BUREAU OF ENVIRONMENT
CONFERENCE REPORT

SUBJECT: Monthly SHPO-FHWA-ACOE-NHDOT Cultural Resources Meeting
DATE OF CONFERENCES: November 5 and 12, 2009
LOCATION OF CONFERENCE: John O. Morton Building
ATTENDED BY:

NHDOT
Tim Boodey
John Butler
Victoria Chase
Jill Edelmann
Darrel Elliott
Jon Evans
Cathy Goodmen
Charles Hood
Robert Juliano
Marc Laurin
Jim Marshall
Joyce McKay
Mark Richardson
Matt Urban
Chris Waszczuk
C.R. Willeke

Federal Highway Administration
Jamie Sikora

NHDHR
Edna Feighner
Jim Garvin
Peter Michaud
Beth Muzzey
Linda Wilson

Town of Campton
Sharon Davis
Charles Wheeler

CMA Engineers
Roch Larochelle

DuBois & King
Bob Durfee

Historic Documentation Co.
Richard Casella

Hoyle Tanner
Sean James

HSI
John Vancor

Town of Littleton
Ron Bolt
Edward Boynton
Rep. Lyle Bulis
Chuck E. Connell
Eddy L. Moore
Rep. Brian Ward

Matthew Moore Civil Eng.
Matthew Moore

City of Nashua
Leon Kenison

Nashua RPC
Tim Roache

Quantum Construction
Jennifer Reczek
Anna Giraldi

Town of Salem
Bob Puff

Stantec
Andre Betit
Mike Leach

Tidewater Environmental
Jamie Paine

UVLSRPC
Nate Miller

VHB
Sally Gunn
Frank O'Callaghan
Pete Walker
Rita Walsh

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

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November 5, 2009

Laconia SP-RR-LSB(1)
Participants: Darrel Elliott, Matt Urban, NHDOT

The Department is proposing to sell 226,809 sq ft of railroad property to abutters on the Lake Shore Branch (Lakeport) Railroad Corridor in the Town of Laconia. The subject property was reviewed in the field by Matt Urban, Environmental Manager and Joyce Mckay, Cultural Resource Manager.

Matt Urban presented the aerial images of the property location to SHPO. Due to the close proximity of Lake Winnipesauke and the relatively flat terraces, SHPO requested Phase 1A/1B archaeological survey.

Matt Urban informed SHPO that we would be using some available funds to conduct the surveys prior to the sale of the property to free up the corridor from potential restrictions that might impact the value of the land.

Campton 12407 (no federal number yet)
Participants: Sean James, Hoyle Tanner; Rich Casella, Historic Documentation Company; and Matt Moore, Matthew Moore Civil Engineering; Charlie Wheeler and Sharon L. Davis, Town of Campton; Jim Garvin, NHDHR

This project includes an engineering study for the rehabilitation of the Blair Covered Bridge. The study phase of the project is being funded through the NHDOT Municipal Bridge Aid Program. A funding application through the National Historic Covered Bridge Preservation Program is pending. Hoyle Tanner is treating the project as if it had federal funding. It was noted that 1829 Blair Bridge is the only Long Truss in the state, and it is therefore very significant.

Sean James, PE, SECB of Hoyle, Tanner submitted an NHDHR Request for Project Review Form with additional photos of the bridge, approaches and substructure. Campton Selectboard members Sharon Davis and Charlie Wheeler, Town consultant Matt Moore and Rich Casella from Historic Documentation Company, Inc. were also in attendance. Hoyle, Tanner is currently completing an engineering study for a complete rehabilitation of the bridge, the extent of which has not been determined. S. James noted that Arnold Graton worked on the bridge in 1977.

Initial site observations and data collection has been completed and the bridge was found to be in good to poor condition depending upon the component. A summary of the major components of the bridge follows. The trusses are generally in good condition with some areas in poor condition due to rot and breaks in chord splice members. The decking is heavily worn and loose, while the floor beams vary in condition from good to poor. The bridge has sufficient upper lateral bracing, however the lower lateral bracing is limited and the connection of it to the trusses are poor. The

arches are in fair condition with the exception of the rods, which are in poor condition. It is anticipated that the arches will be retained and new rods and needle beams utilized in place of the direct connection of the rods to the bottom chord.

As a basis of discussion, the rehabilitation is expected to include replacement of the existing metal roof with a standing seam metal roof, repair or replacement of wooden bridge members, realignment of the truss, installation of fire protection systems, minor approach pavement, installation of lighting, reconstruction of some wing walls, repairs to the abutments, and installation of steel sheeting around the bridge pier.

All ground disturbance is expected to be within the right-of-way and within 150’ of the ends of the bridge. The disturbance would be made for replacement of approach pavement and potentially installation of underground utilities to the bridge. Edna Feighner indicated that this is a very archaeologically sensitive area, and a Phase IA investigation would likely be required if there is ground disturbance outside the pavement limits.

R. Casella of Historic Documentation Company, Inc. presented an overview of his work on the project to date including review of the bridge with Hoyle, Tanner engineers and review of Town and State files. R. Casella presented a draft outline of proposed NH Covered Bridge Project Permitting and Reporting Guidelines. Recently Historic Structures Reports (HSR) have been requested by NHDHR for Covered Bridge Projects, however the HSRs were not designed for covered bridge projects. Therefore the intent of this document is to provide a framework for NHDHR project review specific to covered bridges in the state. J. Garvin indicated that this outline is the sort of information NHDHR has been looking for. He will review the document in detail and provide review comments.

