

**Appendix 6**

**Section 106**

**Timeline, MOA, SHPO Concurrence,  
Determination of Effects and Eligibility**

<b>Section 106 Steps and Consultation for the Frank J Wood Bridge Project</b>	
<i>Includes Activities to 12/22/18</i>	
<b>Date</b>	<b>Action</b>
9/23/14	Preliminary engineering funding for Frank J Wood bridge improvement project authorized by FHWA
<b>Steps 1-2: Initiate Section 106 Process, Identify Historic Properties</b>	
October 2015	<p><b>(36 CFR 800.2(c) (1-4))</b> Consulting parties (often called “by-right” consulting parties) were established:</p> <ul style="list-style-type: none"> <li>• “By-right” consulting parties notified: Maine State Historic Preservation Officer, The Penobscot Nation, Passamaquoddy Tribe, the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, Town Representatives of Brunswick and Topsham, Advisory Council on Historic Preservation, and MaineDOT.</li> </ul>
October 2015	<b>(36 CFR 800.4 (a)(1))</b> Area of Potential Affect (APE) established.
11/3/2015	<b>(36 CFR 800.4 (a)(4))</b> Email sent to Tribes (standard protocol) requesting comments regarding historic and cultural properties. Area of Potential Effect sent to Maine Historic Preservation Commission Archaeological staff for review and comments.
11/5/2015	<b>(36 CFR 800.4 (a)(3))</b> Letters sent to the Town of Brunswick and Topsham requesting information/knowledge of or concerns with historic properties.
12/11/15	<b>(36 CFR 800.4 (a)(3))</b> MaineDOT received email response from Town of Topsham with information regarding contributing buildings and structures within the historic district.
11/12/15	<b>(36 CFR 800.4 (a)(3))</b> MaineDOT received email response from Town of Brunswick with information regarding the Brunswick Commercial Historic District.
11/19/15	<b>36 CFR 800.4 (a)(4)</b> Response received from Penobscot Nation.
12/8/15	<b>36 CFR 800.4 (a)(4))</b> Response received from Passamaquoddy Tribe.

1/15/16	<b>(36 CFR 800.4 (a)(2) and (b) and (c))</b> Architectural survey within APE begins to document properties eligible and listed for the National Register of Historic Places.
5/29/16	<b>(36 CFR 800.4 (a)(2) and (b))</b> Architectural survey approved by Maine Historic Preservation Commission.
5/31/16	<b>(36 CFR 800.4 (c))</b> MaineDOT requests State Historic Preservation Officer (SHPO) concurrence regarding National Register eligibility for properties within the APE.
6/16/16	<b>(36 CFR 800.4 (c))</b> MaineDOT receives concurrence on properties that are eligible for the National Register of Historic Places from the SHPO.
<b>June 2016</b>	<b>(36 CFR 800.2(c)(5) and 800.3 (f))</b> In addition, the Federal agency may invite other entities with a “demonstrated interest in the undertaking” to participate as consulting parties. Examples include local historic preservation officials, historic preservation groups, community organizations, individual property owners, and other stakeholders.)
7/11/16	<p><b>(36 CFR 800.2 (a)(4))</b> Section 106 Consulting Party meeting #1 held in Topsham. The Section 106 process and identification of National Register eligible and listed properties was discussed. MaineDOT’s architectural survey, determination of eligibility, and the SHPO concurrence on eligibility were provided to the consulting parties.</p> <p><u>Consulting party Points of Interest offered:</u></p> <ul style="list-style-type: none"> <li>• Bridge is on the cover of the local phone book and the Bowdoin College Catalog</li> <li>• Individuals selected the Topsham/Brunswick community because of its historic character included the bridge</li> <li>• Business decisions currently pending outcome of bridge project</li> <li>• Existing bridge is unique, it matters, and provides important connection between two villages</li> <li>• Bridge is part of a continuous stretch of historic elements approaching Brunswick Downtown from Bowdoin College through downtown Brunswick, over the bridge and up to Topsham Village; it contributes overall magnitude to driving/walking/biking experience; is the connecting link that holds it all together</li> </ul>

	<ul style="list-style-type: none"> <li>• Placement of a new bridge could alter the falls significant to early settlement of the Brunswick/Topsham area and an important visual element</li> <li>• Bicycle/pedestrian accommodations required</li> </ul> <p><u>Section 106 points offered:</u></p> <ul style="list-style-type: none"> <li>• APE should be expanded to include the approaches on the Brunswick side to allow consideration of cumulative effects</li> <li>• MaineDOT responded to numerous technical questions regarding feasibility of different rehabilitation options</li> </ul>
<p>8/18/16</p>	<p><b>(36 CFR 800.2 (a)(4))</b> Section 106 Consulting Party meeting # 2 held in Brunswick. John Buxton &amp; Bill Doukas (MaineDOT) talk about the inspection. APE boundaries were discussed and MaineDOT’s architectural survey, determination of eligibility, and the SHPO concurrence on eligibility were provided to the consulting parties.</p> <ul style="list-style-type: none"> <li>• Justification of the APE was provided specifically why the Topsham Historic District and the Brunswick Historic district were not included.</li> <li>• Route 1 severs Brunswick from the Cabot Mill, resulting in a lack of cohesion between resources.</li> <li>• Loss of historic structures between the intersection of Route 24 and parts of Bowdoin Mill Island results in a loss of cohesion; therefore, the APE remains as is, concurred with by SHPO</li> <li>• Consulting parties inquired about the individual eligibility of the Cabot Mill complex. An attendee indicated he/she was aware that it had been determined individually eligible as part of another project with a federal action. Consulting parties requested that the concurrence from that project be included into the record of this project.</li> <li>• <i>The concurrences were included as appendices to the Determination of Effect.</i></li> </ul>

<b>Step 3: Assess Effects to Historic Properties</b>	
10/27/16	<p><b>(36 CFR 800.2 (a)(4) and 800.5 (a) and 800.6 (a))</b> Section 106 Consulting Party meeting #3 held in Topsham. Effects discussion, FJW’s individual eligibility. Matrix of alternatives, summary of alternatives, bridge inspection report,</p> <ul style="list-style-type: none"> <li>• Requested comments from consulting parties by Dec 6, 2016.</li> <li>• Individual eligibility of the Frank J Wood Bridge considering the 15-year passage of time since the MaineDOT historic bridge inventory had been completing.</li> <li>• A question as to whether the natural falls of the Androscoggin River in this location were eligible for listing on the National Register as an individual resource.</li> <li>• The parties commented that mill workers were known to live in the houses of Summer Street and questioned what impact that would have on the Summer Street historic district.</li> <li>• Comments were made about the potential effect to historic properties resulting from headlights for a changed alignment.               <ul style="list-style-type: none"> <li>- Questions were asked regarding how the bridge plays a role in the setting of Summer Street HD, Cabot Mill, and the Pejepscot Paper Company.</li> </ul> </li> <li>• Questions were asked regarding how materials used in a rehabilitation may or may not affect a historic property.</li> <li>• Comments were made about the view to the bridge from businesses within the Cabot Mill and Bowdoin Mill (PPC).</li> <li>• Comments regarding the use of a detour for rehabilitation.</li> </ul>
12/6/17	<p><b>(36 CFR 800)</b> MaineDOT received, reviewed, and considered --- comments from Section 106 Consulting Parties and the public between November 3, 2016 and March 6, 2017.</p>
2/6/17	<p><b>(36 CFR 800.6 (a))</b> Public Notice published providing the public an opportunity to view information regarding the various alternatives and their effects on National Register eligible and listed properties posted on MaineDOT’s web site. Interested parties were provided the opportunity to submit comments by March 6, 2017.</p> <p>MaineDOT submitted a request to the SHPO for concurrence on the various alternatives and their effects on National Register eligible and listed properties.</p>

3/6/17	<p>MaineDOT received a concurrence memo from the SHPO regarding the various alternatives and their effects on National Register eligible and listed properties. The SHPO did request additional information regarding the Summer Street Historic District. This request was also received during from the public during the public comment period.</p> <p>MaineDOT received, reviewed and considered 31 comments from Section 106 Consulting Parties and the public between November 3, 2016 and March 6, 2017.</p>
3/8/17	MaineDOT began additional research on the Summer Street Historic District as requested.
March 2017	MaineDOT and FHWA posted of a public open house meeting to be held on April 5, 2017. All materials were posted on the MaineDOT website the comment period was officially open until April 19, 2017.
3/17/17	MaineDOT submitted a request to the SHPO for concurrence on the additional information requested on the Summer Street Historic District.
3/29/17	MaineDOT received a concurrence memo from the SHPO regarding additional information on the Summer Street Historic District.
4/5/17	<b>(36 CFR 800.6 (a)(4))</b> Public meeting - open house format. 99 members of the public officially signed in. This meeting included historic resources, but expanded to include design, natural resources, and bicycle/pedestrian concerns.
4/19/17	Public comment period closed.
4/20/17	MaineDOT and FHWA began reviewing and considering all comments received
4/30/17	All public and Section 106 consulting party comments received were posted to the MaineDOT website.
6/27/17	MaineDOT and FHWA announce preferred Alternative.
June 2017- December 2017	Continued correspondence between the consulting parties, State Historic Preservation Office and FHWA. The consultation led to a reevaluation of the FJW individual eligibility.

10/25/17	MaineDOT sent determination of National Register individual eligibility (determined not eligible) to the SHPO for review and concurrence.
11/16/17	The SHPO sends memo not concurring with MaineDOT's determination. SHPO states the bridge is eligible based on the additional research provided.
12/11/17	FHWA preservation Officer determines the Frank J. Wood Bridge is individually eligible for the National Register.
12/13/17	MaineDOT sends memo to SHPO stating that the FHWA has determined the Frank J. Wood Bridge is individually eligible for the National Register.
1/16/18	MaineDOT sends addendum effect memo to SHPO and Section 106 Consulting Parties for comment.
2/16/18	Friends of Frank J Wood officially comment under the adverse effect comment period. Memo sent to FHWA.
2/27/18	EA circulated for public comment
3/28/18	EA public meeting
4/11/18	EA Public Comment Period closes. MaineDOT and FHWA begin review of comments.
5/30/18	Public comments received posted on the MaineDOT project website.
<b>Step 4: Resolve/Mitigate Adverse Effects</b>	
6/11/18	FHWA provides update to consulting parties: After reviewing all substantive comments, MaineDOT and FHWA are moving ahead with Alternative #2 – Replacement Bridge on the Upstream Alignment, and continuing next steps in the Section 106 process. Invites consulting parties to meeting to discuss mitigation for adverse effects.
6/27/18	<b>(36 CFR 800.6)</b> Section 106 Consulting Party meeting #4 held in Topsham to receive comments on potential mitigation for adverse effects. Comments on mitigation accepted until July 11, 2018.
7/17/18	MaineDOT and FHWA meet with SHPO; provide minutes and update on June 27, 2018 consulting party meeting and obtain input on potential mitigation measures.

8/22/18	FHWA provides meeting minutes and information in response to comments and questions raised at the consulting parties meeting.
10/3/18	Section 106 Consulting Party meeting #5 held in Topsham to receive comments on potential mitigation and draft MOA for adverse effects. Comments on mitigation accepted until October 22, 2018.
10/22/18	Section 106 consulting parties' and public comments regarding potential mitigation and draft MOA for adverse effects received.
10/25/18	Section 106 MOA sent to Section 106 consulting parties and the public notified of final comments being accepted through November 7, 2018.
11/7/18	Section 106 consulting parties' and public final comments regarding MOA for adverse effects received.
11/9/18	Section 106 MOA sent to signatories, invited signatories, and concurring signatories for signatures. Signatures requested by November 16, 2018.
12/22/18	MOA signed by all required signatories. Section 106 complete.

**MEMORANDUM OF AGREEMENT**  
**AMONG THE FEDERAL HIGHWAY ADMINISTRATION,**  
**ADVISORY COUNCIL ON HISTORIC PRESERVATION,**  
**MAINE DEPARTMENT OF TRANSPORTATION,**  
**AND MAINE STATE HISTORIC PRESERVATION OFFICER**  
**REGARDING THE FRANK J. WOOD BRIDGE #2016**  
**REPLACEMENT**  
**CUMBERLAND AND SAGadahoc COUNTIES, MAINE**

WHEREAS, the Federal Highway Administration (FHWA) plans to fund the Frank J. Wood Bridge project (undertaking) between Brunswick and Topsham, Maine via the Federal-Aid Highway Program; and

WHEREAS, the undertaking consists of replacing the Frank J. Wood Bridge with a new steel girder bridge supported by concrete abutments and piers on an upstream alignment; and

WHEREAS, the FHWA Maine Division Administrator is the "Agency Official" responsible for ensuring that the undertaking complies with Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 306108), as amended, and codified in its implementing regulations, 36 CFR Part 800, as amended (August 5, 2004); and

WHEREAS, the MaineDOT proposes to design and construct the undertaking; and

WHEREAS, the MaineDOT has been delegated responsibilities under the November 4, 2004 Programmatic Agreement Among Federal Highway Administration, Federal Transit Administration, the Advisory Council on Historic Preservation, The Maine State Historic Preservation Officer, and Maine Department of Transportation, Regarding the Implementation of the Federal Aid Highway and Federal Transit Programs in Maine; and

WHEREAS, FHWA has defined the undertaking's area of potential effects (APE) as displayed in Attachment A; and

WHEREAS, FHWA has determined that the undertaking has an adverse effect on the Cabot Mill, which is eligible for listing in the National Register of Historic Places (NRHP) under Criteria

A & C; the Frank J. Wood Bridge which is eligible for listing in the NRHP under Criteria A, and for the purposes of mitigation FHWA is considering eligible under Criterion C; the Brunswick Topsham Industrial Historic District which is eligible for listing in the NRHP under Criteria A & C; and Pejepscot Paper Company which is listed in the NRHP under Criteria A & C, and has consulted with the SHPO; and

WHEREAS, FHWA has consulted with federally-recognized Indian tribes (Tribes) including the Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation on the proposed undertaking in accordance with 36 CFR Section 800.3(f)(2). Emails were sent to the Tribes on November 3, 2015 in accordance with their preferred method of receiving information. The Penobscot Nation and the Passamaquoddy Tribe responded on November 19, 2015 and December 8, 2016 and indicated that this undertaking will have no impact on a structure or site of historic, architectural or archaeological significance to their Tribes. Additional information was provided on the preferred alternative and archaeological Phase II results to the Tribes on October 22, 2018 via email. The Houlton Band of Maliseet responded with no concerns; and

WHEREAS, in accordance with 36 CFR 800.2(c), FHWA has requested input and considered the views of consulting parties (Attachment B) in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties. Attachment C provides a timeline of the Section 106 process including communications to and from the consulting parties; and

WHEREAS, in accordance with 36 CFR 800.2(d), FHWA has requested input and considered the views of and the public in a manner that reflects the nature and complexity of the undertaking and its effects on historic properties; and

WHEREAS, in accordance with 36 CFR Section 800.6(a)(1), FHWA has notified the ACHP of the potential for an adverse effect determination. FHWA invited the ACHP to consult and the ACHP has chosen to participate in the consultation pursuant to 36 CFR Section 800.6(a)(1)(iii) on December 28, 2017; and

WHEREAS, in accordance with 36 CFR Section 800.6(c)(2), FHWA has invited the MaineDOT to be an invited signatory; and

WHEREAS, in accordance with 36 CFR Section 800.6(c)(3), FHWA has invited the consulting parties to be concurring signatories.

NOW, THEREFORE, the ACHP, FHWA and the Maine SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

## STIPULATIONS

FHWA, with assistance from MaineDOT, shall ensure that the following measures are carried out:

### **I. New Bridge Design Review Process**

MaineDOT will consult with the Maine SHPO, the Bridge Design Committee, and the consulting parties on the final design of the new bridge. MaineDOT will provide the SHPO, Bridge Design Committee, and the consulting parties, for their review and comments, details on aesthetic bridge design features, including public space, viewing, railing and lighting options to ensure compatibility with existing historic features. The information will be provided at 60% and 90% relevant design documents via email and posted on the MaineDOT Frank J Wood web page. The Design Advisory Committee and consulting parties will have 30 calendar days to review and provide any comments to MaineDOT.

### **II. Historic American Engineering Recordation**

MaineDOT will provide recordation of the Frank J. Wood Bridge (Maine State Bridge No. 2016) in consultation with the National Park Service and in accordance with Historic American Engineering Record (HAER) Level 1 Standards which include *Guide to Written Reports for the Historic American Engineering Record (HAER)* and the *Guide to Preparing HABS/HAER Photographic Documentation* (2008, updated December 2017; and 2011, updated June 2015, respectively). Documentation will be prepared by a 36 CFR 61 qualified architectural historian. All materials submitted as documentation will follow the requirements stated by the Heritage Documentation Program and the National Park Service Northeast Regional Office's schedule of documentation. The Maine SHPO will be provided an opportunity of forty-five (45) days to review and comment on one draft before the HAER is submitted to the National Park Service to be archived. The Maine SHPO may request a second round of review.

