

**THE CITY OF CONCORD
in conjunction with the
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENT**

**Concord, BRF-X-5099 (021), 12004
Draft
Environmental Study and Programmatic 4(f) Evaluation**



May 2013 update by
CHA Consulting, Inc.
11 King Court
Keene, NH 03431

**Draft
May, 2013**

Table of Contents

Part I- Environmental Study	1
Introduction	1
Existing Conditions and Need	1
Proposed Action	3
Alternatives Considered	4
Evaluation of Environmental Effects	5
Social/Economic Resources	6
Air Quality	6
Business Impacts, Community Services, Land Use and Tax Base	6
Contaminated Properties	7
Environmental Justice	7
Land Acquisition	7
Noise	7
Conservation Land/Public Lands/Recreation.....	8
Safety/Transportation Patterns	9
Utilities.....	10
Natural Resources	10
Endangered Species / Wildlife / Fisheries / Natural Communities	10
Floodplains.....	11
Groundwater /Water Quality.....	11
Shoreland Protection/Wetlands/Surface Water.....	11
Cultural Resources	12
Description of Historic Resources	13
Mitigation of Historic and Pre-historic Resource Impacts.....	14
Construction Impacts	14
Coordination.....	15
Summary of Environmental Commitments.....	16
Part II: Programmatic Section 4(f) Evaluation For Use of Historic Bridges	17
Introduction.....	17
Existing Conditions/ Proposed Action	18
Description of Historic 4(f) Resources	19
Impacts to Section 4(f) Properties.....	19
Avoidance Alternatives.....	20
No-Build	20
Rehabilitation of the Existing Bridge	20
Other Alternatives Considered To Minimize Impacts To Section 4(f) Resources.....	20
Measures to Minimize Harm/ Mitigation	21
Coordination & Public Participation.....	22
Programmatic Applicability	23
Summary	23
Exhibit 1- Map of Project Area	24
Exhibit 2 - Topographic Map of Project Area.....	24
Exhibit 3 - Proposed Alignment of New Bridge and Roadway.....	25
Exhibit 4 - Air Photo of Project Area.....	27
Exhibit 5- Photo of existing bridge looking north.....	28
Exhibit 6- Photos showing bridge	29
Exhibit 7- Reply from NH DRED re: 6(f) properties	32
Exhibit 8 - Reply from NHHB	32
Exhibit 9 - Reply from NHF&G.....	32
Exhibit 10 - Reply from OEP-Conservation Land Stewardship.....	32
Exhibit 11 - Map of Conservation Lands in the vicinity of the Project Area.....	33

Exhibit 12 - Reply from NHOEP regarding Floodplains in Project Area	34
Exhibit 13 - Reply from U.S. Fish and Wildlife Service.....	34
Exhibit 14 - Memo from NH Department of Historical Resources.....	34
Exhibit 15 - Letter from NH Fish and Game regarding LCIP and Recreation Land.....	34
Exhibit 16 - Map of Sewalls Falls Recreational Trails.....	35
Exhibit 17 – Alternative Summary Matrix	35
Exhibit 18 – Meeting Minutes and Public Comment	37

Part I- Environmental Study

Introduction

This project was initiated in 1994 by the New Hampshire Department of Transportation (NHDOT). In 1999, NHDOT retained the services of Clough Harbour and Associates LLP, now CHA Consulting, Inc. (CHA), to perform the design engineering evaluations for the replacement of the Sewalls Falls Bridge under the Part A, Preliminary Engineering Services Phase of the project. Initial engineering evaluations focused on roadway alignment alternatives and associated impacts to cultural and natural resources. Through the public engagement process and meetings with stakeholders, design alternatives considered also included means of preserving and rehabilitating the existing bridge to carry legal highway loads. At the end of the NHDOT initiated Part A, the Preferred Alternative was to rehabilitate the existing Sewalls Falls Road Bridge to carry one lane of northbound traffic and construct a new single lane, steel beam bridge just upstream of the existing bridge to carry a single lane of southbound traffic. Both structures would be placed on a new cast-in-place concrete substructure. This was identified as the Proposed Action in the Final Environmental Study and Programmatic Section 4(f) Evaluation¹ that was prepared by NHDOT in 2010 (2010 Studies).

At the conclusion of the Part A Preliminary Engineering Phase, NHDOT turned the project over to the City of Concord to complete the final design and construction as a Municipally Managed Project under the Department's Bridge Aid Program. One of the first steps that the City undertook was to perform a detailed structural inspection and load rating analysis of the existing bridge to determine the extent of rehabilitation required, as this had not been performed under the NHDOT Part A Phase of the project. The results of the inspection and load rating determined that, while the bridge could be rehabilitated to carry legal highway loads, the extent of rehabilitation was significant and included either strengthening or replacing the majority of the structural members. As a result of these findings, the City of Concord decided to reevaluate previously investigated alternatives to determine which alternative would best meet the near-term and long-term needs of the City and best serve the public safety. This Environmental Study and Programmatic Section 4(f) Evaluation documents those efforts and updates and/or supplements the 2010 Studies by NHDOT.

This Environmental Study/Programmatic Section 4(f) Evaluation also documents the anticipated effects associated with this project as detailed in 23 CFR 771.117(d)(3). Documents and reports referenced and footnoted herein can be found at the City of Concord's website <http://nh-concord.civicplus.com/index.aspx?nid=426>.

Existing Conditions and Need

The proposed project, located on Sewalls Falls Road in the City of Concord, involves the removal of the existing one-lane bridge, over the Merrimack River (070/117) and the construction of a new two-lane steel beam bridge along the existing alignment replacing the existing structure (See [Exhibits #1-6](#)). Being one of only five bridges in the City of Concord crossing the Merrimack River, this bridge has been identified by the City and the State of New Hampshire as an important crossing over the Merrimack River. Sewalls Fall Road is also anticipated to provide a vital link to future development and economic growth anticipated along the future extension of Whitney Road (currently the driveway to the Concord Monitor) on the east / north side of the Merrimack River as well as consideration of a new Exit 16 ½ as part of the long-term transportation improvement plan. Currently the bridge is in poor condition with a Federal Sufficiency rating of 0.0 out of 100. The project will greatly improve functionality and safety of the bridge.

The existing bridge is 338 feet long and just under 18 feet wide with a vertical clearance dictated by the existing portal geometry of 15.33 feet limiting large truck traffic access. It has one travel lane on an open steel grid deck that allows alternate one-way traffic flow, east bound and west bound, with no sidewalks. This lack of sidewalk

¹ Concord, BRF-X-5099 (021), 12004, Environmental Study and Programmatic 4(f) Evaluation, Draft, November 2010 prepared by the State of New Hampshire Department of Transportation Bureau of Environment

segments the existing recreation trail systems that exist on both sides of the river. This roadway provides local access to both the east and the west sides of the Merrimack River in the north part of the City of Concord, without the need to access Interstate-93. Since the bridge is limited to one lane of traffic, this necessitates alternating travel directions and the need for vehicles to stop to wait for oncoming traffic to cross the bridge. The current posted speed is 30 mph with the recommended speed being 20 mph due to one-way alternating traffic and the presence of poor sight distance approaching the bridge from the northeast and exiting the bridge from the southwest. The existing sight distance around the curve at the north end of the bridge is approximately 200 feet. The minimum stopping sight distance per AASHTO guidelines for the 30 mph posted speed limit is 200 feet. The cut slope embankment and vegetation on the inside of the curve is what controls the available sight distance.

The bridge was built in 1915 and was designed by John William Storrs, a noted bridge designer and five-term Mayor of Concord. This bridge is the only one of Storrs' designs remaining in Concord and only one of two 2-span steel Pratt Truss bridges remaining in the State of New Hampshire. The other example is located in Henniker, NH and was also designed by Storrs. A multi-span steel approach was constructed on the westerly side in 1939 after the 1938 flood, to allow for floodwater storage.

The existing bridge and steel approach spans are in very poor condition (See [Exhibit # 6](#)) and have been on the Municipal Red List for a number of years. The weight load was recently downgraded from 14 tons to 10 tons, preventing the use of this bridge by City of Concord Emergency Vehicles. It has two steel spans with a single granite pier in the Merrimack River. The steel trusses are in poor condition and need repair and repainting. Both abutments have extensive cracking and spalling of the concrete and there have been significant problems with the cut granite pier. A considerable number of stones have cracked, shifted, and/or fallen into the river, thereby compromising the overall integrity of the pier. Although NHDOT Bridge Maintenance forces have performed repairs, these are not considered as permanently addressing concerns with the pier. The existing substructure elements are founded on spread footings placed on original soil at the excavated depths. Piles supporting the substructure were not utilized and the foundation design does not meet current protective scour design standards.

The existing conditions of the roadway and bridge result in safety hazards for the traveling public and segments the recreation trail systems that exist on both sides of the bridge as noted above. In addition to the current and immediate impacts that these conditions present, they will also limit considerations and policies as detailed in the City's current Master Plan². These include future economic development along a future extension of Whitney Road (currently the driveway to the Concord Monitor) on the east / north side of the Merrimack River as well as consideration of a new Exit 16 ½ as part of the long-term transportation improvement plan.

On the east side of the Merrimack River are two properties, adjacent to the approach to the bridge. The Concord Monitor Newspaper facility (Parcel #1) is located on the northeast side of Sewalls Falls Road and a residential property (Parcel #2) is located on the southeast side of the road. There is an active **railroad** line to the east of the bridge, just east of the entrance to the Concord Monitor. The rail crossing of Sewalls Falls Road will be impacted by the widening of the roadway to include a left turn lane from the west, into the Concord Monitor parking area. On the west side of the Merrimack River there is a New Hampshire Fish and Game (NHF&G) boat launch and parking lot on the south side of Sewalls Falls Road (Parcel #4) and Conservation Land, owned by NHF&G and purchased with Land Conservation Investment Program Funds (LCIP), currently Conservation Land Stewardship property (CLS), on the north side of the road. Another **railroad** line occurs west of the NHF&G boat launch entrance. The project will end just before this rail line, so there should be no impacts on it. Traffic data from 2007 indicate an Average Daily Traffic (ADT) of 3900. There have been 13 vehicular accidents in this area from January of 1998 to December of 2009 with no fatalities and only one injury. Most of these accidents appear to have possibly been due to wet or icy roads. More current traffic and accident data is being compiled and will be included in the final Study Documents.

² *Master Plan 2030, Concord New Hampshire*, prepared by the City Planning Board, June 18, 2008

Proposed Action³

Because the alternative analysis and plan development extended over a significant period of time, some of the alternatives, including the Proposed Action, were developed in metric units while others in English units depending on what the standard unit convention was at the time of development. Therefore, the narrative describing the Proposed Action is presented in both English and metric units to aid in the comparison of alternatives.

The City of Concord proposes a design to replace the bridge over the Merrimack River at Sewalls Falls Road. The proposed project will construct a new two-lane steel beam bridge with concrete decking along the existing alignment replacing the existing structure. A new pier and abutments will be constructed as the existing pier and abutments are in poor condition.

The proposed roadway geometry includes providing 2 – 12' (3.6 m') travel lanes with 5' (1.5 m) shoulders and 5' (1.5 m) sidewalk(s) on either side of the road. The roadway alignments are based on a 35 MPH (60 KPH) design speed. The proposed sidewalk extends from the Fish and Game Park (Parcel 4) driveway to the Concord Monitor (Parcel 1) driveway. Widening and improvements to the roadway approaches will be constructed northeast past the Boston and Maine Railroad crossing and southwest up to the Boston and Maine Railroad corridor. The total construction distance is 2,000 linear feet (610m), 830 feet (253m) on the east side of the bridge and 840 feet (256m) on the west side of the bridge.

The horizontal roadway alignment will closely mimic the existing alignment. However, the vertical alignment will be raised approximately 10' (3m) higher at the western abutment and approximately 16' (5m) higher at the eastern abutment. While the profile is significantly higher than existing, it does provide for a smooth vertical geometry, with vertical curve lengths and profile grades greater than the minimum required. This vertical geometry also minimizes impacts to Parcels 1 and 2 on the northern (eastern) approach.

The existing sewer and gas mains located on the existing structure will need to be relocated. Provisions for maintaining these utilities during construction will need to be incorporated into the Final Design. The City of Concord is also proposing to extend the existing water service across the bridge from Manor Road to connect into the existing service in the vicinity of the Concord Monitor driveway (Parcel 1). In addition, the existing 24" (600 mm) storm drain at the southwest quadrant will need to be relocated.

Drainage facilities in the project area will be re-designed and water quality facilities will be installed on unused areas of Parcel # 4, the NHF&G Boat Launch parcel, beneath the existing Unitil easement. Additional water quality treatment for Sewalls Falls Road may be provided using the existing Concord Monitor water quality basin located in the northwest quadrant pending an agreement between the City of Concord and the property owner.

A flood control dam was constructed in Franklin Falls on the Pemigewasset River, upstream from the Sewalls Falls Bridge. This dam was started in 1939 and completed in 1943 and protects the areas downstream from flooding, including the towns of Franklin, Northfield, Concord and Bow, New Hampshire. Since this flood control dam was constructed, there is no longer a need for the steel approach spans on the west approach to the Sewalls Falls Bridge. The spans are in poor condition and will be removed and a typical fill approach will be constructed. There currently is a recreational trail (see [Exhibit #16](#)) from the NHF&G boat launch area, passing under the approach span that connects to a trail on Parcel # 5 on the north side of Sewalls Falls Road. This trail connects to another trail south of the boat launch area, to the old Sewalls Falls Dam and extends northwest approximately 1000 feet (305m) along the Merrimack River on Parcel # 5. The proposed design will relocate the west abutment further away from the river thereby allowing pedestrians and wildlife to pass in front of the proposed abutment.

³ Refer to letter report prepared by CHA Consulting, Inc. dated November 28, 2012 entitled *Re-Evaluation of Preliminary Design Alternatives*.

Alternatives Considered

No-Build Alternative

The No-Build alternative does not meet the purpose and need of the project since it would not address the public safety concerns associated with the existing conditions. Failure to address the substandard and existing unsafe conditions would perpetuate the roadway deficiencies, which would likely become more severe if left unaddressed and lead to the closure of the bridge and eventual removal from the location.

Rehabilitate the existing bridge

This alternative was not pursued, as it would still not allow for two-way traffic due to the width of the bridge. Widening is not recommended as the existing pier and sub-structure are in poor condition and would not support the weight of the wider structure. The existing substructure would continue to deteriorate and require maintenance. Rehabilitation of the existing bridge would require closure of the bridge during the entire time of rehabilitation, which would cause great inconvenience to those who use the bridge daily. Even with this rehabilitation, traffic would be limited to alternating one-way travel. The City of Concord has anticipated future development of this area and a one-way, alternating bridge would not be adequate to handle the increased traffic.

Rehabilitate the Existing Bridge & Add an Additional One-lane Bridge

This option was the preferred alternative/proposed action in the 2010 Study and consists of rehabilitating the existing Sewalls Falls Road Bridge to carry one lane of northbound traffic and constructing a new single lane, steel beam bridge just upstream of the existing bridge to carry a single lane of southbound traffic. Both structures would be placed on new cast-in-place concrete substructures. Based on a detailed structural inspection⁴ and load rating analysis⁵ of the existing bridge conducted by CHA in the Spring of 2012, it was determined a more extensive amount of rehabilitation would be required to the existing truss in order to carry legal highway loads than initially assumed. This alternative was no longer pursued based on the extent of rehabilitation required in order for the existing trusses to carry legal highway loads, safety concerns, long-term serviceability, high maintenance costs as well as initial construction costs, and sustainability of the bridge once rehabilitated due to anticipated development and increased traffic demands on Sewalls Falls Road, thereby not meeting the long-term goals and needs of the City of Concord. In addition this alternative had a less than desirable proposed roadway alignment, as it requires traffic to split at the bridges.

Replacement alternatives

New Two-Lane Bridge Upstream Replacement

This alternative was not pursued due to requiring much more land acquisition, increase environmental impacts, as well as higher initial construction costs than the Proposed Action. A larger strip of land would be needed from the Concord Monitor parcel and would impact their parking lot. A larger portion of the LCIP Parcel would be needed, impacting more wetlands on that property and possibly impacting areas that are sensitive for archaeological resources. If the existing structure were bypassed, the bridge would eventually deteriorate and need to be removed, resulting in the loss of this historic structure.

⁴ *Sewalls Falls Bridge 2012 In-Depth Inspection*, dated March 2012, prepared by CHA Consulting, Inc., prepared for the City of Concord, New Hampshire Engineering Services Division.

⁵ *Sewalls Falls Bridge 2012 Load Rating*, dated June 2012, prepared by CHA Consulting, Inc., prepared for the City of Concord, New Hampshire Engineering Services Division.

New Two-Lane Bridge Downstream Replacement

This alternative was not pursued due to requiring much more land acquisition and higher initial construction costs than the Proposed Action. The residential property on the east side of the Merrimack River would be greatly impacted, with the possibility of having to relocate the residents. The NH Fish and Game parcel, with the boat launch and parking area on the west side of the river, would require the complete reconstruction of the boat launch and parking area. If the existing structure were bypassed, the bridge would eventually deteriorate and need to be removed, resulting in the loss of this historic structure.

A summary matrix comparing the Proposed Action, the *New Two-Lane Bridge Upstream Replacement*, and *Rehabilitate the Existing Bridge & Add An Additional One-lane Bridge* is provided in the Appendix (Exhibit 17). Other alternatives such as the No-Build were not included in the summary matrix, as they do not meet the long-term needs of the City of Concord.

Evaluation of Environmental Effects

The effects of the project relative to the following social, economic, natural and cultural resources/issues, if applicable, have been reviewed. Resources/issues, which are not discussed in the body of the report, were investigated, however, no impacts were evident and as such these resources/issues are omitted from the environmental documentation. The resources and issues deemed applicable for this project are indicated in **Bold** type.

	Social/Economic	Natural	Cultural
Air Quality	Business Impacts	Coastal Zone	Aesthetics
Community Services	Construction Impacts	Endangered Species	Archaeological
Contaminated Properties	Displacements	Floodplains	Historical
Energy Needs	Environmental Justice	Groundwater/Water Quality	Stonewalls
Farmlands	Land Acquisition	Invasive Plants	
Land Use	Neighborhoods	Natural Communities	
Noise	Public Lands	NH Designated Rivers	
Recreation	Safety	Shoreland Protection	
Tax Base	Transportation Patterns	Stream Rechannelization	
Utilities		Surface Water	
		Wetlands	
		Wild & Scenic Rivers	
		Wildlife/Fisheries	

The project corridor also includes the following Section 4(f) resources: The Sewalls Falls Bridge; Sewalls Falls State Recreation Area (Parcel #4), as well as the Boston, Concord Montreal Railroad Line. The previous 2010 Study found the impacts to the Sewalls Falls State Recreation Area (Parcel #4), as well as the Boston, Concord Montreal Railroad Line to be *de minimis*⁶. A similar finding is anticipated for the current Proposed Action. Part II of the Environmental Study for the current Proposed Action is the Programmatic 4(f) Evaluation developed for the Sewalls Falls Bridge.

⁶ Black’s Law Dictionary (8th ed. 1999) defines *de minimis* as 1. Trifling, minimal. 2. (of a fact or thing) so insignificant that a court may overlook it in deciding an issue or case. 3. *De minimis Non Curat Lex*, the law does not concern itself with trifles

Discussion of the effects on the resources/issues follows:

Social/Economic Resources

Air Quality

Pursuant to the Clean Air Act Amendments (CAAA) of 1990, this project was examined for potential impacts to local and regional air quality. The proposed project is located within an area of the State that is in attainment with respect to the National Ambient Air Quality Standards (NAAQS) for ozone and all other transportation related criteria pollutants (CO, NO_x, VOCs, PM₁₀ and PM_{2.5}). The project has been included in the *Statewide Transportation Improvement Program (STIP) 2013-2016* approved January 25, 2013. The proposed effort is not considered a "Regionally Significant Project" as defined in the final Transportation Conformity rules (40 CFR 93.101) or in those rules adopted by the New Hampshire Department of Environmental Services in accordance with the interagency consultation provisions required by 40 CFR 93.105.

When completed, the project is not expected to result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative or contribute to violations of the NAAQS. Consequently, this project is exempt from the conformity requirements of the CAAA.

For the above noted reasons, the Federal Highway Administration (FHWA) has determined that this project will generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special mobile source air toxics (MSAT) concerns. Consequently, this effort is exempt from analysis for MSAT. Moreover, Environmental Protection Agency (EPA) regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends, conducted by the FHWA using EPA's MOBILE6.2 model, forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050, while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the MSAT background level as well as the possibility of even minor MSAT emissions from this project.