There was additional discussion on the arches, lighting, fire protection, and abutment monitoring. R. Casella's research indicates that the arches were most likely added in 1876-7 after the bridge was completed. The arches appear to have been added by a different builder than the bridge builder. S. James noted that it is proposed to replace the arch rods due to condition and add needle beams under the bridge due to the poor detailing of the arch rods and steep angle by which they connect to the bridge. The number of rods would be reduced and the sharp out of plane loading that they currently impart to the bridge would be eliminated. J. Garvin noted that needle beams are a traditional method used with added arches and this option appears reasonable. J. Garvin also noted that NHDHR is generally in favor of adding fire protection to covered bridges and does not object to lighting. The preliminary results of the substructure review were discussed. There was some discussion on possible rebuilding of portions of the substructure along with long-term monitoring.

Portsmouth, X-A000(357), 14417
Participants: Roch Larochelle, CMA Engineers

This project will involve the construction of a dedicated bike/pedestrian path southerly along Grafton Drive beginning at its intersection with Corporate Drive, continuing along a portion of NH Route 33 to the intersection with Portsmouth Avenue and continuing towards the Greenland Town Line. The total length of the project is estimated at approximately 1.7 miles. Aside from the

purpose stated above, it is intended to provide for improved access at the southern Tradeport Entrance as part of the "Great Bay Bicycle Loop" which is a designated State bicycle route.

Based on input received at the November 6, 2008 Cultural Resource Meeting regarding a nearby Native American site within the adjacent public golf course, a Phase IA Sensitivity Assessment was requested and completed by Independent Archeological Consulting, LLC (IAC). The results of the study were compiled in a Phase IA Short Form that was transmitted to the Department for review and concurrence on October 21, 2009. The report recommended no further study for the subject site, and concurrence was received by NH DHR on October 23, 2009.

The group was informed that the project is moving forward as originally described. The Environmental Document and Resource Agency Contact letters are in the process of being prepared and the completed Environmental Study will be submitted to NHDOT for review and approval later this year. All permanent work is to be completed within the existing right of way or on Pease property however there will be a need for several construction easements to complete the project. A Memorandum of Effect noting "No Historic or Archeological Properties will be Affected" was signed by FHWA and NHDHR.

Laconia, 15303 (no federal funds)
Participants: Bob Durfee, DuBois & King (RDurfee@dubois-king.com)

This project addresses the Main Street (Route 106) Bridge over the Winnipesaukee River (NHDOT Bridge No. 124/047). The bridge was build over three years in 1968, 1969, and 1970 in three sections (Beacon Street East, Main Street, & Beacon Street West). The bridge is a steel girder bridge with a concrete deck.

Bob Durfee provided a brief overview. The bridge is to be rehabilitated, and includes replacement of the concrete deck, repairs to steel girders and painting, and repairs to the concrete substructure (abutments and piers). Roadway approach pavement will be reclaimed and repaved. All construction will occur within the existing ROW.

The Committee determined that there are no archeological or historic properties within the project limits. The project will have no historic properties affected. No federal funds are included.

B. Durfee will complete a Memorandum of Effect form, which was signed at the meeting.

Newington-Dover, NHS-0271 (037), 11238
Participants: Victoria Chase, ROW, Marc Laurin, Bob Juliano, and Chris Waszczuk

The status of the Pinkham Barn acquisition and advertising schedule for relocation was discussed. V. Chase stated that the Bureau of ROW is anticipating making an offer to the owners in mid-December. To meet the construction schedule, the barn will need to be relocated within 10 months from the 11238L contract's advertising date (April 2010). J. McKay stated that there is a need to finish the documentation of the interior, but this could only be done once the barn is acquired and

all the objects stored in the barn can be removed. L. Wilson inquired about the Commissioners' recent statement that DOT would look into relocating barns that are to be impacted by the Department to Welcome Centers or for other uses by the Department. V. Chase thought that due to the time restrictions with this contract it would be difficult for the Department to pursue this option. L. Wilson stated that there should be a lot of interest in the seacoast area for the purchase of the barn. She will provide J. McKay with a list of where to advertise to better reach those who have an interest in acquiring old barns. J. Garvin stated that the barn would be able to be disassembled for relocation, and would probably only take a week to remove it. It was agreed that the barn will be advertised for a month with covenants, then for 2 weeks without in the Union Leader, Foster's, Portsmouth Herald, with Beverly Thomas of the Preservation Alliance, and other appropriate publications provide by L. Wilson.

R. Juliano presented the impacts that will occur to the Dover side abutment and approaches of the General Sullivan Bridge (GSB). J. McKay stated that large format documentation of the abutment has been completed, and archaeological investigation is on-going, though there does not seem to be any archaeological concerns in this area. R. Juliano described the new GSB pedestrian/bicycle access bridge to be constructed with the 11238L contract. The design will eliminate a good portion of the abutment, and the truss will be visible from the Hilton Park Access Road. The pedestrian bridge will be a constant 4% grade, with weathering steel and vertical rail elements. J. Garvin suggested that the rails be painted green to match the GSB. C. Waszczuk expressed concern with maintenance of the paint on the structure. It was agreed that anodized or powder coat that would match the green color of the rehabilitated GSB would be specified for the rails and would lessen maintenance concerns.

November 12, 2009

Walpole-Charlestown, X-A000(487), 14747
Participants: Jon Evans and CR Willeke, NHDOT; and Nate Miller, Upper Valley Lake Sunapee RPC (nmiller@uvlsrpc.org)

This Context Sensitive Solutions (CSS) project involves the reconstruction and associated improvements to a 2.7-mile portion of NH Route 12 beginning at Main Street in North Walpole, continuing to NH Route 12A in Charlestown.