MaineDOT will be responsible for providing the following to:

#### **\*Maine SHPO**

one (1) archival printed copy of the HAER, one (1) set of large format photos and negatives, and pdfs on a USB flash drive.

#### **\*Town of Brunswick**

one (1) archival printed copy of the HAER and one (1) set of large format photos and negatives.

#### **\*Town of Topsham**

one (1) archival printed copy of the HAER and one (1) set of large format photos and negatives.

MaineDOT will complete the recordation and distribution by December 2020.

### **III. National Register of Historic Places Nomination**

MaineDOT will prepare and submit to the Maine SHPO a NRHP nomination for the previously determined eligible Brunswick Topsham Industrial Historic District (including National Register-eligible tenement housing). The nomination will be prepared by a 36 CFR 61 qualified architectural historian with a specialization in industrial history. MaineDOT will submit qualified consultants to the Maine SHPO for approval. This nomination shall be developed in consultation with the staff of the Maine SHPO and shall meet the Maine Historic Preservation Commission's National Register Submission Guidelines, 2016.

MaineDOT will complete the National Register nomination by December 2022.

### **IV. Outdoor Interpretive Panel**

MaineDOT will design and install two (2) permanent outdoor interpretive displays (consisting of no more than three (3) panels at each site) depicting the Frank J. Wood Bridge and earlier crossings, their history, and significance. The interpretive panels will be erected at locations within the view shed of the bridge. One (1) location will be in Brunswick and one (1) location will be in Topsham. The panels' content and material will be prepared by MaineDOT and a 36 CFR 61 qualified architectural historian. The Maine SHPO, town officials, the Pejepscot Historical Society, and the consulting parties will be provided an opportunity for 45 (forty-five) calendar days to review a draft of the interpretive panel(s)' content, design, and locations.

MaineDOT will prepare the draft interpretive panels for review by December 2022. MaineDOT will erect the interpretive panels by September 2023.

### **V. Conservation of Existing Bridge Plaques**

MaineDOT will be responsible for removing, storing, and conserving the four (4) historic plaques (two (2) in Brunswick, two (2) in Topsham) on the existing Frank J. Wood Bridge. The exact location of installation and appropriate plaque interpretation will be determined in consultation with FHWA, MaineDOT, Maine SHPO, town officials, and the consulting parties. An established and qualified objects conservator will be hired within a framework sufficient to examine and verify the method of safe removal and conservation of the plaques.

MaineDOT will install the conserved plaques by September 2023.

### **VI. Adaptive Reuse or Reuse of Portions of the Structure**

Prior to dismantling, MaineDOT and the Federal Highway Administration (FHWA) shall offer the Frank J. Wood bridge to any group that could legally take possession of the bridge and maintain it at a new location, provided the group assumes all future legal and financial liability. Costs to induce acceptance of the offer of donation may not exceed the cost to dismantle the bridge. FHWA, the Maine State Historic Preservation Officer and MaineDOT will work jointly to determine the most appropriate use of the existing bridge from any proposals received.

If no offers are received for adaptive reuse, then a portion and/or feature of the Frank J. Wood Bridge will be retained and offered to the towns or the Pejepscot Historical Society.

MaineDOT will offer the bridge for adaptive reuse by March 2019. If no offers are received MaineDOT will coordinate with the town of Brunswick, the town of Topsham, and the Pejepscot Historical Society on portions of the bridge beginning by August 2019.

#### **VII. Illustrated Booklet on the History of the River Crossing**

The MaineDOT, in consultation with the Maine SHPO, will commission an illustrated booklet on the history of the river crossing, as well as document the complete story of the Frank J. Wood Bridge and its relationship to the community and the cultural landscape, including indigenous use of the area. The booklet may include contemporary photographs from the HAER documentation, historic photographs, information derived from the HAER research, oral history interviews, historic maps, and any other applicable materials. The booklet will be approximately twenty-five (25) pages and the Maine SHPO, Pejepscot Historical Society, and the consulting parties will be provided an opportunity of forty-five (45) calendar days to review and comment on one draft.

MaineDOT will be responsible for providing copies of the booklet to the following:

**\*Maine SHPO**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Town of Brunswick**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Town of Topsham**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Topsham Historical Society**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Pejepscot Historical Society**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Topsham Public Library**

Ten (10) printed copies and one (1) electronic copy in PDF format.

**\*Curtis Memorial Library**

Ten (10) printed copies and one (1) electronic copy in PDF format.

MaineDOT will complete and distribute the booklet by September 2023. A copy of the booklet will be available on MaineDOT's website for downloading by the public.

### **VIII. Indoor Traveling Exhibit**

MaineDOT will develop a single indoor traveling exhibit consisting of three (3) 24" x 36" panels that share the story of the history of the Androscoggin River crossing, including the Frank J. Wood Bridge. MaineDOT will be responsible for research, development, and design. MaineDOT will retain the services of a 36 CFR 61 qualified architectural historian to develop the exhibit.

MaineDOT will be responsible for creating digital back-up files and providing them the Maine SHPO and the Pejepscot Historical Society. The Maine SHPO, Pejepscot Historical Society, and the consulting parties will be provided an opportunity for a 45 (forty-five) calendar day review of the draft content and design. The final exhibit will be housed at the Pejepscot Historical Society.

MaineDOT will complete and distribute the exhibit by September 2023.

FHWA shall also ensure the following terms and conditions are implemented:

### **IX. Duration**

This agreement will be null and void if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, FHWA may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation XI.

### **X. Post-Review Discoveries**

If potential historic properties are discovered or unanticipated effects on historic properties found, FHWA shall consult in accordance with 36 CFR Section 800.6(c)(6). If any unanticipated discoveries of historic properties or archaeological sites are encountered during the implementation of this undertaking, MaineDOT shall suspend work in the area of the discovery in accordance with Maine Department of Transportation Standard Specification 105.9: *Historic and Archaeological Considerations* and DOT shall immediately notify the FHWA. In compliance with 36 CFR §800.13, FHWA shall notify within 24 hours the ACHP, the Maine SHPO, and, if applicable, federally recognized tribal organizations that attach religious and/or cultural significance to the affected property. The Maine SHPO, the FHWA, MaineDOT, and Tribal representatives, as appropriate, may conduct a joint field review within 72 hours of the notification to the FHWA. The FHWA, in consultation with the appropriate parties, will determine an appropriate treatment of the discovery prior to the resumption of construction activities in the area of the discovery.

### **XI. Discovery of Human Remains**

MaineDOT shall ensure that any human remains and/or grave-associated artifacts encountered during the archaeological investigations are brought to the immediate attention of the FHWA, the Maine SHPO, and any federally recognized Tribes that may attach religious and/or cultural significance to the affected property. Notification will be within 48 hours of the discovery. No activities which might disturb or damage the remains will be conducted until FHWA, in consultation with the appropriate parties, has developed a treatment plan that considers the comments of the appropriate parties. All procedures will follow the guidance outlined in the

National Park Service Publication *National Register Bulletin 41: Guidelines for Evaluating and Registering Cemeteries and Burial Places*, taking into account the Native American Graves Protection and Repatriation Act of 1990 (PL 101-601). If Native American cultural materials are encountered during the course of the project, MaineDOT will abide by the Maine Department of Transportation Standard Specification *105.9: Historic and Archaeological Considerations* by stopping all activities in the area of discovery and notifying FHWA, SHPO, ACHP, the Aroostook Band of Micmacs, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation. Stipulation X of this agreement will be followed; and

## **XII. Reporting**

Each year, by December 1, following the execution of this agreement until it expires or is terminated, MaineDOT shall provide all parties to this agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in MaineDOT's efforts to carry out the terms of this agreement. Failure to provide such summary report may be considered noncompliance with the terms of this MOA; and

## **XIII. Dispute Resolution**

Should any party to this agreement object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with the objecting party(ies) to resolve the objection. If FHWA determines, within 30 days, that such objection(s) cannot be resolved, FHWA will:

- A. Forward all documentation relevant to the dispute to the ACHP in accordance with 36 CFR Section 800.2(b)(2). Upon receipt of adequate documentation, the ACHP shall review and advise FHWA on the resolution of the objection within 30 days. Any comment provided by the ACHP, and all comments from the parties to the MOA, will be taken into account by FHWA in reaching a final decision regarding the dispute.
- B. If the ACHP does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, FHWA may render a decision regarding the dispute. In reaching its decision, FHWA will take into account all comments regarding the dispute from the parties to the MOA.
- C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. FHWA will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. FHWA's decision will be final.

#### **XIV. Resolving Public Objections**

At any time during implementation of the terms of this Agreement, should any member of the public raise an objection in writing pertaining to such implementation to any signatory party to this Agreement, that signatory party shall immediately notify FHWA. FHWA shall:

- A. Immediately notify the other signatory parties in writing of the objection. Any signatory party may choose to comment on the objection to FHWA.
- B. Establish a reasonable time frame for this comment period. FHWA shall consider the objection, and in reaching its decision, FHWA will take all comments from the other parties into account.
- C. Within 15 days following closure of the comment period, FHWA will render a decision regarding the objection and respond to the objecting party. FHWA will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. FHWA's decision regarding resolution of the objection will be final.
- D. Following the issuance of its final decision, FHWA may authorize the action subject to dispute hereunder to proceed in accordance with the terms of that decision. Nothing in this paragraph creates additional legal rights or responsibilities on the FHWA that are not already afforded under the NHPA.
- E. FHWA's responsibility to carry out all other actions or terms of this MOA that are not the subject of the objection remain unchanged and may proceed.

#### **XV. Amendments**

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

#### **XVI. Termination**

If the MOA is not amended following the consultation set out in Stipulation XV it may be terminated by any signatory or invited signatory. Within 30 days following termination, FHWA shall notify the signatories if it will initiate consultation to execute an MOA with the signatories under 36 CFR §800.6(c)(1) or request the comments of the ACHP under 36 CFR §800.7(a) and proceed accordingly.

If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR §§800.6(c)(7) and 800.6(c)(8). The amendment will be effective on the date a copy signed by all the original signatories is filed with the ACHP. If the signatories, including any invited signatory, cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement.

**XVII. Coordination with Other Federal Reviews**

In the event that another federal agency not initially a party to or subject to this MOA receives an application for funding/license/permit for the Undertaking as described in this MOA, that agency may fulfill its Section 106 responsibilities by stating in writing it concurs with the terms of this MOA and notifying the FHWA, SHPO, and the ACHP that it intends to do so, and adherence to the terms of this MOA.

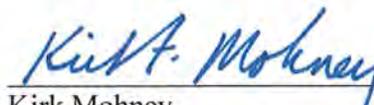
Execution of this MOA by the FHWA, Maine SHPO, and ACHP and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

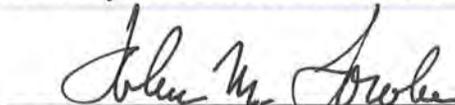
Federal Highway Administration

 Date 11/9/18  
Todd D. Jorgensen  
Division Administrator

Maine State Historic Preservation Officer

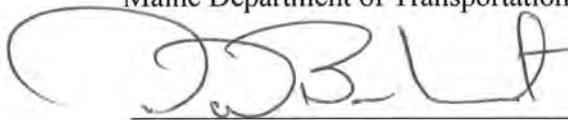
 Date 11/13/18  
Kirk Mohney  
State Historic Preservation Officer

Advisory Council on Historic Preservation

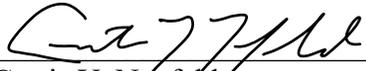
 Date 12/22/18  
John M. Fowler  
Executive Director

INVITED SIGNATORY:

Maine Department of Transportation

 Date 11/9/18  
David Bernhardt  
Commissioner

CONCURRING SIGNATORIES:

 Date 12/27/2018  
Curtis Y. Neufeld

CONCURRING SIGNATORIES:

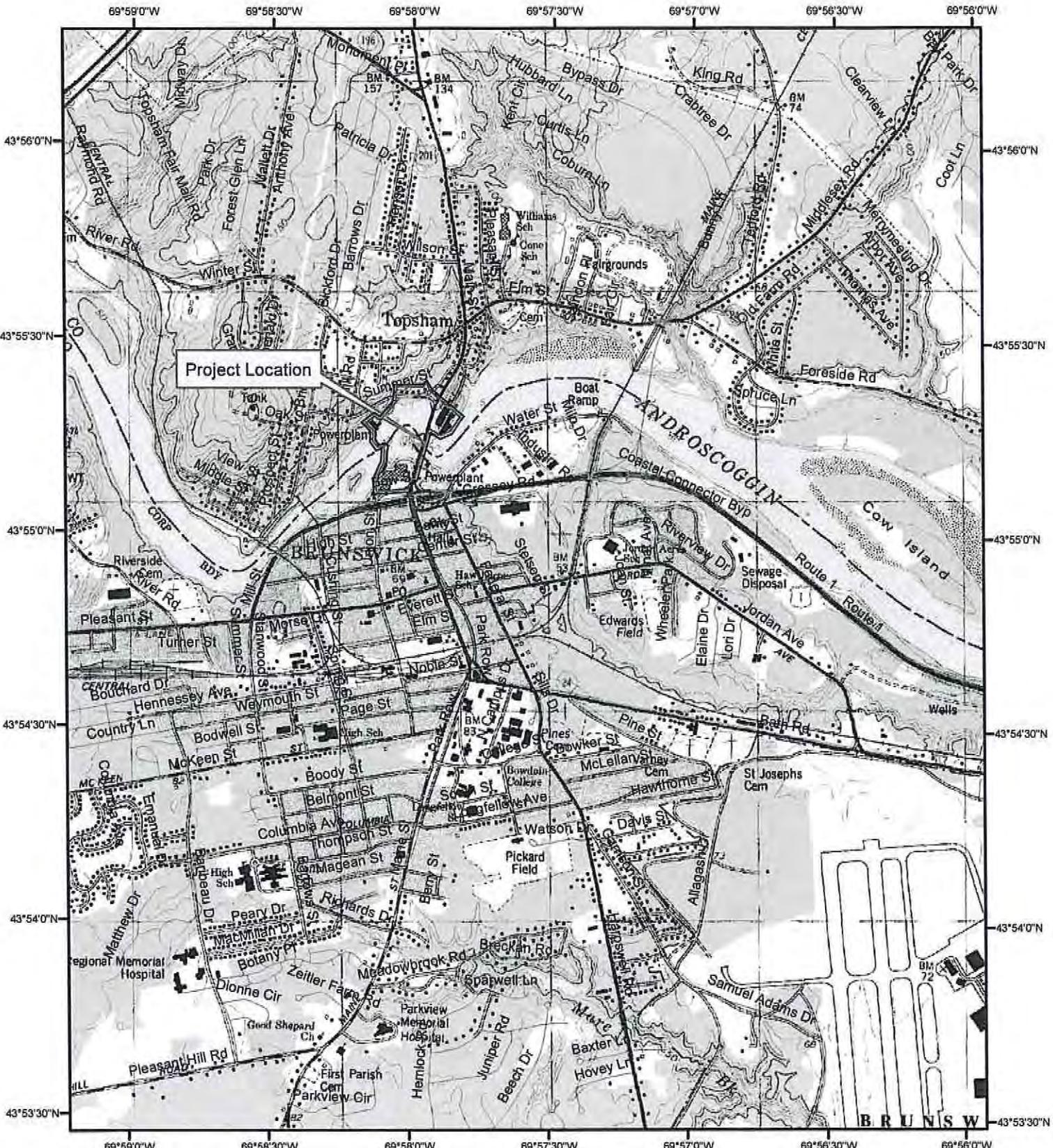
 Date 12/26/2016  
Douglas Bennett

CONCURRING SIGNATORIES:

 Date 12/27/2018  
Linda Smith, Town of Brunswick

**ATTACHMENT A**

**AREA OF POTENTIAL EFFECTS**



Project Location

-69.9661  
43.9206

- APE
- Survey Boundaries



MDOT WIN 20467.00  
Topsham-Brunswick Bridge #2016  
bridge repair



**ATTACHMENT B**

**SECTION 106 CONSULTING PARTIES**

**Frank J. Wood Bridge (BR #2016)**  
**Route 201, Brunswick & Topsham, ME**  
**MaineDOT WIN: 22603.00, Federal Project No. STP-2260(300)X**

**Section 106 Consulting Parties**

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**Frank J. Wood Bridge (BR #2016)**  
**Route 201, Brunswick & Topsham, ME**  
**MaineDOT WIN: 22603.00, Federal Project No. STP-2260(300)X**

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**ATTACHMENT C**

**SECTION 106 TIMELINE**

<b>Section 106 Steps and Consultation for the Frank J Wood Bridge Project</b>	
<i>Includes Activities to 11.8.18</i>	
<b>Date</b>	<b>Action</b>
9/23/14	Preliminary engineering funding for Frank J Wood bridge improvement project authorized by FHWA
<b>Steps 1-2: Initiate Section 106 Process, Identify Historic Properties</b>	
October 2015	<p><b>(36 CFR 800.2(c)(1-4))</b> Consulting parties (often called “by-right” consulting parties) were established:</p> <ul style="list-style-type: none"> <li>• “By-right” consulting parties notified: Maine State Historic Preservation Officer, The Penobscot Nation, Passamaquoddy Tribe, the Aroostook Band of Micmacs, the Houlton Band of Maliseet Indians, Town Representatives of Brunswick and Topsham, Advisory Council on Historic Preservation, and MaineDOT.</li> </ul>
October 2015	<b>(36 CFR 800.4 (a)(1))</b> Area of Potential Affect (APE) established.
11/3/2015	<b>(36 CFR 800.4 (a)(4))</b> Email sent to Tribes (standard protocol) requesting comments regarding historic and cultural properties. Area of Potential Effect sent to Maine Historic Preservation Commission Archaeological staff for review and comments.
11/5/2015	<b>(36 CFR 800.4 (a)(3))</b> Letters sent to the Town of Brunswick and Topsham requesting information/knowledge of or concerns with historic properties.
12/11/15	<b>(36 CFR 800.4 (a)(3))</b> MaineDOT received email response from Town of Topsham with information regarding contributing buildings and structures within the historic district.
11/12/15	<b>(36 CFR 800.4 (a)(3))</b> MaineDOT received email response from Town of Brunswick with information regarding the Brunswick Commercial Historic District.
11/19/15	<b>36 CFR 800.4 (a)(4)</b> Response received from Penobscot Nation.
12/8/15	<b>36 CFR 800.4 (a)(4)</b> Response received from Passamaquoddy Tribe.