Though exempt from the conformity requirements of the CAAA, the National Environmental Policy Act (NEPA) requires consideration of the project's impact on air quality. Of the NAAQS pollutants of concern in New Hampshire, only CO can generally be addressed at the project level. The existing Sewalls Falls Bridge is too narrow for two-way traffic. As a result, a system of alternating one-way traffic is in place, requiring vehicles to stop and if necessary wait while oncoming traffic passes across the bridge. The proposed project involves the replacement of the existing bridge with a structure wide enough to accommodate for two-way traffic. As the proposed project will eliminate the existing stop and wait conditions, it is anticipated that this project will have an overall positive effect on air quality. As a result, it can be concluded that this project will also not have an adverse impact on air quality. No further air quality review is warranted.

Business Impacts, Community Services, Land Use and Tax Base

There should be no permanent impacts on Land Use and the Tax Base due to this project. The new bridge will improve Business and Community services as there will be two-way traffic at all times, eliminating the need for stopping to wait for oncoming traffic to cross the bridge. The new bridge will also facilitate future economic development along a future extension of Whitney Road (currently the driveway to the Concord Monitor) on the east side of the Merrimack River as well as consideration of a new Exit 16 ½ as part of the City's long-term transportation improvement plan as it does not create any restrictions on use. City of Concord and other emergency vehicles will be able to use this crossing again as the load limit will be raised. Also local school busses will be able to use the bridge again as they have also been limited by the lowered load limit. The existing bridge will be closed and removed during construction. This closure would result in an approximate six (6) mile detour from one side of the bridge to the other.

Contaminated Properties

An in-house database search of the NH Department of Environmental Services (DES) ‘OneStop Environmental Site Information Guide’ identified a previous hazardous waste generator at the Concord Monitor Newspaper property, but that site has been remediated and closed. This project should have no impact on the previously remediated site and it appears there are no other contamination issues with the project area.

Environmental Justice

Title VI of the Civil Rights Act of 1964 and Executive Orders 12898 & 13166 ensure fair and full participation and the equal receipt of benefits under federally assisted programs for traditionally underserved groups. The area surrounding the project was studied to determine if there were any protected groups that might be impacted by this project and no protected groups were identified.

Land Acquisition

There will be the need to acquire small amounts of Right of Way (ROW) easements on both sides of the roadway on the east side of the river to construct a left turn lane into the Concord Monitor driveway. This Alternative will require moderate slope easements from each of the properties adjacent to the bridge. While the majority of the proposed roadway and utility infrastructure can be built within the existing ROW, the City of Concord may desire to acquire some additional ROW easements along these parcels for maintenance purposes. A permanent drainage easement will be required at the Fish and Game parcel for a water quality basin. In addition, another permanent drainage easement may be obtained for water quality treatment at the Concord Monitor parcel, provided an agreement between the City of Concord and the property owner can be reached. A preliminary list of easement acquisition amounts is noted in the chart below. Final amounts of easement acquisitions will be determined during Final Design.

Parcel No.	Property Owner	Estimated Temporary Easements (Sq. Ft)	Estimated Permanent Easements (Sq. Ft)	Estimated ROW Easements (Sq. Ft)
	Newspapers of New Hampshire, Inc.	5,250	14,500	11,500
	Galipeault, Jeremie R. and Jennifer L.	11,600		5,100
	State of N. H. (Fish and Game)	6,000	48,000	
	State of N. H. (LCIP Property)	9,200	16,000	

Noise

The NH Department of Transportation’s *Policy and Procedural Guidelines for the Assessment and Abatement of Highway Traffic Noise for Type I Highway Projects* (Noise Policy) provides guidelines for assessing noise impacts and determining the need, feasibility, and reasonableness of noise abatement measures for proposed Type I highway construction and improvement projects. Noise impacts associated with the proposed project were examined by NHDOT in accordance with the guidelines set forth in the Department’s Noise Policy. Traffic noise levels associated with this project were developed using the Federal Highway Administration’s Traffic Noise Model 2.5. The results of this analysis are considered to be a “worst case scenario” as they do not take into account vegetation and topographical information that would likely result in lower noise levels.

The Department uses a Noise Abatement Criteria (NAC) of 67 decibels (dBA) Leq for residential receptors and 72 dBA Leq for commercial receptors. These criteria apply to exterior, ground level areas where frequent human

use occurs and where a lowered noise level would be of benefit. Traffic noise impacts occur when the predicted traffic noise levels approach (within 1 dBA), are equal to, or exceed the NAC or when future predicted traffic noise levels exceed existing noise levels by 15 dBA or more.

The project area consists of several residential properties, one commercial property and a recreational facility. The existing peak hour traffic noise levels within the project area are approximately 52 dBA or less. Noise levels throughout the project area are expected to increase by approximately 6 dBA, to a maximum of 58 dBA, by the year 2032. These increases can be attributed to expected increases in traffic over the next several decades and the ability of the road to once again allow for truck traffic (currently prohibited due to the existing weight restrictions on the Sewalls Falls Bridge). As the existing and proposed noise levels are not anticipated to be in excess of the NAC, and the proposed noise levels are not anticipated to surpass existing noise levels by 15 dBA or more, traffic noise impacts are not expected in association with this project.

Traffic Noise Model (TNM 2.5) Results

	Land Use	Existing (2010) (dBA)	Proposed (2032) (dBA)	Increase over existing (dBA)	NAC (dBA)
Parcel 13	Residential	49.4	55.6	6.2	66
Parcel South of 12	Residential	51.1	57.3	6.2	66
Parcel 12	Residential	51.6	57.8	6.2	66
Parcel 4	Recreational	45.5	51.6	6.1	66
Parcel 2	Residential	48.7	54.5	5.8	66
Parcel 1	Commercial	46.7	52.8	6.1	72

Construction activities will temporarily increase noise due to the use of heavy equipment, however these noise levels are expected to return to normal after the project has been completed. For the reasons stated above, this project is not expected to adversely affect noise levels at any of the adjacent receptors.

Conservation Land/Public Lands/Recreation

Conservation Land

The Conservation Land Stewardship (CLS) Program (formerly the Land Conservation Investment Program, LCIP) is responsible for monitoring and protecting the conservation values of conservation easement lands in which the State of New Hampshire has invested. The CLS has identified Parcel #5, which was purchased in 1991 with LCIP funds, as being impacted by this project. This 28.8-acre parcel, known as the Sewalls Falls Wildlife Management Area, is held by the New Hampshire Department of Fish and Game (NHF&G) as a Wildlife Management area. The parcel extends north of the bridge along the Merrimack River for approximately 1000 feet (305m) and includes a recreational trail that connects southerly, across Sewalls Falls Road to Parcel # 4 and to a trail running south along the Merrimack River to the old Sewalls Falls Dam (see Exhibit #16).

At the conclusion of the 2010 Study, NHDOT and NHF&G agreed that acquiring a strip of land on this parcel would be necessary in order to construct the new bridge and associated approach work. The City is evaluating whether or not it will still pursue acquiring this property. Assuming that a similar agreement could be reached for the current Proposed Action, the City of Concord and NHF&G will sign a Memorandum of Understanding (MOU), allowing the City of Concord to acquire 36,600 sq ft of Parcel # 5 for construction of the new Sewalls Falls Bridge. There will also be the need for approximately 7,500 square feet of temporary easements just to the north of the new abutment area to allow the contractor access to the river for construction of the new pier and bridge. All impacts to Parcel #5 will be limited to those agreed upon in the MOU between the City of Concord and NHF&G. This will also be petitioned to the NH Legislature for permission to impact LCIP funded property.

Public Lands/Recreation

Parcel #4 was purchased with US Fish and Wildlife funds and is used as a boat launch to the Merrimack River and parking lot for boaters and pedestrians using the recreational trail. It was purchased in November 1987 and consists of approximately 99.2 acres. The parcel extends south of the Sewalls Falls Bridge along the Merrimack River and contains the recreation trail that extends south to the old Sewalls Falls Dam (see Exhibit #16). A permanent easement of 48,000 sq. ft. will be needed for this Parcel for slope, drainage and maintenance impacts. Also, a temporary construction easement of approximately 6,000 square feet will be needed on the south side of the existing bridge to allow the contractor access to the river for removal of the existing bridge as well as construction of the new pier and abutment.

At the conclusion of the 2010 Study, NHF&G indicated that they are the officials with jurisdiction of the Sewalls Falls State Recreation Area (Parcel #4) and sent a letter indicating that they do not object to the proposed project and subsequent slope and drainage easements, as they will not adversely affect the activities, features, and attributes of the Sewalls Falls Recreation Area. As such, in accordance with Section 6009(a) of the 2005 SAFETEA-LU transportation program reauthorization, that project was determined to have a *de minimis* impact on the Sewalls Falls Multi-Use Recreation Area, Parcel #4, satisfying the requirements of Section 4(f). A similar finding is anticipated for the current Proposed Action and such notification and findings, once received, will be included in the final study documents. The City of Concord will work with the NHF&G to determine appropriate mitigation requirements for these impacts and will incorporate them in the final plans for this project.

Section 6(f) is an article of the Federal Land and Water Conservation Fund (LWCF) Act of 1964, which provides financial assistance for the acquisition and development of public lands to create parks and open spaces; protect wilderness, wetlands and refuges; preserve wildlife habitat; and enhance recreational opportunities. Any land acquired or improved with these funds is subject to a body of federal regulations under the purview of the US Department of the Interior (USDOI). Pursuant to these regulations, any land subject to Section 6(f) cannot be “converted” to another use for purposes inconsistent with the Act without the approval of the USDOI and without being replaced with other land that is of equal use and value to the land proposed for conversion. At the conclusion of the 2010 Study based upon a review of their LWCF files, the NH Department of Resources and Economic Development (DRED) advised that there are no Section 6(f) parcels in the project area (Exhibit # 7). A similar finding is anticipated for the current Proposed Action and such notification and findings, once received, will be included in the final study documents.

Safety/Transportation Patterns

The replacement of the existing bridge with a new two-lane bridge will decrease road delays and will increase the safety of motorists. The new bridge will also further the consideration of a new Exit 16 ½ off of I-93 as part of the City’s long-term transportation improvement plan as it does not create any restrictions on use. These improvements will also allow emergency vehicles to use this roadway again, reducing response time for emergencies. Local school busses will also be able to use the crossing again. The general traffic patterns will not change due to the construction of this new bridge. The existing bridge will be closed and removed during construction. This closure would result in an approximate six (6) mile detour from one side of the bridge to the other.

Utilities

The following utility companies have been identified within the project area:

<u>AGENCY</u>	<u>SERVICE</u>
AT&T Corp	Fiber Optic Cable
Comcast	Cable
Unitil Energy Systems	Electric
Fairpoint Communications	Telephone
Liberty Utilities (formerly National Grid)	Gas
Concord General Services Department	City Sewer
Concord Fire Department	Emergency Signals

There is currently a gas line and a sewer line connected to the existing bridge. The City of Concord is planning to include a new waterline installation with this project (City funded), from Manor Road, southwest of the construction limits, to the entrance driveway to the Concord Monitor.

Natural Resources

This project was presented at the Natural Resource Agencies Meetings on January 17, 2001, August 15, 2007, September 15, 2010, and December 19, 2012. Agencies represented at these meetings included: US Fish and Wildlife (USF&W), US Army Corps of Engineers (ACOE), EPA, NH Natural Heritage Bureau (NHNHB), NHF&G, NHDES and FHWA. There were several opinions about alternatives proposed and impacts associated with those alternatives, but there were no objections to the project.

Endangered Species / Wildlife / Fisheries / Natural Communities

The NH Natural Heritage Bureau (NHNHB), the NH Fish and Game Department (NHF&G), and the US Fish and Wildlife Service (USFWS) have reviewed the project area. As part of the 2010 Study, there were no Natural Communities identified in the area, but there are four animal species of concern identified by the NH Natural Heritage Bureau as potentially being in the project area. These included the Bald Eagle, Brook Floater mussel, the Wood Turtle and the Blanding's Turtle (Exhibits 8 & 9). In 2001, a survey of the river was conducted to determine the presence of Brook Floaters. Some were found both upstream and downstream from the bridge. A new survey will be performed just prior to construction. If any brook floater mussels are found, the USFWS and the NHF&G will require the City of Concord to move the threatened mussels out of the construction zone.

The Wood Turtle and Blanding's Turtle were both located outside the project area. Care will be taken to minimize disturbance to any habitat conducive to each species.

The concern with Bald Eagles is that they use the tall pine trees along the Merrimack River for roosting. Some trees will need to be removed to construct the new bridge, but the removal of possible eagle roosting trees will be minimized as much as possible. (See Exhibit # 13).

Parcel #5 is designated a Wildlife Management Area by NHF&G, the managers of this parcel. As noted above in the introduction, any impacts to a wildlife area must be reviewed by the agency that has jurisdiction over the resource and the agency must then agree in writing that the impact does not adversely affect the activities, features and attributes of the resource. At the conclusion of the 2010 Study, NHF&G had sent a letter stating the project will have no adverse effect on the wildlife resource; hence the finding of *de minimis* applies to this impact. A similar finding is anticipated for the current Proposed Action and such notification and findings, once received, will be included in the final study documents.

The Magnuson-Stevens Act (formerly the Magnuson-Stevens Fishery Conservation and Management Act) was amended in 1996 by the addition of a new habitat conservation provision to protect the productivity and sustainability of important US marine fisheries. This new provision mandates the identification of Essential Fish Habitat (EFH) for managed species as well as measures to conserve and enhance the habitat necessary for fish to carry out their life cycles. The Magnuson-Stevens Act requires cooperation among the National Marine Fisheries Service (NMFS), fishing participants, Federal and State agencies and others in achieving EFH protection, conservation, and enhancement. A plan of the proposed project has been sent to the NMFS for their review.

Floodplains

The NH Office of Energy and Planning's National Flood Insurance Program Coordinator who works with the Federal Emergency Management Authority (FEMA), has determined that the project is located within the flood plain and floodway area of the Merrimack River (Exhibit #12) and determined that this project should produce no change in the floodwater capacity of the floodplain. The proposed construction will add minimal fill, if any, to the 100-year flood plain. A hydraulic analysis was not performed, but the consultant has determined that this volume of fill is relatively small and should have a negligible impact on the floodplain elevations. Coordination between the City of Concord and NHDOT has determined that this project will not result in any increase in flood levels within the community during the base flood discharge. The presence of the flood control dam located upstream in Franklin should prevent any flooding problems in this area.

Groundwater /Water Quality

The Merrimack River at this location is impaired for mercury, Escherichia coli, ph, dissolved oxygen and aluminum. NHDOT has coordinated with the City of Concord and NHDES to address storm water issues. The project will increase the amount of permanent pavement and there will be more storm water generated than the current conditions. A closed drainage system will be installed with storm water being treated in a treatment structure on the west side of the river to improve water quality and control peak flow discharges. Additional water quality treatment may be possible using the existing water quality basin at the Concord Monitor parcel, provided an agreement between the City of Concord and the Property Owner can be reached.

Shoreland Protection/Wetlands/Surface Water

Since this project will also remove some vegetation along the banks of the Merrimack River, an NHDES Shoreland Protection Permit will be necessary.

The project will impact the bank and stream bed of the Merrimack River due to the construction of a new bridge. The existing pier and abutments will all be removed and a new pier and abutments will be installed to support the new bridge. There is also a small Forested Palustrine wetland on Parcel # 5 that will be impacted due to slope work related to the construction of the western approach to the new bridge. Small wetland areas on Parcels # 2 and # 26 will be impacted for the widening of the roadway to allow for a left turn lane into the Concord Monitor entrance. A Standard Dredge and Fill Wetland Permit will be required from NHDES and it is anticipated that the project should qualify for the State Programmatic General Permit from the US Army Corps of Engineers. All appropriate measures will be taken to ensure that there are no storm water impacts to the surface waters during construction. A closed drainage system will be installed for this project. See the Groundwater/Water Quality section above.

Anticipated Impacts to wetlands in square feet

Wetland I.D. Letter	Parcel #	Wetland Classification	Permanent Impact Area Sq. Ft.	Temporary Impact Area Sq. Ft.
E	5	PFO1E	3,420	
G	Merrimack River	R3FL1,2,3	2,000	3,000 *
H	2	PEM/FO1E/R4/2,3	2,370	
K	26	PEM1E	1,018	
L	26	PFO/EM1E1	817	

* Potential Temporary impacts in Merrimack River for bridge and pier construction (20' x 150')

Cultural Resources

The National Historic Preservation Act and the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), require the identification and evaluation of historic and archaeological resources within any project area impacted by construction and/or excavation. As part of the earlier NHDOT lead alternative development and 2010 Study, the project was reviewed with the NH Division of Historical Resources (NHDHR) and FHWA at several Cultural Resource Agency Coordination Meetings as noted in the Coordination Section. At the conclusion of this phase the rehabilitation of the bridge was determined to result in an adverse effect, but was felt to minimize the effects.

It was also determined at the October 7, 2010 Cultural Resource Agency Coordination Meeting that impacts to the Boston, Concord and Montreal Railroad line on the east side of the project will have a *de minimis* effect. In addition, the northwestern side of the project area is sensitive for archaeology. Similar findings are anticipated for the current Proposed Action and such notification and findings, once received, will be included in the final study documents.

Under the current design development efforts lead by the City of Concord and following the detailed structural inspection and load rating analysis conducted by CHA in the Spring of 2012, the City of Concord and CHA presented the findings of those reports to representatives from NHDHR on August 10, 2012 and at the Cultural Resource Agency Coordination Meeting on September 13, 2012 expressing concerns on the extent of rehabilitation required and whether or not the previously approved alternative met the City's near-term and long-term needs.

Following the September 13, 2012 Cultural Resource Meeting, the City of Concord further retained the services of Historic Documentation Company, Inc. (HDC) to review the load rating and inspection reports and develop an opinion of the effects that the extensive rehabilitation would have on the historical significance and eligibility of the bridge for the Historic Registry. The opinion presented in HDC's letter report⁷ was that while the extents of rehabilitation and replacement of members resulted in adverse effects to the historic structure, the effects were minimized by maintaining the bridge's use. The City of Concord presented the project again at the December 6, 2012 and April 4, 2013 Cultural Resource Agency Coordination Meetings with a recommendation of replacing the bridge as the current Proposed Action based on the extent of rehabilitation required in order to rehabilitate the existing truss to carry legal highway loads as well as safety concerns and the long-term serviceability and sustainability of the bridge once rehabilitated.

⁷ Sewells (or Sewalls) Falls Bridge, Concord, New Hampshire, Effects of Proposed Rehabilitation Alternatives on Historic Characteristics of Bridge, dated November 2012, prepared by Historic Documentation Company, Inc. as part of the letter report prepared by CHA Consulting, Inc. dated November 28, 2012 entitled *Re-Revaluation of Preliminary Design Alternatives*.

Description of Historic Resources

Sewalls Falls Bridge

The bridge was built in 1915 and was designed by John William Storrs, a noted bridge designer and five-term Mayor of Concord. This bridge is the only one of Storrs' designs remaining in Concord and only one of two 2-span steel Pratt Truss bridges remaining in the State of New Hampshire. The other example is located in Henniker, NH and was also designed by Storrs. A multi-span steel approach was constructed on the westerly side in 1939 after the 1938 flood to allow for floodwater storage.

The existing bridge is 338 feet (103m) long and just under 18 feet (5.5m) wide. It has one travel lane on an open steel grid deck that allows alternate traffic flow, east bound and west bound, with no sidewalks. This roadway provides local access to both the east and the west sides of the Merrimack River in the north part of the City of Concord, without the need to access Interstate-93. Since the bridge is limited to one lane of traffic, this necessitates alternating one-way travel directions and the need for vehicles to stop to wait for oncoming traffic to cross the bridge. The current posted speed is 30 mph with the recommended speed being 20 mph due to one-way alternating traffic and the presence of poor sight distance approaching the bridge from the northeast and exiting the bridge from the southwest. The existing sight distance around the curve at the north end of the bridge is approximately 200'. The minimum stopping sight distance per AASHTO guidelines for the 30 mph posted speed limit is 200'. The cut slope embankment and vegetation on the inside of the curve is what controls the available sight distance.

The existing bridge and steel approach spans are in very poor condition (See [Exhibit # 6](#)) and have been on the Municipal Red List for a number of years. The weight load was recently downgraded from 14 tons to 10 tons, preventing the use of this bridge by City of Concord Emergency Vehicles. It has two steel spans with a single granite pier in the Merrimack River. The steel trusses are in poor condition and need repair and repainting. Both abutments have extensive cracking and spalling of the concrete and there have been significant problems with the cut granite pier. A considerable number of stones have cracked, shifted, and/or fallen into the river, thereby compromising the overall integrity of the pier. Although New Hampshire Department of Transportation (NHDOT) Bridge Maintenance forces have performed repairs, these are not considered as permanently addressing concerns with the pier. The existing substructure elements are spread footings placed on original soil at the excavated depths. Piles supporting the substructure were not utilized. Therefore, the possibility of scour at the pier and abutments is also a strong concern.