C.R. Willeke and Jon Evans indicated that the Public Advisory Committee (PAC) recently chose a preferred alternative. This alternative is known as alternative 3-2-3. C. Willeke indicated that given the length of the project and the various constraints located along the corridor, the project area was broken into three sections. Option 3-2-3 is a blend of two of the alternatives, which were examined during the CSS process (alternatives 2 and 3). He indicated that this alternative involves moving the railroad and roadway to the east away from the river in the southern and northern sections and slightly shifting the roadway to the west in the middle section. Preliminary Design plans of the preferred alternative are available online at:
http://www.nh.gov/dot/projects/walpole14747/documents/plan_323.pdf.)
C. Willeke explained that the greatest constraint in the southern section was the Connecticut River, and as a result the railroad would be shifted towards a moderately steep slope to the east, and then the roadway would be shifted accordingly. This may require impacts to several potential

archaeologically sensitive areas to the east of the railroad. In the middle section, the hillside to the east becomes much steeper and as a result the roadway would be widened to the west. This would require impacts to several wetlands associated with Meany's Cove, but would avoid substantial cuts into the hillside of Fall Mountain. In the northern section, the railroad will be shifted to the east to allow the roadway to be widened to the east. This would avoid impacts to the Connecticut River but would require moving the railroad to the east and impacting an existing stone block retaining wall, adjacent to the Augustinowicz property (parcel 25). The existing banks of the Connecticut River and other slopes within the project area still need to be further evaluated by NHDOT geotechnical engineers to determine the magnitude of any long term stability issues and any necessary slope treatments.

J. Evans and Joyce McKay indicated that a Phase 1A archaeological assessment and a District Area Form of the Sullivan County Railroad had already been prepared. J. McKay indicated that the District Area Form had included documentation of all known railroad features including the existing drainage features (culverts). J. Evans indicated that the proposed project would impact approximately 7 of the 14 archaeologically sensitive areas identified in the Phase 1A assessment. Edna Feighner indicated that a Phase 1B archaeological assessment would be necessary for any of the previously identified archaeologically sensitive areas that would be impacted in association with the proposed alternative and its drainage swales.

Linda Wilson asked if the granite blocks from the retaining wall adjacent to Parcel 25 could be reused in the construction of the proposed retaining wall. J. Evans and C. Willeke indicated that this might be possible and had been discussed, however further engineering is still needed to determine this possibility.

L. Wilson indicated that she felt the extensive public involvement included in the CSS process had produced a reasonable alternative while still meeting the project purpose and need. She did indicate however, that some of the details of the mitigation package still need to be worked out.

Weare 14339 (no federal number)
Participants: Jamie Paine, Tidewater Environmental Planning (jameson@tidewaterep.com)

Jamie Paine of Tidewater Environmental Planning, LLC presented the project to the group. As part of a municipally managed NHDOT Bridge Aid Project, the Town of Weare proposes to replace the Peaslee Road Bridge (State Bridge No. 125/141) over the Piscataquog River. The existing structure, built in 1940, is a single span, one lane, beam girder bridge, with a cast-in-place concrete deck. The single lane bridge is 63 feet (ft) in length and 17.8 ft wide, 15 ft curb to curb.

There is currently a problem with roadway flooding on a regular basis during large storms. The subject bridge was substantially flooded during May 2006 storm events. The bridge, transition, and end approach rails are all substandard. The overall condition of the existing bridge warrants complete replacement of the structure at this time. The bridge connects to two dwellings, one of which has Italianate features.

PROPOSED DESIGN

The proposed design for the project will maintain the same horizontal roadway alignment and allow for two lanes (24 ft curb-to-curb as recommended by NHDOT). The proposed typical is approximately 29 ft wide between the tops of side slopes (24 ft road plus 2 x 2.5 ft wide guardrail panels). The clear span of the bridge is currently estimated to be approximately 100 ft, placing the abutments on the outermost banks of the river. If the span stays at 100 ft in length, the proposed bridge is expected to be a steel plate girder bridge with a concrete deck. If the span is ultimately reduced to 90 ft or less, the recommended structure type would be either a rolled beam bridge with a concrete deck or a precast concrete butted box beam bridge.

In addition, the road will be raised in some areas up to five or six feet to minimize flooding. This work would provide 1.5 to 1 stone slopes on the sides of the road to minimize impacts. Several mature trees will need to be removed along the project corridor.

A final location for a temporary bridge has not been selected. However, the preference is expected to be the downstream side as it would have less wetlands impacts. The temporary bridge profile will probably be designed so that it falls somewhere between the existing and proposed profile of the permanent road to minimize grade differentials when traffic is switched from one to the other. A copy of NHDHR's Request for Project Review (RPR) Form was completed, and provided to E. Feighner.

NHDHR/FHWA Determination
L. Wilson and E. Feighner determined that the project would require additional information to be provided to determine the project's impacts on historic and archaeological resources. E. Feighner requested that a Phase IA/IB (if needed) be completed to review for archaeological sensitivity. L. Wilson requested that a brief Inventory Form (Front Form) be completed for the bridge, but none was needed to the dwelling.

Northfield 13698 (no federal number)
Participants: Anna Giraldi, (agiraldi@quantum-cc.com) and Jennifer Reczek (jreczek@quantum-cc.com), Quantum Construction Consultants

Quantum Construction Consultants, LLC (QCC) has been retained by the Town of Northfield to undertake an engineering study for the proposed improvements to Bean Hill Road. The limits of work extend from the intersection with NH Route 132 southeasterly for approximately 6350 LF to just passed the Williams Brook crossing. The terrain consists of rolling hills, with two main uphill sections from Sta. 100+00 to112+00 and Sta. 116+00 to 144+00. Currently, along these stretches, there are large roadside ditches on either side of the road, which overtop under heavy rainfall. There are also several noticeable ledge outcrops over the length of this segment of roadway.

QCC stated that the roadway has a Prescriptive Highway Easement (PHE) defined by the presence of stone walls. QCC has based the design on a 40-foot width, which is within the limits of the stone walls present along this section of roadway. The design intent is to stay within the PHE with no disturbance to stone walls.

