

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGE DESIGN**

CONFERENCE REPORT

PROJECT: Northfield-Tilton 16147
Rehabilitation of Two Bridges on I-93

DATE: June 7, 2013

DATE OF CONFERENCE: June 6, 2013

LOCATION OF CONFERENCE: Tilton Town Hall, 257 Main Street

ATTENDED BY:	<u>NHDOT/CONSULTANTS</u>	<u>PUBLIC</u>
	J. Patusky	See Attached Sign-In Sheet
	R. Juliano	
	C. Perron	
	David McNamara (FST, Inc)	

SUBJECT: Public Officials/Public Informational Meeting

NOTES ON CONFERENCE:

R. Juliano opened the presentation and explained that this project involves the rehabilitation of two red-listed bridges on I-93 in the towns of Northfield and Tilton. The bridges, located just south of exit 20, carry I-93 NB & SB over the Winnepesaukee River, NHRR and Winnepesaukee River Trail.

The focus of the project is to replace the concrete bridge decks on both of the bridges and install scour countermeasures to protect the bridge pier foundations from being undermined during periods of high river flow. The biggest challenge of the project is expected to be the traffic control.

This project is part of the State's 10-Year Transportation Improvement Plan and will be funded with a combination of federal and state funds.

Copies of the plans from tonight's presentation will be posted to the DOT website where you can view them. This information should be available on our website within a few days after this meeting.

Technical Presentations then followed.

C. Perron read the project environmental statement; a copy is attached to this report.

J. Patusky presented the details of the bridge work as follows:

- Both bridges were put on the State's Red-List due to the deteriorated condition of the bridge decks. Photos presented indicated active corrosion of bottom reinforcing mats with significant concrete spalling from the underside of the bridge decks.
- Both bridges were constructed in 1960. Both bridges were widened in 1980. At that time the bridge decks, bridge and approach rail, structural support steel and bridge bearings were removed and replaced. Deck expansion joints over the piers were eliminated.
- The original bridge decks were in-service for 20 years.
- The second generation bridge decks were patched in 1980. At that time, waterproofing membranes and bridge pavement were replaced.
- The existing decks have been in service for 32 years.
- Both bridge decks will be replaced with an improved concrete and (epoxy) coated reinforcing steel throughout (top and bottom mats) to prevent rust formation. These material improvements are expected to increase the longevity of the new bridge decks. Our expectation is that the new bridge decks will provide a service life in excess of 50 years.
- Scour countermeasures will be installed around the river piers to prevent erosion of the streambed support of the foundations during extreme flood events. Photos of a matrix system of precast concrete blocks, currently being installed at another site, were presented as a viable armoring alternative.
- Other bridge repairs and replacements discussed included: Repairs to scour monitors at center pier locations, full or partial replacement of bridge and approach railing, probable replacement of bridge bearings, replacement of deck end joints, installation of a waterproofing membrane over the bridge deck roadways and bridge deck paving.

D. McNamara presented the details of the traffic control options we are considering as follows:

- Option "A" involves a temporary two lane bridge in the median. The details of this option are as follows:
 - Both northbound lanes would be diverted to the temporary bridge, allowing work on the northbound bridge to be completed in one phase.
 - Access to the northbound off-ramp at Exit 20 will be maintained while the traffic is diverted to the temporary bridge.
 - Following completion of the work on the northbound bridge, the southbound lanes would be moved to the temporary bridge. Due to the location of the piers from the US Route 3 Bridge, the southbound crossover needs to begin north of the interchange, and the lanes pass to the east of the piers and onto the temporary bridge.
 - Southbound on-ramp traffic will remain on the southbound bridge and merge with the mainline traffic south of the bridge, at the tie-in of the detour. This will require the southbound deck to be replaced in two phases.
 - The temporary bridge will require piers in the river and increased environmental impacts. Piers would not directly impact the Rail Trail or Railroad, however, there would be temporary impacts to the trail during installation of the bridge.