1/15/16	<b>(36 CFR 800.4 (a)(2) and (b) and (c))</b> Architectural survey within APE begins to document properties eligible and listed for the National Register of Historic Places.
5/29/16	<b>(36 CFR 800.4 (a)(2) and (b))</b> Architectural survey approved by Maine Historic Preservation Commission.
5/31/16	<b>(36 CFR 800.4 (c))</b> MaineDOT requests State Historic Preservation Officer (SHPO) concurrence regarding National Register eligibility for properties within the APE.
6/16/16	<b>(36 CFR 800.4 (c))</b> MaineDOT receives concurrence on properties that are eligible for the National Register of Historic Places from the SHPO.
<b>June 2016</b>	<b>(36 CFR 800.2(c)(5) and 800.3 (f))</b> In addition, the Federal agency may invite other entities with a “demonstrated interest in the undertaking” to participate as consulting parties. Examples include local historic preservation officials, historic preservation groups, community organizations, individual property owners, and other stakeholders.)
7/11/16	<p><b>(36 CFR 800.2 (a)(4))</b> Section 106 Consulting Party meeting #1 held in Topsham. The Section 106 process and identification of National Register eligible and listed properties was discussed. MaineDOT’s architectural survey, determination of eligibility, and the SHPO concurrence on eligibility were provided to the consulting parties.</p> <p><u>Consulting party Points of Interest offered:</u></p> <ul style="list-style-type: none"> <li>• Bridge is on the cover of the local phone book and the Bowdoin College Catalog</li> <li>• Individuals selected the Topsham/Brunswick community because of its historic character included the bridge</li> <li>• Business decisions currently pending outcome of bridge project</li> <li>• Existing bridge is unique, it matters, and provides important connection between two villages</li> <li>• Bridge is part of a continuous stretch of historic elements approaching Brunswick Downtown from Bowdoin College through downtown Brunswick, over the bridge and up to Topsham Village; it contributes overall magnitude to driving/walking/biking experience; is the connecting link that holds it all together</li> </ul>

	<ul style="list-style-type: none"> <li>• Placement of a new bridge could alter the falls significant to early settlement of the Brunswick/Topsham area and an important visual element</li> <li>• Bicycle/pedestrian accommodations required</li> </ul> <p><u>Section 106 points offered:</u></p> <ul style="list-style-type: none"> <li>• APE should be expanded to include the approaches on the Brunswick side to allow consideration of cumulative effects</li> <li>• MaineDOT responded to numerous technical questions regarding feasibility of different rehabilitation options</li> </ul>
<p>8/18/16</p>	<p><b>(36 CFR 800.2 (a)(4))</b> Section 106 Consulting Party meeting # 2 held in Brunswick. John Buxton &amp; Bill Doukas (MaineDOT) talk about the inspection. APE boundaries were discussed and MaineDOT's architectural survey, determination of eligibility, and the SHPO concurrence on eligibility were provided to the consulting parties.</p> <ul style="list-style-type: none"> <li>• Justification of the APE was provided specifically why the Topsham Historic District and the Brunswick Historic district were not included.</li> <li>• Route 1 severs Brunswick from the Cabot Mill, resulting in a lack of cohesion between resources.</li> <li>• Loss of historic structures between the intersection of Route 24 and parts of Bowdoin Mill Island results in a loss of cohesion; therefore, the APE remains as is, concurred with by SHPO</li> <li>• Consulting parties inquired about the individual eligibility of the Cabot Mill complex. An attendee indicated he/she was aware that it had been determined individually eligible as part of another project with a federal action. Consulting parties requested that the concurrence from that project be included into the record of this project.</li> <li>• <i>The concurrences were included as appendices to the Determination of Effect.</i></li> </ul>

<b>Step 3: Assess Effects to Historic Properties</b>	
10/27/16	<p><b>(36 CFR 800.2 (a)(4) and 800.5 (a) and 800.6 (a))</b> Section 106 Consulting Party meeting #3 held in Topsham. Effects discussion, FJW's individual eligibility. Matrix of alternatives, summary of alternatives, bridge inspection report,</p> <ul style="list-style-type: none"> <li>• Requested comments from consulting parties by Dec 6, 2016.</li> <li>• Individual eligibility of the Frank J Wood Bridge considering the 15 years passage of time since the MaineDOT historic bridge inventory had been completing.</li> <li>• A question as to whether or not the natural falls of the Androscoggin River in this location were eligible for listing on the National Register as an individual resource.</li> <li>• The parties commented that mill workers were known to live in the houses of Summer Street and questioned what impact that would have on the Summer Street historic district.</li> <li>• Comments were made about the potential effect to historic properties resulting from headlights for a changed alignment.               <ul style="list-style-type: none"> <li>- Questions were asked regarding how the bridge plays a role in the setting of Summer Street HD, Cabot Mill, and the Pejepscot Paper Company.</li> </ul> </li> <li>• Questions were asked regarding how materials used in a rehabilitation may or may not affect a historic property.</li> <li>• Comments were made about the view to the bridge from businesses within the Cabot Mill and Bowdoin Mill (PPC).</li> <li>• Comments regarding the use of a detour for rehabilitation.</li> </ul>
2/6/17	<p><b>(36 CFR 800.6 (a))</b> Public Notice published providing the public an opportunity to view information regarding the various alternatives and their effects on National Register eligible and listed properties posted on MaineDOT's web site. Interested parties were provided the opportunity to submit comments by March 6, 2017.</p> <p>MaineDOT submitted a request to the SHPO for concurrence on the various alternatives and their effects on National Register eligible and listed properties.</p>

3/6/17	<p>MaineDOT received a concurrence memo from the SHPO regarding the various alternatives and their effects on National Register eligible and listed properties. The SHPO did request additional information regarding the Summer Street Historic District. This request was also received during from the public during the public comment period.</p> <p>MaineDOT received, reviewed and considered 31 comments from Section 106 Consulting Parties and the public between November 3, 2016 and March 6, 2017.</p>
3/8/17	MaineDOT began additional research on the Summer Street Historic District as requested.
March 2017	MaineDOT and FHWA posted of a public open house meeting to be held on April 5, 2017. All materials were posted on the MaineDOT website the comment period was officially open until April 19, 2017.
3/17/17	MaineDOT submitted a request to the SHPO for concurrence on the additional information requested on the Summer Street Historic District.
3/29/17	MaineDOT received a concurrence memo from the SHPO regarding additional information on the Summer Street Historic District.
4/5/17	<b>(36 CFR 800.6 (a)(4))</b> Public meeting - open house format. 99 members of the public officially signed in. This meeting included historic resources, but expanded to include design, natural resources, and bicycle/pedestrian concerns.
4/19/17	Public comment period closed.
4/20/17	MaineDOT and FHWA began reviewing and considering all comments received
4/30/17	All public and Section 106 consulting party comments received were posted to the MaineDOT website.
6/27/17	MaineDOT and FHWA announce preferred Alternative.
June 2017- December 2017	Continued correspondence between the consulting parties, State Historic Preservation Office and FHWA. The consultation led to a reevaluation of the FJW individual eligibility.

10/25/17	MaineDOT sent determination of National Register individual eligibility (determined not eligible) to the SHPO for review and concurrence.
11/16/17	The SHPO sends memo not concurring with MaineDOT's determination. SHPO states the bridge is eligible based on the additional research provided.
12/11/17	FHWA preservation Officer determines the Frank J. Wood Bridge is individually eligible for the National Register.
12/13/17	MaineDOT sends memo to SHPO stating that the FHWA has determined the Frank J. Wood Bridge is individually eligible for the National Register.
1/16/18	MaineDOT sends addendum effect memo to SHPO and Section 106 Consulting Parties for comment.
2/16/18	Friends of Frank J Wood officially comment under the adverse effect comment period. Memo sent to FHWA.
2/27/18	EA circulated for public comment
3/28/18	EA public meeting
4/11/18	EA Public Comment Period closes. MaineDOT and FHWA begin review of comments.
5/30/18	Public comments received posted on the MaineDOT project website.
<b>Step 4: Resolve/Mitigate Adverse Effects</b>	
6/11/18	FHWA provides update to consulting parties: After reviewing all substantive comments, MaineDOT and FHWA are moving ahead with Alternative #2 – Replacement Bridge on the Upstream Alignment, and continuing next steps in the Section 106 process. Invites consulting parties to meeting to discuss mitigation for adverse effects.
6/27/18	Section 106 Consulting Party meeting #4 held in Topsham to receive comments on potential mitigation for adverse effects. Comments on mitigation accepted until July 11, 2018.
7/17/18	MaineDOT and FHWA meet with SHPO; provide minutes and update on June 27, 2018 consulting party meeting and obtain input on potential mitigation measures.

8/22/18	FHWA provides meeting minutes and information in response to comments and questions raised at the consulting parties meeting.
10/3/18	Section 106 Consulting Party meeting #5 held in Topsham to receive comments on potential mitigation and draft MOA for adverse effects. Comments on mitigation accepted until October 22, 2018.
10/24/18	Additional two-week comment period provided on MOA for adverse effects.



Preserving America's Heritage

December 21, 2018

Mr. Todd Jorgensen  
Division Administrator  
U.S. Federal Highway Administration  
Maine Division  
Edmund S. Muskie Federal Bldg.  
40 Western Avenue, Room 614  
Augusta, ME 04330

Ref: *Proposed Frank J. Wood Bridge Project*  
*Cumberland and Sagadahoc Counties, Maine*  
*ACHPConnect #012371*

Dear Mr. Jorgensen:

Enclosed is the copy of the fully executed Memorandum of Agreement (MOA) for the referenced project. By carrying out the terms of the MOA, the U.S. Federal Highway Administration, Maine Division (FHWA) will fulfill its responsibilities under Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C. § 300101 et seq.) and its implementing regulations, "Protection of Historic Properties" (36 C.F.R. Part 800). Please ensure that all consulting parties are provided a copy of the executed Agreement. The original MOA will remain on file at our office.

While execution of the MOA formally concludes the Section 106 process for this project, the Advisory Council on Historic Preservation (ACHP) also is providing comments pursuant to 36 C.F.R. § 800.7(b) to David Clarke, FHWA Federal Preservation Officer, and to you as the agency official, to address concerns regarding the conduct of this Section 106 consultation. The ACHP's comments are intended to highlight issues encountered in this case related to the planning and review of historic bridge projects that can impede the ability of FHWA, the Maine Department of Transportation (MDOT), and consulting parties to effectively consider alternatives that would avoid and minimize adverse effects to these types of historic properties.

Consulting parties have consistently stated that they believe the selection of the Preferred Alternative, which consists of the demolition and replacement of the Frank J. Wood Bridge (the Bridge) was premature, as FHWA had not yet completed an evaluation of the properties' eligibility for listing in the National Register of Historic Places (NRHP), and the analysis of alternatives was incomplete and not well documented. Consulting parties believe that FHWA did not consult early in the planning process for this undertaking, and did not provide critical information to the consulting parties in a timely manner to understand the undertaking's effects on multiple historic properties. While FHWA made efforts to address some of these concerns later in consultation, including revising its determination of eligibility for the Bridge to incorporate an additional significance criterion, consulting parties believe the assessment of effects and the mitigation measures do not adequately address the bridge's significance, and the proposed new bridge's design disregards the historic character of its surrounding environment. In response to the numerous concerns submitted to the ACHP by consulting parties, we strongly urge FHWA take into account the following Section 106 regulations requirements for future consultations:

- FHWA should ensure that the Section 106 process is initiated early in the undertaking's planning process, so that a broad range of alternatives may be considered during the planning process for the undertaking pursuant to 36 C.F.R. § 800.1(c). By initiating consultation after the preferred alternative was selected,

ADVISORY COUNCIL ON HISTORIC PRESERVATION

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consulting parties, including the ACHP, were left with the impression that FHWA was disinclined to consider other alternatives that would meet the same purpose and need.

- FHWA should ensure the use of contractors is consistent with applicable conflict of interest laws, and the consultants and engineers have experience in documenting, assessing effects, and considering alternatives to the loss of historic bridges consistent with the requirements of 36 C.F.R. § 800.2(a)(3). The ACHP informed FHWA via e-mail on December 5, 2016, that the engineering firm that completed the initial evaluation supporting replacement of the Frank J. Wood Bridge as an alternative may have had a bias toward new construction. To address any questions regarding this potential bias, the ACHP requested FHWA seek a second opinion from an engineering firm with historic bridge experience to make a full and fair assessment of the rehabilitation potential for the Bridge. It appears FHWA did not consider our suggestion, and used the same engineering firm for its preliminary and final assessment of effects for the undertaking, leaving us with a concern about the conclusions of the assessment.
- If FHWA modifies its determination of eligibility for historic properties, then it is responsible for reassessing the undertaking's effects including this new eligibility information, and allowing the consulting parties to consult on the revised determination of eligibility and assessment of effects pursuant to 36 C.F.R. § 800.4-5. The consulting parties provided additional documentation later in the consultation that supported the individual NRHP eligibility of the Frank J. Wood Bridge. However, the SHPO could only concur that the historic bridge is eligible under Criterion A due to an incomplete statewide historic bridge survey. To address the consulting parties' concerns about the bridge's potential eligibility under Criterion C, FHWA agreed to incorporate the additional significance criterion in its assessment of effects. However, the ACHP and some consulting parties remain concerned that the demolition of the Bridge and the construction of a new replacement bridge exhibiting the proposed design parameter would introduce visual adverse effects to the adjacent Summer Street Historic District and that these effects were not adequately considered by FHWA. Additionally, the ACHP is concerned that if this level of review had happened earlier in this consultation then it could have influenced the selection of alternatives and a potentially different preferred alternative might have been chosen.
- Finally, if consulting parties and/or the SHPO disagree with FHWA's finding of effect (whether a finding of no adverse effect or adverse effect), the federal agency must either consult with the party to resolve the disagreement, or request the ACHP to review the finding pursuant to 36 C.F.R. § 800.5(c)(2-3). The recent consulting parties' comments indicate that FHWA did not resolve the dispute regarding the potential impacts of the new bridge design to the adjacent historic district Summer Street Historic District and the Brunswick-Topsham Industrial Historic District considering the Frank J. Wood Bridge is a contributing element. The ACHP did not receive a request from FHWA to review the disputes. The ACHP recommends FHWA follow the design review process stipulated in this MOA, which provides further opportunities to address these concerns as the new design has not been developed yet.

To prevent similar consultations in the future, the ACHP recommends FHWA provide Section 106 training to FHWA and MDOT staff involved in Section 106 reviews to ensure they appropriately understand the Section 106 regulations and its consultation requirements.

The ACHP also recommends FHWA develop a Programmatic Agreement (PA) to establish procedures for considering the effects of proposed undertakings on historic bridges within the state of Maine. The PA could include a process for identifying and evaluating the NRHP eligibility of historic bridges, including a priority list of bridges ideal for rehabilitation, as well as a process for notifying and consulting with consulting parties, including federally-recognized Indian tribes, the MDOT and the SHPO, early in the planning process for a historic bridge project and throughout the entire the Section 106 consultation. When developing and consulting on this historic bridge PA, FHWA should allow the consulting parties to review and comment on the recently updated statewide bridge survey. Multiple states have developed such PAs, which have proven to be effective tools in managing the Section 106 process for the states' historic bridge preservation program.