There are three proposed alternatives for the project. Each alternative includes the same drainage improvements with differing approaches to roadway reconstruction. The alternatives include: 1.) reclamation of the existing pavement, excavation of 18" depth to allow for reconstruction of the

roadway box and repaving, 2.) reclamation and installation of geo-grid and 6" of crushed gravel and repaving, and 3.) reclamation and repaving. In all cases the existing roadway width of 20 feet will be preserved where there is open drainage and increased to 26 feet where new closed drainage systems are installed.

Drainage improvements will consist of a combination of 1.) closed drainage along the bottom of the two steep hill sections; 2.) open swales and driveway culverts; 3.) replacement of cross culverts; 4.) the possible slip-lining of the culvert at Sta. 163+00; and 5.) installation of under drains.

Cultural resources exist along the corridor as evidenced by stonewalls and traditional farm fields and structures. As work is to be confined to existing PHE, there will be not impacts to these resources. NHDHR was pleased to know that QCC's proposed plan would not be impacting the stone walls and thought that the closed drainage in place of large open swales would help maintain the character of the road. QCC was asked to provide photographs of the final project to NHDHR.

The project was considered to have no historic properties affected. QCC will send memo to be signed.

Eastern Railroad Bridge, Hampton
Participants: Charles Hood and Tim Boodey, NHDOT

Charles Hood and Tim Boodey met with the committee to discuss the removal of the Drakeside Road railroad bridge (163/121), and any potential mitigation for the removal of this eligible structure. T. Boodey stated that he had a crew available in the immediate future, and would like to remove the structure before snowfall. The removal of the superstructure will not affect the abutments or the mile marker, and concrete barriers will be placed at the site to close the railroad line at this location. Linda Wilson asked if marketing the bridge was required, and J. McKay stated that railroad bridges do not need to be marketed. It was suggested that instead of marketing the bridge, to contact DRED and snowmobile clubs in the area to see if there was any interest in re-using some of the bridge parts. T. Boodey stated he would provide information to J. McKay and NHDHR, who can then contact some of the above listed groups, and see if there is any interest in re-use. T. Boodey cautioned that the one split beam should not be listed for re-use and will most likely be scrapped during removal. C. Hood suggested that NHDOT and DRED work closely to provide updated and detailed information regarding bridge re-use, creating a list of wanted needs, and surplus bridges. For documentation, L Wilson asked that large format photographs be taken before the structure is removed. The photographs should highlight the significant features.

Salem (no project numbers)
Participants: Michael Leach, (Michael.leach@stantec.com) and Andre Betit, Stantec; Bob Puff, Town of Salem

The meeting began with Michael Leach and Andre Betit from Stantec Consulting Services, Inc. and Bob Puff from the Town of Salem presenting the project. M. Leach opened the meeting with a

brief overview of the project location and description, 4,400 linear feet of roadway reconstruction from Route 28 to Lawrence Road that will be funded by the Town. The project involves impacts to wetlands including replacement of triple culverts with a box culvert. There are several residents along the roadway and some of the work will involve stonewall reconstruction. M. Leach presented the project plans and identified nine house locations along the roadway greater than 50 years old and five stonewall impact areas. There may be a few feet of temporary impacts through limited grading onto these properties. Photographs of the house locations and the five stonewall locations were presented and the photographs were left for the resource agency along with reduced scale copies of the general plans.

Edna Feighner asked who would be reconstructing the walls. A. Betit responded that the contractor would be responsible for reconstruction. E. Feighner asked how they would be reconstructed and what kind of wall is there now. M. Leach identified the wall locations in the photographs with the picture locations and orientation. E. Feighner noted the walls appear to be rubble walls. Discussion followed about how the walls would be removed and replaced in kind. J. McKay noted there is a stone wall manual. A. Betit responded that the walls would be replaced in the same location or about six feet from the roadway location upon completion. Most of the roadway will be in the same location except at one location at a sharp curve where the roadway will be moved about a lane width to the south to provide a safer alignment. The right-of-way and impacts to the abutter at this location are still being negotiated at this time. The question of wall type documentation was brought up.

Linda Wilson asked what a cape cod berm was. A. Betit explained the configuration of a cape cod berm. It is used to contain roadway drainage and to prevent roadway runoff draining toward abutters. A. Betit indicated that the use of a cape cod berm eliminated the need for roadside swales by requiring only some minor grading along the frontage of the lots to match back into the existing grades. Bob Puff noted most of the work will be within the existing right-of-way with some minor grading encroachments of approximately five to ten feet on the abutting lots to match into the exiting grades. E. Feighner asked if there were photos of the new drain outlet location. The photos for the drainage outlet near Lawrence Road were displayed, and M. Leach explained the proposed drainage location was within the 100-foot prime wetland buffer. M. Leach indicated that this location was discussed with the conservation commission and the proposed design will retain most of the larger trees in the area and remove the smaller trees. It was noted that one large tree in the middle of the proposed construction area was to be removed. However, this treetop was severely damaged in the last ice storm. The conservation commission has approved the design.

A finding of no adverse effects was discussed amongst the resource agency members. E. Feighner noted that further stone wall documentation would be needed, which described the type and condition of the walls with photographs to ensure the reconstructed walls would be the same. After construction, photographs would be needed to show that the stone walls were reconstructed as noted on the plans. M. Leach asked about the stone wall manual mentioned earlier, and J. McKay indicated that she would provide a copy. J. McKay and J. Edelmann recommended sending an e-mail to get a copy of the manual after the meeting.

The NHDHR RPR form was completed with the notation of “No Adverse Effect” conditioned with documentation of the stone wall areas through photography and description using the stone wall manual as a guide. A memo will be prepared for signature.

Bob Puff asked for clarification as why NHDOT and NHDHR were involved in a Town funded project. E. Feighner indicated that NHDOT is not involved, but that this meeting time was the easiest way to ensure that NHDHR could meet and get a better understanding of the project. E. Feighner further indicated that NHDHR reviews all projects that require a federal permit such as the Army Corps of Engineers permit required for this project.