The proposed project will replace the existing bridge and a revised effects memo will be developed. The City of Concord will also work with NHDHR, FHWA and NHDOT to develop a new MOA and mitigation package.

The area has been surveyed for archaeological resources. There is an area on the west side of the Merrimack River on Parcel #5 that may be sensitive to pre-historic resources, but it is outside direct impact of this project. Construction fencing will be placed to prevent construction equipment from disturbing this area.

Boston, Concord, Montreal Railroad line

The Boston and Maine Railroad line on the east side of the Merrimack River was originally constructed in the early 1850's. It was part of the Boston, Concord and Montreal Railroad that was chartered in 1844. Sewalls Falls Road was in existence prior to the rail line, so this crossing was initially constructed in the 1850's. The signals were added in the late 1930's when the NH State Highway Department petitioned the NH Public Service Commission to require signals at the two at-grade railroad crossings on Sewalls Falls Road, due to the increased automobile traffic. The crossing includes an abandoned electric signal control box and railroad crossing signs. Originally a passing train would trigger a flashing light and possibly a bell. The lights and/or bell are no longer present and most of the inner workings of the signal box are missing.

The effect on the railroad crossing will be the widening of Sewalls Falls Road at this location. The road will be widened to the east and west of the rail crossing to provide a protected left turn lane into the Concord Monitor entrance drive from the southwesterly direction. The existing old signal box will be within the new roadway and slope work of this widening.

A survey was conducted for this intersection in regards to the Historic Railroad District. The signal box was evaluated according to the National Register of Historic Places criteria. Based on this survey, the signal has been determined to be eligible as a contributing factor to the Historic Railroad District. It retains integrity for location, design, setting, materials, workmanship, feeling and association. Alterations include the removal of the flashing lights and possibly a bell as well as the replacement of the crossing signs.

Mitigation of Historic and Pre-historic Resource Impacts

At the conclusion of the 2010 Study it was agreed among FHWA, NHDHR and NHDOT that impacts to the historic resources are unavoidable and that several measures will be implemented to mitigate for these impacts. These include:

1. Erecting orange construction fencing to protect adjacent, unaffected pre- historic resources along the proposed Right of Way line and extending into the LCIP property (Parcel #5).
2. Documentation of the historic steel truss bridge with photographs and description.
3. Preserving the granite blocks from the pier for the City of Concord to use in other historical installations.
4. Moving the existing old railroad signal box back from the roadway and preserving it in this new location.
5. Salvaging the existing construction plaque mounted on the existing bridge.

Below are some possible additional mitigation measures under the current Proposed Action which could be considered by the City of Concord, NHDHR, FHWA and Consulting Parties during the development of a Memorandum of Agreement (MOA) for the Proposed Action.

1. The City of Concord will ensure that the Sewalls Falls Bridge is marketed for reuse in compliance with 23 USC Sec. 144 for relocation. Funding, up to the estimated amount for the bridge's demolition, will be provided for the relocation. Marketing will occur once within a New Hampshire state and local newspapers by a mutually agreed to date. Additionally, the City of Concord will market the bridge on their website beginning and ending on mutually agreed to dates. Ownership transfer will require the use of preservation covenants or other instruments to ensure the long-term protection of the qualifying characteristics of bridge.
2. The City of Concord will work with the FHWA, NHDOT, NHDHR and Consulting Parties in exploring options to provide further education about the historic preservation options which may include training or workshop sessions.
3. Develop an interpretive display of Concord historic resources in highly visible well-visited locations.
4. Erect an interpretive sign of the Sewalls Falls Bridge at the NH Fish and Game parcel.

Construction Impacts

This project is anticipated to cause temporary increases in noise and dust levels within the project area. However, they are expected to return to normal after the project is completed. Standard precautionary measures will be employed to minimize these inconveniences, primarily for project abutters. The existing bridge will be closed and removed during construction of the new bridge. This closure will result in an approximate six (6) mile detour

from one side of the bridge to the other. There will be inconveniences and disruptions to motorists, pedestrians, bicyclists and people wanting to avail themselves of the commercial and recreational establishments in this area, although access to abutting properties will be maintained for the duration of the project. It is estimated at this time that two (2) construction seasons will be necessary to construct this project.

An erosion and sediment control and storm water pollution prevention plan (SWPPP) specific to this project, and appropriate to the contractor’s method of operation and schedule, will be submitted by the construction contractor to the City for review and approval. The sediment and erosion control measures will be installed prior to construction. Monitoring during construction will ensure that impacts to surface waters are minimized to the extent practicable and restricted to the construction phase.

The project is regulated under the National Pollutant Discharge Elimination System (NPDES) Storm Water Construction General Permit, as administered by the US Environmental Protection Agency (USEPA). The project is subject to Notice of Intent, Notice of Termination and other project records by the contractor.

Coordination

Meetings were held periodically with various Federal, State and local agencies, as well as with the general public throughout the development of this project (See Exhibit 18 for Meeting Minutes). Under the NHDOT lead design alternative evaluations concluding with the 2010 Study, these meeting are as follows:

The proposed project was presented at Cultural Resource Agency Coordination meetings on the following dates: May 25, 2000; December 7, 2000; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010, May 6, 2010, October 7, 2010.

The proposed project was presented at Natural Resource Agency Coordination meetings on January 17, 2001, August 15, 2007, and September 15, 2010.

This project was presented to the Concord City Council on October 11, 2011.

Under the current City of Concord lead design alternative evaluations, these meeting are as follows:

The proposed project was presented at Cultural Resource Agency Coordination meetings on the following dates: September 13, 2012, December 6, 2012, and April 4, 2013.

The proposed project was presented to representatives from NHDHR on August 10, 2012

The proposed project was presented at Natural Resource Agency Coordination meeting on December 19, 2012.

Letters requesting input on the project were sent to various Federal, State and Local Agencies and/or Officials as noted below:

AGENCY/ORGANIZATION	CONTACT	LETTER SENT	REPLY RECV'D
NH Office of Energy and Planning - Floodplain Management Program	Jennifer Gilbert	03/27/13	
NH Office of Energy and Planning – Conservation Land Stewardship Program	Steve Walker	03/27/13	
NH Fish and Game Department	Kim Tuttle	03/27/13	
NH Department of Resources and Economic Development – Parks & Recreation Division	Jane Carey	03/27/13	
NH Natural Heritage Bureau	Melissa Coppola	03/27/13	
US Fish and Wildlife Service	Maria Tur	03/27/13	

This project was presented to the Concord City Council on August 13, 2012, and February 11, 2013.

This project was presented to the Concord Heritage Commission on September 6, 2012 and January 3, 2013

This project was presented at a City of Concord Public Information Meeting on January 23, 2013

Summary of Environmental Commitments

The following environmental commitments will be made for this project.

1. Prior to the commencement of work, the contractor shall submit an erosion control and storm water pollution prevention plan (SWPPP) specific to this project and appropriate to the contractor's method of operation and schedule. The plan shall be implemented prior to construction and monitored as required. (CONSTRUCTION/ENVIRONMENT)
2. A survey of the Merrimack River for brook floater mussels shall be conducted prior to construction and if mussels are found within the construction area, they shall be moved out of the construction zone, prior to construction activities in the river. (ENVIRONMENT)
3. Construction fencing will be placed around pre-historic resource areas on Parcel # 5 and construction equipment will not disturb those areas. (CONSTRUCTION/ ENVIRONMENT)
4. The granite blocks from the pier will be saved and stockpiled for the City of Concord's use. (CONSTRUCTION)
5. Precautions shall be employed to minimize noise and dust levels during the construction period, primarily for the abutting receptors located adjacent to the project area. (CONSTRUCTION)
6. The City of Concord will ensure that the Sewalls Falls Bridge is marketed for reuse in compliance with 23 USC Sec. 144 for relocation. Funding, up to the estimated amount for the bridge's demolition, will be provided for the relocation. Marketing will occur once within New Hampshire state and local newspapers by a date mutually agreed upon. Additionally, the City of Concord will market the bridge on their website beginning and ending on mutually agreed upon dates. Ownership transfer will require the use of preservation covenants or other instruments to ensure the long-term protection of the qualifying characteristics of bridge. (ENVIRONMENT)
7. The existing bridge will be closed and removed during construction following Commitment #6. This closure will result in an approximate six (6) mile detour from one side of the bridge to the other. (CONSTRUCTION)
8. Access to all properties will be maintained throughout the construction period. (CONSTRUCTION)
9. At the eastern railroad crossing, the old signal box will be moved to a location near the existing location, but out of the area impacted by this project. (CONSTRUCTION)

Part II: Programmatic Section 4(f) Evaluation For Use of Historic Bridges

Introduction

This Programmatic Section 4(f) Evaluation has been developed to demonstrate that there is no prudent and feasible alternative for the use of the existing bridge that carries Sewalls Falls Road over the Merrimack River. This evaluation also outlines coordination that has occurred and the measures proposed to minimize harm to these resources.

The US Department of Transportation Federal Highway Administration (FHWA) – Programmatic Section 4(f) Evaluation is for FHWA projects that necessitate the use of Historic Bridges. The approval for its use is subsequent to design studies that have determined that there are no feasible and prudent alternatives for certain historic bridge structures to be rehabilitated or replaced with Federal funds and that the project includes all possible planning to minimize harm resulting from such use.

Pursuant to Section 4(f) of the Department of Transportation Act of 1966, 49 U.S.C. 303(c), and Section 18(a) of the Federal-Aid Highway Act of 1968, 23 U.S.C. 138 (as amended by the Federal-Aid Highway Act of 1983), the Secretary of Transportation may approve a program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of National, State, or local significance, or land of an historic site of National, State, or local significance (as determined by Federal, State, or local officials having jurisdiction over the park, area, refuge or site) only if:

1. There is no prudent and feasible alternative to using that land, and
2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife or waterfowl refuge, or historic site resulting from the use.

In 1999, NHDOT retained the services of Clough Harbour and Associates LLP, now CHA Consulting, Inc. (CHA), to perform the design engineering evaluations for the replacement of the Sewalls Falls Bridge under the Part A, Preliminary Engineering Services Phase of the project. Initial engineering evaluations focused on roadway alignment alternatives and associated impacts to cultural and natural resources. Through the public engagement process and meetings with stakeholders, design alternatives also considered means of preserving and rehabilitating the existing bridge to carry legal highway loads. At the end of the NHDOT initiated Part A, Preliminary Engineering Services Phase of the project, the Preferred Alternative was to rehabilitate the existing Sewalls Falls Road Bridge to carry one lane of northbound traffic and constructing a new single lane, steel beam bridge just upstream of the existing bridge to carry a single lane of southbound traffic. Both structures would be placed on a new cast-in-place concrete substructure. This was identified as the Proposed Action in the Final Environmental Study and Programmatic Section 4(f) Evaluation that was prepared by NHDOT in 2010 (2010 Studies)⁸.

At the conclusion of the Part A Preliminary Engineering Phase, The City of Concord assumed responsibility of the project to complete the final design and construction as a Municipally Managed Project under the Department's Bridge Aid Program. One of the first steps that the City undertook was to perform a detailed structural inspection and load rating of the existing bridge to determine the extent of rehabilitation required, as this was not performed under the NHDOT Part A Phase of the project. The results of the inspection and load rating determined that, while the bridge could be rehabilitated to carry legal highway loads, the extent of rehabilitation was significant and included either strengthening or replacing the majority of the structural members. As a result of these findings, the City of Concord decided to reevaluate previously investigated alternatives to determine which alternative would best meet the near-term and long-term needs of the City and

⁸ Concord, BRF-X-5099 (021), 12004, Environmental Study and Programmatic 4(f) Evaluation, Draft, November 2010 prepared by the State of New Hampshire Department of Transportation Bureau of Environment.

best serve the public safety. This Programmatic Section 4(f) Evaluation documents those efforts and updates and/or supplements those documents prepared in 2010 by NHDOT.

Under the NHDOT lead design alternative evaluations concluding with the 2010 Study, the Department coordinated with the NH Division of Historical Resources (NHDHR), FHWA, local organizations, local officials and the public to locate and identify National Register of Historic Places listed or eligible properties within the area and has determined how they would be affected by the proposed project. The project was reviewed with NHDHR, FHWA and NHDOT at regularly scheduled Cultural Resource Agency Coordination Meetings on May 25, 2000; December 7, 2000; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010. An "Adverse Effect" memo for the Sewalls Falls Bridge was signed on May 6, 2010 for Proposed Action at that time.

Under the current design development efforts lead by the City of Concord and following the detailed structural inspection⁹ and load rating analysis¹⁰ conducted by CHA in the Spring of 2012. The City of Concord and CHA presented the findings of those reports to representatives from the NHDHR on August 10, 2012 and at the Cultural Resource Agency Coordination Meetings on September 13, 2012 expressing concerns on the extent of rehabilitation required and whether or not the previously approved alternative met the City's near-term and long-term needs.

Following the September 13, 2012 Cultural Resource meeting, the City of Concord further retained the services of Historic Documentation Company, Inc. (HDC) to review the load rating and inspection reports and develop an opinion of the effects that the extensive rehabilitation would have on the historical significance and eligibility of the bridge for the Historic Registry. The opinion presented in HDC's letter report¹¹ was that while the extents of rehabilitation and replacement of members resulted in adverse effects to the historic structure, the effects were minimized by maintaining the bridge's use. The City of Concord presented the project again at the December 6, 2012 and April 4, 2013 Cultural Resource Agency Coordination Meetings with a recommendation of replacing the bridge as the current Proposed Action based on the extent of rehabilitation required in order to rehabilitate the existing truss to carry legal highway loads as well as safety concerns and the long-term serviceability and sustainability of the bridge once rehabilitated.

Existing Conditions/ Proposed Action

The proposed project, located in the City of Concord, involves the replacement of the bridge (070/117) that carries Sewalls Falls Road over the Merrimack River (See Exhibit #1). This bridge has received a sufficiency rating of 0.0% out of 100%, making the status of this bridge structurally deficient. The existing conditions of the roadway and bridge result in safety hazards for the traveling public and segments the recreation trail systems that exist on both sides of the bridge as noted above. In addition to the current and immediate impacts that these conditions present, they will also limit considerations and policies as detailed in the City's current Master Plan¹². These include future economic development along a future extension of Whitney Road (currently the driveway to the Concord Monitor) on the east / north side of the Merrimack River as well as consideration of a new Exit 16 ½ as part of the long-term transportation improvement plan. The project seeks to address the safety concerns as well as those noted above associated with this Red-Listed bridge.

⁹ *Sewalls Falls Bridge 2012 In-Depth Inspection*, dated March 2012, prepared by CHA Consulting, Inc., prepared for the City of Concord, New Hampshire Engineering Services Division.

¹⁰ *Sewalls Falls Bridge 2012 Load Rating*, dated June 2012, prepared by CHA Consulting, Inc., prepared for the City of Concord, New Hampshire Engineering Services Division.

¹¹ *Sewalls (or Sewalls) Falls Bridge, Concord, New Hampshire, Effects of Proposed Rehabilitation Alternatives on Historic Characteristics of Bridge*, dated November 2012, prepared by Historic Documentation Company, Inc. as part of the letter report prepared by CHA Consulting, Inc. dated November 28, 2012 entitled *Re-Revaluation of Preliminary Design Alternatives*.

¹² *Master Plan 2030, Concord New Hampshire*, prepared by the City Planning Board, June 18, 2008

The project was initiated through State bridge inspection findings and communication with the City of Concord. Currently the project is funded for construction beginning in 2014 at a cost of approximately \$15,200,000. Funding is programmed to be 80% Federal, 20% City.

The existing Sewalls Falls Road is a two-lane road consisting of two 11-foot (3.35m) travel lanes and no shoulders on both sides of the existing bridge. The road narrows to a total width of 18 feet (5.5m) from curb to curb with no shoulders on the bridge, providing only alternating one-way traffic and no accommodation for pedestrians or bicyclists. The entrance to the NH F&G boat launch and parking area intersects Sewalls Falls Road approximately 550 feet (168m) southwest of the bridge. A residential driveway intersects the road approximately 300 feet (91m) northeast of the bridge and the Concord Monitor driveway intersects the road approximately 550 feet (168m) northeast of the bridge. Two active Boston and Maine Rail Lines cross Sewalls Falls Road. One is approximately 840 feet (256m) southwest of the bridge and is outside the project limits. The other is approximately 600 feet (183m) northeast of the bridge and is within the project limits. The bridge is in a vertical sag and curve on the northeast side and the existing sight distance resulting from the roadway profile is minimally adequate for the posted speed limit of 30 mph. The minimum stopping sight distance per AASHTO guidelines for the 30 mph posted speed limit is 200' (61m) and the existing sight distance around the curve at the north end of the bridge is approximately 200' (61m). As such, a speed of 20 mph is currently recommended. The cut slope embankment and vegetation on the inside of the curve is the control of available sight distance. For more information, see the **Existing Conditions/Need** and **Proposed Action** sections in **Part I: Environmental Study** of this document.

Description of Historic 4(f) Resources

In 2009, an individual determination of eligibility was completed for the Sewalls Falls Bridge for a determination of its eligibility for the National Register of Historic Places. As a result of this survey, it was determined that the bridge was eligible for the National Register. In addition, other sensitive areas were surveyed for their archaeological significance. One sensitive area was determined to be located within the project area on the LCIP land but will be fenced off and avoided by the project.

Sewalls Falls Bridge (070/117)

Sewalls Falls Bridge (070/117) over the Merrimack River, built in 1915, is a two-span, steel High Pratt Truss bridge. The substructure consists of reinforced concrete abutments and one granite pier. The superstructure is composed of steel girders and an open steel grid deck. The bridge has an overall length of 338 feet (103m) and the curb-to-curb width is 18 feet (5.5m).

The bridge was evaluated according to the National Register of Historic Places criteria. Based on this survey, the bridge is eligible for the National Register as an early example of a steel High Pratt Truss bridge. It retains a high level of integrity, location, design, setting, materials, workmanship, feeling and association. Aside from routine maintenance, and the addition of the approach spans in 1939, the bridge remains largely unaltered since its construction in 1915.

Impacts to Section 4(f) Properties

Sewalls Falls Bridge (070/117)

Effects on historic resources were determined by the NHDHR, FHWA and NHDOT based on the Section 106 review process established by the National Historic Preservation Act of 1966 and outlined in 36 CFR 800.5. It was determined at the May 25, 2000; December 7, 2000; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010, May 6, 2010, August 10, 2012, September 13, 2012, December 6, 2012, and April 4, 2013 Cultural Resource Agency Coordination meetings that the rehabilitation/ replacement of the Sewalls Falls Bridge (070/117) would be an "Adverse Effect". Effects are as follows:

The proposed project will involve the removal of the existing bridge and constructing a new two-lane steel beam bridge with concrete decking along the existing alignment. A new pier and abutments will be constructed to support the new bridge. The existing bridge will be closed and removed during construction. This closure will result in an approximate six (6) mile detour from one side of the bridge to the other.

The proposed roadway geometry includes providing 2 – 12' (3.6 m') travel lanes with 5' (1.5 m) shoulders and 5' (1.5 m) sidewalk(s). The roadway alignments are based on a 35 MPH (60 KPH) design speed. The proposed sidewalk extends from the Fish and Game Park (Parcel 4) driveway to the Concord Monitor (Parcel 1) driveway. Widening and improvements to the roadway approaches will be constructed northeast past the Boston and Maine Railroad crossing and southwest up to the Boston and Maine Rail Road corridor. The total construction distance is 2,000 linear feet (610m), 830 feet (253m) on the east side of the bridge and 840 feet (256m) on the west side of the bridge.

A flood control dam was constructed in Franklin Falls on the Pemigewasset River, **upstream** from the Sewalls Falls Bridge. This dam was started in 1939 and completed in 1943 and protects the areas **downstream** from flooding, including the towns of Franklin, Northfield, Concord and Bow, New Hampshire. Since this flood control dam was constructed there is no longer a need for the steel approach spans on the west approach to the Sewalls Falls Bridge. The spans are in poor condition and will be removed and a typical fill approach will be constructed. There currently is a recreational trail (see [Exhibit #16](#)) from the NHF&G boat launch area, passing under the approach span that connects to a trail on Parcel # 5 on the north side of Sewalls Falls Road. This trail connects to another trail south of the boat launch area, to the old Sewalls Falls Dam and extends northwest approximately 1000 feet (305m) along the Merrimack River on Parcel # 5. The proposed design will relocate the south abutment further away from the river thereby allowing pedestrians and wildlife to pass in front of the proposed abutment.

Avoidance Alternatives

No-Build

The “No-Build” alternative was not considered as it does not address the structural deficiencies associated with the existing bridge, as well as the inadequate sight distance and the related public safety concerns associated with the existing bridge and Sewalls Falls Road. The safety concerns would persist and the bridge would continue to deteriorate and eventually need to be closed. This closure would lead to the loss of an alternate means of crossing the Merrimack River, requiring traffic to either use the US Route 4/King Street Bridge in Boscawen, or the bridge on Interstate 93 in Concord, just south of Exit 16. As such, this alternative was not considered feasible and prudent and was not selected.