As FHWA implements this MOA, we hope you adhere to our recommendations listed in this letter. If you have questions or concerns, please contact Sarah Stokely at (202) 517-0224, or via e-mail at [sstokely@achp.gov](mailto:sstokely@achp.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Reid J. Nelson", with a long horizontal flourish extending to the right.

Reid J. Nelson  
Director  
Office of Federal Agency Programs

Enclosure



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Maine Division**

February 14, 2019

40 Western Avenue, Room 614  
Augusta, Maine 04330  
207-622-8350

In Reply Refer To:  
HDA-ME

Reid J. Nelson  
Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
401 F Street NW, Suite 308  
Washington, DC 20001

Dear Mr. Nelson:

Thank you for your December 21, 2018 letter regarding the *Proposed Frank J. Wood Bridge Project*, Cumberland and Sagadahoc Counties, Maine [**ACHP Connect #012371**]. The Federal Highway Administration (FHWA) takes planning and review of historic bridge projects seriously, including early consideration of alternatives that may avoid and minimize adverse effects to these important resources.

The Advisory Council on Historic Preservation (ACHP) advised FHWA to make specific changes to ensure that Section 106 is initiated early in an undertaking's planning process such that a broad range of alternatives may be considered as required in 36 C.F.R. § 800.1(c). We wholeheartedly agree with this goal. To improve the quality of Section 106 consultation in the future, as recommended by ACHP, FHWA will implement the following actions:

- FHWA will host a Section 106 training with MaineDOT staff and contractors in 2019. This training will focus on historic bridge/historic district project planning and review. We invite ACHP to attend and present at this training to share your knowledge and build relationships with both FHWA and MaineDOT staff.
- FHWA will recommend that MaineDOT consider developing a Programmatic Agreement (PA) to establish procedures for considering the effects of proposed undertakings on historic bridges in the State. This process could include steps for identifying and evaluating the National Register of Historic Places (NRHP) eligibility of historic bridges, including development of a priority list and individual preservation plans for bridges ideally suited for rehabilitation.

ACHP also suggested that when developing a historic bridge PA, FHWA consider allowing public review of an ongoing statewide historic bridge survey. As this is a routine update to a 2003 survey of historic truss bridges, FHWA continues to support MaineDOT's assessment that public review and comment is not required on this survey, but would be appropriate, for example, on any Statewide PA focused on future bridge planning.

In addition to providing program-wide recommendations, your office raised concerns regarding the Section 106 consultation for the proposed *Frank J. Wood Bridge Project*. FHWA values ACHP's opinion regarding how FHWA and MaineDOT could have more effectively considered alternatives to avoid and minimize adverse effects to historic properties.

While a Memorandum of Agreement (MOA) executed by ACHP on December 22, 2018 fully resolves adverse effects for this federal undertaking, FHWA would like to take the opportunity to describe implementation of applicable federal requirements as they relate to concerns shared by some consulting parties.

36 CFR § 800.1(c) requires agency officials to ensure the Section 106 process is initiated early in an undertaking's planning, such that a broad range of alternatives may be considered.

- FHWA initiated the Section 106 process before the selection of a preferred alternative. In accordance with 36 CFR § 800.2(c)(1-4), "by-right" consulting parties were notified of this undertaking in November 2015. In accordance with 36 CFR § 800.4(a)(3), letters were sent to recognized Tribes and the Towns of Brunswick and Topsham requesting information, knowledge of, or concerns regarding historic properties in the project area. In addition, several consulting parties and public meetings were held prior to MaineDOT and FHWA announcing a preferred alternative in June 2017. Regulations at 36 CFR § 800.2(c)(5) and 800.3(f) encourage Federal agencies to invite any other entities with a "demonstrated interest in an undertaking" to participate as consulting parties. After input from this wider group of stakeholders, FHWA did consider additional alternatives that would meet the same purpose and need. These alternatives are discussed and evaluated in the *Frank J. Wood Bridge Project Environmental Assessment/Draft Section 4(f) Evaluation*.

36 CFR § 800.2(a)(3) permits federal agencies to use the services of applicants, consultants, or designees to prepare analysis and recommendations for use in the Section 106 process, "consistent with applicable conflict of interest laws".

- MaineDOT, in accordance with 23 CFR § 172, prepares and maintains written policies and procedures for the procurement, management, and administration of engineering and design related consultant services. MaineDOT's policies and procedures must address prevention, identification, and mitigation of conflicts of interest for employees of both the contracting agency and consultants as specified in 2 CFR § 200.112, 23 CFR § 1.33, and 23 CFR § 172. In accordance with 23 CFR § 172, FHWA reviews and approves MaineDOT's Consultant Procurement Manual and Consultant General Conditions (and any updates to those documents) for compliance with 23 CFR § 172. In the specific case of this project, FHWA found that MaineDOT's use of TYLIN International as a consultant did not constitute a conflict of interest and that MaineDOT followed approved procedures as outlined in MaineDOT's *Consultant Procurement Manual* and *Consultant General Conditions*.<sup>1</sup>

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<sup>1</sup> MaineDOT's *Consultant General Conditions* provides specific conflict of interest procedures for consultants involved in the preparation of information used in evaluations under the National Environmental Policy Act.

Lastly, 36 CFR § 800.4-5 outlines basic procedures for identification of historic properties and assessment of adverse effects. These requirements provide agencies with discretion to consult with parties to attempt to resolve disputes, or request ACHP review of agency findings.

- In accordance with 36 CFR § 800.6(a), MaineDOT presented initial findings of effect on this undertaking to the State Historic Preservation Officer (SHPO) for concurrence in February 2017. Additional research did not reveal a substantial connection between the Summer Street Historic District (SSHD) and the Brunswick Topsham Industrial Historic District (BTIHD). The SHPO eventually concurred with both eligibility and effect determinations for all historic properties, including MaineDOT's re-evaluation of individual eligibility for the Frank J. Wood Bridge. In several cases the project team provided additional information with the specific purpose of resolving disagreement over effects to historic resources. MaineDOT's design team drafted detailed elevation estimates and renderings to address potential change in views to and from the SSHD. Later, in response to disagreement over the criterion listing for the Frank J. Wood Bridge, FHWA agreed to prepare and make available for review a mitigation package incorporating additional criterion categories, even though the SHPO did not have enough information to concur with an expanded listing.

For further information, we encourage interested parties to refer to MaineDOT's project website, which includes a timeline of Section 106 activities related to this undertaking, as well as multiple Q&A documents addressing Section 106 topics: <https://www.maine.gov/mdot/env/frankjwood/>.

We appreciate your staff's time and commitment to answering multiple questions and comments from consulting parties, as well as your input throughout the consultation process.

FHWA looks forward to working with your office to pursue the activities outlined above. If you have questions or concerns, please feel free to contact Eva Birk at (207) 512-4921, or via e-mail at [eva.birk@dot.gov](mailto:eva.birk@dot.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Todd D. Jorgensen", with a long horizontal flourish extending to the right.

Todd D. Jorgensen  
Division Administrator



MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

PAUL R. LEPAGE  
GOVERNOR

KIRK F. MOHNEY  
DIRECTOR

September 19, 2018

To: Ms. Julie Senk, MDOT/ESD

From: Arthur Spiess, Senior Archaeologist

Subject: WIN 22603.00, Frank J. Wood bridge replacement Alternative 2, Phase I/II archaeology, MHPC #1595-15

We have completed the Phase I/II archaeological testing at the Brunswick end of the bridge project, western side (see end-of-fieldwork memo attached). This area was the only area of archaeological concern associated with the Frank J. Wood bridge project. Based on the field work results, no further archaeological work is necessary, and there are no significant sites in the project APE.

It is extremely unlikely that a significant archaeological site would be affected by this project, in our opinion. In following the procedures specified in the Federal Highway/MHPC/MDOT programmatic agreement, we recommend a finding "that there will be no archaeological properties affected by the proposed undertaking" of the Frank J. Wood bridge replacement using Alternative 2.

September 18, 2018

## **End of Fieldwork Memorandum**

Archaeological Phase I/II Investigations of the Proposed South Approach  
for the Frank J. Wood Bridge Replacement, Project WIN 22603 (Alternative 2), MHPC #1595-  
15. Brunswick, Maine

From: Leith Smith, Arthur Spiess  
Maine Historic Preservation Commission

### **Introduction**

A plan for the replacement of the present Frank J. Wood bridge carrying Route 24 (Main Street) over the Androscoggin River places the new bridge (Alternative 2) immediately west (upstream) of the existing bridge along with slight modification to the present bridge approaches. Assessment of the project for potential negative impacts to archaeological resources determined that the north approach on the Topsham side consists largely of fill that was put in place in the early 1930s for the present bridge. No historic structures were located in this area prior to filling and the level of disturbance precluded the need for historic or prehistoric archaeological survey on the Topsham side.

The proposed south approach to Alternative 2 on the Brunswick side of the river will require removal of a portion of an elevated parking lot associated with the present Frontier Restaurant on the north side of the Cabot Mill. This area is bound by a concrete retaining wall (along the current bridge approach) and by a dry-laid stone wall to the north that was potentially associated with an historic structure. An assessment of historic maps, including a series of Sanborn insurance maps for the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, showed no structures at this location. Structures at this location, therefore are expected to date before 1857, and could be considerably older. The presence of this wall and the potential for the presence of other significant archaeological features suggested this area was archeologically sensitive and should be subjected to survey.

An area of river bank immediately north of the parking lot will also be impacted by the proposed project. Assessment of this area found an historic dry-laid stone foundation or retaining wall to be present within the bank along with several narrow terraces. This feature was of particular interest due to the fact that Fort George (1684 to early 1800s) was located somewhere in the vicinity of the present Cabot Mill, but its exact location is not known. The fort consisted of a 50' x 50' stone enclosure probably containing a blockhouse and other small buildings. The fort was rebuilt a number of times during the 18<sup>th</sup> century and finally fell into ruin in the early 19<sup>th</sup> century. It is likely that additional associated structures would have been built in the vicinity of Fort George over time, and before the present mill was constructed in the latter 19<sup>th</sup> century. The presence of this feature resulted in a determination of this section of river bank to be archaeologically sensitive for the potential presence of historic structures.

## **Archaeological Phase I/II Survey Results**

Archaeological investigation of the two areas was conducted between September 10<sup>th</sup> and 17<sup>th</sup>, 2018.

### Elevated Parking Lot

Archaeological investigation of the parking area commenced with cutting and machine-assisted removal of the pavement. This was followed by machine assisted scraping of underlying sediments to search for intact archaeological features and deposits. The area as a whole was found to consist of several layers of fill containing a low density of artifacts dating to the very late 19<sup>th</sup> and early 20<sup>th</sup> centuries. A truncated foundation wall of dry-laid fieldstones was identified and documented at the north end of the excavation area. The association of this wall with a particular structure is not possible and its date was not possible to determine. A deposit of stone rubble was found in the central southern portion of the excavation area. This feature may have served as a foundation for a coal-fired boiler and masonry stack. Associated artifacts suggest a construction/demolition date of the late 19<sup>th</sup> to early 20<sup>th</sup> centuries. No other potentially significant archaeological features or deposits were found.

### Riverbank

Archaeological investigation of the stone feature in the riverbank began by opening excavation units at the western portion of the feature where preservation was anticipated to be greatest. A series of stones adjacent to a hard-packed gravel and stone pavement was uncovered, and this discovery prompted the excavation of additional units to the east and close to the present bridge. Continued excavation found the features to be modern in nature, however, and likely to be associated with significant landscape modification that occurred during construction of the hydroelectric facility. No evidence of potentially significant archaeological features or deposits were found.

## **Conclusion and Recommendation**

No potentially significant archaeological deposits or features were found by the Phase I/II investigation. As a result the proposed bridge construction will have no effect on historic or archaeological resources. The proposed project should proceed as planned.

**STATE OF MAINE**  
**Memorandum**

Date: January 9, 2018

To: Kirk F. Mohny, MHPC  
From: Julie Senk, Maine DOT/ENV  
Subject: **Addendum to Supplemental Supporting Information for a Finding of Effect**  
Brunswick 22603.00  
Scope: Bridge Replacement  
Finding of Effect: **Adverse Effect**

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*This addendum is to be considered in concert with, not in place of, the previous finding of effect filed with MHPC on February 3, 2017. It also considers correspondence between the lead federal agency, consulting parties, and the state historic preservation office/officer since the February 3, 2017 filing.*

**Background**

Since the last Section 106 consulting parties meeting (October 27, 2016), Section 106 consultation has continued via electronic means between the Federal Highway Administration Maine Division (FHWA-ME), Maine Department of Transportation (MaineDOT), Maine Historic Preservation Commission (MHPC), Advisory Council of Historic Preservation (ACHP), and consulting parties. During that process consulting parties asked FHWA-ME and MaineDOT specific questions regarding the individual eligibility of the Frank J. Wood Bridge (#2016), with particular interest in the bridge's role within the statewide context of truss bridges, 1936 flood, and interurban rail line. Consulting parties and the public also requested additional information regarding the National Register-eligible Summer Street Historic District (SSHHD)<sup>1</sup>.

FHWA-ME and MaineDOT researched those points and made determinations of eligibility based on that research. Documentation of these efforts were submitted to MHPC for concurrence and to the consulting parties.<sup>2</sup> With regard to the Frank J. Wood Bridge, MHPC (November 16, 2017) stated that the bridge is individually eligible for listing in the National Register of Historic Places under Criterion A for its local significance in Transportation for its significant association with regional interurban trolley lines. While most of the features associated with the interurban line are gone, MHPC noted that the standard width and height of the bridge, set specifically to accommodate the interurban was adequate integrity to convey that significance. Based on MHPC's statement, FHWA-ME determined (December 11, 2017) that the Frank J. Wood Bridge is eligible for listing in the National Register as an individual resource. The bridge remains a contributing resource to the National Register-eligible Brunswick-Topsham Industrial Historic District (BTIHD).

The finding of effect for this project will not change as a result of the Frank J. Wood Bridge being determined an individually eligible resource. The project would still result in adverse effects to

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<sup>1</sup> MHPC concurred the SSHHD does not hold significant association with the Frank J. Wood Bridge and that the SSHHD's period of significance (POS) ends prior to the construction of the bridge.

<sup>2</sup> Information was sent to MHPC in the following documents on the respective dates: Finding of Effect (February 3, 2017), Summer Street Historic District (March 17, 2017; requested by SHPO in its initial response to Finding of Effect), and a memo regarding the individual eligibility of the Frank J. Wood Bridge (October 25, 2017). MHPC replied on March 6, 2017, March 29, 2017, and November 16, 2017, respectively.

historic properties. Effects are applied to historic properties and the Frank J. Wood Bridge has always been considered a historic property (as a contributing resource to the BTIHD). The proposed actions of each alternative, as they were understood at the time, were assessed as effects to the historic properties within the Area of Potential Effect (APE).

With the new determination that the bridge is individually eligible, FHWA-ME is documenting its updated assessment of all alternatives' effects to historic properties. The findings have not changed as the removal of the bridge as a contributing resource results in a similar effect to surrounding properties as its removal as an individually eligible resource. The following descriptions have been updated from those included in the original finding of effect dated February 3, 2017.

### No Build

#### No Historic Properties Affected

This alternative would result in a finding of no historic properties affected because the aspects of integrity of all properties would remain the same. The planned maintenance of the Frank J. Wood Bridge would prevent demolition by neglect. Additionally, the maintenance methodology includes using materials that fit characteristics, design, and materials of the bridge and therefore, retain integrity without diminishing it.

### Alternate 1 – Replacement Bridge on Existing Alignment

#### Adverse Effect

This alternative results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD and an individually eligible resource. The removal represents a degradation of the integrity of design, materials, workmanship, feeling, and association of the BTIHD and the Frank J. Wood Bridge. Additionally, the integrity of setting of the Cabot Mill and Pejepscot Paper Company (PPC) would be diminished because the bridge represents one of the last remaining pieces of transportation infrastructure originating from the mills' POS. The retention of the current alignment would minimize harm to additional resources, such as the Summer Street Historic District, and avoid direct impacts to the Cabot Mill and PPC. Additionally pier placement would likely avoid area sensitive for archaeology.

### Alternate 2 – Replacement Bridge on Curved Upstream Alignment

#### Adverse Effect

This alternative results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD and an individually eligible resource. The removal represents a degradation of the integrity of design, materials, workmanship, feeling, and association of the BTIHD and the Frank J. Wood Bridge. Additionally, the integrity of setting of the Cabot Mill and PPC would be diminished because the bridge represents one of the last remaining piece of transportation infrastructure that originated during the mills' POS. This alternative would also require a small right-of-way take from the Cabot Mill property. Tying the current approaches would minimize harm to additional resources as it would limit the number of right-of-way takes to other historic resources.