Salisbury 14626A (no federal number)
Participants: Rita Walsh and Sally Gunn, VHB; Peter Michaud, NHDHR

Rita Walsh presented the revised Pingree Bridge MOA, Historic Preservation Deed Restriction (Easement) Provisions and Marketing Plan. She also shared the "Truss Bridge for Sale" ad (previously reviewed by NHDHR & NHDOT), which Salisbury had posted in the Concord Monitor. Peter Michaud provided VHB a copy of two additional provisions to be added to the Preservation Deed: Extinguishment and Amendment.

Rita Walsh stated VHB is awaiting Kate Atwood's (ACOE) comments on whether the MOA complies with Appendix C of an ACOE document.

J. McKay stated that since lead testing has been completed by the Town, the provision should be removed from the MOA.

Sally Gunn shared information from a Virginia Department of Transportation document in which VDOT has developed a written interpretation of the *Secretary of the Interior's Standards* for Bridge Repair, Rehabilitation and Replacement Situations as a suggestion for including with the Pingree Bridge historic easement. Peter Michaud skimmed the document. He stated that the DHR is obligated to follow the document referenced in the covenant, the *Secretary of the Interior's Standards*. Linda Ray Wilson requested a copy of the document for their reference and information.

The reconstruction of the stone wall was discussed. There will be notes or special provisions to specify how the work will be completed, and VHB will be observing construction. Sally Gunn stated VTrans has a special provision for stone wall reconstruction, which will be consulted in developing the bid documents for Salisbury. A copy will be sent to the DHR. DHR has a list of stone wall masons, which it will send the list to Sally Gunn.

J. McKay spoke with Doug Gosling of the NHDOT Bridge Maintenance. If the truss is still in the Bridge Maintenance Yard in Franklin after the five-year advertising period, the NHDOT will dispose of it.

NHDOT Bill Cass, Director of Project Development, should be added as a signatory of the MOA.

Littleton X-A000(298), 14307
Participants: Sally Gunn and Rita Walsh, VHB; Representative Brian Ward, Representative Lyle Bulis, Eddy L. Moore, Ron Bolt, Edward C. Boynton and Chuck Connell, Town of Littleton; Jim Marshall, NHDOT

The attendees and NHDHR and NHDOT representatives introduced themselves. Sally Gunn reviewed the outstanding questions from last meeting:

1. Original load capacity of bridge from existing bridge plans is for 15-ton trucks.
2. Alternative routes for concrete trucks, gravel and sand trucks is the Beacon Street Bridge, and downstream is the closest alternate river crossing. The Beacon Street-Highland Avenue intersection has a very steep hill with no landing for the trucks on upper Beacon Street. The trucks cannot travel Highland Avenue to Grove Street through downtown because Grove Street is very narrow and it is posted. The other detour route is through Bethlehem (detour map was shown).
3. The rehabilitation costs were reevaluated based on three recent truss rehabilitation projects in Vermont. The revised rehabilitation project cost is estimated to be $2.6M - $3.1M as compared to $2.9M for a new girder bridge/roadway approach improvements.
4. One alternative is construction of the road adjacent to bridge over tennis court. The tennis and basketball courts were constructed with federal funding (LCWF), and they are a 6(f) resource, so the recreational facility would have to be reconstructed. This would be quite costly.
5. How did VTrans move the through trusses? VTrans has moved more pony trusses than through trusses. The two West Milton through trusses were removed and stored for 4-5 years. A consultant documented the dismantling, and each piece was carefully tagged with metal member numbers. The two through trusses were rehabilitated and set on existing railroad bridge abutments with a new pony truss in Swanton this past year. The cost was high, but the West Milton trusses had been determined to be very significant.

The AASHTO Draft document, the November 2008 *AASHTO Guidelines for Historic Bridge Rehabilitation and Replacement* discussed by Jim Garvin at the last meeting has been finalized. Sally Gunn stated this project was reevaluated using the framework in this document. A copy of excerpts from the document, which are incorporated into these notes in italics below from the online draft document, was handed out and reviewed with respect to the Redington Street bridge.

The background for why we are here discussing this project follows. *While the National Historic Preservation Act of 1966 (amended) and Section 4(f) of the U.S. Department of Transportation Act of 1966 specify nationally applicable processes for considering preservation or replacement of historic bridges (defined as those that are listed in or have been determined eligible for inclusion in the National Register of Historic Places), there is no corresponding protocol that ensures a nationally consistent approach to determining when rehabilitation is the appropriate decision or when replacement is justified.*

Historical significance must also be a major factor in the decision-making process, including whether the bridge is of such significance that a higher level of effort to preserve it is warranted. If a bridge can be improved to an acceptable level in a prudent manner, within the limits of acceptable technology and without adversely affecting what it is that makes it historic, then the bridge is likely a viable candidate for rehabilitation.

The guidelines lead decision makers through four steps that will result in balanced and appropriate decisions. Each step integrates engineering and historic preservation considerations and is intended to achieve iterated assessments.

Step 1, Understanding What Makes a Bridge Historic, *provides an understanding of the historical significance of the bridge and its components.*

Step 2, Applying Structural and Functional Considerations, *discusses how to balance considerations addressing functional and operational inadequacy with historical and environmental issues.*

Step 3, Historical and Environmental Considerations, *addresses any historical and environmental issues not addressed in step 2.*

Step 4, Applying the Decision-Making Thresholds, *explains how to use the information from steps 1 through 3 to define and support when rehabilitation of a historic bridge is feasible and prudent and when it is not.*

Step 1, Understanding What Makes a Bridge Historic. *What Makes the Bridge Historic? Is the Bridge of Average or High Historical Significance?*

The Redington Street Bridge, also known as the Apthorp Bridge, is included in the draft Multiple Property Documentation form entitled, *High Pratt Trusses of New Hampshire 1890-1945,* and the accompanying National Register of Historic Places draft determination of eligibility prepared by Richard Casella. The bridge is eligible under criterion A, history, for its association with the 1927 flood and flood relief funds used for its construction, and Criterion C, engineering significance as a truss and includes its association with its designer, Harold Langley, a prominent New Hampshire Highway Department engineer.