Rehabilitation of the Existing Bridge

This alternative would still not allow for two-way traffic due to the width of the bridge. Widening is not recommended as the existing pier and sub-structure are in poor condition and would not support the weight of the wider structure. The exiting substructure would continue to deteriorate and require maintenance. Rehabilitation of the exiting bridge would require closure of the bridge during the entire time of rehabilitation, which would cause great inconvenience to those who use the bridge daily. As such, this alternative was not considered prudent or feasible and was not selected.

Other Alternatives Considered To Minimize Impacts To Section 4(f) Resources

Rehabilitate the existing bridge & add an additional one-lane bridge

This option was the preferred alternative/proposed action in the 2010 Study and consists of rehabilitating the existing Sewalls Falls Road Bridge to carry one lane of northbound traffic and constructing a new single lane,

steel beam bridge just upstream of the existing bridge to carry a single lane of southbound traffic. However, based on a detailed structural inspection and load rating analysis of the existing bridge conducted by CHA in the Spring of 2012 an extensive amount of rehabilitation would be required to the existing truss in order to carry legal highway loads. The City of Concord further retained the services of Historic Documentation Company, Inc. (HDC) to review the load rating and inspection reports and develop an opinion of the effects that the extensive rehabilitation would have on the historical significance and eligibility of the bridge for the Historic Registry. The opinion presented in HDC's letter report was that while the extents of rehabilitation and replacement of members resulted in adverse effects to the historic structure, they were offset by maintaining its use. However, this alternative was no longer pursued based on the extent of rehabilitation required in order for the existing truss to carry legal highway loads as well as safety concerns and the long-term serviceability and sustainability of the bridge once rehabilitated due to anticipated development and increased traffic demands on Sewalls Falls Road. In addition this alternative had a less than desirable proposed roadway alignment, as it requires traffic to split at the bridges.

New Two-Lane Bridge Upstream Replacement

This alternative was not pursued due to requiring much more land acquisition, increased environmental impacts, as well as higher initial construction costs than the Proposed Action. A larger strip of land would be needed from the Concord Monitor parcel and would impact their parking lot. A larger portion of the LCIP Parcel would be needed, impacting more wetlands on that property and possibly impacting areas that are sensitive for archaeological resources. If the existing structure were bypassed, the bridge would eventually deteriorate and need to be removed, resulting in the loss of this historic structure.

New Two-Lane Bridge Downstream Replacement

This alternative was not pursued due to requiring much more land acquisition and higher initial construction costs than the Proposed Action. The residential property on the east side of the Merrimack River would be greatly impacted, with the possibility of having to relocate the residents. The NH Fish and Game parcel, with the boat launch and parking area, on the west side of the river would require the complete reconstruction of the boat launch and parking area. If the existing structure were bypassed, the bridge would eventually deteriorate and need to be removed, resulting in the loss of this historic structure.

A summary matrix comparing the *Proposed Action*, the *New Two-Lane Bridge Upstream Replacement*, and *Rehabilitate the Existing Bridge & add an additional one-lane bridge* is provided in the Appendix (Exhibit 17). Other alternatives such as the No-Build were not included in the summary matrix, as they do not meet the long-term needs of the City of Concord.

Measures to Minimize Harm/ Mitigation

At the conclusion of the 2010 Study, it was agreed among FHWA, NHDHR and NHDOT that impacts to the Sewalls Falls Bridge were unavoidable and that several measures would be implemented to mitigate for these impacts. These measures, which are anticipated to be carried forward as part of the current Proposed Action, include:

1. The preparation of a New Hampshire Property Documentation form with large format photographs, which will include the examination of the Work Progress Administration involvement with the construction of the approach span.
2. The new construction may include the reuse of the stone from the abutment and pier in the design of the project. This design will receive NH State Historic Preservation Officer (NHSHPO) concurrence. The City of Concord will work with NHDOT to reuse the stone.

3. The City of Concord will coordinate and receive concurrence with the elements of final design including the landscaping and bridge railing with the City of Concord and NHDHR.
4. All necessary phases of archaeological investigations will be completed prior to the beginning of construction. Construction fencing will be placed on the LCIP property (Parcel #5) prior to construction activities to prevent construction work on areas that are sensitive to pre-historic resources.

Coordination & Public Participation

Coordination meetings have been held among NHDHR, FHWA, and NHDOT, Concord City officials and concerned citizens to discuss alternatives and measures to minimize harm to the Section 4(f) properties (See Exhibit 18 for Meeting Minutes). As part of the 2010 Study efforts, a Section 106 Adverse Effects memo was prepared which addressed the unavoidable impacts to the historic properties and a Memorandum of Agreement (MOA) developed that identified the mitigation measures noted above. Further coordination is expected to occur in order to update the Section 106 Adverse Effects memo for the current Proposed Action and to develop a new MOA that will identify any additional measures which will be incorporated into the design of the project to minimize harm to Section 4(f) properties.

Meetings were held periodically with various Federal, State and local agencies, as well as with the general public throughout the development of this project. Under the NHDOT lead design alternative evaluations concluding with the 2010 Study, these meetings are as follows:

The proposed project was presented at Cultural Resource Agency Coordination meetings on the following dates: May 25, 2000; December 7, 2000; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010, May 6, 2010, October 7, 2010.

The proposed project was presented at Natural Resource Agency Coordination meetings on January 17, 2001, August 15, 2007, and September 15, 2010.

This project was presented to the Concord City Council on October 11, 2011.

Under the current City of Concord lead design alternative evaluations, these meetings are as follows:

The proposed project was presented at Cultural Resource Agency Coordination meetings on the following dates: September 13, 2012, December 6, 2012, and April 4, 2013.

The proposed project was presented to representatives from NHDHR on August 10, 2012

The proposed project was presented at Natural Resource Agency Coordination meeting on December 19, 2012.

This project was presented to the Concord City Council August 13, 2012, and February 11, 2013.

This project was presented to the Concord Heritage Commission on September 6, 2012 and January 3, 2013

This project was presented at a City of Concord Public Information Meeting on January 23, 2013

Letters were sent to various Federal, State and local agencies requesting input on this project. See **Coordination** section **Part I- Environmental Study** above.

Programmatic Applicability

This project meets the criteria for Programmatic Section 4(f) Evaluations for Federal Aid Highway projects that necessitate the use of historic bridges because:

- The project will require the use of a historic bridge structure, which is eligible for listing on the national Register of Historic Places.
- The bridge is not a National Historic Landmark.
- The FHWA Division Administrator has determined that the facts match those set forth in the sections of this document labeled Alternatives, Findings, and Mitigation.
- Agreement between the SHPO and FHWA has been reached through the Section 106 review process.
- Fully adequate records of the bridge will be made in accordance with the standard for NH Historic Property Documentation, which are similar to the standards set by the Historic American Engineering Record (HAER).
- This project does not require the preparation of an Environmental Impact Statement (EIS).

Summary

Based on the above considerations there are no feasible and prudent alternatives to the use of this historic bridge and the proposed action includes all planning to minimize harm to the 4(f) resources resulting from such use.

Date: _____ Recommended for Approval by: _____
Jamison S. Sikora
Environmental Program Manager

Date: _____ Approved by: _____
Patrick A. Bauer
Division Administrator

Exhibit 1- Map of Project Area

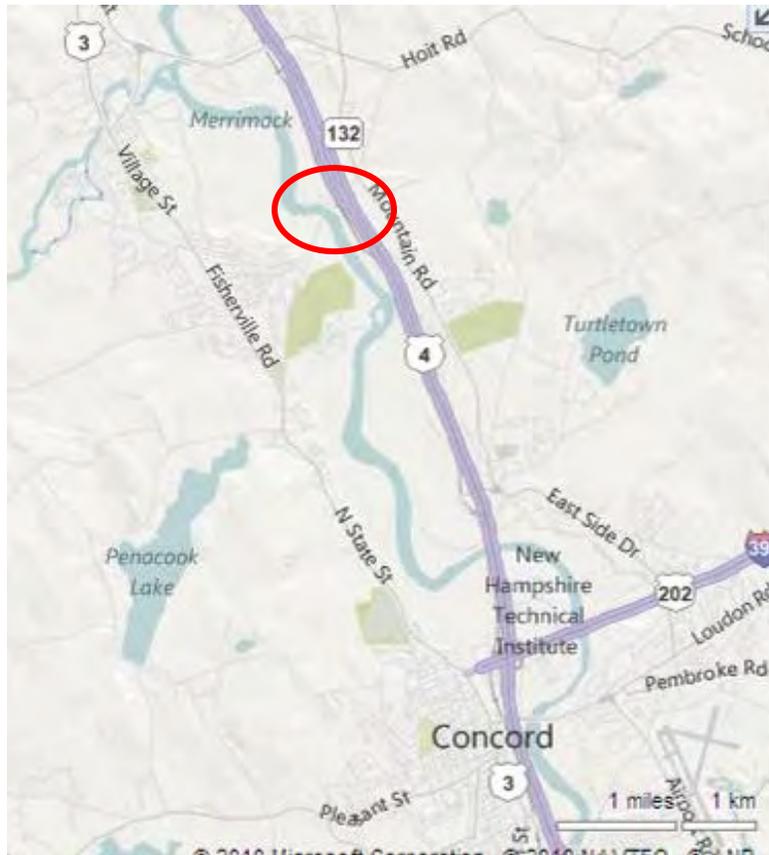


Exhibit 2 - Topographic Map of Project Area

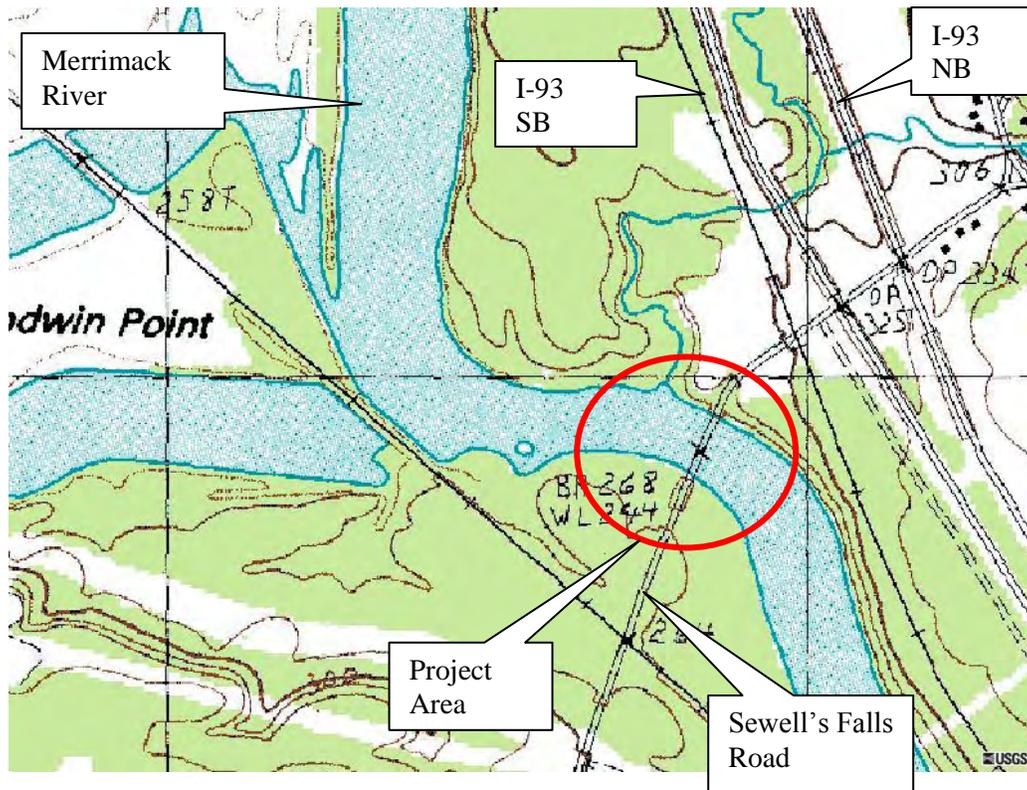


Exhibit 3 - Proposed Alignment of New Bridge and Roadway

East (north) side of project

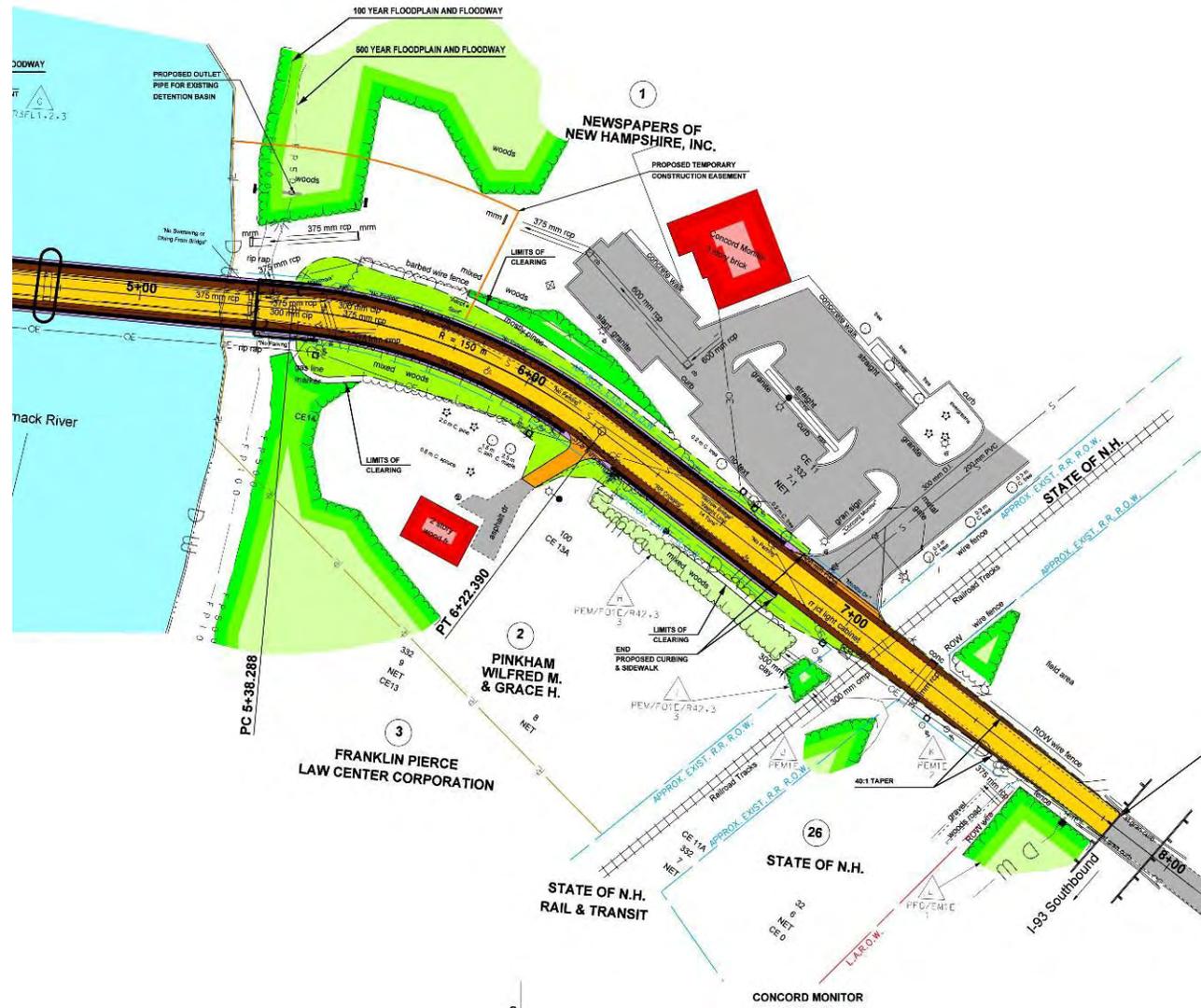


Exhibit 4 - Air Photo of Project Area



Exhibit 5- Photo of existing bridge looking north



Exhibit 6- Photos showing bridge

Looking west from bridge



Looking east from bridge



Looking at the North side of the bridge from the west bank.



Approach spans



Deteriorated concrete and exposed rebar on supports.



Deterioration of the approach span on the west side.



Exhibit 7- Reply from NH DRED re: 6(f) properties

Exhibit 8 - Reply from NHNHB

Exhibit 9 - Reply from NHF&G

Exhibit 10 - Reply from OEP-Conservation Land Stewardship

Exhibit 11 - Map of Conservation Lands in the vicinity of the Project Area



Exhibit 12 - Reply from NHOEP regarding Floodplains in Project Area

Exhibit 13 - Reply from U.S. Fish and Wildlife Service

Exhibit 14 - Memo from NH Department of Historical Resources

Exhibit 15 - Letter from NH Fish and Game regarding LCIP and Recreation Land

Exhibit 17 – Alternative Summary Matrix

Concord 12004 Sewalls Falls Road Bridge over the Merrimack River Alternatives Summary Matrix			
Typical Section Sidewalk	5' Shoulder -12' Lane -12' Lane -5' Shoulder 5 feet on both sides		18' Existing - 20' New One 5' wide sidewalk
	Alternative 4	Alternative 8	Alternative H
	Off-Line Upstream	On-Line Replacement	Rehab Exist Add 2nd One-Way Steel Girder/Concrete Deck on Upstream Side
Engineering Issues			
Design Speed	35 mph	35 mph	35 mph w/Lighting
Profile	35 mph	35 mph	20 mph
Maintenance of Traffic	On existing bridge	Bridge closed during construction	On existing bridge
Phased bridge construction?	Yes	No	Yes
Approx. construction duration	2 seasons	2 seasons	3-4 seasons
Sewer and gas lines	Can remain on exist bridge	Relocated	Can remain on exist bridge
Right-of-Way Impacts			
Fish & Game property	Moderate (E)	Moderate (E)	Moderate (E)
State LCIP property	Substantial (A)	Moderate (E)	Substantial (A)
Concord Monitor	Substantial (A)	Moderate (E)	Substantial (A)
Residential property opposite Concord Monitor	Minimal (E)	Moderate (E)	Minimal (E)
Resource/Environmental Impacts			
Existing historic bridge	Can remain in place	Removed	Can remain in place
Fish & Game boat ramp	Minimal**	Minimal**	Minimal**
LCIP property	Substantial	Moderate	Substantial
Floodplain/floodway	Minimal	Minimal	Minimal
Potential eagle perch trees	Moderate	Minimal	Moderate
Brook Floater mussels	Minimal	Minimal	Minimal
Community Resource Impacts			
Emergency Response Time During Construction	Minimal	Substantial	Minimal
Bicycle/Pedestrian Safety Improvement	Substantial	Substantial	Minimal
Aesthetic Impact	Substantial	Substantial	Moderate
Recreational Impacts	Minimal	Moderate	Minimal
Neighborhood Impacts	Moderate	Moderate	Moderate
City Cost	Moderate****	Standard****	High
(E) - Easement only (A) - Acquisition of Right-of-Way easements required **** Assumes bridge type to be Steel Girder/RC Deck *** Impacts to the boat ramp can be mitigated by constructing a flanking span across the ramp, cantilevering the proposed sidewalk over the ramp, or relocating the ramp ** Boat ramp may need to be closed temporarily during construction			
Cost			
Steel Girder/ Reinforced Concrete Deck			
Bridge Construction	\$ 5,324,000.00	\$ 5,324,000.00	
Removal of Exist. Truss Bridge	\$ -	\$ 400,000.00	
Removal of Exist. Approach Spans	\$ 430,000.00	\$ 430,000.00	
10' Wide Culvert in West Approach Fill	\$ 150,000.00		
Roadway Construction	\$ 3,187,000.00	\$ 2,954,000.00	
Right-of-Way	\$ 250,000.00	\$ 150,000.00	
Engineering	\$ 670,000.00	\$ 575,000.00	
Existing Bridge Rehabilitation for Pedestrian Use^^	\$ 600,000.00	\$ -	
Utility Relocations*	*	*	
Total	\$ 10,611,000.00	\$ 9,833,000.00	
Rehab Existing Truss and Add 2nd One-Lane Bridge			
Bridge Construction			\$ 4,310,000.00
Rehabilitation of Exist. Truss Bridge			\$ 3,106,000.00
Painting of Existing Truss			\$ 888,100.00
Removal of Exist. Approach Spans			\$ 430,000.00
10' Wide Culvert in West Approach Fill			\$ 150,000.00
Roadway Construction			\$ 3,119,000.00
Right-of-Way			\$ 250,000.00
Engineering			\$ 670,000.00
Utility Relocations*			*
Total			\$ 12,923,100.00
* does not include utility relocation costs ^^ - Cost could be eliminated if bridge were to remain in place as a static structure			
Approximate Maintenance costs of truss over 25 years	\$ 81,000.00	\$ -	\$ 1,903,000.00
Approximate maintenance of new bridge over 25 years	\$ 534,980.00	\$ 534,980.00	\$ 534,980.00

Exhibit 18 – Meeting Minutes and Public Comment

SHPO minutes

May, 2000

Concord, BRF-X-5099(021), 12004 by Jason Stone and John Butler

The project will replace the Sewall's Falls Road Bridge over the Merrimack River. The bridge will be replaced essentially on-line, although upstream as well as downstream shifts are being considered. No buildings will be affected by the project. Cultural resource constraints in the immediate vicinity include the historic, two-span truss bridge and potential archaeological resources within the Fish and Game Dept. boat launch facility and other recreational land owned by the Fish and Game Dept. as well as other adjacent lands with archaeological sensitivity. The Fish and Game lands downstream from the project along the east side have undergone archaeological survey. The agencies will be kept informed as design studies progress.