Alternate 3 – Rehabilitation with Westerly Sidewalk Retention

No Adverse Effect

This alternative results in a finding of no adverse effect as the rehabilitation retains the Frank J. Wood Bridge, a contributing resource to the BTIHD and an individually eligible resource. Rehabilitation would follow the Secretary of the Interior’s Standards for the Treatment of Historic Properties to include the replacement in kind of materials in the deck, superstructure, and substructure to reflect the original design of the bridge, while keeping original materials in the trusses. A finding of no adverse effect acknowledges a change to the features that qualify a resource for listing in the National Register, but does not diminish them. The application of and compliance with the Secretary of Interior’s Treatment of Historic Properties would minimize harm to the bridge and avoid effects to surrounding resources.

Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction

No Adverse Effect

This alternative results in a finding of no adverse effect because the sidewalk would be designed following the Secretary of the Interior’s Standards for the Treatment of Historic Properties. It would be constructed in a manner that is consistent with materials, type, and design of the Frank J. Wood Bridge. A finding of no adverse effect acknowledges a change to the features that qualify a resource for listing in the National Register, but does not diminish them. The application of and compliance with the Secretary of Interior’s Treatment of Historic Properties would minimize harm to the bridge and avoid effects to surrounding resources. MHPC noted in its March 6 2017 response that it did not have adequate information to conclusively concur that the rehabilitation with a second sidewalk would result in a no adverse effect. It also noted “given the scale of the bridge, the addition of such a feature may not have an adverse effect upon it.” FHWA-ME maintains that the use of the Secretary of the Interior Standard’s in a way that would not alter the character defining features would not result in a finding of adverse effect because the second sidewalk would likely be cantilevered outside the trusses, retaining the width and height of the truss.

Alternate 5 – Replacement Downstream Parallel Alignment

Adverse Effect

This alternative results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD and an individually eligible resource. The removal represents a degradation of the integrity of design, materials, workmanship, feeling, and association of the BTIHD and the Frank J. Wood Bridge. Additionally, the integrity of setting of the Cabot Mill and PPC would be diminished because the bridge represents one of the last remaining pieces of transportation infrastructure that originated during the Cabot Mill’s POS. This alternate would require a small take from the PPC property. Minimization efforts are limited for this alignment due to a need for increased right-of-way and a take from the PPC.

Friends of the Frank J Wood Bridge (The Friends)  
10 Pleasant Street  
Topsham, ME 04086

Cheryl Martin  
Assistant Division Administrator  
Federal Highway Administration – Maine Division  
40 Western Ave  
Augusta, ME 04330

02/16/2018

Comments: Frank J. Wood Bridge Individual-Eligibility for National Register of Historic Places

Dear Ms Martin,

Please place the below comments in the permanent record of the Section 106 process. The determination of the Frank J. Wood Bridge as individually eligible for the National Register of Historic Places emphasizes the importance of preserving this landmark for future generations. Although the Section 106 process gives equal protection to both contributing resources in a historic district and individually eligible resources, the significance of the bridge being individually eligible is an indication of a higher level of significance to the community and the state. This higher significance should carry weight in your final recommendation.

Please also note for the record, that the Frank J. Wood Bridge was placed on Maine Preservation's Most Endangered List for 2017. This list identifies the most important currently threatened historic resources in Maine. Inclusion of this list is further evidence of the significance of this historic structure and the role it has played in the history of Maine. The Frank J. Wood Bridge was named to the Most Endangered List because it is a valuable historic resource that can and should be preserved.

### **Updated Inventory Survey**

Several Section106 parties, including Mary Ann Naber of the Advisory Council on Historic Preservation, The Friends of the Frank J. Wood Bridge, and others have requested that the historic bridge inventory of existing bridges in Maine be updated from the last survey of 2002. Without an updated survey it is impossible to fully assess how important the Frank J. Wood Bridge is in the overall inventory. Is it one of the last ones? Rare surviving examples of even common designs are typically recognized as having higher significance. The weight of how much significance is being destroyed with the removal of this bridge cannot be fully gauged without this knowledge.

Although a brief update was provided, the methodology was different from that used for the 2002 survey – using Warren truss bridges rather than Steel Through-Truss bridges (V-9 and V10 in the appendix of the report). This is an important distinction because the lay person can easily recognize a steel through- truss bridge but cannot define what a Warren truss is. The methodology used inflates the total numbers of existing bridges comparable to the Frank J.

Wood Bridge to appear larger than it is. The Friends again requests the updating of the appendix of the 2002 survey of Steel Through-Truss Bridges (V-9 and V10).

### **Independent Engineering Report**

The Preliminary Design Report (PDR) was repeatedly requested by The Friends starting at the first public meeting in April of 2016 and not released until August of 2017. The Friends, Mary Ann Naber, and others asked for an independent engineering review of the feasibility and cost of fully rehabbing the bridge early in the public Section 106 process. The concern behind this request was the lack of experience with historic bridge rehabilitation by the engineering consulting firm hired by MDOT for the project. This request was ignored. Lacking an independent engineering analysis of rehabilitation options, the PDR was critical to understanding the decision-making process underway at MDOT and FHWA. MDOT repeatedly stated that the PDR was not available "yet."

Through a Freedom of Information Request made to MDOT, The Friends were able to see that there were drafts of the PDR available a full year before it was finally released and, more importantly, that at least one member of the public was provided with a copy of the draft, but that Federal Highway blocked the release to the Section 106 consulting parties. The Friends request an explanation of why the earlier drafts were withheld from consulting parties supporting rehabilitation but provided to an individual supporting demolition.

Most importantly, comparing the earlier drafts to the released PDR, there are vast differences in methodology on life cycle costs and wording around the feasibility of rehab.

At odds with the earlier drafts, the PDR ultimately made the flawed case that the life cycle costs of rehabilitation are significantly higher than a new bridge – apparently based on the same information that had previously indicated otherwise.

Documentation obtained through the Freedom of Information Request shows that the preliminary study of the bridge, from September of 2015+/- through August 2017 cost more than six-hundred-thousand dollars. Federal guidelines put the average cost for this work in the one-hundred-thirty-thousand dollar range. It appears a large amount of the over-run was spent to support the efforts of the "local" design advisory committee that MDOT repeatedly stated they had not requested and had no role in. MDOT staff and their consulting engineer attended most, if not all, of the meetings of this group and provided consulting and design services to them. At the same time, The Friends and ACHP were told that there was no money in the budget for an independent engineering firm with historical bridge rehabilitation experience to do an independent report analysis on the feasibility and cost on of rehabilitation options and life cycle costs.

As a result of this refusal to respond to the requests of several consulting parties, specifically the ACHP and The Friends, The Friends has had to independently raise the money to finance such a study from an engineer with extensive experience in the rehabilitation of historic truss bridges. While MDOT and FHWA spent tens-of-thousands of dollars on a committee to decorate a new bridge that does not need to be built, the local residents of The Friends of the Frank J. Wood Bridge organization and many of the 1200 supporters of rehabilitation on the Friends Facebook page have raised the money for this engineering report. It needs to be noted for the record that it is unconsciously upper handed, unfair, and contrary to the Historical Preservation

Act of 1966 when the public is forced to pay for what the Lead Federal Agency on the Section 106 process is required to provide; a fair and comprehensive analysis of all the alternatives.

### **Flawed Process**

The execution of this Section 106 Process has been flawed from the beginning. MDOT announced in an April 2016 public meeting that their preferred alternative was a new build. This decision was made well before the Section 106 began, well before any 106 consulting parties were notified or held a meeting, and well before the alternatives were defined and studied. In fact, as this letter documents, consulting parties are still waiting on requested updates to surveys and on independent engineering feasibility study.

The Section 106 process appears to have been viewed as a mere formality by MDOT and the Maine office of the Federal Highway Administration. A “check box” they were used to checking quickly as they moved ahead with decisions made before the “review” process had begun. It was clearly a surprise and a pain in their view when the public actually attended and demanded that the procedure set out in law be followed. Internal emails show both higher ups in MDOT and Federal Highway questioned the right of national historical bridge experts to be consulting parties “because they were not from Maine” and had to ask other Federal Highway departments if this was acceptable. The answer, of course, is that involvement by groups with an interest in historic resources a normal an expected part of the Section 106 process. In fact, it is the point of the Section 106 process. This small example just clearly shows the almost complete lack of understanding of the Section 106 process in Maine by the governmental parties entrusted to oversee it. It is vastly clear that the Section 106 process has been skewed to arrive at the preferred outcome of a new bridge, and every disingenuous claim to the contrary made by MDOT and FHWA is countered by dozens of documents obtained through the Freedom of Information Act request made by The Friends.

It is through the persistent pressuring and research of one of The Friends’ members that the Frank J. Wood Bridge’s individually National Register eligibility was determined. MDOT’s historic consultants have continually ignored and brushed aside relevant information and have made ludicrous claims to avoid having this determination. The best example of which is trying to claim that the historic significance of the “crossing” in some manner out-weighs the historic significance of the bridge. The Frank J. Wood Bridge is the existing bridge, in this moment of time, and can be reasonably and feasibly preserved for generations to come. There is no debate on the Frank J. Wood Bridge having historical significance. This is a fact. Attempting to undermine this fact brings into question the degree to which MDOT is dictating to the historic consultants who were/are hired to look into the significance of the bridge. It also begs the question why did they not come to the ultimate conclusion that the bridge is individually eligible? The Maine Historic Preservation Commission alone among government agencies involved in this process has attempted to fairly assess the historic value of the Frank J. Wood Bridge, as their own repeated requests for an updated state-wide bridge survey to provide a foundation for understanding the state-wide context for the bridge went ignored for more than a year.

MDOT, although publicly changing their tune in August of 2016 and saying no preferred alternative had been chosen (after clearly saying one *had* been chosen in the April 2016 public meeting), commissioned and attended a new bridge advisory committee made up of favorable members of both communities and chaired by a former MDOT employee. Several of The Friends spoke to Cheryl Martin of FHWA in the August 2016 Section 106 meeting raising

MDOT's involvement in this committee as a concern, given that they had recently announced that no decision had been made on rehab vs new build. Ms. Martin stated that it was premature and inappropriate for MDOT to be supporting the creation of this committee and attending its meetings. However MDOT and TyLin attended the monthly meetings for over a year and spent countless hours and resources on answering questions and providing numerous renderings for the "new" bridge committee. Even after several requests both in Section 106 meetings and in written comments there has yet to be made public *one* rendering of restored and painted Frank J Wood Bridge.

In addition the Bridge Advisory Committee and MDOT came to several agreements on the design, width and style of the new bridge that add significant cost (in the millions) to that alternative. These costs have not been added into the PDR or the cost break down in the list of alternatives provided to the Section 106 consulting parties and available on MDOT's website for the public to view. This has created a false narrative that provides the public no way of truly comparing alternatives. These additional costs were also purposely left out of the last public meeting even though they were known. FOIA documents show that it was discussed internally whether to include them in the public information, and the decision was to withhold information that did not help make the case for a new bridge.

To further this, there have been no scheduled Section 106 meetings for over a year, even though the bridge's individual National Register eligibility has been in debate and it was recently deemed to be individually eligible.

The Section 106 and 4f reviews give equal recognition to both individually eligible resources and resources that contribute to a district. Yet, in the latest version of the PDR, MDOT points out several times that the bridge is NOT individually eligible as if that makes its demolition less of a concern. Why do they state-it repeatedly, why do they highlight it in the PDR, if not to make a case that the bridge is somehow less significant and worthy of preservation? Using the logic of MDOT's own argument in the PDR, that the Frank J. Wood Bridge would be more worthy of preservation if it was individually eligible for the National Register of Historic Places, The Friends agrees that it is more worthy of preservation now that it has been determined individually eligible for the National Register.

Sincerely,

John Graham  
President of the Friends of the Frank J. Wood Bridge

# STATE OF MAINE

## Memorandum

Date: December 13, 2017

To: Kirk F. Mohny, MHPC

From: Julie Senk, Maine DOT/ENV

Project: MaineDOT WIN 22603.00 Brunswick-Topsham; MHPC #1595-15

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The MaineDOT has reviewed the memo received on November 20, 2017 from the Maine Historic Preservation Commission addressing the MaineDOT's request for concurrence on the individual eligibility of the Frank J. Wood Bridge dated October 25, 2017.

The MaineDOT conducted additional research on areas of significance that were presented by a Section 106 consulting party in order to determine the individual eligibility of the Frank J. Wood Bridge. This research focused on the bridge's association with the 1936 flood, interurban history, and Boston Bridge Works. The MaineDOT concluded that the bridge was not individually eligible for listing in the National Register of Historic Places. The Commission did not concur with this determination, stating "the Frank J. Wood Bridge is individually eligible for listing in the National Register of Historic Places under Criterion A in the area of transportation."

Based on our research, the Federal Highway Administration, as the lead federal agency, has made the determination that the Frank J. Wood Bridge is individually eligible under Criterion A. Therefore, we will be moving forward with the bridge being an individually eligible resource and a contributing element to the Brunswick Topsham Industrial Historic District. This does not change the adverse effect determination for the preferred alternative.

Please contact me at [Julie.Senk@maine.gov](mailto:Julie.Senk@maine.gov) or 592-3486 if you have any questions. Thank you.

cc: CPD e-file

**From:** [Clarke, David \(FHWA\)](#)  
**To:** [Chase, Cassandra \(FHWA\)](#)  
**Cc:** [Martin, Cheryl \(FHWA\)](#); [Jorgensen, Todd \(FHWA\)](#); [Clarke, David \(FHWA\)](#)  
**Subject:** RE: Review Requested for NR Eligibility of Frank J. Wood Bridge in Maine  
**Date:** Monday, December 11, 2017 9:51:21 AM  
**Attachments:** [1-Historic Bridge Survey FJW.PDF](#)  
[2-Initial106Packagebrunswick.pdf](#)  
[3- MHPCCConcurrence 6 16 16.pdf](#)  
[4-Brunswick 22603.00 DOE Correspondence and Supporting Information.pdf](#)  
[6-Eligibility Concurrence Request 10.25.17.pdf](#)  
[7-November 16 2017 SHPO Response.pdf](#)  
[5-E-mail Correspondence MHPC Consulting Parties.pdf](#)

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Here you go, please include this as part of the administrative record and pass it on to the DOT and SHPO.

Attn: FHWA Maine Division Office,

On behalf of the Federal Highway Administration I was asked by the Maine Division Office to review and make a Section 106 eligibility determination for the Frank J. Wood Bridge. I was provided a recommendation from the Maine DOT, and other correspondences from the Maine SHPO (attached). I've reviewed all the attached documentation and put forth the following determination: The Frank J. Wood Bridge is individually eligible for listing in the National Register of Historic Places under Criteria A; the bridge is not eligible under criteria's B and D; there is insufficient information to determine if the bridge would be eligible under criteria C.

Thanks,

David S. Clarke  
Federal Preservation Officer  
Federal Highway Administration  
1200 New Jersey Avenue, SE  
Washington, DC 20590  
(202) 366-2060  
[david.clarke@dot.gov](mailto:david.clarke@dot.gov)

## STATE OF MAINE

### MEMORANDUM

November 16, 2017

To: Julie Senk, MaineDOT/ENV  
From: Kirk F. Mohny, State Historic Preservation Officer *KFM*  
Subject: 22603.00; Brunswick-Topsham; MHPC #1595-15

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I have reviewed the information received October 26, 2017 to continue consultation on the above referenced undertaking pursuant to the Maine Programmatic Agreement and Section 106 of the National Historic Preservation Act of 1966, as amended.

The MaineDOT has asked the Commission to concur with or object to its conclusion that the Frank J. Wood Bridge is not individually eligible for listing in the National Register of Historic Places. The MaineDOT acknowledges that the structure is already considered to be a historic property as defined in 36 CFR Part 800.16(1)(1), and that it is eligible for inclusion in the National Register in accordance with Part 800.16(1)(2). Nevertheless, the MaineDOT has stated that making a determination about the bridge's individual eligibility "will better inform the Section 4(f) process and ensure utmost compliance with Section 106 and Section 4(f)." It is unclear how such a determination will affect the Section 106 process since both our office and MaryAnn Nabor of the Advisory Council on Historic Preservation have previously stated that such a distinction is irrelevant. Furthermore, the MaineDOT has not explained why it is important in the Section 4(f) process to make a distinction between a historic property's eligibility for listing in the National Register as a contributing resource in a historic district and one that is individually eligible in that same district. The Commission requests that the MaineDOT clarify the above referenced statement.