Step 2, Applying Structural and Functional Considerations: *Analysis of Structure, Condition and Waterway Adequacy*. Photos showing the deteriorated condition of the exiting truss were provided. The existing bridge is hydraulically adequate.

Analysis of Load-Carrying Capacity: Every bridge needs to have a structural capacity that is consistent with the road network it services, and how that is achieved must be well thought-out. The existing traffic is 2800 vehicles per day. The bridge is posted for 10 tons, is on the NHDOT Red List, was closed in 1995, and has temporary supports. The Fire Department Response Route is no longer across the Redington Street since the bridge was posted. The posting limits access to that part of town from only one direction. There are 2 Engines (approx. 38,000 pounds each), 1 Tanker (approx. 30,000 pounds), and 1 Aerial truck (68,000 pounds), which cannot use the bridge. Persons Concrete on Railroad Street has 20-30 sand and stone delivery trucks/day, 1-2 cement deliveries/day and 6 redi-mix trucks/day, all of which must go around Redington Street Bridge. Harris Energy on Highland Ave. can only cross the bridge with 600 gallons in a 3000-gallon oil truck and winter driving on Beacon Street can be very unsafe, and the 7-mile detour through Bethlehem is a hardship. Ash Supply on Highland Ave, adjacent to bridge, cannot receive their deliveries via the adjacent bridge.

Analysis of Geometry and Safety Features: The vertical 12’-4” Vertical Clearance Height Restriction has resulted in portal and bracing damage, as well as damage to the trucks which hit them

(anecdotal). Phoenix Pre-cast will be moving into the Norton Pike site on Highland Ave. Their pre-cast manholes are stacked on trucks 13'-8" high, so they will not be able to use the bridge. The bridge width is 21 feet and the sidewalk is 4 feet wide. The sidewalk plow cannot fit on the sidewalk so pedestrians and children walking to school must walk in the road. There is also poor sight distance from the south approach due to the truss members, and the vertical geometry near the railroad tracks is substandard. Also, substandard are the bridge railing and approach transition railing. The Federal Sufficiency Rating is 15.5 of 100.

Step 3, Historical and Environmental Considerations. *Since these guidelines are intended to balance historic preservation with engineering issues throughout the decision-making process, there is likely to be some overlap between steps 2 and 3 as consideration of some historical issues will have already been integrated into the analysis of the engineering data in step 2.*

Are there additional environmental constraints like wetlands, historic archaeological sites, takings, or other NEPA issues that must be considered? If so, do they affect the feasibility of particular methods to rehabilitate or replace the bridge?

- *Can the project goal be achieved using minimally acceptable or tolerable design criteria? Is the project need and purpose statement appropriate to the setting?*
  The *Purpose* of this project is to provide public safety and public mobility: a safe crossing of the Ammonoosuc River with no height, width or weight restrictions and without limiting economic development. The *Need* is defined by the following deficiencies: structural capacity, height restriction, bridge width restriction, limited life span, maintenance costs, limited roadway approach sight distance, substandard roadway approach geometry, economic impact on local businesses.

- *Have the views and values of the community been appropriately addressed?*
  Public Participation: Public Meeting May 2008; Town voted twice to fund this project; Cultural Resources Coordination Meeting 5/8/08; Cultural Resources Coordination Meeting 2/12/09; Cultural Resources Coordination Meeting 11/12/09; Numerous Select Board Meetings; Town's consistent and unanimous desire to remove bridge and replace it with a new, modern, functional, long-lasting structure. This meeting is being attended by two state representatives, all three Select Board members, and the Town Manager. The Select Board later read a statement supporting a new bridge.

Step 4, Applying the Decision-Making Thresholds.
Defining Feasible and Prudent (4f)

The measure of the viability of any proposed alternative is whether it is feasible and prudent. What does feasible and prudent mean? From the engineering perspective, the technology exists to do almost anything given unlimited resources. Thus, much is possible or technically feasible, but is that action prudent? Resources are not unlimited, and there are other engineering and environmental concerns that affect decision-making, like initial cost, life-cycle costs, and any additional environmental issues, from the presence of other historic properties or wetlands to extraordinary disruptions.

There is no inclusive definition of what is prudent and what is not; it varies from project to project based on its need and purpose and existing conditions. It is useful, however, to think of prudent as tempering feasibility with common sense and realistic constraints.

To facilitate advancing projects through the NEPA process using a holistic approach, FHWA has defined a feasible and prudent alternative as one that "avoids using Section 4(f) property [like a historic bridge] and does not cause other severe problems of a magnitude that outweighs the importance of protecting the Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation goals of the statute [23 U.S.C. 138 and 49 U.S.C. 303 and known as Section 4(f)]." Through codification (CFR 774.17(h)(1-5)), which at this writing is in the comment phase, FHWA provides six instances of when an alternative is not feasible and prudent:

1. *It cannot be built as a matter of sound engineering judgment;*

2. *It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;*

3. *It results in severe safety or operational problems;*

4. *After reasonable mitigation, it causes severe impacts or disruptions to other resources, groups, communities or the environment;*

5. *Extraordinary initial and/or life cycle costs; and/or*

6. *Causes unique problems or other factors.*

Life-cycle costs are one of the most frequently used factors in decision making. Agencies have limited resources, and choices must continually be made whether to utilize them on old bridges. There are some historic bridges where cost clearly is not an issue, like our landmark bridges or long bridges that will be rehabilitated without being considered for replacement. But those instances are few and far removed from the problems of allocating resources among the much more common shorter and average significance bridges. It is for these structures where initial construction and long-term maintenance costs are vitally important and often the deciding factor.