December 2000

Concord, BRF-X-5009 (021), 12004: Presentation by Mark Hemmerlein

Mark Hemmerlein wanted to inform the group about a number of competing interests involved with this project. The project involves the Sewalls Falls Bridge, which is a two span, high warren truss with a score of 22. The bridge was determined eligible for the National Register as part of the department's review of bridge in the late 1980's. The project traffic that will cross the bridge is predicted to rise sharply in the next few years. Mark Hemmerlein conducted a field visit with Mike Ameral and Sussana Von Oettingen from US Fish and Wildlife Service and John Kanter from the NH Fish and Game Department. They indicated this reach of the river has Brook Floater Mussels. These mussels are a state endangered species. In the law that protects state endangered species, both the mussel and the habitat are protected. John was reluctant to support an alternative that would require additional impacts to the river bottom. He also pointed out that this area is the NH Fish and Game's prime Atlantic Salmon fishery and again that they would be reluctant to support any alternative that would impact the river bottom. Additionally, the National Marine Fisheries Service would be involved because of their Essential Fish Habitat Program, which must be addressed by the Army Corp of Engineers when they issue a permit. Mike Ameral noted the abundance of large white pine trees on the north side of the bridge. Any alternative along the north side would impact these trees, which are utilized by Bald Eagles.

Gary Hume noted that previous testing in the area indicated a high potential for archaeological sites on the northwest quadrant of the bridge. The other three quadrants will also require testing.

March, 2003

Concord, BRF-X-5099(021), 12004. Participants: Don Lyford, Mark Hemmerlein, John Butler, and Roger Hawk and Martha Drukker, City of Concord.

Roger Hawk indicated that the Department had made a presentation about this project approximately nine months previously. The city is concerned that the bridge is falling further into disrepair. It is an important link across the Merrimack River, and it needs to be replaced. The Emergency response people noted that it was important link in the transportation system. Roger Hawk stated there were some interesting tradeoffs associated with this project. He stated that bridge is a reasonably important historic structure. Linda Wilson pointed out that it was on the cover of the State of New Hampshire Historic Preservation Plan.

R. Hawk indicated that the City of Concord needs a functioning transportation structure at this location and listed the possible options including saving the existing bridge, placing the new bridge along side it; replacing it with a replica bridge; or replacing it with a modern bridge. R. Hawks suggested that southerly alternative would be more viable. R. Hawk also acknowledged the competing interests in this project including LCIP property to the north, the Fish and Game Access Facility with its boat ramp, and the Historic Bridge. J. Butler added that the Concord Monitor Property and a private residence are also located adjacent to the bridge.

J. Butler described the four options in more detail: the upstream, downstream, phased construction, and on-alignment options. The east end of the bridge would be raised 9-15 feet, and J. Butler showed a few photo-renderings of the alternatives. M. Hemmerlein asked about the conversion of City ROW to State ROW as outlined in the law. D. Lyford stated that any conversion activity would have to go through the Legislature. The project will affect natural resources as well. The USFWS has expressed their concern about the large Eastern White Pine trees, which are roosting places for Bald Eagles.

R. Hawk indicated there was some sentiment to preserve the existing bridge type or construct even a new covered bridge. J. Garvin stated that usually constructing a replica bridge is not preferred, and a modern bridge would have equal weight when considering historic preservation issues. He stated that the best option would be to leave the existing bridge in place. Edna reviewed the archaeological resources. The Fish and Game Department had cleared their land, but the other three quadrants needed review. J. McKay indicated that the Department has finished the Phase 1A and is working on the Phase 1B. Up to this point, the Department's consultant has not found any significant resources and noted a high level of disturbance.

H. Kinter stated that there seems to be consensus that the downstream alternative is the best. H. Kinter explained it may be more difficult to justify the 4(f) argument for the southern alternative, which is preferred by the city. Mark Hemmerlein indicated the 4(f) argument could be made for either alternative. J. Garvin asked if there was a hydraulic issue with the flanking spans being replaced with a causeway, and Mark Hemmerlein indicated that area was not in the floodplain of the river. D. Lyford stated that there are benefits for the south alignment, but constructability may be an issue. He wanted know what would be required for the old bridge. H. Kinter indicated that there needs to be a decision about an investment in the existing bridge. R. Hawks indicated he wanted to include a long-term cost when the decision is made to either retain the bridge or remove it. M. Hemmerlein has spoken with Bob Sporel about the bridge, and the Trails Bureau would be interest to see the bridge remain as crossing point of the Merrimack River. R. Hawk indicated the next step is to take this project to the City Counsel.

Thursday, January 12, 2006

Concord, BRF5099(021), 12004. Participant: Don Lyford.

Jim Garvin had requested information about the funding for different alternatives. He asked whether NHDOT paid only 80% of the cost if the bridge were replaced on line with a new bridge. D. Lyford indicated that this funding approach would not be followed, and Harry Kinter concurred, indicating that this approach, which essentially forces demolition, could not be followed under current FHWA regulations. Option 4, which leaves the bridge in place and locates the new bridge upstream, provides 80% of the funding from FHWA and the cost of demolition for the rehabilitation of the existing bridge for recreational purposes. An option including the rehabilitation of the existing bridge for oneway traffic and the construction of a bridge for the other lane would be very expensive. For each option, funding is provided for a new basic stringer bridge.

H. Kinter confirmed that the approximately \$80,000 for demolition can be invested in the rehabilitation of the existing bridge. J. Garvin noted that the city had been leaning toward an option that leaves the existing and builds a truss bridge. D. Lyford stated that while there was

some flexibility in covering the cost of a new bridge, the funding would not cover all of 80% of an expensive option such as a truss. The cost of a basic bridge is the starting point for negotiations.

J. Garvin expressed concern about the constraints on the city's bridge committee. It was noted that there were two groups, an ad hoc group established to consider the bridge project and established by the city council and a second group that was working with the heritage commission. H. Kinter hoped that it was clear to the city and committees that they needed to work toward an option that preserved the bridge. It would be difficult for FHWA to fund a project that entertained its removal. Although he has not specifically acknowledged it, it was thought that this had been made clear to Roger Hawk.

November 2009

Concord, BRF-X-5099(021), 12004

Participants: Cathy Goodmen, John Butler, and Mark Richardson NHDOT

This project is the replacement/rehabilitation of the bridge carrying Sewell's Falls Road over the Merrimack River. This Project was previously presented in May 25, 2000; Dec. 7, 2000; March 13, 2003; and Jan. 12, 2006. The proposal for this project now includes building a new one-lane, modern steel girder and concrete bridge, rather than mimicking the existing bridge, to the north of the existing bridge to carry the westbound traffic. This new bridge will include roadway shoulders on each side of the single travel lane.

The existing bridge will be rehabilitated for eastbound traffic, and a sidewalk will be attached to the outside of the existing truss. The approach spans will be replaced. A new substructure, common for the new and existing bridges, will be constructed. Edna Feigner noted that she would read the current archaeological survey report to make sure survey was conducted over the area now proposed for work. Comment was made about the loss of the stone supports for the old bridge, but retaining the existing bridge trusses was considered more important. Linda Wilson requested written documentation supporting the necessity for replacement of the existing substructure. Mark Richardson will provide this documentation when available. L. Wilson noted that while this alternative does create an adverse effect, it is much reduced by the current proposal.

April 2010

Concord, BRF-X-5099(021), 12004

Participants: John Butler, Cathy Goodmen, and Mark Richardson NHDOT

This project is the replacement/rehabilitation of the one-lane High Pratt Truss bridge over the Merrimack River on Sewell's Falls Road. This meeting was a follow up to previous meetings to determine effects of the removal of the stone pier and abutments and the WPA floodway approach spans on the west side of the river.

Cathy Goodmen introduced this project review since the City of Concord would like to bring this project to a public hearing this summer, which will require the environmental document to be completed in draft form. This will also require that impacts to cultural resources be determined. The city officials are very supportive of this plan to rehabilitate the existing lane and add a new bridge with one lane. C. Goodmen noted that currently the weight limit prevents emergency vehicles from using this bridge. Mark Richardson stated that we want to go forward with this proposal to finalize the effects memo and determine details of mitigation as the project proceeds.

Discussion included the following. C. Goodmen noted that the existing plan calls for work west of the RR tracks on the west side of the river, but the work will probably end before the tracks, minimizing impacts to the LCIP land on the north side of Sewell's Falls Road. Archaeological testing of this area is currently being conducted, and a report will be available in the next month or so.

Planned rehabilitation to the existing bridge includes the following. The metal grid travel-way will be removed and solid asphalt will be placed on the rehabilitated truss lane. M. Richardson added that the new sidewalk would be cantilevered on the side of the existing truss bridge. John Butler noted that the sidewalk will be five feet wide and there will be bike shoulders on both bridges. He added that there are plans for more industrial development in this area, making this construction/rehabilitation a timely project.

M. Richardson noted that the elevated viaduct constructed by the WPA after the 1936 or 1938 flood is not hydraulically needed any longer and will be removed. The new approach will be asphalt on fill, and a box culvert will be installed under the roadway to allow pedestrian travel between both sides of the road. Jim Garvin noted that there are new flood controls in place upstream and that is why the viaduct is not necessary. He also noted that he is unsure how the 1930's flooding and viaduct construction may have changed the bridge that we see today and that the existing granite foundation might be on top of an earlier circa 1874 foundation. He stated that the current plan seems to be the best approach to save the high trusses. M. Richardson also stated that the existing foundation is not stable and has had many repairs due to scouring. This prompted the design of a new pier and abutments. To save the truss system, a new substructure needs to be constructed.

B. Muzzey asked that we look at the Stratford-Maidstone project to see how that changed the historic appearance of the area. She also asked if there can be any re-use of the granite from the pier and abutments and if the city had any thoughts for their reuse in the city. Jim Garvin stated that the city might have ideas of how the stone could be used, including an interpretive use about the bridge or other subject. M. Richardson noted that we would ask about the granite at the public meeting.

B. Muzzy asked if there are any aesthetic concerns for the people that use the trail and if we have any consulting parties. M. Richardson noted that we would include that in the public meeting.

M. Richardson noted that we still need to address the question concerning whether a lane will be left open during construction, or if the bridge will be closed the entire time of construction.

J. McKay added that the approach is considered an eligible part of the bridge. Mitigation would include documentation of the approaches as well as the bridge.

B. Muzzey noted that this would be an Adverse Effect due to the loss of the stonework pier and abutment and the 1938 extension. In the effect memo, we can note that some portions are adverse, but the overall project is beneficial to the preservation of the eligible High Pratt Trusses. She also noted that we still need to look at the railings, the sidewalk and the smaller details and have continued 106 review as the design is finalized.

J. McKay will put together a memo noting mitigation as: rehabilitating the trusses; work with the City about the re-use of stone; final design of landscaping with NHDHR and the City of Concord; documentation of the bridge with additional details about the involvement of the WPA; and coordination of continued consultation with reviewing parties.

May 2010

Memo Signed by SHPO

October 2010

Concord, BRF-X-5099(021), 12004

Participants: Catherine Goodmen, John Butler, Don Lyford, NHDOT; and Ed Roberge, City of Concord

This project has previously been presented May 25, 2000; December 7, 2000; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010, May 6, 2010.

This project would replace/rehabilitate the bridge that carries Sewall's Falls Road over the Merrimack River.

The City of Concord has requested that the design for this project include a protected left turn lane into the Concord Monitor driveway from the southwesterly direction. This will require the widening of Sewall's Falls Road to the east of this driveway, impacting the railroad crossing of the Boston, Concord and Montreal Historic rail line.

This intersection was previously presented for another project, Concord 15935, a project to replace the signals at this crossing and upgrade the rails, ties, and the approaches. The project proposes to remove the old signal box and old crossing posts. Due to this crossing project, SHPO requested an Individual Inventory Form for this crossing. It had been previously determined that the corridor is eligible as a district, and the signals and signal box were contributing resources. The designers for this project stated that the new signals would have to be placed in the same location as existing, but the signal box could remain unaffected. SHPO agreed that this preservation of the signal box would provide mitigation for the loss of the signals and issued a finding of De Minimis impacts.

With the widening of Sewall's Falls Road, the signal box will have to be moved. Cathy Goodmen suggested that we preserve the signal box but move it back from the road, but out of the new roadway and slope work, essentially in the same location.

SHPO agreed that this would still be a No Adverse Effect, with J. Sikora's determination of De Minimis impact on the resource for the 15935 project.

September 2012

Sewalls Falls Bridge, Concord, NH BRF-X-5009 (021), 12004; RPR#1691

Participants: Ed Roberge, City of Concord; Martha Drukker, City of Concord; Rob Faulkner, CHA.

This project is a continuation of consultation, previously reviewed on October 7, 2010, April 1, 2010, November 12, 2009, January 12, 2006, March 13, 2003, May 1, 2002, July 1, 2002, December 7, 2000, and May 25, 2000. Since October 2010, a draft Environmental Study and Programmatic 4(f) Evaluation (November 2010), an Adverse Effect Memo (May 2010), and a Load Rating Analysis Study has been completed. Recently representatives of DHR and FHWA Bridge and NEPA representatives have been consulted. The purpose of the meeting was to update the committee on the results of the Load Rating Report and seek guidance how to proceed.

Ed Roberge, Concord City Engineer, provided a brief overview of the project outlining previous cultural and natural resource review efforts and recent structural inspection and load rate analyses completed by CHA Companies. Ed Roberge noted that previous cultural review efforts did not include detailed structural analysis of the truss bridge – which should have been done as a basis of alternative review.

A truss rating graphic was prepared by CHA and distributed to the group which Rob Faulkner explained as showing that, based on the analysis, the majority of the truss members would either need to be rehabilitated / strengthened, or replaced. This was in addition to the lower chord and floor beam system being completely replaced as previously identified. With the colored coded graphic depicting significant modification to the existing truss structure, Rob Faulkner stated that based on the level and extent of rehabilitation, the project team questions if the historical integrity of the bridge is retained.

Ed Roberge noted that Concord staff had met with staff of NHDOT and FHWA to review the load rating analysis and limited fatigue life remaining on the truss structure. Concerned with long-term stability of the truss bridge and safety, Concord, NHDOT, and FHWA concurred that given the extent of the member replacement, rehabilitation, or strengthening required to meet current bridge design standards, rehabilitation of the existing bridge is not a wise choice and therefore, should not be pursued.

Laura Black made the point that based on the load rating analysis, the as-built design of the existing bridge, even if in perfect condition, would still need to be strengthened in order to meet current highway design loads. Ed Roberge expressed Concord's concern over the fatigue life of the bridge, even after it was rehabilitated. Based on the analysis, the best case remaining fatigue life of the bridge was stated as 45 years. However, the bridge has likely been overloaded through its life on multiple occasions and the remaining fatigue life would likely be less than the stated 45 years, at which point the bridge would no longer be serviceable and would need to be replaced, regardless of the degree of replacement/rehabilitation to the majority of the bridge structural members. Ed Roberge indicated that the same concerns were expressed to the Concord City Council at its September 2012 meeting where safety, sustainability, and historic integrity of the bridge were Concord's top priorities.

Laura Black asked what the remaining fatigue life of the bridge could be extended to if it were rehabilitated. Ed Roberge responded that fatigue life of the existing steel could not be extended and that old bridge structures have a finite life. Edna Feighner stated that all bridges, even new ones, had a finite fatigue life. It was then noted that the fatigue life of new bridges is much greater because of they are specifically design to handle certain loads and the strength of steel is quite different than old steel.

Rob Faulkner added that based on experience, it was highly likely that the extent of members that would need to be repaired or replaced would increase during construction due to the limited amount of each member that was visible during the inspection.

Laura Black said that NHDHR would be looking for solid justification, with backup as to why the bridge could not be rehabilitated prior to the next review at a Cultural Resource meeting. Ed Roberge noted that staff is working with CHA Companies to include review by a bridge historian to determine the impacts to the historic integrity of the bridge by rehabilitating the bridge as noted. Staff will also provide detailed justification as to why the bridge should not be rehabilitated as well as summarize project impacts and costs of the preservation, and replacement alternatives previously considered

December 6, 2012

Concord 12004 BRF-X-5099(021) RPR#1691 Sewalls Falls Road Bridge

Participants: Participants John Parelli, Robert J. Faulkner, CHA; Martha Drukker, Ed Roberge, City of Concord; Richard Casella, Historic Documentation; Cathy Goodman, NHDOT

Continuing consultation, previously reviewed on May 25, 2000; December 7, 2000; January 1, 2002; May 1, 2002; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010; October 7, 2012; September 113, 2012. The purpose of the meeting was the presentation of the rehabilitation assessment of the existing bridge and review of other alternatives.

E. Roberge began with a brief introduction and the following items were discussed:

- 1) Review of Current Project; R. Faulkner gave a brief review of the project history and current status.
 - a) Project was started in 1999 as a bridge replacement project. NHDOT led the project as a Part A Preliminary Engineering Phase. Many alternative alignments were considered and through the process the project evolved into rehabilitating the existing bridge. More alternatives that included reuse of the bridge were developed.

- b) The preferred alternative (Alternative H) included rehabilitating the truss to support northbound traffic with a cantilevered sidewalk on the downstream side and building a new single lane bridge upstream of the truss to accommodate southbound traffic.
 - c) The preferred alternative progressed through the majority of the NEPA process, however the MOA was never completed. In 2010 the project was turned over to the City of Concord to be completed under the Bridge Aid Program as a Municipally Managed Project.
 - d) The initial phase of work under the Final Design was an in-depth bridge inspection and load rating to determine the extent of rehabilitation required.
 - e) The results of the load rating showed that the cantilevered sidewalk on the downstream fascia of the bridge was not practical, as the majority of the downstream truss panels would need to be strengthened or replaced. In addition, without the addition of a sidewalk, a significant number of the truss members would still require strengthening or replacement. The switching of the sidewalk to the upstream side of the new bridge resulted in increased impacts to LCIP property as well as mid-block crosswalks at the Fish and Game and Concord Monitor driveways.
 - f) As suggested by NHDHR, Historic Documentation Companies was hired to comment on the effect of rehabilitation on the historic significance of the bridge. The conclusion was that while the extensive rehabilitation is considered an adverse effect, the structure could still be considered historically significant.
 - g) The City remains concerned with the safety and reliability of the truss considering the non-redundant nature of its construction. The limited horizontal and vertical clearance and fatigue life do not meet the City's long-term needs when considering the potential plans for future development and the overall transportation system.
- 2) R. Faulkner gave a brief description of the Alternatives being considered further which had been developed as part of the Preliminary Engineering Phase.
- a) Alternative 4 consists of a new two lane bridge upstream of the existing bridge. The existing bridge would remain and could be used for pedestrians although a new sidewalk would be constructed on the new bridge. The bridge could also remain abandoned in place as a "monument". This alternative has the longest project length and the greatest ROW impacts and environmental footprint.
 - i) It was noted by R. Roach that keeping the bridge as a monument is not desirable as demonstrated by previous projects where the bridge is left to rust.
 - b) Alternative 8 consists of a new two lane bridge on the existing horizontal alignment. This alternative has the best vertical geometry but would require the removal of the existing bridge.
 - c) Alternative H was the preferred alternative coming out of the Preliminary Engineering Phase and consists of a new one lane bridge upstream of the existing bridge and rehabilitation of the existing truss bridge, all on new substructures. This alternative has the least desirable roadway geometry and has the highest construction and maintenance costs.
 - d) R. Roach asked what the City's preference was and whether they were willing to pay the cost for Alternative H.
 - e) R. Faulkner responded that the cost is the highest, estimated at about \$13 million. There was a discussion about the alternatives requiring additional ROW. R. Faulkner noted that there will be

additional easements and ROW requirements and the costs are approximate. The City also discussed the high continued maintenance costs for keeping the truss.