- Option “B” is a full crossover, without a temporary bridge, with one lane from each barrel crossing over to the other during the respective phases of construction. A minor permanent widening would be constructed to develop the necessary width on the northbound bridge to accommodate three lanes of traffic while the southbound bridge deck is constructed. The following points were presented:
 - The first stage of work would involve shifting the high speed northbound lane to the southbound barrel, and leaving one northbound lane on the northbound bridge.
 - The northbound bridge will be constructed in two phases.
 - There will be no access to the northbound off-ramp from the northbound high speed lane in this scenario, which will require advance signage. Similar scenarios have been used in the State.
 - During the northbound bridge rehabilitation, minor permanent widening will take place on each side. The deck will be widened an additional 9” on each side to extend a total of 3’ beyond the exterior girders. This will provide additional room to fit a third lane on the bridge for the southbound crossover.
 - Following the completion of the northbound work, both northbound lanes and one southbound lane will be moved to the northbound barrel. The southbound bridge will be constructed in two phases.
- The advantages and disadvantages of each alternative were presented, as follows:
 - Temporary bridge advantages:
 - Limit staged construction
 - Access to Exit 20 northbound off-ramp
 - Temporary bridge disadvantages:
 - Cost (up to \$1.5-2 million)
 - Impacts to the River, Trail, and Railroad corridor
 - Cross over advantages:
 - Less costly
 - Minor widening improves permanent shoulders
 - Less impacts to River, Trail and Railroad corridor
 - Cross over disadvantages:
 - One lane access to the Exit 20 northbound off-ramp
 - Southbound on-ramp merge is substandard
 - Additional phase of construction on northbound bridge

Schedule

The project is scheduled to advertise for bids in December 2015, with construction beginning in the spring of 2016. The work is expected to take two full construction seasons with completion being in the fall of 2017.

We are working toward having the project plans complete and on-shelf by August 2014, in case funding was to become available sooner.

Comments

The following comments were made and items discussed:

- Is the duration of construction expected to be shorter with either of the TCP options?

The overall construction duration is expected to remain about the same, two construction seasons. Under the temporary bridge alternative, more time will be spent erecting the bridge, while there will be some time savings on the actual rehabilitation work, resulting in a similar overall time frame.

- Will the temporary bridge or cross-overs be in use during the winter?

No, traffic will be restored to the mainlines in advance of the winter season. If a wider temporary bridge were used, it may allow for traffic to remain over the winter, but that is not anticipated.

- Silver Lake Dam releases water during the summer months, increasing river flows significantly.
- Excavation and test pits were done as part of the rec trail construction and no artifacts were found.
- The rail bed is used by snow machines in the winter.
- How will the contractor access the river to place scour countermeasures?

Consideration has been given to constructing an access road from the south approach median or to secure the rights to use the access road to the Super 8 Motel and cross the railroad at the trail crossing.

- Where are the staging areas under the bridge for placement of materials and equipment?

A large parcel of land behind the McDonald's restaurant and adjacent to NH Route 140, previously owned by the State of New Hampshire and considered as a candidate for a staging area, has been sold to McDonald's and recently repaved.

- Over 150 rec trail users per day can be expected at times during the summer months.
- The Winnepesaukee River Basin Authority needs to have access under the bridges to clean out the sewer manholes estimated at 3-4 times per year.
- Concern was expressed that falling concrete from the underside of the bridge deck presents a hazard to rec trail users and could we install netting overhead?

On 6-7-13 Bridge Maintenance was notified of the concerns about falling concrete. Bridge Maintenance indicated that they had been to the site about a year ago and removed loose concrete from the underside of the bridge decks over the trail. Based on these recent observations, Bridge Maintenance will schedule another inspection and remove any loose concrete that is found.

- A request was made to clean out the drainage ditch between the rail bed and the toe of abutment slope as part of this project. The ditch doesn't drain very well and is a maintenance issue.
- The general consensus of those in attendance was that the preferred traffic control option was the median cross-over when considering the cost of the temporary bridge (estimated at \$1.5M to \$2.0M).

SUBMITTED BY: David McNamara

NOTED BY: Robert Juliano
Joseph Patusky

Attachments

cc: M. Richardson
R. Landry
File