Once the issues related to load capacity and functional adequacy and environmental concerns have been addressed, the remaining question is "How much do initial cost (cost of rehabilitation) and life-cycle costs differ from that of a new bridge?" There are no hard and fast rules to answer that question, but it can be said with certainty that if the cost of rehabilitation is less than the cost of replacement, if the life-cycle costs are approximately equal to that of a new bridge, and if the life of the rehabilitation is on the order of 25 years, then rehabilitation can be easily justified even though a new bridge may have a life of 50 years or more. Experience shows that even if the cost of rehabilitation approaches the cost of replacement, as long as the cost of maintenance and the rehabilitation life remains reasonable, rehabilitation of the historic bridge is justified. Rehabilitation should not be considered if the maintenance costs are extremely high and if major work will be required in less than 25 years.
An important point to remember is that rehabilitation must correct the deficient features using methods that do not require constant maintenance. Selected materials and methods should be the best available and in conformance with generally accepted preservation and conservation guidance, even when cheaper and less long-lived methods are available. The prudent approach is to rehabilitate well so that the work does not need to be done again anytime soon and that maintenance costs are not abnormal.

Application of Thresholds Based on Aspects of Adequacy

This step explains how to use the aspects of adequacy – the structural and functional/safety factors – to determine when rehabilitation of a historic bridge is feasible and prudent and when it is not. It is acknowledged that rehabilitation or replacement decisions are largely founded on the ability of a bridge to perform adequately based on aspects of functional and operational adequacy.

Since rehabilitation or replacement decisions are largely founded on the feasibility and prudence of making the superstructure and substructure condition, load-carrying capacity, and geometry/safety features adequate, the thresholds defining when rehabilitation is the appropriate decision and when it is not are based on placing the bridge into one of six groups.

Group I	*Adequate:*	*Superstructure/Substructure Condition*
		Load-Carrying Capacity
		Geometry
Group II	*Inadequate:*	*Geometry*
	Adequate:	*Superstructure/Substructure Condition*
		Load-Carrying Capacity
Group III	*Inadequate:*	*Load-Carrying Capacity*
	Adequate:	*Superstructure/Substructure Condition*
		Geometry
Group IV	*Inadequate:*	*Load-Carrying Capacity*
		Geometry
	Adequate:	*Superstructure/Substructure Condition*
Group V	*Inadequate:*	*Load-Carrying Capacity Superstructure/Substructure Condition*
	Adequate:	*Geometry*
Group VI	*Inadequate:*	*Load-Carrying Capacity*
		Superstructure/Substructure Condition
		Geometry

Bridges with high and exceptional historical significance should be considered for rehabilitation based on a greater level of effort (level of engineering required, cost, etc.) because of the overriding historical significance.

The Redington Street Bridge falls into Group V or Group VI and rehabilitation does not meet the Purpose and Need for the project; therefore, it is not recommended for rehabilitation.

Group V. Load-Carrying Capacity and Superstructure/Substructure Condition are Inadequate; Geometry is Adequate

Bridges that are in this group were originally designed for lighter load requirements (load-carrying capacity) and are deteriorated due to age or poor maintenance practice. These bridges will typically

require some level of structural rehabilitation to improve their condition and load-carrying capacity. Sometimes the amount of work required is too great or the bridge type is one that cannot readily be repaired and/or strengthened, like reinforced concrete rigid frame and T-beam bridges. In analyzing the bridges within this group, group III criteria should be used for load-carrying capacity. Bridges that cannot be improved in a feasible and prudent manner so that both the condition and the load-carrying capacity are adequate may be considered to not have rehabilitation potential.

Group VI. Superstructure/Substructure Condition, Geometry, and Load-Carrying Capacity are Inadequate

Bridges in this group are severely deteriorated and severely deficient. When a bridge is deficient in all categories and those deficiencies cannot be corrected in a feasible and prudent manner, it is very unlikely to have rehabilitation potential. The problems may be too great for keeping it on-system.

Jamie Sikora stated FHWA is the lead federal agency on this project. The section 106 requirements of National Register eligibility and determination of effect are made by the FHWA with NHDHR as a consulting party, and the federal section 4(f) requirements are comparatively stringent. The development of alternatives must be presented in the 4(f) document.

The alternatives, which were evaluated and presented at previous Cultural Resources Coordination Meetings are: do nothing; rehabilitation in-place for continued vehicular use; rehabilitation as a footbridge; construction of a new bridge alongside; construction of a new bridge and relocate the existing for adaptive reuse at another site; construction of a new bridge and storage of the existing bridge at a storage yard for reuse at a later date; and documentation and removal.

Linda Wilson told the representatives from Littleton that removal of the bridge is an adverse effect. Mitigation alternatives for the bridge must be determined. A MOA will be required, which will include documentation of the bridge.

J. McKay stated the outstanding issue from the last meeting of the potentially historic properties was resolved prior to this meeting by NHDOT and NHDHR.

Sally Gunn asked if the bridge project could go ahead as a replacement project. Linda Wilson said she appreciates the AASHTO approach and thinks the other members of NHDHR will agree. Since Beth Muzzey was not present at the meeting, she and Edna Feighner will get together to discuss the request with her. VHB should provide a summary of today's presentation, and then NHDHR could respond. Jamie Sikora reminded the group that FHWA makes the final determination.

Jamie Sikora stated this project will qualify as a programmatic section 4(f) and that the draft categorical exclusion document can be submitted to him, even if the environmental work is not yet complete. He needs to notify ACHP. He said rehabilitation of the bridge would not be considered prudent.