In response to my e-mail of October 4, 2017 to Phinney White, the MaineDOT conducted additional research to determine whether, in its opinion, the Frank J. Wood Bridge is individually eligible for listing in the National Register for its association with areas of significance not previously examined. The Commission's response to the MaineDOT's analysis and conclusions are as follows:

#### Association with Interurban History

The MaineDOT's research found that the Frank J. Wood Bridge was designed to meet minimum requirements of electric railway loading that had been set by the American Association of State Highway Officials (AASHO). Furthermore, the intended railway user – the Androscoggin & Kennebec Railway (A&K) – was responsible for a proportional share of the bridge cost. The MaineDOT concluded that the Lewiston, Augusta and Waterville Railway (whose system came under the operation of the A&K by 1919) is significant at the local level, but only for the period from c. 1900 to 1919. The subsequent history of the line through Brunswick-Topsham and its operator is not considered to be significant because the A&K "only saw the downfall of the interurbans...." The guidance in National Register Bulletin 16A for establishing periods of significance under Criterion A states, in part, that "For properties associated with historic trends...the period of significance is the span of time

when the property actively contributed to the trend.” Although the heyday of the interurban railway that served Brunswick and Topsham may have been reached prior to the construction of the Frank J. Wood Bridge, that does not mean that the railway’s significance as a means of transportation ended. The fact that the bridge was designed and built to accommodate the railway and that the A&K paid for a share of the construction costs indicates that interurban service was still considered important – and viable – in 1931. Contrast this with the conditions only six years later when the A&K did decide to end service between Bath and Lisbon Falls when the State began to develop plans for a new highway between Topsham and Lewiston. In our opinion, 1937 should be considered the end date of significance for this particular interurban railway, not 1919.

The Commission concludes that the bridge is associated with “A pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the nation.” (NR Bulletin 15, p.12.) The guidance in Bulletin 15 also states that “Mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A; the property’s specific association must be considered important as well.” Since the Frank J. Wood Bridge carried the A&K over a major river crossing (as had the predecessor bridge), it seems to have an important association with the interurban railway.

In addition to having an important association with an important event or trend, properties that are eligible for listing in the National Register must have integrity. Considered in relation to the interurban function of the Frank J. Wood Bridge, we believe that the structure fully retains integrity of location, setting and feeling. Although the design, materials, workmanship, and association of the bridge have been diminished by the removal of the original bridge deck, rails and catenary system, we nevertheless conclude that it possesses sufficient physical design characteristics - including its horizontal and vertical clearances - to convey the fact that it was not designed simply to carry two lanes of highway traffic.

For the reasons noted above, the Commission believes that the Frank J. Wood Bridge is individually eligible for listing in the National Register of Historic Places under Criterion A in the area of transportation.

#### Boston Bridge Works

The MaineDOT conducted additional research to ascertain whether the Frank J. Wood Bridge’s association with the Boston Bridge Works (BBW) is significant, and what characteristics (if any) distinguish the bridge from one that might have been designed and fabricated by another company in this period. It determined that the bridge was designed by the Maine State Highway Commission to AASHO standards; that its standardized design does not have characteristics unique to the BBW; and that the BBW was contracted to supply the superstructure only. In addition, the MaineDOT stated that “the BBW’s significance as a bridge contractor is based in

the period when it was designing smaller spans and dominating the fabrication industry.” This period predates the construction of the Frank J. Wood Bridge. Based on this information, the MaineDOT concluded that the bridge’s association with the BBW is not significant.

The Commission concurs with the MaineDOT’s conclusion that the Frank J. Wood Bridge is not significant for its association with the BBW. Furthermore, our position takes into consideration the possibility that it may be the last remaining structure in Maine that has this association. In the absence of any specific design characteristics that are unique to the BBW and that have significance, the association with the BBW – or any other company in this period that was fabricating bridges to standardized specifications – does not meet any of the National Register Criteria. That is not to say that a bridge erected to standardized specifications in this period cannot be considered significant; rather we believe that association with a particular fabricator is not a primary area for assessing significance.

#### Flood of 1936

In his e-mail of August 29, 2017 Mr. White expressed his opinion that the Frank J. Wood Bridge is significant because it survived the 1936 flood. The Commission in its October 4, 2017 response came to a different conclusion. In our opinion, the fact that the bridge was present at the time of this historic event is not a significant association. Many buildings and structures existed at the time of the flood and directly experienced its effects, but we do not consider them to be individually eligible for listing in the National Register based on that fact alone.

#### Metal Truss Bridge Inventory

Consulting parties have questioned whether the determination in the Statewide Historic Bridge Survey that the Frank J. Wood Bridge is not individually eligible under Criterion C should be reevaluated due to the decline in the number of eligible metal truss bridges since the inventory was created. The MaineDOT has reaffirmed its position that the Frank J. Wood Bridge is not eligible under Criterion C because “it does not embody distinctive characteristics of the type; nor was its design innovative.”

The Commission has previously stated that the metal bridge inventory should be revisited and updated, and that the original survey and inventory methodology should be reviewed. As the population of metal bridges in Maine declines, a point may be reached when the remaining examples, regardless of whether their design is innovative or not, will come to “Embody distinctive characteristics of a type, period, or method of construction” and be eligible for listing in the National Register under Criterion C. However, at this time the Commission does not have sufficient information to either concur with or object to the MaineDOT’s conclusion that the Frank J. Wood Bridge is not individually eligible under Criterion C.

If you have any questions regarding our comments, please do not hesitate to contact me.

# STATE OF MAINE

## Memorandum

Date: October 25, 2017

To: Kirk F. Mohny, MHPC  
From: Julie Senk, Maine DOT/ENV  
Subject: Section 106 request for concurrence  
Project: Brunswick/Topsham 22603.00, MHPC#1595-15

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The Maine DOT has reviewed this project pursuant to the Maine Programmatic Agreement (PA) and Section 106 of the National Historic Preservation Act of 1966, as amended.

This request for concurrence is related to the bridge's potential individual significance. On June 16, 2016, MHPC concurred with MaineDOT's determination that the Frank J. Wood Bridge was a contributing element to the National Register eligible Brunswick Topsham Industrial Historic District. However, to date, MHPC has not taken a position on the individual eligibility of the Frank J. Wood Bridge. Due to new information presented by a Section 106 consulting party, MaineDOT has revisited this determination and is resubmitting a request for concurrence on the individual eligibility of the Frank J. Wood Bridge. Although the Frank J. Wood Bridge has already been determined to be historic under Section 106, as it is a contributing element to the Brunswick Topsham Industrial Historic District, determining the Frank J. Wood Bridge's individual eligibility will better inform the Section 4(f) process and ensure utmost compliance with Section 106 and Section 4(f).

In accordance with 36 CFR Part 800.4, the following identification efforts of historic properties were made:

800.4(c) – The Maine DOT researched significance using the resources on the included bibliography. **The MaineDOT has determined that the Frank J. Wood Bridge #2016 is not eligible for listing as an individual property. The bridge remains eligible for listing in the National Register as a contributing resource to the Brunswick Topsham Industrial Historic District.**

In accordance with the PA and 36 CFR Part 800, please reply with your concurrence or objection to the determination made for the Frank J. Wood Bridge as an individual property within 30 days.

Please contact me at Julie.Senk@maine.gov or at 592-3486 if you have any questions.

Thank you.

cc: CPD e-file  
enc: Kleinfelder memorandum, dated 10/25/17



## MEMORANDUM

TO: Julie Senk, Cultural Coordinator; MaineDOT  
FROM: Kate Willis, Architectural Historian; Kleinfelder  
DATE : October 25, 2017SUBJECT: Brunswick 22603.00  
CC: David Gardner; MaineDOT, Amanda Taylor; Kleinfelder, file  
ENCL: 1931 Plans, Frank J. Wood Bridge

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This memo is in response to discussions with FHWA-ME and MHPC regarding the history of the Frank J. Wood Bridge, looking particularly at potential associations with an interurban trolley line and the Boston Bridge Works. Information was presented to MHPC by a consulting party, Phinney White, from August 29, 2017 to September 29, 2017.<sup>1</sup>

### BACKGROUND

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This memo is a continuation of information presented in the Section 106 Determination of Effect for MaineDOT Brunswick 22603.00 regarding potential individual significance of the Frank J. Wood Bridge. Within that determination, dated February 6, 2017, MaineDOT and FHWA-ME determined that the Frank J. Wood Bridge was not eligible for listing as an individual resource under Criteria B & C. Conclusions from the February 6, 2017 determination are summarized below.

A property must have association with an individual's (or entity's) productive life in order to be eligible for listing in the National Register under Criterion B. While the Frank J. Wood Bridge was named after the man who proposed its alignment, Mr. Wood's productive life was as a farmer. Therefore, the bridge does not have significance for this association.

Additionally, the consulting parties asked whether or not the bridge now had significance under Criterion C due to the reduction of the number of truss bridges within the state since the completion of the historic bridge survey in 2004. MaineDOT and FHWA-ME maintains that the bridge is not eligible as an individual resource under Criterion C because it does not embody distinctive characteristics of the type; nor was its design innovative. We also considered guidance from National Register Bulletin 16A regarding rarity.

### RECENT DEVELOPMENTS

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<sup>1</sup> *This memo shall be considered with all other submitted documentation regarding Section 106 for Brunswick 22603.00 to date. This includes, but is not limited to, the Architectural Survey materials, MHPC requests for additional information, and the Determination of Effect.*



On August 29, 2017, in an email to MHPC, Mr. White stated his opinion that three areas warranted new consideration: the bridge's association with the Boston Bridge Works, the 1936 Flood, and the unique characteristics of a bridge carrying a trolley line in the center of the deck.

This memo will specifically address questions posed by MHPC in its response to Mr. White on October 4, 2017. These questions are outlined below.

In addition to utilizing Maine specific resources, we reached out to the Massachusetts Department of Transportation (MassDOT), the Vermont Agency of Transportation (VAOT), and the Nevada Agency of Transportation as well as the National Register Coordinators in Kansas and Louisiana regarding documentation that the respective agencies may have on the subjects of this memo, particularly updated contexts for metal truss bridges. To date, New Hampshire has not completed a survey of pre-1945 bridges and were therefore not contacted as part of this effort.

MassDOT provided examples of HABS/HAER documentations it has found useful in recent eligibility determinations as well as "Boston Bridge Works and the Evolution of Truss Building Technology." The work is an undergraduate thesis by Greg Galer and cited in some materials, particularly HAER documentations, investigated as part of this effort.

VOAT sent us the Vermont Division of Historic Preservation (VTDHP)'s Metal Truss, Masonry, and Concrete Arch Multiple Property Documentation Form (MPDF), which was accepted by the Keeper of the National Register in 1991. VOAT also directed us to VTDHP's Online Resource Center (ORC). The ORC provides the public with many different materials relating to compliance and historic preservation issues applicable to the state of Vermont. Within the ORC we found the "Vermont Historic Metal Truss Bridge Survey Final Report and Preservation Plan, October 1997." The report provides valuable, specific information about metal trusses as well as preservation plans for some.

NevadaDOT sent "Indiana Bridges Historic Context 1830s-1965", "Historic Context and National Register Evaluation of New Mexico Department of Transportation Bridges", and a copy of "A Context for Common Historic Bridges Types" NCHRP Project 25-25, Task 15.

The National Register Coordinators did not have any specific material to provide.

## MHPC QUESTIONS and MAINEDOT/FHWA-ME RESPONSES

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- 1. Above and beyond its significance as a contributing part of the eligible historic district, is the bridge associated with other events that have made a significant contribution to the broad patterns of our history (National Register Criterion A)? In other words, are there areas of significance that have not been considered with which the bridge has an important historic association?*

### 1936 Flood

Regarding Mr. White's opinion that the bridge may have individual significance due to its performance during the 1936 Flood, MHPC wrote:



As you have noted, the Frank J. Wood Bridge survived the 1936 flood because it had been engineered to do so. We agree. However, in our opinion that does not necessarily make it significant. The bridge did what it was designed to do, much as a house is designed to provide shelter or an industrial building is designed to meet the needs of a particular manufacturing process.

We agree with this statement and find that the bridge does not hold significance in association with the 1936 Flood, because the Frank J. Wood Bridge was built in 1931, prior to the 1936 Flood. With regard to National Register Criterion A, the ability of a bridge to survive a flood does not constitute significance in association with an important event/trend in history. Therefore, the Frank J. Wood Bridge would not be individually eligible for listing in the National Register for its relationship with the 1936 Flood.

#### Other Considerations under Criterion A

We examined whether or not a three-span truss bridge would be eligible for listing under Criterion A for Transportation without any documented association with a particular event or pattern of events while also considering that the bridge does not hold any significance under Criterion C. More simply, would a three-span truss have significance under Criterion A for Transportation because it is a three-span, but had no other association? We know of no example in Maine or New Hampshire of a bridge that fit this definition, nor could one be found in Massachusetts. We, therefore, examined the reports acquired from Vermont to ascertain if any bridge in that state was found significant solely for its role as a bridge, but not associated with any particular event or pattern of events nor for its engineering significance.

Based on information in the MPDF and the historic truss survey, many truss bridges are significant because of association with a specific event, particularly as part of Vermont's recovery from the devastating November 1927 flood. The state lost approximately 2000 bridges and most were replaced in two years. As of 1997, Vermont had 111 truss bridges left, 54 of which were built after and in response to the 1927 Flood, and are associated with the 1927 Flood.<sup>2</sup> We sampled at least 15 truss bridges (by type, locations, and year constructed) to review their individual survey form and preservation plan. We did not find a single example of a bridge holding significance under Criterion A without association with a specific event or pattern or events and were not eligible under Criterion C. Most, if not all, were eligible under Criterion A due to association with the 1927 flood recovery.<sup>3</sup>

#### Interurban History

We also examined the history of the bridge in the context of Maine's interurban lines. Interurban lines were born of city trolley lines. The roots of the line that the Frank J. Wood Bridge carried began in 1889 with the incorporation of the Brunswick Electrical Railway (aka. Brunswick & Topsham Electrical Railway). The line provided local service from the

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<sup>2</sup> For context – Vermont has approximately 4000 bridges.

<sup>3</sup> VOAT confirmed that a bridge's inclusion within the 1997 survey does not automatically lead to National Register eligibility.



Sagadahoc Fairground in Topsham, through Brunswick, and south to Harpswell. Its charter dictated construction must be finished in 1894; however, the company was granted two extensions. In 1895 Amos Gerald, of Fairfield, who would become known as “Electric Railroad King of Maine” purchased the charter.<sup>4</sup> Noted electric rail historian O. R. Cummings noted that the railway was required to strengthen the existing bridges over the Androscoggin River and Granny Hole Stream.

In 1897 Gerald, having by that time assumed control of the Bath Street Rail and the Lewiston & Auburn Horse Railroad, approached the legislature for approval of a charter for a line connecting Bath, Brunswick, and Lewiston. With approval in hand, he renamed the three lines the Lewiston, Brunswick, and Bath Railway (LBB). The line ran 18 miles in length. O. R. Cummings notes that Gerald always intended to sell the LBB.<sup>5</sup> In 1900 Gerald sold the LBB to a group of men from New York City. While the NYC group decreased debt from \$13,275 to \$4,000 in one year, they only paid small dividends in the next few years and continued to carry a small amount of debt.

The year of 1906 proved important for the LBB. A group headed by John R. Graham, of the Bangor Railway & Electric Company, absorbed the LBB along with three other lines: Augusta, Winthrop, and Gardiner Railway (AWG), Auburn, Mechanic Falls, and Norway Railway (AMN), and Augusta & Waterville Railway (AW). The following year Graham changed the name of AMN to the Lewiston, Augusta, and Waterville Railway (LAW), which in turn absorbed the ACH, AW, and the LBB. The AWG became the Augusta Division of the LAW while LBB became the Lewiston & Bath Division. In 1910 and 1913, the LAW absorbed the Auburn & Turner Railway and the Brunswick & Yarmouth Railway, becoming the Lewiston and Freeport divisions, respectively. By 1911, the LAW had expanded to 144 miles providing connection between Bath, Lewiston/Auburn, Augusta, and Waterville.<sup>6</sup> In *The Electric Interurban in America*, George Hilton notes that 1913 was the peak year for the LAW. He also described the LAW as “one of the principal electric railways in Maine.”<sup>7</sup>

For context, while the charter for the Portland interurban had been issued, Portland and surrounding towns were still being served by a collection of local lines connecting to Brunswick and Lewiston. The Portland and Lewiston interurban would not open until 1914.<sup>8</sup> Bangor’s electric rail trolleys would run until 1945.

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<sup>4</sup> Cummings, O.R. “Trolleys to Brunswick, Maine 1896-1937.” *Transportation Bulletin*, No.73, 1966, 4.

<sup>5</sup> Like many trolley lines of the time, the locals and the LBB were in part meant to provide access to a leisure park. Gerald had developed Merrymeeting Park; but it was out of business by 1906.

<sup>6</sup> Cummings, *Trolleys to Brunswick, Maine*, 15.

