.

Questions/Comments

Carol Henderson inquired whether the preferred alternative would be identified before the public hearing. Don Lyford and Gene McCarthy explained that the preferred alternative would be identified at the next public information meeting prior to the public hearing. NHDOT has held public information meetings recently, one in the Town of Bow, on May 31st, and one in the City of Concord, on June 1st. The material presented during this NRA Meeting is the same material that was presented to the public. Numerous comments from the public, town and city officials have been received as well as comments received through the project website.

Michael Hicks, ACOE, inquired about the location of historic structure impacts and expressed concern that the ACOE would have difficulty determining the permit area based upon the impacts. He commented that FHWA would be the lead Federal Agency for this project, but cautioned about challenges with these impacts. Gene McCarthy identified the location of several historic areas. He stated that for the Ralph Pill building the impact would be that access would be eliminated.

Michael Hicks suggested that since Turnpike funds were being used for a portion of the project, and if the project areas had independent utility, perhaps the project could be permitted in phases. Gene commented that for some of the red-listed bridges there is clearly independent utility, but for some of the other more complicated changes, the impacts will need to happen all at once. Gino Infascelli, DES, stated that it was too soon to determine how the project would be permitted.

Tracy Boisvert, DNCR/Bureau of Forest Management inquired on the tree clearing acreage for the Cilley State Forest and stated the establishment of the Forest was through funding by HHS and not other funding mechanisms. Jennifer Zorn estimated that approximately 13 acres of forest would be cleared for Concept C. Jennifer will supply Tracy the current impact acreage for all three concepts, in the near future. Tracy commented that DNCR is concerned about this alternative.

Amy Lamb, DNCR/NHB requested clarification on the extent of the project limits outside of the I-393 Exit 1 area and noted there is an exemplary floodplain forest in this location. Jennifer Zorn stated she would review this area and determine impacts, if applicable. Gene commented that the concepts do not really change the configuration at Exit 1, so impacts are not expected except for the bridges on the red list.

C. Henderson asked about impacts to Terrill Park. Jennifer commented that any tree clearing will be within the existing right-of-way and impacts to Terrill Park are not anticipated. There was a brief conversation about the acoustic survey for bats, over 10,000 sound files recorded at detector sites through the corridor. Many of the files were recorded at Terrill Park. C. Henderson will have the Department's bat specialist contact Jennifer to discuss the bat survey results for this project.

John Butler, NHDOT offered that the location of proposed stormwater management facilities has not been developed and would be determined in the near future. Impacts in addition to those discussed at the NRA meeting are anticipated from storm water treatment. Mark Hemmerlein commented that designing storm water collection/treatment may be challenging due to the configuration of the roadway.

Additional project information and preliminary design mapping is located on the project website www.i93bowconcord.com.

The project team anticipated attending an upcoming NRA meeting in late fall of 2017 to discuss the impacts and the selection of the preferred alternative.

This project has been previously discussed at the 7/17/2002, 8/21/2002, [12/14/2005](#), [11/15/2006](#), and [4/16/2014](#) Monthly Natural Resource Agency Coordination Meetings.