Edna Feighner asked the Town to think about mitigation measures. They have a very important NH historic resource; the bridge is one of a small number of high Pratt trusses in the state. The town was reminded that the bridge will need to be marketed, and up to the cost of demolition can be offered for its relocation.

The Chairman of the Board of Selectman read a statement from the Board. They want to move along the bridge project as quickly as possible. It is the number one infrastructure issue in the Town. They desire a new bridge; and they ask for timely actions.

Representative Brien Ward spoke. He was formerly a selectman in Littleton. He gave a brief history of the three river crossings in Littleton, which were replaced after the 1927 flood, and how the Redington Street Bridge has had the posting lowered to 6 tons and was later closed. The NHDOT did some temporary repairs to increase the posting to 10 tons, and the projected life of those repairs is nearing its end. The bridge width and height cause hardship because the bypass is via Brook Road to Bethlehem and then the Interstate.

Representative Rusty Bulis stated the restriction caused by this bridge is an economic "adverse effect," and a new bridge would be beneficial to the town. He discussed how Littleton has been a good steward of its historic resources, citing the Opera House, the Community Building, and the vibrant Historical Society. He thinks Littleton is doing things right by its historic properties, but the town needs to modernize to keep going economically.

Linda Wilson agreed that Littleton has done much to preserve its historical resources and explained that it is NHDHR's job to ask for alternatives. Sally Gunn has answered these questions today.

NHDHR is as concerned as the Town about funds for rehabilitating existing bridges, which have been bypassed. Chichester is an example of a community that has restored one of its truss bridges. It does take money and support of the community, however. There are other options, which can be explored such as heritage tourism, bridge trails, and working with towns to recognize and support their historic resources.

J. McKay stated the state has applied for a TE grant for a statewide bridge preservation plan. It is one of many projects vying for limited TE grant funding.

Nashua, NRBD-5315(021), 10040A
Participants: Pete Walker (pwalker@vhb.com), Frank O'Callaghan, and Rita Walsh (rwalsh@vhb.com), VHB; Tim Roache, Nashua Planning Commission; Leon Kenison, City of Nashua Engineer; John Vancor, HSI

Major topics discussed at this meeting were:

- Inner circulation within the Nashua Mfg. Co. complex
- Questions regarding removal of sections of Storehouse #2
- Updating information on moving the Waste House
- November 19 public meeting in Nashua

Frank O'Callaghan summarized the alternatives being considered and the various impacts to historic resources that result. He then presented a redesign of the proposed inner circulation north of the NIMCO building (Mill #5) that attempts to use existing roadways as much as possible and that completely avoids the NIMCO building. He also corrected an earlier statement that the canal's

penstock at the north end could be bridged over with the new roadway. It cannot be because the new roadway section would need to be too high.

A reexamination of how the new roadway would impact Storehouse #2 was presented. The building is divided into sections by firewalls, which provide possible locations for removal. Although removal of approximately 125 feet of the north end of Storehouse #2 was anticipated, the need to provide parking spaces for whatever business is ultimately located at the north end of the building requires removal of approximately an additional 75 feet (for a total of 200 feet). Otherwise, the potential for reuse of the building is jeopardized by lack of adequate parking spaces. Other parking alternatives, besides spaces right next to the new north end of Storehouse #2, were discussed, including to the west across the canal, although a bridge would need to be built over the canal to accommodate such parking. A shuttle or other means to provide parking are possibilities in the future for cars and pedestrians. There are no opportunities to gain parking spaces on the new roadway or on adjoining streets.

John Vancor presented updated information on ways to move the Waste House, whose original location is within the new proposed ROW. He reported that they spoke with two moving companies (Paine and Getty) placed on a list provided by NHDHR to get a better idea of costs and feasibility. The approximate cost would be $400,000, which would not include excavation on a new site or purchase or hazardous materials abatement. Mr. Vancor also noted possible new locations for the Waste House within the complex, which might include on the site of the boiler house (although this site would require a new curb cut) and the west end of the parking lot north of the NIMCO building, which is preferred. This location is a the approximate site of a former mill building, so archaeological assessment may be needed. A viable use for the building on a new site is, of course, an important consideration. One possible idea is for the City of Nashua to convert it into a museum facility, which would hold historical objects for display, including a Rollins Steam Engine that the City already possesses. Maintenance costs of the building, however, could become an issue if it does not have an income-producing tenant. The search for original plans of the Waste House continues, both to better understand the building's construction and to assist with the possible move and to ascertain its original uses. Reexamination of photographs of the basement revealed that the piers rest on concrete footers, which confirms that the floor level seen today was original, rather than more recent fill.

A meeting to update the public on the project and proposed new alternatives, especially Alternative 2 and 2A, has been scheduled for Thursday, November 19. The meeting will have an open house format, with workstations for various topics, including Section 106 and results of the recent surveys. The public will be given the opportunity to request consulting party status including historical societies and owners of impacted properties and to understand the Section 106 process. Pete Walker of VHB and Jamie Sikora of FHWA will be present at the meeting. There will also be a second information meeting in February 2010. It was also noted that VHB should send letters of invitation to potential consulting parties, including property owners and historical agencies.

The meeting concluded with a brief discussion of previous archaeological investigations in the Project Area. Independent Archaeological Consulting, Inc. did investigate the selected alternative 4C modified and recommended no further work. A review of historic maps, especially Sanborn

maps, to determine where previous buildings and uses were in the mill yard, both where the new roadway section is proposed and possible new sites for the Waste House, should be examined.

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.

****Memos/MOA's**: Gilford, 15626; Keene, 14891; Laconia, 15303

Submitted by: Joyce McKay, Cultural Resources Manager
Jill Edelmann, Cultural Resources Assistant
http://www.nh.gov/dot/org/projectdevelopment/environment/units/technicalservices/crmeetings.htm