- f) L. Black asked how many of truss bridges still exist in the State and how many have been demolished in recent years.
 - g) R. Casella summarized the historic effects of the rehabilitation.
 - h) P. Perkins reviewed the extent of required rehabilitation to the truss to carry legal highway loads.
 - i) R. Roach again asked what the City's desire was and further noted that the City cannot be forced to keep the bridge if they don't want to.
- 3) Going forward; E. Roberge reviewed the City's next steps:
- a) A report will be submitted to the City Council in January for consideration at the January City Council Meeting. This report will include City Staff's recommendation to proceed with the On-line Replacement Alternative.
 - b) The City will also hold a public information meeting in late January to hear public comment.
 - c) City council is anticipated to provide the direction on which alternative to proceed with at their February meeting.
 - d) The city will conduct their standard outreach program with announcements in multiple locations and in multiple media including mailings. The City can list FHWA as a contact for information in advertisements.
- 4) There was a discussion about the importance of getting the public involved and the Section 106 requirements. The group discussed what parties need to be included in the new decision process. It was also noted that an advocate for the bridge is needed and rehabilitation options need as much promotion as replacement options.
- 5) It was noted that the previous ad-hoc committee for the project has expired and not all past members are available. The City Heritage Commission was a party and will be included in the January meetings. E. Roberge gave a summary of what past public meetings were held under the Preliminary Engineering Phase.
- 6) The group discussed mitigation options which included using pieces of the truss portal and stones from the pier in a display at the Fish and Game property. Options can also include documentation and dissemination of documentation to the public through libraries and schools.
- 7) Conclusions:
- a) The City will start the public outreach process for the January and February meetings.

April 4, 2013 agenda

9:30 Concord 12004 BRF-X-5099(021) RPR#1691 Sewalls Falls Road Bridge

Continuing consultation, previously reviewed on May 25, 2000; December 7, 2000; January 1, 2002; May 1, 2002; March 13, 2003; January 12, 2006; November 12, 2009; April 1, 2010; October 7, 2012; September 13, 2012; and December 6, 2012. The purpose of this meeting is to confirm that the City has held a Public information meeting and that the City Council has approved moving forward with the online alternative. Discussions would also include mitigation alternatives as well.

Participants: John Parrelli, Rob Faulkner, CHA; Martha Drukker, Ed Roberge, City of Concord; Richard Casella, Historic Document Co.; Cathy Goodmen, NHDOT

Cultural Resource Meeting

Meeting Minutes - April 4, 2013

Project: Sewalls Falls Road Bridge, Concord 12004

Location: NHDOT John O Morton Building

In Attendance: See sign-in sheet

Materials Distributed: Sewalls Falls Road Bridge Project Presentation
Public/Consulting Party Comments

Rob Faulkner provided handouts of the presentation and comments received to date from the public and Consulting Parties which are available at the City's project website <http://nh-concord.civicplus.com/index.aspx?nid=426> and noted that the intent of this meeting was to be a continuation of the previous discussions and public process that started with this project back in 1999 even though the preferred alternative has changed from the previous Alternative H to an on-line replacement alternative. Mr. Faulkner continued to provide background information on the bridge and project efforts to date, a summary of recent meetings as part of the public process as well as public and Consulting Party comments received to date.

Jim Garvin (Consulting Party) asked who was managing this project, who the lead federal agent for the project was, and who will report the final findings. Jamie Sikora responded he was the lead federal agent and that the project was being done through NHDOT's Bridge Aid Program with Tom Jameson as NHDOT's LPA Project Manager. Jamie further noted that he felt that this project would likely have a Programmatic 4(f) review. Jim Garvin stated that the project had not gone to the Advisory Council for Historic Preservation (ACHP) for review. Jamie Sikora stated that in fact it had gone through the ACHP as part of the original NHDOT Preliminary Design process with Alternative H as the preferred alternative and were notified of the adverse effect based on that alternative. Jamie added that the project has now evolved in a similar fashion as the Memorial Bridge project where it started out as a rehabilitation project, but later became a replacement project due to the extensive deterioration and rehabilitation needs of the bridge. Jamie further noted that he typically waits on notifying the ACHP until the effects memo has been signed. Jim Garvin followed up by asking if a Programmatic 4(f) review was a less stringent review. Jamie Sikora responded that the review will still be stringent, but the processing time is streamlined for these types of Programmatic Section 4(f) Evaluations as they do not require the Dept. of Interior's review or FHWA legal sufficiency review. Jamie Sikora noted he would send Mr. Garvin and other meeting attendees copies of FHWA Guidance related to the Programmatic 4(f) Evaluation for Historic Bridges.

Following initial comments, Rob Faulkner continued his presentation by providing an overview of the plans of the three alternatives on the board with the On-Line Replacement, Alternative 8, being the preferred alternative that was approved by the Concord City Council on February 11, 2013. Mr. Faulkner noted that the City remained concerned with the structural deficiencies and safety of the truss bridge as well as the highway approach issues. Mr. Faulkner noted that the existing bridge fails to meet the City's long-term development goals for the area. Rob Faulkner reviewed the project decision summary matrix outlining the process of considering alternatives including project impacts (cultural, environmental, and ROW), risk contingency, and costs. Mr. Faulkner concluded with review of the recent public process, a summary of public comments and consulting party comments received by the City to date, and outlined the next steps in the project.

Ed Roberge provided a brief summary of the project noting that CHA was retained by NHDOT in 1999 to do preliminary engineering on what was a replacement project at that time. The project evolved through a public review process initiated by the City to a rehabilitation project (rehabilitated truss to carry northbound traffic; build an additional bridge to accommodate the southbound lane, and re-do all the piers/abutments). However, consensus on the rehabilitation alternative was made prior to any detailed inspection or load rating of the bridge being performed. Ed Roberge noted that in 2010, a structural inspection and load rating analysis was performed after which the City expressed concerns with the rehabilitation option; specifically that the majority of the structural members would need replacement or strengthening, the portal openings and rail systems would require modifications to the extent that members would need replacement including the intermediate sway bracing and the entire rail system. Mr. Roberge added that all of this is after fully replacing the bottom chords, decking, center pier and abutments. He further noted that while HDC's review did find that the bridge could still be considered eligible for listing in the National Register (NR) of Historic Places after rehabilitation, it still did not address the City's biggest concern of structural stability, safety, and longevity of the truss bridge and felt that the rehabilitation of the bridge is not sustainable, does not meet long term goals of the City and that the bridge needed to be replaced and not rehabilitated.

Jim Garvin noted that he was aware of a Memorandum of Agreement (MOA) between NHDOT and SHPO from a previous project on preserving High Pratt trusses although he did not know the specific details or commitments of that agreement. Rich Casella noted that the MOA was to develop a Management Plan for preservation and not for the actual preservation and further noted that the draft plan prepared for the DOT did not include the Sewalls Falls Bridge because project plans at the time were to rehabilitate the bridge. Ed Roberge noted that City Council was careful in their decision to not rely on State Bridge Aid Funds for the long-term maintenance of this bridge in the event funding was not available.

Jim Garvin referenced the Adverse Effect Memo that was signed in 2010 for the previous project which included the removal of the stone pier and the southern abutment. He further stated that CHA's report noted that the bridge could be rehabilitated to carry legal highway loads and he therefore contended that the rehabilitation alternative may be considered a reasonable alternative under section 4(f). Jamie Sikora noted that "prudent and feasible" only applies to No Adverse Effects, and not adverse effects, so it wouldn't apply in this case. Ed Roberge again indicated that the previous selection of the rehabilitation alternative did not include the engineering data reported now and if it did, that alternative would not likely have been advanced. Jamie Sikora noted that with the latest information, the alternative analysis needs to be documented. Jamie also noted that he commended the City in its effort to date and he would email a copy of the Section 4(f) information to the meeting attendees.

Jim Garvin requested that Rich Casella summarize his report on the effects of the rehabilitation on the historic significance of the bridge. Rich noted that his report was an opinion that the bridge would still remain historically significant. He further stated that this was his professional opinion and based on the conceptual level of rehabilitation design that was discussed with CHA and not based on hard design. Jim Garvin also noted that MaryAnn Naber should be involved in the project, as it is the SHPO Officer that decides whether an alternative is historic or not, not Rich Casella. Martha Drukker and Jamie Sikora both noted that it was in fact FHWA that makes that determination.

Audra Klumb (Consulting Party) asked if the design criteria could be reduced to keep the bridge: reduce load rating, reduce speed, and make travel lanes narrower which would also help control sprawl. Ed Roberge responded that because the project uses federal funds, adherence to federal design standards is required so reduction in those design standards would not be acceptable. Audra then asked, "No exceptions?" While Ed responded that there couldn't be any, Jamie Sikora noted that design exceptions are possible, although they have to meet certain criteria to be approved.

Martha Drukker noted that based on the City's experience in working through similar Section 106 and 4(f) processes since the 1980's, the USACOE provides guidance for project alternative analysis which needs to be based on a Least Environmentally Damaging Practical Alternative (LEDPA) basis. Based on that analysis, Martha noted that historic resources and their significance is only one piece of a project's total impact analysis. With the exception of the removal of the bridge, the online replacement alternative has the least impacts to all other resources except the historic resource. She continued to note that none of the alternatives have changed through the project development process, but that additional engineering has since been done. She also noted that had the extent of rehabilitation on the bridge been known previously that it was highly likely that the rehabilitation option would not have been considered further.

Ed Roberge stated that the City Council is aware of the historic significance of the Sewalls Falls Bridge – in fact one of its champions, Councilor Shurtleff, expressed that concern to City Council at the February public meeting. Ed Roberge noted that Council concurred with the safety concerns of the existing bridge and specifically addressed the sustainability in terms of costs to rehabilitate, construct, and maintain the bridge. Ed Roberge noted that the City of Concord has carefully and diligently reviewed the alternatives and concludes that it is not practical to rehabilitate the bridge. He further noted that the City Council's decision included all of the public comments received. Laura Black noted that one of the most important parts of the Section 106 process is formal public involvement. Open meetings encourage passive involvement in the project, where the Section 106 process allows active involvement. Ed Roberge concurred and noted the public process completed by the City to date. Martha Drukker noted that this process is a continuation of the public process that started back in early 2000's which led to the previous Adverse Effect Memo. It was acknowledged that the shift of the intent of the project from Alternative H to Alternative 8 was dramatic enough that the Consulting Party process should have been opened back up to potential parties who may not have had concerns or had wanted to participate when the assumption was that the city was moving forward with a rehabilitation option.

Jim Garvin asked if there was an Environmental Impact Report. Martha Drukker responded that CHA is in the process of updating the previous report that was prepared by NHDOT in 2010. Responses and input from the regulatory agencies as well as proposed mitigation still need to be provided. The City wants to submit the completed documents, including mitigation options to minimize the review process. The updated study references CHA's Re-evaluation Report, dated 11/28/12.

Jim Garvin noted that as far as 4(f) is concerned, the City's preference does not trump the Secretary of Transportation 4(f) laws. Jamie Sikora noted that this meeting was to discuss the Section 106 review process associated with the project. FHWA is the agency with jurisdiction in determining the sufficiency of analysis developed for compliance with Section 4(f) and therefore is aware of the Section 4(f) process and related requirements. Roy Schweiker (Consulting Party) said that he would like to hear a discussion on mitigation options which could help determine the preferred alternative. Jim Garvin asked what NHDOT has pledged to do regarding preservation of High Pratt trusses and noted VTrans' efforts of storing used bridges. Jill Edelmann noted that NHDOT does not have any intention of creating or maintaining a bridge graveyard. This issue has been explored in the past, and the Department has concerns with liability, lead-based paint contamination, and maintenance costs. The Department has been willing to store bridge members in the past, with the understanding that the storage is temporary and disposal date assigned.

Jamie Sikora suggested that a Preliminary Categorical Exclusion and Programmatic 4(f) document be submitted. Jamie Sikora outlined the next steps to keep this project moving forward:

1. Issue a Preliminary version of the Environmental Study and Programmatic 4(f) Evaluation Report for review (post to project website); Jamie Sikora would also provide a copy of this documentation to the

ACHP so they might determine if they'd like to be involved as a consulting party during the remaining Section 106 review process for the project

2. Issue draft Memorandum of Effects (post to project website)
3. Pratt Truss Management Plan. There needs to be further discussion as to whether or not this draft document can be made public and posted to project website;
4. Identify Public Comment Period (30 days from document posting);
5. Attend the May 2013 Cultural Resource Review Meeting to review the draft environmental documents and discuss mitigation options;

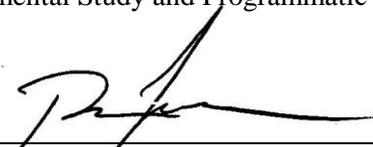
Jim Garvin asked if the project information was easy to find on the City's website. Ed Roberge noted that it is listed under the Department of Engineering, City Projects. (www.concordnh.gov).

Jerry Zoller stated that he was speaking as a Concord resident and Sewalls Falls Bridge neighbor and not as a representative of NHDOT. Mr. Zoller noted that he was disappointed with the delays in the design process. He noted that he never understood why DOT did not do load rating/inspection prior to the 2004 meeting. He agrees that the rehabilitation of the bridge will be a "bottomless pit of costs", though he appreciates the intent to preserve it. Mr. Zoller agrees with the online replacement option, as a member of the public and applauds the City for preferring Alternative 8. He further appealed to the historic review process to stop delaying the project because time is of essence and the bridge is only deteriorating. Tom Jameson emphasized that Mr. Zoller was speaking as a Concord resident and not a DOT employee related to the project.

Laura Black noted that it was important that all parties follow the Section 106 Process and that the Consulting Parties can be actively involved. This situation underscores the importance of starting the public input process early and throughout the entire process. Rob Faulkner stated that if we were just starting this as a new project 16 months ago we would have engaged the public much more to review alternatives. However, as identified by the project team at the September 13, 2012 Cultural Resource Review meeting, this was seen as an amendment to the ongoing process which had a significant amount of public involvement based on new information and not as an attempt to circumvent the system. Roy Schweiker disagreed with seeing this as a minor amendment and noted that if you read newspaper articles dating back to original meetings, there were 2 goals: to save the bridge and to maintain traffic. So Alternative 8 is not what the public originally wanted but also indicated that the new engineering information concludes significant structural impacts and is most interested in discussing mitigation.

It was agreed that the group would meet at the May Cultural Resource Meeting following review of the draft Environmental Study and Programmatic 4(f) Evaluation Report and supporting documentation.

Drafted by:


Robert J. Faulkner, PE

Noted by: E. Roberge, City of Concord
M. Drukker, City of Concord
J. Sikora, FHWA
J. Edelmann, NHDOT
C. Goodman, NHDOT
T. Jameson, NHDOT
L. Black, DHR

Sewalls Falls Bridge – Public Information Meeting Questions and Comments

January 23, 2013, 6:00 – 8:00 PM
Beaver Meadow Golf Course

I. Presentation

II. Questions, Comments and Answers

1. Roy Schweiker: I was never in favor of Alternative H due to cost and impracticality. I think it's a good idea to replace the structure. Further, I propose we build a new bridge *downstream*, because that will afford a better approach and better alignment. It will allow us to use the current bridge during construction and keep part of the current bridge as a historical monument. The existing bridge could be placed alongside of the road at the approach to the new bridge.

Faulkner: In 1999, a downstream alternative was explored. However it was dismissed because it impacts a private residence and would cause significantly more impacts in general. It also poses a negative impact on the Fish and Game boat launch.

2. Citizen: Given the fact that regardless of which alternative is selected, a new or refurbished bridge will not be up for several more years, how safe is the current bridge right now?

Roberge: It is indeed a safe bridge and will continue to be for the next several years.

3. Jim Garvin, former NH State Historic Preservation Officer: First, it should be noted that full federal funding (maximum of 80%) for building a new or rebuilding the current bridge may not be granted if we cannot demonstrate that every reasonable effort has been made to preserve the historic bridge. Secondly, I object to the fact that in this process of solving the problem of the Sewalls Falls Bridge for these past 14 or so years, other organizations and private entities have not been invited to participate or be consulting parties in this decision making process.

Roberge: Reiterated history of Concord's role in the bridge replacement project administered by NHDOT beginning in the late 1990's – Concord was handed the project in 2010, moved to assess the condition of the current bridge and called for a detailed structural inspection and load rating analysis. This assessment showed that significant rehabilitation, strengthening and/or replacement were needed. We also found that in order to preserve the look of the bridge, serious safety concerns would remain regarding the metal's ability to keep the bridge safe in the particular truss design the bridge currently has. This led us to seriously question whether it was reasonable and prudent to preserve the bridge. While preservation may be *doable*, does it address the safety concerns and cost requirements that we're compelled to meet?

Casella: In answer to the question of whether making rehabilitations to the current bridge will even give us an end result that remains “historic”, the answer is yes. That is, even if we make all the necessary strengthening, replacements and refurbishments that Mr. Perkins showed us (with the red-lined graphic) to be necessary, the bridge will indeed remain technically “historic.”

4. Karim Naji, of the NH Division of Federal Highway: This is not a federally overseen project; it’s a local project. FHWA involvement is very limited. Their primary focus will be on the Section 106 process. FHWA does have the final approval for the project participating funds, however, NHDOT approves the majority of the day to day documentation of the project.
5. Richard Roach, US Army Corps of Engineers: [in response to Garvin’s comments on “consulting parties”] The 106 Process does allow for participation by consulting parties. See the brochure (one of hand-outs) which states: “For more information on how you can become a consulting party, contact: Jamie Sikora, Environmental Program Manager, FHWA at “Jamie.Sikora@fhwa.dot.gov”.” At the federal level, the Advisory Council on Historic Preservation (ACHP) is the agency that administers public comment on historic properties. For further information visit “www.achp.gov”. Secondly, I have noted a few entirely new bridges being built in NH that are trusses. How are these new truss bridges safe, since it appears from the Sewall’s Falls Bridge’s case that truss bridges are non-redundant and therefore unsafe?

Faulkner: A modern truss bridge was considered as one of the alternatives along the way, but construction costs were prohibitive.

Perkins: New truss designs can indeed have redundancy. In the case of this bridge however, if we retain its general design we cannot put the trusses in a place that keeps them safe from the danger of cars running into them. Also metal elements are not limited to one unit on *modern* trusses, but would be so limited if we kept the general (old) design of the Sewalls Falls Bridge. Cracks in metal cannot proliferate significantly when they occur in multi-element situations, but in the older designs such as the current bridge, one crack will compromise a whole metal piece because it is designed as one unit.

6. Citizen: Are we going to replace the metal deck and does that alleviate any safety issues?

Roberge: Yes, we would replace the decking since there is limitation to the 1915 steel’s fatigue life and replace it with a steel girder and reinforced concrete deck.

7. Jim Garvin: Question about fatigue: It’s been stated that the current bridge has a remaining life of 45 years. But it was my understanding that only the diagonals have vulnerability to fatigue.

Perkins: Yes, fatigue issues can be addressed by replacement of all the diagonals.

Roberge: I think for longevity, we should replace rather than strengthen the diagonals. After all is done, we need to have a safe bridge that will last and meet our future needs.

Naji (FHWA): There would be a great deal of rehabilitation needed to meet current design criteria.

8. Ken George: The existing bridge is a one lane bridge, something has to be done. What will we have on either side of whatever bridge we select, once the bridge is finished? Gas stations? Dunkin Donuts store? That is, we'll have more development.

9. Citizen: I don't think we should be emotional or sentimental - rather we need to be practical in our decision, and I think we should emphasize the criteria of safety and feasibility for future expansion. Let's not let our emotions get in the way.

10. Ed Welch: Regarding our one-lane current bridge, I value its traffic calming effects. What about Exit 16? How can we slow traffic down there and on Mountain Rd and Sewalls Falls Rd? Remember we are a community. Please encourage your neighbors to slow down.

11. Citizen: We must consider that there is a need for a good maintenance plan for the new bridge to keep it in good shape. Also, as for traffic calming we need to look to the interchange between Sewalls Falls Road and I-93.

Roberge: Funding for maintenance is critical; regular maintenance prevents the buildup of small problems that turn into large, expensive problems. And as you have suggested, this must be planned out in advance.

The interchange is well into the future; it won't be considered or built for another 20 to 30 years or so.

12. Citizen: In terms of the speed issue, if we have 5 foot shoulders on a new bridge, it will cause people to speed up and reach speeds of 50 mph.

Roberge: Those widths are supportive of our Complete Streets commitment. The design needs to be walkable and bike-able as well as drive-able.

13. Citizen: What about the south entrance to the bridge?

Roberge: The six section flanking span structure that was added in the 1930's allowed for flood waters to pass by. This is no longer necessary. So the south entrance will become roadway on an earthen berm.

14. Citizen: Regarding speed, I am also very concerned. We do not have support from police in terms of enforcement.

15. Josh: I love the bridge. If we build a bigger bridge we could get more development on the north side which would slow down drivers.

16. Citizen: Were any of the alternatives considered a one-way bridge?

Naji (FHWA): No because such an alternative would not get federal funding; it wouldn't comply with AASHTO Standards.