<sup>7</sup> Hilton, *George Woodman and John F. Due. The Electric Interurban in America*. Stanford, CA: Stanford University Press, 1960, 323.

<sup>8</sup> *The Portland & Lewiston ceased operations by 1933 and its infrastructure was immediately removed and scrapped. Cummings, Portland-Lewiston Interurban*, 2.



From 1907 to 1917 the LAW was profitable; however, in 1918 troubles began. Workers went on strike and a deficit began to grow, even with a toll raise. By 1918, LAW went into receivership with approximately \$132,000 in debt, including \$39,000 to the Cumberland County Power & Light. By 1919, the LAW had dissolved and the system was under the operation of the Androscoggin & Kennebec Railway (A&K). It is unclear if the A&K is a result of company restructuring along with a name change or represents a purchase of assets and debt by another group. It could be some of both. Most importantly, the A&K only saw the downfall of the interurbans – there was no documented expansion of their holdings in its 21 year history.

The A&K saw a few good early years. In 1920, the lines carried 12,842,576 passengers and reported a \$69,321 profit. O. R. Cummings notes a sharp drop in 1922 which only worsened in the following years. The decline is attributable to losing a battle with the rise of the automobile, courtesy of improved highways, which would often require the realignment of track. In 1927, the A&K carried only 7,863,810 passengers. The A&K's approach to mitigating financial losses was to examine abandonment of certain lines. In 1928, the Winthrop line was the first one decommissioned. When the state announced plans in 1931 to improve Route 201 north of Augusta to Waterville, the A&K elected to abandon the lines rather than expend monies to relocate in a time of degrading financial performance and relevancy. At the same time, the company had \$55,500 in outstanding mortgage bonds for the previous AWG. The company was ordered to liquidate and it abandoned lines from Augusta south to Gardiner and Sabattus. The tracks, overheads, and cars, including plows, were sold to a company in New York. Interestingly, the A&K removed the tracks and overhead between Gardiner and Sabattus and Augusta and Waterville even though they were not included in the mortgage that had been defaulted on. Presumably, these resources were also sold to generate much needed revenue. These actions completely removed the Kennebec division of the A&K. These efforts could not stave a company loss; by 1930 the A&K saw its first deficit, \$17,423, followed by \$29,711 in 1931.

Additionally, when the Frank J. Wood Bridge was constructed, the A&K railway was responsible for a proportional part of the expense. In 1937, the state looked to construct a new highway between Lewiston and Topsham (State Route 196) which would greatly impact the A&K. At this time, the A&K decided to end service between Bath and Lisbon Falls. It was likely that the electric railway infrastructure was removed soon afterward. The A&K went into receivership in 1940 and on January 10, 1941 its assets were auctioned. Service between Lisbon Falls and Lewiston continued until 1941, when bus service replaced it.

Circa 1930-1931, Maine State Highway Commission (MSHC) realized that the bridge crossing the Androscoggin River between Topsham and Brunswick was failing. Originally the commission had planned to replace it on alignment; however, a small group successfully persuaded the commission to realign the bridge in part to eliminate a smaller crossing north of the Pejepscot Paper Company while hoping to increase the potential energy of the horseshoe dam by enlargement. It is unclear what bridge type the MSHC planned for the on-alignment replacement. The change in alignment necessitated MSHC to alter the design and engineering of the bridge without delaying the replacement any



more than absolutely necessary. The MSHC would have likely looked to a design that was efficient and known, as well as using the American Association of State Highway Officials (AASHO) standards (the precursor to today's AASHTO standards). Galer correctly identifies that "truss bridges could usually be erected more quickly and less expensively for longer spans than reinforced concrete bridges."<sup>9</sup> Another facet of the crossing was incorporating the A&K interurban line.

By 1931, MSHC had specific guidance on how to incorporate an electric railway on to a bridge. The 1931 AASHO standards provided the specification for minimal vertical and horizontal clearances as well as specific loads for a bridge carrying a single-track railway with one-way highway as well as for a single-track railway with a two-way highway. (See *Photo 1: Section 5.2.11 – Electric Railway Loading*, *Photo 2: Clearance Diagram Electric Railway and Two Way Highway* and *Photo 3: Electric Railway Loading*). The Standard even contains a section directing commissions how to distribute the railway wheel load.

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<sup>9</sup> Lichtenstein Consulting Engineers. *MaineDOT Historic Bridge Survey Phase II Final Report & Historic Context*. Augusta, ME: MaineDOT, 2004, III-14.

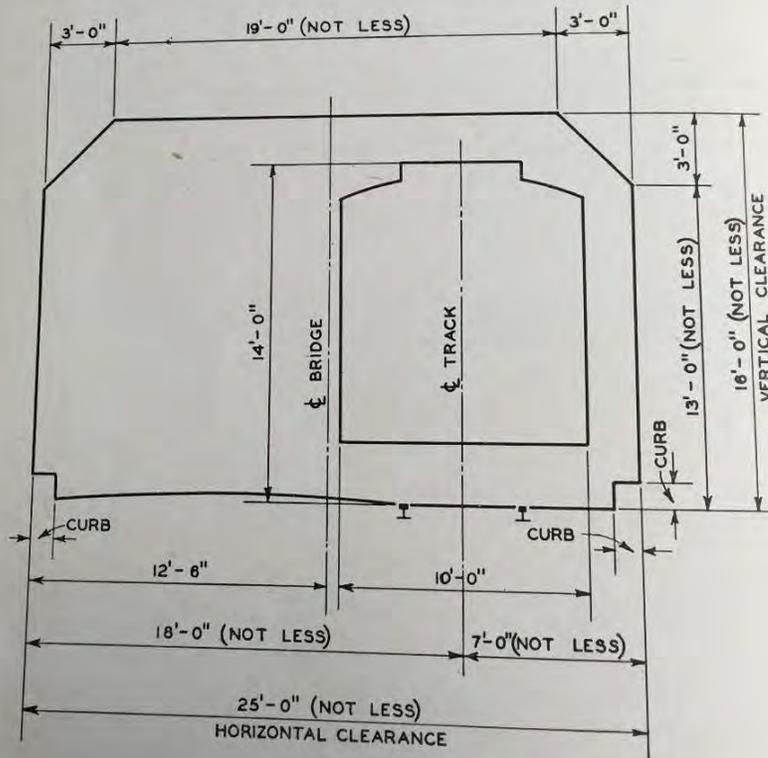
168 HIGHWAY BRIDGES AND INCIDENTAL STRUCTURES

shall be constructed to secure the following limiting dimensions or clearances for traffic:

The clearances and width of railway for 2-lane traffic shall be not less than those shown in Figure 1. The roadway width shall be increased at least 9 feet for each additional lane of traffic.

Bridges constructed for the combined use of highway and electric railway traffic shall have clearances not less than those shown in Figures 2 and 3.

In cases involving curved tracks, the horizontal clearances shall be increased an amount corresponding to that required to maintain the specified clearances. If the outer rail is super-elevated, the clearances shall be correspondingly increased.



CLEARANCE DIAGRAM  
SINGLE TRACK RAILWAY AND ONE WAY HIGHWAY TRAFFIC

FIGURE 2

Photo 1: Clearance Diagram for electric railway with one way highway

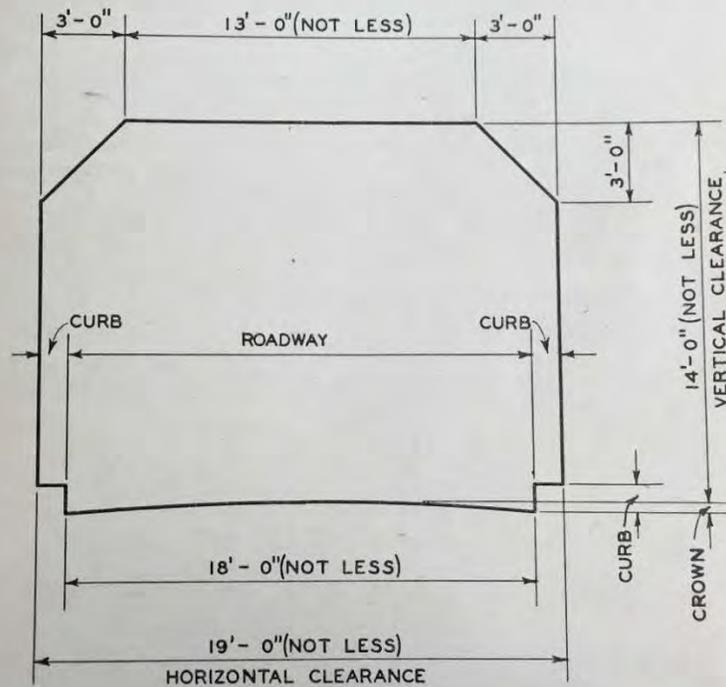
5.1.8.—*Length of Culverts.*

The length of culverts shall be sufficient to provide the full required width of roadway or width at the top of embankment. The assumed slope of the embankment shall be suitable for the particular filling material and shall be such as to eliminate any tendency for the embankment slopes to slip or slide.

5.1.9.—*Clearances.*

The horizontal clearance shall be the clear width, and the vertical clearance the clear height, available for the passage of vehicular traffic, as shown on the clearance diagrams.

Unless otherwise provided the several parts of the structure



CLEARANCE DIAGRAM  
TWO WAY HIGHWAY TRAFFIC

FIGURE 1

Photo 2: Clearance standard for electric railway with two way highway.

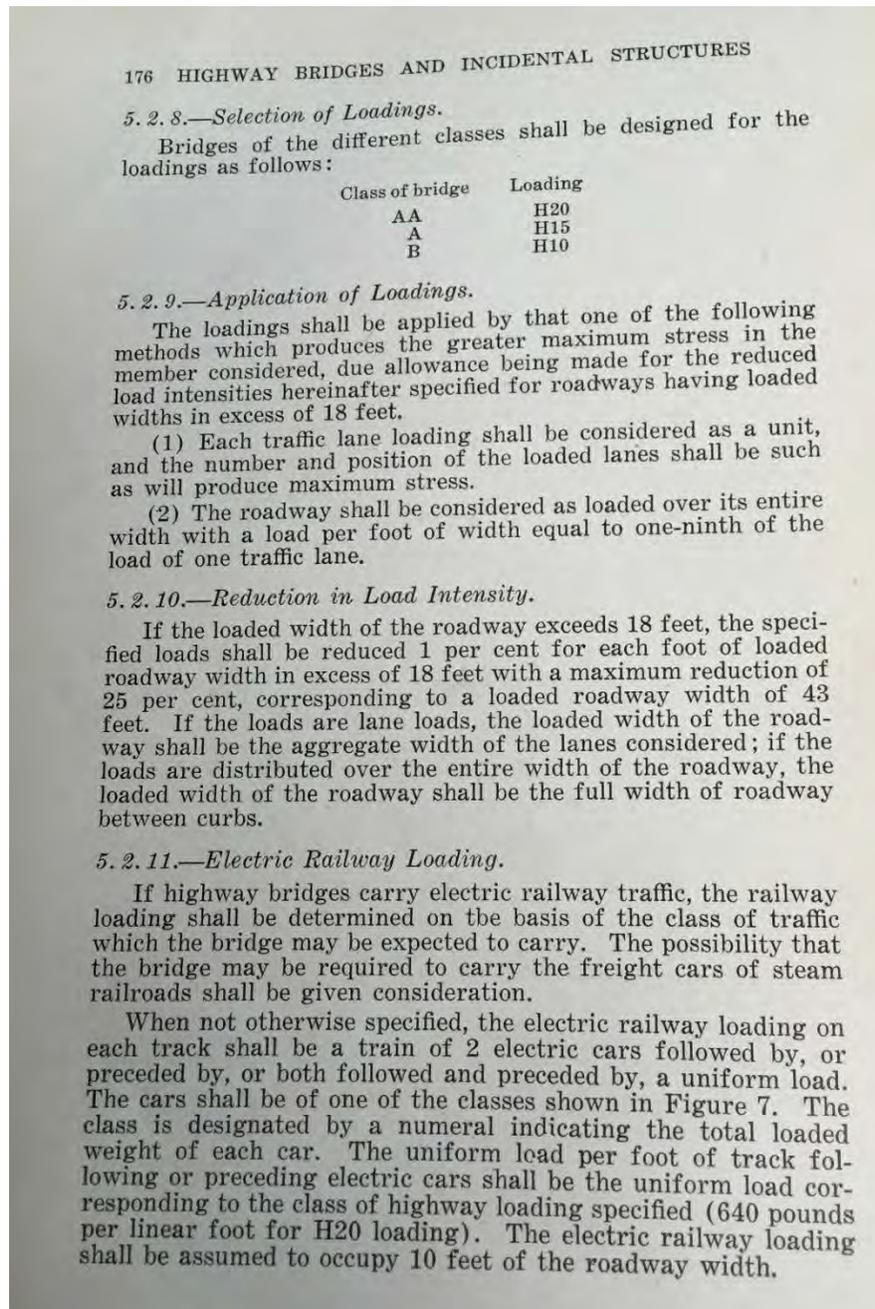


Photo 3: Electric Railway Loading

The 1931 plan set shows that the MSCH planned the bridge to meet the minimums required by AASHO. There was no technological innovation required on the part of Max Wilder and those who worked under him. Additionally, the tracks have since been removed. These facts quickly rule out individual eligibility under Criterion C for Engineering. This is because by the time the MSCH was designing the Frank J. Wood Bridge, the use of national standards had been in practice for nearly twenty years. The



incorporation of an electric railway onto the crossing did not require technological innovation nor does it stand out within the greater context of the rich history of electric railway within the state. A national body instructed MSHC designers exactly how to move electric railcars over a crossing and the MSCH followed that guidance to the bare minimum.

#### National Register Criteria & Integrity

The history of the interurban and the bridge's construction need to be considered against National Register Bulletins 15 (Bulletin 15) and 16A (Bulletin 16A) to understand if the bridge has significance under Criterion A and integrity to be eligible for listing as an individual resource.

The LAW is significant on a local level for its contributions to a specific period in Transportation. The LAW represents the peak of the interurban trend. It is significant because it linked three smaller lines and brought each area's burgeoning suburbs together. Its period of significance would be ca. 1900 to 1919, coinciding with the construction of the 18 miles of track necessary to connect the individual city based trolley services, and would end when the company entered receivership, marking its eventual downfall to automobiles. The A&K, while it had two good years, is mostly associated with the downfall of the trend, and was not the last operational electric railway.

The physical features of the LAW would include: tracks, rolling stock, catenary/high tension wire system, poles, car houses, waiting rooms, and power generating facilities. Evidence of these resources would ideally be found in the original corridors (also physical features) in the middle of highways, including any crossings (rivers/valleys) or linear corridors constructed specifically for the railways. However, the LAW does not retain any of the essential physical features that made up its character in its period of significance. Therefore, it does not hold any aspects of integrity and cannot convey its significance.

As the Frank J. Wood Bridge is not part of the LAW, it is not considered a significant resource. However, in the event that additional information is found regarding potential significance of the A&K that illuminates it continued to gain character and association within the transportation trend not represented by the LAW or its predecessors, it would still be considered a contributing resource to a historic district as it lacks individual distinction. It does so due to the commonality and availability of standardization.

While we understand there are few resources associated with interurbans, it is our interpretation of Bulletin 15 that this bridge does not fit guidance regarding rare examples. We find that the bridge on its own, even considering guidance on rare examples, does not fit the definition of an individual resource – regardless of the difference in significance or lack thereof between the LAW and the A&K. Additionally, particularly as the bridge is a standard design, it does not represent or hold essential physical features, especially without tracks or catenary, to retain integrity to adequately convey significance of the A&K, if it were ever found to have significance.

- 2. How important is the fact that the bridge was erected by the Boston Bridge Works, regardless of whether it is the last one in Maine? In addition, what characteristics of this*



*bridge distinguish it from one that might have been designed and fabricated by any other bridge company in this period, and are those distinguishing characteristics – if any – significant (National Register Criterion C)?*

It is more important to understand the significance of the company throughout its existence before fully understanding whether or not a “last” bridge can be significant because of that standing.

The early history and significance of the Boston Bridge Works (BBW) is better understood than in its later years. Information is found in resources by National Register nominations and HAER documentations (available through the Library of Congress). The Library of Congress has included an index function for the company within the HABS/HAER collection. The 9 BBW bridges documented in HAER all are from the earliest period of the company having been built in the late 19<sup>th</sup> century. The MPDF includes the following regarding the firm, “In the late 19<sup>th</sup> century this firm ranked second in New England to Berlin Iron Bridge in structural-fabrication capacity...movable bridges were a specialty, and its products also included railroad turntables and roof trusses.”