17. Citizen: I live nearby and I like historic things. Perhaps the downstream idea meant *way* further downstream. I don't like the alternative of adding a second bridge and rehabilitating the old bridge. For one reason, essentially making it 2 lanes would bring more traffic including trucks and they would pose an even greater risk to the safety/integrity of the bridge if they hit the metal verticals and diagonals.

Roberge: Yes, that is correct. And furthermore, emergency vehicles cannot currently use the bridge. Emergency vehicle capacity should be seriously taken into account.

18. Roberge : Pros and cons to offline (in a different spot than the current bridge) or online (in the same exact spot as the current bridge) alternatives. If we choose offline, there will be phased construction that is slow and protracted, but the bridge will never have to close. If we choose an online alternative, we will have to close the bridge but the total construction will be quicker.

19. Bob Bragg (Sewalls Falls Bridge Neighbor): Route 3 construction caused more people to use Sewalls Falls Bridge. My vote is to replace the bridge because it is inevitable in the long run. "We can get a hip or knee replacement and that can help us to move around easier for a few years, but at some point in time we're gonna *bury* it!"

20. Citizen: I like the current bridge. I would like any replacement to be equally emotionally pleasing. Also, are there mitigation plans if we do replace the current bridge? Documentation plans?

Roberge: Regarding a replacement bridge, it would be nice, cost-effective, well-engineered and one that reflects its neighborhood by possibly being a 'signature bridge'. Plans for mitigating would definitely go beyond simply documenting.

21. Tom Harrison: Who decides what amount of land which will be taken from the LCIP (Land Conservation Investment Program) land and the Fish and Game land? There has been a *lot* of public investment.

Faulkner: The offline alternative has the *most* impacts to such land. The online alternative has the *least* impacts.

Roberge: Our goals are to minimize impacts and maximize recreational and wildlife use.

Roberge: Thank you everyone. Please join us on February 11, 2013 at 7:00 PM at the City Council Chambers for a City Council public hearing.

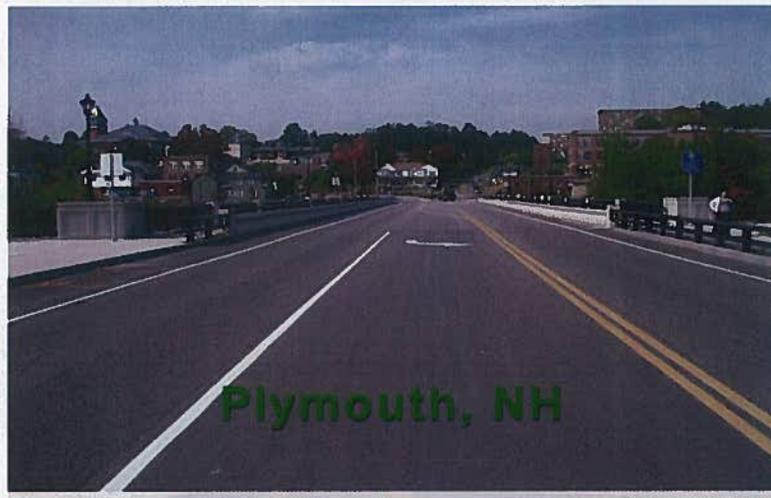
Drukker, Martha

From: welched@egr.msu.edu
Sent: Friday, February 01, 2013 10:37 AM
To: projectcomments@concord.gov
Cc: Jamie.Sikora@dot.gov; eswelch@comcast.net
Subject: Sewalls Falls Bridge Comments
Attachments: Ed Welch.vcf

Engineering Department, City of Concord,

I attended and appreciated the Sewalls Falls Bridge Meeting on January 23rd. It was well run and generated a lot of valuable questions and answers. The following are my comments regarding the project:

1. Designing and constructing a bridge that is easy to maintain is essential for the preservation of the structure. A conventional I-Beam bridge with a paved concrete deck has been the standard bridge in New Hampshire for years. It is easily maintainable and can be enhanced to differing degrees with ornamental lighting and railings, pedestals, and sidewalks based on need and budget. Some good examples of this type of structure are the Holderness/Plymouth Bridge:175A over the Pemigewasset River, the Hanover Bridge over the Connecticut River, and the Concord Bridge: Manchester Street over the Merrimack River. The choice of bearings, joints and structural steel protection are also critical to the ease of maintenance and durability of a structure.



AASHTO
THE VOICE OF TRANSPORTATION

TSP-2
Transportation System Preservation
Technical Services Program

2. Having an adopted/written Maintenance and Preservation Plan for the bridge that has dedicated funding will assure that the bridge is maintained in the future and kept in good condition. Routine Maintenance and Preservation have to be performed to new bridges in a proactive manner in order to avoid extensive repair costs in the future. Painting, washing and sealing, joint repair, debris removal and repaving have to be anticipated in this program.

3. I understand that the construction of the road connecting the Concord Monitor and the Trash to energy plant; and the construction of a SB-On Ramp and a NB-Off Ramp at Sewalls Falls Road are in the future. However, there was great sentiment at the meeting to reduce and slow down traffic. Both of these projects will reduce traffic in these residential neighborhoods on both sides of the river These projects should continue to be regularly considered in future planning.

4. The construction of full twelve foot lanes with ten foot shoulders will increase the speed of traffic dramatically in this a residential neighborhood. Consideration should be made to having ten or eleven foot lanes with narrower shoulders (as was done on Fisherville Road). Another example of where this was done is on the newly constructed Bristol/New Hampton Bridge over the Pemigewasset River. Sidewalks should only be constructed if they can be plowed. Presently, there are no other sidewalks in the immediate area and would need to be constructed.

5. I do agree that the removal of the existing bridge is best for the City. Maintenance of historic structures can be very costly. An example of the placement of a historic plaque with Pictures is also at the Bristol/New Hampton Bridge. There also, as a preservation measure, the granite blocks from the abutments were used as steps for recreational access to the river.

Thank you for considering my comments. I will be glad to discuss the project with any members of the project team.

Ed Welch
356 Mountain Road
Concord, NH 03301
(603) 224-5792

Roberge, Edward

From: Jerry Zoller <JZoller@dot.state.nh.us>
Sent: Friday, February 08, 2013 1:36 PM
To: Sewalls Bridge Group
Cc: * Engineering
Subject: Sewalls Falls Bridge - public comment from Jerry Zoller

City Engineer, Ed Roberge,

- I attended the public info meeting of January 23, 2013 as well as the original meeting of Nov 16, 2004. I have reviewed the on-line reports.
- I have lived close to the bridge at 10 Sewalls Falls Road since 1978 and cross it a lot.
- I work in the NHDOT Bridge Design office and am familiar with truss rehabs, and the other related issues involved.
- I comment in this email as a citizen of Concord and neighbor of the bridge, and not as a DOT official, but as a Professional Engineer familiar with the issues.

- I commend City Engineer, Ed Roberge, for his presentation at the public info meeting and his answers to questions from the public.
- I commend the City for hiring CHA to conduct the structural analysis in March 2012 and perform the load rating, and for hiring historian Richard Casella.

- I support Ed Roberge's recommendation to remove the existing truss bridge and replacing it with a new bridge.
- I support the "on-line" option (Alternative 8, I believe). As described in the "Alternatives Summary Matrix" it best serves the long-term needs of the City.
- Closing the bridge will impact people's travel habits somewhat, but it is necessary to accommodate construction, raising the grade, and on-line construction.

A couple of technical comments of support for the proposal to demolish the existing truss:

- The structural analysis makes it clear that an enormous amount of member replacement and strengthening is required to bring the truss up to legal loads. By default this analysis, as illustrated by the truss sketch with the 'red' members, is reason enough to demolish the truss.
- However, I assert that if the truss was to be salvaged, the enormous work involved would make it unfeasible anyway.
- For example, the truss would need supporting with temporary piers during member replacement.
- The condition of the lower truss connections will be much worse than even reported once the rivets are removed and the plates examined, due to rust and pack rust, section loss and deterioration.
- The issue of lead-bearing paint is under reported. In actual fact, during rehabilitation, provisions would have to be made to catch any LBP debris from falling into the river, even during member replacement. There would be additional costs associated with OSHA mandated worker protection for even rivet busting and other demolition activities.
- Keeping the truss would require repainting it, and dealing with the LBP will be expensive. The amount of long-term success with a protective coating system is limited by the built-up lattice members with many crevices and faying surfaces which will leak rust stain for years to come.
- As was pointed out at the info meeting, a truss is non-redundant and vulnerable to impact damage and failure. For example, a truss bridge in the early 1970's in Franconia collapsed when a truck approached and the

load slipped off the bed and into the end portal member, taking the bridge down and the truck with it. The 2007 collapse of the Minnesota I-35W bridge should make us sensitive to this point as well.

- Lastly, even if replacing the bad truss members and restoring the truss was economically feasible, when the work is all done we would still be left with a narrow, short, vulnerable structure that is inadequate to carry traffic, pedestrians, and bicyclists.

A few final considerations about the new bridge:

- In my view the F&G parking lot will be the staging area for the Contractor during construction. The boat launch and rec trail features will have to be relocated during the construction phase.
- The term "signature" bridge is often mentioned. My recommendation is that that not be a consideration. This location is neither a gateway or special in an of itself. The bridge type selected should be based on cost-effective design. For a two-span bridge this would be a deck plate girder. For a one-span bridge to eliminate pier work in the river, the bridge could be a deck truss, or possibly a through-arch. But the choice should be based on what is best not what is "signature".
- For a long-life steel coating, I recommend considering metallizing. It is expensive but it is also long-lasting. A local shop here in NH has a metallizing capability, namely, Structal Bridge in Claremont.

Thanks.

For your consideration.

Jerry

Jerry S. Zoller, P.E.
10 Sewalls Falls Road
Concord, NH 03301
603-228-1448
soccerbridge@comcast.net

Roberge, Edward

From: Roy Schweiker <royswkr@hotmail.com>
Sent: Sunday, February 10, 2013 5:55 PM
To: Sewalls Bridge Group
Subject: FW: Sewalls Falls bridge project, Concord NH, BRF-X-5009(021)

From: royswkr@hotmail.com
To: jamie.sikora@fhwa.dot.com; bridgecomments@concordnh.gov; roy.schweiker@juno.com
Subject: Sewalls Falls bridge project, Concord NH, BRF-X-5009(021)
Date: Sun, 10 Feb 2013 17:53:58 -0500

Hi,

I felt that the alternatives presented at the January 23, 2013 public meeting were not sufficiently inclusive, and would like the Section 106 review process to include the following issues:

* Preservation of at least one span of the existing bridge intact on dry land, possibly adjacent to the Fish&Game parking area over the settling basin or maybe in the widened part of the state railroad right-of-way (or there's always the industrial park). This would allow historians a closer look at a rare hundred-year-old bridge type without fear it would collapse a long distance or block the channel if it did.

* Consideration of a downstream location alternative which would avoid use of the conservation land on the NW corner and allow the existing bridge to be used as a temporary saving maybe \$1 million on construction. The excuse given by the consultant for ignoring this was that the 2008 consultant had been told to avoid the boat ramp area - as this is an impossibility, why not look at the chance to save \$1 million.

- Roy Schweiker, Concord NH

February 11, 2013

Regarding: Sewalls Falls Bridge

Thank you for holding a public meeting at Beaver Meadows on Wednesday, January 23, 2013.

I would like to see the Sewalls Falls Bridge closed permanently for vehicular traffic and the area used strictly for outdoor recreation. I would also like to see the Boscawen/Penacook exit developed (rather than Sewalls Falls) with better on/off ramps, gas stations, etc. Cars driving through downtown via that particular exit would help expand the Penacook area better with new local businesses such as restaurants, shops, a grocery store etc, reaching the committee's goal without construction on the Sewalls Falls area.

Unfortunately, the decision has been made to repair or replace the bridge and it appears there is now talk of expanding Monitor Road to Whitney Road Extension for future development and perhaps to have an on/off ramp with access to Route 93 via Sewalls Falls Road.

All I can say is, UGH.

When I purchased my home at 172 Sewalls Falls Road in 2009, the proximity to the Sewalls Falls Recreational Area was an integral part of my decision As a person who enjoys the outdoors, I've utilized the area to walk, run, swim, cross country ski, snowshoe and occasionally to relax and read a book. I have also viewed a variety of wildlife such as deer, fox and loons and bald eagles,. Though it's within city limits, it can be a quiet and peaceful area and **I enjoy it very much.**

However, I'm afraid that this area will change dramatically in the next several years, with the addition of a new bridge. I'm now questioning if purchasing a home in this area and in Concord in general, was the right thing to do. Yet, I truly enjoy living in Concord and I want to protect its resources. .

With this new project, I am concerned about several factors:

- Increased speed – the speeding on Sewalls Falls Road is horrible. With the new bridge and newly paved roads leading to the bridge, the number of speeding vehicles will increase.
- Usage of large/heavy trucks at all hours of the day and night.
- Increased noise. More traffic, more truck usage brings more noise.
- Lack of sidewalks on Sewalls Falls Road (specifically from Manor Road to Abbott Road) makes it impossible to walk or run without the fear of being hit by a speeding car. The few sidewalks that are on Sewalls Falls Road have significantly pot holes. Increased traffic will make this more dangerous for pedestrians and especially children.
- Increased light pollution. Will the bridge have lights?

- What will become of the intersection at Sewalls Falls Road and Manor Road? A traffic light? A roundabout? This is directly across from my house and therefore I am not interested in having that intersection changed to process more traffic.
- Loss of natural resources. It pains me that this new bridge will encroach on surrounding woods.

I propose the following:

- We close the Sewalls Falls Bridge permanently and use the area strictly as a recreational area.

I am more than happy to speak with you directly about the proposed changes and my concerns. Please contact via the contact information below. Thank you for your time and consideration on this very important and impactful issue.

Respectfully Submitted:

Elizabeth Szelog
172 Sewalls Falls Rd
Concord, NH 03301
603-568-8105

JAMES L. GARVIN
FARRINGTON HOUSE

30 South Main Street · Building 1, Suite 201 · Concord, New Hampshire, 03301
james@jamesgarvin.net <http://www.james-garvin.com>

31 March 2013

Mr. Jamison S. Sikora
Environmental Program Manager
Federal Highway Administration
New Hampshire Division Office
53 Pleasant Street, Suite 2200
Concord, New Hampshire, 03301

Re : Section 106 Review, Sewall's Falls Bridge,
Concord, 12004, BRF-X-5099(021)

Dear Mr. Sikora:

The NHDOT cultural resources meeting agenda for April 4, 2013, includes a discussion of the Sewall's Falls Bridge project in Concord with the words, "the purpose of this meeting is to confirm that the City [of Concord] has held a public information meeting and that the city council has approved moving forward with the online alternative. Discussions would also include mitigation alternatives as well."

An effects memorandum for project 12004, BRF-X-5099(021) was signed by the Federal Highway Administration, the New Hampshire Department of Transportation, and the State Historic Preservation Office on May 6, 2010 during an earlier planning phase when the project was managed by the New Hampshire Department of Transportation. That document memorialized the purpose of the project, based on planning between 1999 and 2010, as the rehabilitation of the National Register-eligible Sewall's Falls Bridge as a one-lane bridge, with a second, modern, one-lane bridge to be constructed for the opposite lane of traffic adjacent to the historic bridge.

This project ceased to be managed by the New Hampshire Department of Transportation and became municipally managed by the City of Concord in October 2011. The single public informational meeting that has been held on this project occurred on January 23, 2013. At this meeting, for the first time, public participation under Section 106 of the National Historic Preservation Act was invited.

During the fifteen months between the city's assumption of management responsibility for this project and the first public informational meeting, the City of Concord commissioned a load

Garvin to Sikora, 31 March 2013, page 2.

rating report on the bridge. At the behest of the State Historic Preservation Office, the city also commissioned a report from a bridge historian that analyzed the effects on the bridge's National Register eligibility of rehabilitating the structure as outlined in the load rating report.

The load rating report concluded that Sewall's Falls Bridge "can be rehabilitated and strengthened to support [current] legal highway loads (HL93)." The historian's report concluded that the proposed "conversion of the bridge to carry a single lane of traffic has made the job of rehabilitating the bridge to carry modern loads feasible from the standpoint of maintaining the historic integrity of the bridge."

The project that has evolved since the city's assumption of management of this project in 2011 would entail the removal of the historic bridge to permit construction of a modern two-lane bridge on the same alignment. As now defined, the project would have the greatest possible adverse effect upon the historic bridge despite the findings of the city's engineering and historical consultants that it is feasible to rehabilitate Sewall's Falls Bridge, and that rehabilitation as required to attain required live load capacity will maintain the historical integrity and National Register eligibility of the bridge.

Transformation of the character of this project occurred without public participation as defined in 36 CFR Part 800, §800.3(e) and (f). Participation by newly identified consulting parties will occur for the first time at the meeting of April 4, 2013. At that time, participants in the meeting may wish to suggest that public participation be broadened by inviting additional consulting parties under §800.3(e) and §800.6(2).

I request that the purpose of the meeting of April 4, 2013, be defined as the discussion of avoidance of adverse effects on Sewall's Falls Bridge as required under Section 106 review. If the consulting parties are unable to resolve proposed adverse effects after thorough discussion, I will request that participants in the review seek guidance from the Advisory Council on Historic Preservation under §800.2(b)(2) unless the Council has already agreed to enter into the Section 106 process. Given the previous lack of opportunity for the newly identified consulting parties to participate in planning for this project, it is inappropriate to consider mitigation for adverse effects that can be avoided.

Sincerely,

James L. Garvin
Consulting Party

Natural Resource Agencies Monthly Meeting Minutes

Jan 7, 2001

Concord, BRF-X-5099-(021), 12004

Mark Hemmerlein gave a brief introduction to the project. He indicated that the project is located north of Concord proper and south of Penacook and involves the replacement of the bridge that carries Sewalls Falls Road over the Merrimack River. The project is scheduled for a Public Hearing in approximately one year and the Department has developed three alternatives. There are a number of competing issues associated with this project. Mark had met with Mike Amaral, Susi Von Oettingen and John Kanter at the bridge site. They indicated that there were State Endangered Brook Floater Mussels at the site. The habitat in the river is good: Rocky bottom, sandy pockets, and good flow. The area is also a good salmon fishery. The NHFGD release their brood stock at this location. Also, on the north side of the bridge there are large white pine trees that could be used by bald eagles for roosting. Bill Ingham noted there is a lot of recreational activity in the area. Mark noted that property in the northwest quadrant is LCIP with a recreational rider and therefore 4(f). The existing bridge is a double truss, one of two in the state and is considered eligible for the National Register of Historic Places. The bridge scored a 26 out of 30 points and is the second highest scoring bridge in the state. The bridge was constructed in 1928 and the flanking span was constructed after the 1938 flood to convey more water through the bridge site. Since the construction of the flanking span, Hopkinton-Everett and Franklin flood control dams were constructed. The flanking spans are no longer needed. There is also a NH Fish and Game Access Facility in the southwest quadrant of the bridge. Mark has spoken with Rich Tichko at Fish and Game about the potential impacts.

John Butler described the three alternatives that the Department has developed. John reviewed some of the engineering constraints in the area. The Concord Monitor occupies the northeast quadrant of the crossing. There is a private residence in the southeast quadrant of the bridge. There are railroad tracks on either side of the river. The three alternatives consist of: an upstream off-alignment, downstream off-alignment and an on alignment alternative. The upstream alternative can have a curved bridge or a tangent bridge. The upstream alternative has impacts to the LCIP property. The existing profile is essentially flat with a pronounced sag and a crest as the road crosses the river bluff on the east side of the river. To meet the design criteria, the bridge will be sloped up at 2% which would smooth out the profile on the east side of the bridge.

The second alternative is a down stream alternative. This alternative virtually eliminates all impacts to the LCIP property, has minor impacts to the NHFGD access facility and fairly substantial impacts to the residential property. Physically the residence can be saved but there are substantial encroachments onto the property. The impacts will not impact the parking at the NHFGD access facility. The u-back wall from the abutment will nip the end of the turn around for the boat ramp, which is the only functional impact to the access.

The on-line alternative would be slightly downstream of the existing bridge and would require its removal. The new bridge would be tangent and the profile would be raised on the east side of the project. There would not be any functional impacts to the NHFGD access, there would be limited impacts to the LCIP property and there would be some impacts to the residential property.

Harry Kinter asked about the cost of a curved bridge and John indicated that it would cost 10%-15% more. Bill Ingham asked if the old bridge will left in place and John stated that the existing bridge could be left with the off alignment alternatives and would need to come down with the on-alignment alternative. Bill Cass explained there are different factions within the City of Concord that would like to see the bridge either demolished or retained. Bill Ingham expressed concern about people walking out

on the bridge. He was also concerned about the access facility and indicated that there is USFWS money invested at the site. Harry Kinter noted the potential archeology in three out of the four quadrants. Harry asked about the potential use of the bridge and could it be linked to any trails? Mark indicated that there are railroad lines on each side of the river. They are both active in the summer only. The western line is inactive north of Penacook. Various people asked about the condition of the truss. Bill Cass stated that the City has earmarked approximately \$20k for emergency repairs for the bridge. Linda Wilson was quite concerned about the preservation of this bridge. She stated the bridge is an important resource that should be preserved. Harry indicated that it appears that according to 4(f) regulations the off alignment alternatives would be favored. Rich asked about the environmental cost for going off alignment. Mark indicated that both the NHFGD and USFWS were concerned about placing a new pier in the river. Also going to the north we have impacts to the large white pines. There is also brook floater mussels in the river. Mark indicated that we could locate the mussels and relocate them if necessary. Rich asked about a clear span. Any of the alternatives would be a two span bridge, thus requiring a pier in the river. There was some discussion of the alternatives and which one would be favored by the Department. As a Department we were not favoring any alternative over another at this time, and we would have to meet with the City before we could determine a preferred alternative. Mark asked Laura if she had any concerns. She indicated that her Department would prefer any alternative that would not impact the LCIP property. Mark asked if each of the agencies could support an alternative that impacted the mussels or their habitat, if the Department made provisions to relocate them. Both Lori (NHWB) and Rich (ACOE) indicated that they could allow such a proposal to go forward. There was more informal discussion about alternatives. Once we have met with the City, the Department will bring the project back for further discussions.

Aug. 15, 2007

Concord, 12004, BRF-X-5099(021)

This project involves the rehabilitation / construction of the bridge that carries Sewalls Falls Road over the Merrimack River. The project was presented prior to holding a Public Hearing. The alternative that was selected includes constructing a new upstream bridge and rehabilitating the exiting truss. The substructures may need to be reconstructed and may be shared by each substructure. In addition, the flanking spans will be removed as they are no longer needed to pass the 100-year flood. There was a review of environmental issues including the potential eagle roosting trees, brook floater muscles, wildlife passage. The plans have not been reviewed by FHWA

Sept, 15, 2010

Concord, BRF-X-5099(021), 12004

This project involves the rehabilitation of the bridge that carries Sewalls Falls Road over the Merrimack River, and construction of a new bridge adjacent to it. John Butler indicated that at previous meetings the Department discussed alternatives, and ultimately the City decided upon the construction of a bridge adjacent to the existing bridge. Each bridge will carry one lane of traffic. The work would include the rehabilitation/reuse of the existing bridge for northbound traffic with the new bridge used for southbound traffic. New/wider substructure would be constructed for both bridges. The flanking spans at the south abutment would be replaced with fill since there are no longer any flood issues due to the construction of a dam in Franklin. A pedestrian underpass would be constructed at the location of the old flanking spans. Drainage treatment is proposed to the south of the bridge in the area between the road and the NH Fish and Game parking facility at the boat launch to the east. Drainage treatment to the north of the bridge is not feasible due to topographic constraints.

John discussed the environmental constraints associated with the proposed action. On the west side of the bridge is a 29 ac parcel of LCIP land (owned by NH Fish and Game). On the east side of the bridge is a 100 ac NH Fish and Game property which includes the boat launch and parking area near the bridge. The Department is working with NH Fish and Game and through the CORD process to secure the necessary acquisition and easements required on those two parcels.. It is anticipated that the land use would qualify for a de minimis 4(f) determination.

Maria Tur asked about the flanking spans. John replied that the 8 flanking spans would be replaced with fill. With the flanking spans no longer required for flood passage, it is much less expensive to construct an earth embankment rather than reconstructing the bridge spans, and an embankment will have far less long term maintenance costs. Maria indicated that the fill could block passage of animals under the bridge. John indicated that the pedestrian tunnel is proposed to be approximately 10-12' wide/ high. After discussion, including openness ratio to facilitate animal passage, it was determined that the Department would discuss this issue with the City and return to provide follow-up on what could be done to enhance wildlife passage, including evaluation of a larger structure through the fill.

Lori Sommer asked about wetland impacts and the width of the fill at the south approach. It is anticipated that there would be about 5,000 sf of permanent impacts, including work at the pier. Lori asked if there would be compensation for the LCIP impacts. The Department is determining what will happen with those impacts. Lori indicated that the permit may be conditional upon resolution of those issues since some of the wetland impacts are on the LCIP property.

Kevin indicated that since the bridges would essentially match what is there today, the Department is not anticipating that the design would comply with the recently-adopted stream crossing rules, including completing a fluvial geomorphic assessment. This information would not affect the design of the crossing and would only add time and expense to the project. Kevin also mentioned that a mussel survey was completed for pier work on this bridge several years ago. No mussels were identified. The Department acknowledged that another survey may be required prior to construction of this project.

Once the Department has had the opportunity to confer with the City, the project will be reviewed again relative to the animal underpass concerns at the south side.

This project was previously reviewed on the following dates: 1/17/2001, & 8/15/2007.

Nov 17, 2010

Concord, BRF-X-5099(021), 12004

This project was presented by Cathy Goodmen and John Butler. The project involves the rehabilitation of the bridge that carries Sewalls Falls Road over the Merrimack River, and construction of a new bridge adjacent to it. The project involves impacts to the NH Fish and Game boat launch and parking lot on the southwest side of the road and a Land Conservation Investment Program (LCIP) conservation property managed by NH Fish and Game, on the northwest side of the road. This project is being managed by the City of Concord with assistance from NHDOT. Cathy Goodmen noted that it was presented November 8, 2010 to the City Council and approved for construction. NHDOT and the City have received a letter from NHF&G, agreeing that the project is needed and acknowledging that right-of-way will need to be acquired from the two parcels noted above. J. Butler noted that at the September meeting a request was made to address the loss of the approach spans and allow passage for wildlife. The pedestrian underpass, originally designed to be approximately 10 feet wide by 10 feet high and 70 feet long, has been enlarged to be approximately 24 feet wide and 8-10 feet high and approximately 70 feet long. The necessary right-of-way acquisition on the LCIP conservation land is approximately 0.85 acres with some additional temporary construction easements. There will be approximately 2,800 sq. ft right of way acquisition for the new slopes of the roadway and approximately 1.1 acres for permanent drainage easements. The permanent wetland impacts will be approximately 8,000 sq. ft. Jamie Sikora asked if the boat launch can be used by the public during construction. J. Butler said that the boat launch will be open during construction of the bridge, but will need to be closed for a short time when installing the drainage culvert from the detention area, probably for only one or two days. Carol Henderson

noted that NHF&G does not have permission to allow use of this land for road construction. John Butler and Rich Cook noted that they were aware that the proposed right of way has to go to the legislature for final approval. R. Cook also noted that they are waiting for an appraisal of the land before developing the final mitigation proposal. R. Cook also asked for a plan to show the new layout of the drainage swale near the parking area. (C. Goodmen sent this to NHF&G and the Conservation Land Stewardship (CLS) Program after the meeting). It was also noted that the new design removes a smaller amount of trees than the previous design. Rich Roach indicated that the project would qualify for coverage under the NH Programmatic General Permit.

(project website) (NHNHB File #: NHB10-0354) This project was previously reviewed on the following dates: 1/17/2001, 8/15/2007, & 9/15/2010

Dec 9, 2012

Concord, BRF-X05099(021), 12004

Rob Faulkner provided a brief summary of the project's history. The project began in 1999 as a NHDOT Preliminary Engineering Project for the replacement of the Sewalls Falls Road Bridge at which time several alignment alternatives were reviewed. Based on input from the community and City of Concord, the project evolved to include the rehabilitation of the existing truss bridge and construction of a single lane bridge upstream of the existing, which was the preferred alternative (Alternative H) at the conclusion of the Preliminary Engineering Phase in 2010. The project has since been turned over to the City of Concord to be completed as a Municipally Managed Bridge Aid Project and is programmed for FY2014 construction. The results of a detailed inspection and load rating analysis performed by CHA as one of the first steps in the Final Design phase indicated that the existing truss would require extensive rehabilitation in order to carry legal highway loads. In addition, there is a concern as to whether or not Alternative H would meet the long term needs of the City based on potential development and increased traffic demands in the area as well as safety issues associated with the type of structure (non-redundant), roadway alignment, and continuous maintenance needs once the bridge is rehabilitated. As such, the Concord City Council authorized further consideration of two previously evaluated alternatives, construction of a new 2-lane bridge upstream of the existing bridge (Alternative 4) and the on-line replacement of the existing bridge (Alternative 8), to determine which alternative would be best to pursue given the new structural assessment of the rehabilitation Alternative H.

R. Faulkner provided a review of the two alternatives, as summarized below:

Alternative 4 –Off-line Upstream Bridge:

Profile increase at north abutment of +/- 10';
Most impacts to LCIP parcel, potential eagle perch trees, wetlands, and ROW;
Better roadway alignment than Alternative H;
Second highest construction and maintenance cost.

Alternative 8 – On-line Replacement:

Profile increase at north abutment +/- 16';
Least amount of impacts to LCIP parcel, potential eagle perch trees, wetlands, and ROW;
Ideal roadway alignment;
Lowest construction and maintenance costs.

All alternatives would include drainage easements at the Fish and Game parcel for a proposed water quality basin as well as the Concord Monitor due to impacts necessary to their existing water quality basin. Relocation of the freshwater Brook Floater Mussels would need to be performed for all alternatives prior to construction. After further review of the alternatives, the City Engineering Department has prepared a report recommending to City Council that Alternative 4, On-Line Replacement of the existing bridge, be progressed through final design and construction. As such a Public Informational Meeting has been scheduled for January 23, 2013 as part of the Section 106 process, followed by a City Council meeting in early February. Rich Roach asked what the floodplain and wetland impacts were for Alternative 8. R. Faulkner responded that there were about 13,000 sf of wetland impacts and that he didn't have the floodplain impact areas at hand, but noted that the alternative included being

able to push the southern abutment back outside of the currently delineated floodway/floodplain. R. Roach asked if there would be any downstream impacts. R. Faulkner responded that the alternative would have no downstream effects. Mark Kern asked if the City had completed the Historic/SHPO process. R. Faulkner responded that the project was presented at the December 6, 2012 Cultural Resource Agency Coordination Meeting and another meeting would be scheduled following the January 23, 2013 public informational and City Council meetings. R. Roach asked what the land use implications would be by replacing the bridge and whether or not this was accounted for as part of the Bow-Concord Study. He also asked if the proposed water main across the bridge would support future development. R. Roach further stated that if the existing bridge were rehabilitated and kept in service that it might serve as a restriction to hinder future development and enhance conservation of the area. He noted that NEPA requires the consideration of secondary impacts as part of the alternative evaluation. He expressed concern over excessive development and land clearing along the Merrimack River and asked if there were conservation elements included in the City's Planning and Zoning regulations. Ed Roberge confirmed that Concord's zoning regulations protect open space and shoreland areas within the project area. E. Roberge stated that the area in question for future development is currently zoned as Industrial and is considered under the Bow-Concord Study. He also noted that water service did not currently cross the bridge and the area on the north side was already served. However, a new main across the bridge would allow this area to be looped to improve capacity. Carol Henderson noted that Fish and Game recommends reducing the impacts to the potential eagle roosting trees as much as possible. R. Faulkner responded that the on-line replacement option resulted in the least impacts. Henderson commented that any impacts to the LCIP land required legislative action. E. Roberge acknowledged this. Gino Infascelli asked for clarification on the limits of the Bow-Concord planning study and thought that it didn't include the I-93 area in the vicinity of Sewalls Falls Road. J. Sikora noted that the planning study extended to the Exit 17 area.



CITY OF CONCORD

REPORT TO THE MAYOR AND CITY COUNCIL

FROM: Edward L. Roberge, PE, City Engineer

DATE: December 28, 2012

SUBJECT: Status report on the Sewalls Falls Bridge Replacement Project (CIP22)

Recommendation

Accept the attached report by Clough, Harbour & Associates (CHA) summarizing the re-evaluation of preliminary design alternatives, and:

1. accept the City Engineer's recommendation that Alternative 8 (Online Bridge Replacement) is the best project alternative in terms of its overall safety benefits, limited impacts to natural resources, limited need for additional public right-of-way, and lowest construction and life-cycle maintenance costs, and authorize staff to advance Alternative 8 to final design; or
2. affirm the City Council's previously selected preferred alternative (Alternative H – Rehabilitation of the Existing Bridge with the addition of a Second One-Way, One-Lane Bridge on the Upstream Side) and authorize staff to advance Alternative H to final design.

Background

On October 11, 2011, the City Council passed Resolution No. 8507 appropriating funds for project administration, design, permitting, and right-of-way acquisition required for the Sewalls Falls Bridge Replacement Project (CIP #22). Shortly thereafter, the City entered into a municipal managed project agreement with the NH Department of Transportation (NHDOT) and began coordinating the completion of a detailed structural inspection and load rating analysis of the existing truss bridge, the first step required prior to advancing to the final design phase.

Based on the findings of the detailed structural inspection and load rating analysis, City Council authorized staff at its meeting on September 10, 2012 to review previous preliminary design alternatives with the appropriate reviewing authorities and agencies in order to evaluate those alternatives based upon results of the analysis and return to City Council with a final project recommendation.

Discussion

The Council will recall that the previously selected preferred alternative (Alternative H) includes rehabilitating the existing truss bridge as a one-lane bridge for eastbound travel and constructing a new one-lane bridge for westbound travel just upstream or north of the existing bridge. As previously reported, the detailed structural inspection was completed in early March 2012 concluding in a load rating analysis report that was submitted to City Council in September 2012. Where the analysis concludes that the rehabilitation and strengthening of the truss structure will require significant modification or replacement of existing steel elements and the remaining steel elements have limited fatigue life, staff expressed its concerns with the long term safety and structural stability of the truss bridge. The previous evaluation of preliminary design alternatives did not include the findings of this report. In that, serious concerns with condition, capacity, safety, limited structural life due to fatigue, and project capital and life-cycle costs were not completely considered.

At its September 2012 meeting, City Council authorized staff to review the preferred alternative as well as other preliminary design alternatives considered with the appropriate reviewing authorities and agencies involved in the process prior to proceeding to the final design phase. The Council may recall that some 10 to 12 alternatives were developed through the project planning phase where 3 alternatives were considered most compatible with the City's long term goals. Those alternatives include the previously selected preferred alternative (Alternative H), an off-line bridge replacement alternative consisting of constructing a new two-lane bridge upstream of the existing bridge and retaining the existing truss bridge for pedestrian or recreational use or abandoned as a static structure (Alternative 4), and an on-line bridge replacement alternative where a new two-lane bridge would be constructed on the same roadway alignment following the removal of the existing bridge (Alternative 8). All three design alternatives were evaluated based on common design elements and design approach using criteria such as horizontal and vertical alignment, construction complexity and phasing, utilities, right-of-way impacts, natural, cultural, and environmental resource impacts, and capital and life-cycle costs. Other evaluation considerations included remaining service life of the existing steel truss structure as a result of the fatigue analysis, and future growth and traffic use of the bridge.

The detailed report concluded that Alternative 8 (on-line replacement) offers the best opportunity to improve horizontal and vertical alignment, has the least impact to environmental resources, reduces the need for extensive right-of-way, and has the lowest construction and long-term life-cycle costs. However, this alternative would require the removal of the existing truss structure considered historic.

The project team including Engineering staff and CHA met with representatives of NH Department of Transportation (NH DOT), Federal Highway Administration (FHWA), cultural and natural resource review agencies, the Concord Heritage Commission, and others involved in the project development to present the detailed report. Meetings in September, October, and December concluded that the final project alternative must meet the City's immediate, and most importantly, the long-term needs and goals. This includes preservation of cultural and natural resources, controlling initial and long-term costs as well as factors that affect project costs, safety, and the future growth of the Sewalls Falls

Road/Whitney Road project area and the potential for utility extension in northeast Concord and an I-93 interchange.

In order to meet the City's long-term needs and goals, Engineering staff remains concerned with any alternative that maintains the existing truss bridge in a functional capacity to carry legal highway loads. Given that the non-redundant truss structure has a limited remaining fatigue life and extensive modifications are required to meet current service codes, the factors that most control the decision to determine the best project alternative is safety and structural stability. In this case, Alternative 8 is the best project alternative that meets those criteria while addressing the City's immediate and long-term needs and goals.

As this recommendation differs from the previous design alternative preferred by City Council, a public meeting has been scheduled on Wednesday, January 23, 2013 at 6:00 PM at the Beaver Meadow Golf Course Club House to outline the findings of the structural inspection and load rating analysis report to the public and accept comments on the bridge alternatives. Additionally, staff will present the same findings to the Concord Heritage Commission at its meeting on January 3, 2013. The comments generated by those meetings will be reported by staff at the February 2013 City Council presentation.

Therefore, it is recommended that City Council accept the attached report by Clough, Harbour & Associates (CHA) summarizing the re-evaluation of preliminary design alternatives, and accept the City Engineer's recommendation that Alternative 8 (Online Bridge Replacement) is the best project alternative in terms of its limited impacts to natural resources, limited need for additional public right-of-way, lowest capital and life-cycle maintenance costs, as well as its overall safety improvements, and authorize staff to advance Alternative 8 to final design.

/elr

attachments

cc: Tom Aspell, City Manager
Carlos Baía, Deputy City Manager - Development
Brian LeBrun, Deputy City Manager – Finance
Martha Drukker, Associate Engineer
Jeff Warner, Project Manager
Nancy Mayville, NHDOT
Tom Jameson, NHDOT



CITY OF CONCORD

REPORT TO THE MAYOR AND CITY COUNCIL

FROM: Edward L. Roberge, PE, City Engineer

DATE: January 28, 2013

SUBJECT: Supplemental report on the status of the Sewalls Falls Bridge Replacement Project (CIP22)

Recommendation

Accept this report highlighting the discussions from the January 23, 2013 public meeting.

Background

On October 11, 2011, the City Council appropriated funds for project administration, design, permitting, and right-of-way acquisition required for the Sewalls Falls Bridge Replacement Project (CIP #22). Shortly thereafter, the City entered into a municipal managed project agreement with the NH Department of Transportation (NHDOT) and began coordinating the completion of a detailed structural inspection and load rating analysis of the existing truss bridge, the first step required prior to advancing to the final design phase.

Based on the findings of the detailed structural inspection and load rating analysis, City Council authorized staff at its meeting on September 10, 2012 to review previous preliminary design alternatives with the appropriate reviewing authorities and agencies in order to evaluate those alternatives based upon results of the analysis and return to City Council with a final project recommendation.

Where this review includes consideration of alternatives in addition to the previously selected alternative, staff announced that in accordance to the requirements of the National Historic Preservation Act (NHPA), Federal agencies and recipients of federally funded projects are required to consider the effects of their projects on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on federally funded projects prior to their implementation. In that, staff scheduled a public review meeting on Wednesday, January 23, 2013 to update the public on the status of the project, report the findings of the analysis, and seek input on the design alternatives presented, as required in Section 106 of NHPA.

Discussion

The January 23, 2013 was attended by well over 90 residents, staff, officials, and parties interested in the project. The public review meeting included a presentation by the project design team on the three project alternatives considered. Those alternatives include the previously selected rehabilitation of the existing truss bridge and construction of a new one-lane bridge alternative (Alternative H), an off-line bridge replacement alternative consisting of constructing a new two-lane bridge upstream of the existing bridge and retaining the existing truss bridge for pedestrian or recreational use or abandoned as a static structure (Alternative 4), and an on-line bridge replacement alternative where a new two-lane bridge would be constructed on the same roadway alignment following the removal of the existing bridge (Alternative 8). The project design team reported that the replacement alternative offers the best opportunity to improve horizontal and vertical alignment, has the least impact to environmental resources, reduces the need for extensive right-of-way, and has the lowest construction and long-term life-cycle costs. However, this alternative would require the removal of the existing truss structure considered historic.

At the conclusion of the presentation, staff opened the meeting to public comment. See attached Public Information Meeting Questions and Comments. In summary, the well-attended meeting was positive with a broad exchange of questions and comments ranging from support for the replacement alternative to questions regarding the State and City's engagement of interested parties in the project. Some spoke of reducing impacts to abutting conservation and recreation properties while others suggested mitigation alternatives to consider. There were no negative comments related to the public process. Based on the crowd reaction of applause to a comment made by a resident in support of the replacement alternative, it would appear that the general consensus of the group was in support of the replacement alternative.

Therefore, it is recommended that City Council accept this report and the attached public information meeting notes and following the hearing where public comment is heard, accept the City Engineer's recommendation that Alternative 8 (Online Bridge Replacement) is the best project alternative in terms of its limited impacts to natural resources, limited need for additional public right-of-way, lowest capital and life-cycle maintenance costs, as well as its overall safety improvements, and authorize staff to advance Alternative 8 to final design.

/elr

attachments

cc: Tom Aspell, City Manager
Carlos Baía, Deputy City Manager - Development
Brian LeBrun, Deputy City Manager – Finance
Martha Drukker, Associate Engineer
Jeff Warner, Project Manager
Nancy Mayville, NHDOT
Tom Jameson, NHDOT