There are no features of the Frank J. Wood Bridge built by the BBW that distinguish it from any other bridge company in this period. This is because the bridge was designed to standard by the MSHC. The MSHC looked only to BBW for the truss pieces. The BBW’s significance as a bridge contractor is based in the period when it was designing smaller spans and dominating the fabrication industry. Staff engineers likely concentrated on bridges that could be ordered out of a catalog by a railroad company or other entity. No BBW catalogs have been found to date. BBW, as with many other steel fabrication firms, often installed a bronze plaque on bridges. They are common and while interesting pieces of our shared history, they are not considered character defining features due to their ubiquity. In his thesis, Greg Galer notes, “Bridge companies often had standard decorative pieces that acted as signatures of the company.”<sup>10</sup>

Another issue to understand is the role of BBW in bridge design, fabrication, and construction after 1930. Galer presented three methods of constructing a truss bridge during the era of bridge companies. One, the company did the majority itself – fabrication and design, including substructures. Two, the fabricator would hire ‘bridge-brokers’ – those who specialized in construction. They delivered the bridge pieces and were responsible for the piers and abutments. Third, the companies would hire local men for construction, including a foreman, to construct the bridge from materials the company would ship to the site. Based on the research for this effort, it is likely the BBW had very little to do with the construction of the bridge, if any at all.

It is clear, based on the known history of bridge design and technology as well as conclusions reached by Galer in his thesis that truss fabrication and associated companies were waning by this time. By 1930, Galer states, “All evidence of the BBW disappeared from the Boston City Directory. . . The last known structure to be built by the company was

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<sup>10</sup> Galer, 81.



in 1937 [with] evidence the company went out of business in 1938.”<sup>11</sup> Additionally, Galer found the company obtained permits to demolish a large building at its facilities in Cambridge in 1936, likely the result of a large fire in 1932.

The Frank J. Wood Bridge was designed by MSHC engineers – as indicated by the 1931 set found at MaineDOT, which falls into the pattern of design at that time. Additionally, the MSCH annual report notes that Southern New England Contractors Supply was paid \$294,000 for the superstructure and floor slab and that the BBW was paid for the steel superstructure.<sup>12</sup> The plan set indicates the size of members, the load they should carry, and details, like a sidewalk. While BBW may have produced shop drawings for the fabricating effort, it had exact guidance from the MSHC.

The MSHC had exacting guidance as well. In the years prior to the construction of the Frank J. Wood Bridge, standardization had become the norm in bridge engineering. In fact, nearby Vermont had lead the way in standardization for engineering during flood recovery in 1928-1929. With a rapidly failing bridge, the MSHC needed to quickly change designs on short notice to meet construction deadlines. It is likely that MSCH turned to a familiar type – a Warren truss. Engineers were also required to design the bridge to the AASHO standards for both the highway and interurban (even if the interurban, by this time, was struggling). The bridge is a standardized design using parameters produced by a semi-governmental agency.

As a result, the Frank J. Wood Bridge does not represent the work of the BBW during its period of significance; therefore, it is not eligible for listing in the National Register for its association with the company.

In conclusion and in consideration of materials used in research to date for this project, we determined the bridge remains ineligible for listing on the National Register of Historic Places as an individual resource because it is not individually distinctive under any criteria. Integrity is typically examined if a property is significant. Nevertheless, the loss of the interurban infrastructure, particularly the tracks and catenary system on the bridge represents a loss of integrity. The integrity of the standardized width and height of the highway/interurban bridge cannot overcome the loss of the tracks, catenary, cars, and other infrastructure associated with the resource. However, the Frank J. Wood bridge remains a contributing resource to the Brunswick Topsham Industrial Historic District.

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<sup>11</sup> Galer, 54.

<sup>12</sup> 1931-1932 MSHC Annual Report.



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<sup>i</sup> The HAER/HAER collection allows researchers to sort the collection by named indexes, including the Boston Bridge Works. There are 9 bridges within the collected indexed with the company.

# STATE OF MAINE

## MEMORANDUM

March 29, 2017

To: David Gardner, ENV/Maine Department of Transportation

From: Kirk F. Mohney, State Historic Preservation Officer *KFM*

Subject: 22603; bridge improvements/replacement, Brunswick; MHPC #1595-15

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I have reviewed the information received March 20, 2017 to continue consultation on the above referenced undertaking pursuant to the Maine Programmatic Agreement and Section 106 of the National Historic Preservation Act of 1966, as amended.

### Identification of Historic Properties (cont.)

In my memo to you dated March 6, 2017, I stated that “the discussion about the area [proposed Summer Street Historic District] in the SSIFE focuses only on the neighborhood’s architectural significance, and its eligibility for listing in the National Register of Historic Places as a historic district under Criterion C. It does not delve into the history of the neighborhood, or address the nature and duration of any association its residents may have had with the mills. Such an evaluation may have yielded other areas of significance that are represented in the district, as well as a different period of significance.” Later in that same memo, I noted that the effect of the proposed undertaking on the Summer Street neighborhood is, in part, related to the areas of significance represented in the proposed historic district, as well as its period of significance.

The additional information that the MDOT has submitted in response to the Commission’s March 6 memo, provides greater insight into both the history of the houses along Summer Street and the people who occupied them. This research shows that at various times one or more residents of Summer Street worked in the mills, and that the Pejepscot Paper Company owned five of the properties in the period from about 1919 to 1930. However, the MDOT concludes that the Summer Street neighborhood is not significantly associated with either the Pejepscot or the Cabot mill, and it reaffirms the determination that the area is only eligible for listing in the National Register under Criterion C in the area of architecture. The MDOT has refined the proposed district’s period of significance to c.1826-c.1890.

Based on the information that has been provided, the Commission concurs with the MDOT’s conclusion that the proposed Summer Street Historic District is significant only in the area of architecture, and that the period of significance is c.1826-c.1890.

### Finding of Effect (cont.)

The Commission concurs with the MDOT’s findings that Alternatives 1, 3, 4, and 5 will have no effect on the proposed Summer Street Historic District, and that Alternative 2 will have no adverse effect on the district based on the current conceptual design of a replacement bridge on a curved upstream alignment.

If you have any questions regarding our comments, please do not hesitate to contact me.

**STATE OF MAINE**  
**Memorandum**

Date: March 17, 2017

To: Kirk F. Mohny, MHPC  
From: David Gardner, Maine DOT/ENV  
Subject: Section 106 request for concurrence  
Project: Brunswick-Topsham 22603.00  
Scope: Bridge rehabilitation or replacement

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The MaineDOT has reviewed this project pursuant to the Maine Programmatic Agreement (PA) and Section 106 of the National Historic Preservation Act of 1966, as amended. The project consists of improvement of Frank J. Wood Bridge #2016 on the Brunswick-Topsham town line, carrying Route 201 over the Androscoggin River. The Federal action for this project is Federal funding. Please find below a response to the Maine Historic Preservation Commission's (MHPC) request for additional information related to this project dated 6 March 2017.

Identification of Historic Properties

*Summer Street Historic District*

The MHPC has requested further clarification about the relationship between the Summer Street Historic District (SSHHD) and nearby mills in Topsham and Brunswick, particularly the Pejepscot Paper Company and Cabot Manufacturing Company. The SSHHD consists of eight houses at 15, 17, 19, 21, 23, 25, 27, and 29 Summer Street, along with several outbuildings. Deeds, United States census data, and Topsham city directories, along with the 1986 intensive level survey data for Summer Street, have been consulted. A short summary of each residences' occupant/owner history is provided below.

- 15 Summer Street (Haskell-Colby House)  
Hugh Wilson, an early settler of Topsham, sold the lot that this house was built on to Joshua Haskell in 1826. According to Wheeler's *History of Brunswick, Topsham, and Harpswell, Maine*, Haskell built and moved into this house by November 1826. Haskell arrived in Topsham in 1818. He was a lumberman and formed a business with Henry Bowman that manufactured lumber into shingles, clapboards, and boards.<sup>1</sup>

Haskell sold the house and property to Ebenezer Colby in 1853. Colby also worked in lumber manufacturing, as he owned a mill that was located where the Pejepscot Paper Company was eventually constructed. He partnered with James Chaney (see 21 Summer Street). The company made sashes, doors, shingles, and other wood products. Colby later moved his business to another location in Topsham.<sup>2</sup>

Colby enlarged the house at this location between 1875 and 1884. The original house was a Cape form, similar to 17 Summer Street and 25 Summer Street. The house was mortgaged twice, once in 1871 and in 1875. The latter mortgage included his son, Charles Colby, a joiner. Additionally, an 1884 deed for this property shows that the house had been divided between Ebenezer and Charles Colby and their families.<sup>3</sup> The house was enlarged to two-stories with Stick-style

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<sup>1</sup> George A. Wheeler, *History of Brunswick, Topsham, and Harpswell, Maine* (Brunswick: Self-published, 1877), 753; Summer Street, Topsham, Maine Initial Summary Report, November 1986, Maine Historic Preservation Commission; hereafter referred to as Summer Street ISR.

<sup>2</sup> Wheeler, 562.

<sup>3</sup> Charles Colby to Mary Colby, 3 November 1884, Book 98, Page 461, Sagadahoc County Registry of Deeds, Bath, Maine; Summer Street ISR.

elements. The composition is similar to the house at 21 Summer Street. The house at 21 Summer Street was built in 1887 and designed by local architect Samuel Dunning. Thus, Dunning could have designed the enlargement of the Colby's house.

The house remained in the Colby family through Charles Colby's daughter, Martha Chandler until 1920. (Charles Colby is shown as a grocer in Topsham in the 1900 Census.) The Chandler's sold the property to Ernest and Adele Paradis. Topsham city directories show Ernest as a clerk for C. A. Lemieux in 1922 and 1924. Ernest and Adele Paradis died in 1923 and 1924, respectively, and the property passed onto their children.<sup>4</sup> City directories reveal that the Paradis heirs did not live in the house, but rented the property. In 1926 Carl Rackley is shown as resident (no occupation listed) and in 1928 the occupant is George Field, an employee at the Pejepsco Paper Company. The Paradis heirs retained the property until the 1950s. In 1951, heir Omer Livernois is listed in the Topsham city directory as a machinist with Bath Iron Works. He is also renting the house to three others, including Leo Bolduc, who worked at the Verney Corporation (former Cabot Manufacturing Company); Harald Titcomb, a carpenter for Bowdoin College; and Kendall Lord, a cable splicer for the New England Telegraph and Telephone Company.

- 17 Summer Street (John Barron House)

Hugh Wilson, early settler of Topsham, sold the lot that became 17 Summer Street, on 3 March 1826 to James Pray. Pray, a joiner, built the Cape form house here by August 1827 when he sold it to John Barron. Barron (1792-1860) was a lumberman who formed a company with his brother William (see 19 Summer Street). He served in the Maine Legislature in 1850.<sup>5</sup> John Barron died in 1860 and the property remained within the Barron family until the 1910s. Heirs included George Barron, shown as a lawyer in the 1900 Census. George was the father of Anna Barron Harrigan (shown as a teacher in 1900). She sold the property to Thomas Harvey in 1917.<sup>6</sup>

The 1920 Census shows that Thomas Harvey was a barber, while his wife and eldest daughter were employed by the Cabot Manufacturing Company in Brunswick. The 1940 Census shows Julia Harvey, Thomas' widow, as a maid in a hotel, with her eldest son a bartender at a hotel and a son-in-law who works as a loom fixer at a cotton mill (likely Cabot Manufacturing Company). The house remained in the Harvey family through Jeanette (Harvey) Ginn until 1996. The 1951 Topsham city directory shows Ginn as a secretary at Bowdoin College.

- 19 Summer Street (William Barron House)

Hugh Wilson, early settler of Topsham, sold the lot that became 19 Summer Street to George Lewis Jr. on 28 March 1826. The following year Lewis sold the lot to William Barron (1797-1866). William Barron was a lumberman, who formed a company with his brother John Barron (see 17 Summer Street). William also became the president of the Pejepsco National Bank.<sup>7</sup> The property remained with the Barron family until 1901. William's son James Barron worked as a clerk at a lumber yard, according to the 1880 Census. His wife Irene Barron sold the property to Henry Hazling (no occupational information has been located for Hazling).<sup>8</sup>

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<sup>4</sup> St. John's Cemetery, Brunswick, Maine, accessed 14 March 2017;  
<http://www.rootsweb.ancestry.com/~mebrucem/cem32/trans32p.html>.

<sup>5</sup> Wheeler, 717.

<sup>6</sup> Anna Harrigan to Thomas Harvey, 8 June 1917, Book 135, Page 434, Sagadahoc County Registry of Deeds, Bath, Maine.

<sup>7</sup> Wheeler, 718

<sup>8</sup> Irene Barron to Henry Hazling, 23 October 1901, Book 94, Page 480, Sagadahoc County Registry of Deeds, Bath, Maine.

None of the deeds give an indication of whether this property was enlarged in similar fashion to 15 Summer Street. A Cape form house was likely constructed here by 1827, similar to the others on Summer Street. However, whether that house was lost or enlarged has not been found in documentation to date.

Henry Hazling sold the property to Mary Emma Hessel in 1910. She was married to Carl Hessel, who is shown as a photographer in the 1910 Census and a musician at the Bath Opera House in the 1920 Census. Throughout the 1920s, Hessel is shown as a musician and clerk in the Topsham city directories. The Hessel's retained the property until the 1950s when they sold to Lucien Lacharite. Lacharite detached the barn from the house and moved it on the lot. He also added the front porch to the barn.<sup>9</sup>

- 21 Summer Street (James F. Chaney House)  
This house was constructed by James F. Chaney House in c. 1887. He hired local architect Samuel Dunning to design the house. Chaney began his career as a lumberman and partnered with Ebenezer Colby (see 15 Summer Street) manufacturing boards, clapboards, and shingles.<sup>10</sup> By 1900 Chaney is noted as a coal dealer in the Census. Chaney bought the lot for this house in 1872 from Benjamin and Mary Wilson, but deeded it to his father Lyman Chaney in 1874. He received the lot back in 1887. The deeds do not reference buildings associated at this lot. The Wilson family owned the lot since 1849 suggesting that a house likely stood here, though its fate is unknown. Furthermore, Goff does not suggest that Dunning remodeled an existing house when working at 21 Summer Street, but that it was new construction.

The Chaney family retained the house until 1919. James Chaney deeded the land to Roscoe Philips, who sold it to the Pejepsco Paper Company.<sup>11</sup> During the 1920s the occupants of the house changed often, as indicated by Topsham city directories. In 1922 Augustus Boucher, a teamster with D & C Scribners, is located here, followed by Mrs. Ella Dearborn, manager at Pejepsco Paper Company in 1924; Charles S. Pennell, a clerk at the Topsham General Store in 1926; and either Samuel Wilson, an employee of the Pejepsco Paper Company, or George Naugler, an employee of Naugler Brothers, in 1928. The 1951 Topsham city directory notes two individuals living at this location: Philippe Labbe, a carpenter, and Remildo Fortini, a mechanic at the Wright Buick Company. Neither individual is the property owner.

- 23 Summer Street (Cram-Chaney House)  
Mary Wilson, widow of Hugh Wilson, deeded this property to Stephen and Hannah Cram in 1843. Most likely Wilson built the house located here in the 1820s, similar to the other houses on Summer Street. Stephen Cram is noted as a farmer in the 1860 and 1870 Censuses.

In 1887 the house passed to Lyman Chaney via Olive Gilman, the Cram's daughter. The house stayed in the Chaney family until 1919, when James Chaney sold it to Roscoe Phillips. Phillips in turn immediately sold to the Pejepsco Paper Company. Topsham city directories note Samuel Wilson at this location in 1924, 1926, and 1928 (though 1928 could be George Naugler, who worked for Naugler Brothers). He was a towerman at the Maine Feldspar Company;

In 1931 George Naugler obtained the property from the paper company. He is shown in 1928 as living on Summer Street already and working for Naugler Brothers of Brunswick. By 1940

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<sup>9</sup> Summer Street ISR.

<sup>10</sup> Wheeler, 562; John V. Goff, *Samuel Dunning: Brunswick's First Architect* (Brunswick: Pejepsco Historical Society, 1984), 6.

<sup>11</sup> Roscoe Phillips to Pejepsco Paper Company, 15 April 1919, Book 141, Page 467, Sagadahoc County Registry of Deeds, Bath, Maine.

George Naugler had died and the Census shows his wife Crystal and their eldest daughter employed in housework. Crystal Naugler sold the property in 1942 to Agnes Harris.<sup>12</sup> The 1951 Topsham city directory shows George Collins here, with no occupation listed. This house has been extensively altered on the exterior since 1982.<sup>13</sup>

- 25 Summer Street (Wilson House)

In 1826 Jesse D. Wilson purchased the lot for this property from Esther Wilson. The 1850 Census shows Wilson as a lumberman. The house was likely constructed in 1826 or 1827 as it is similar in form to the other early Cape forms on Summer Street. The house stayed in the Wilson family until 1919. The house passed from Jesse and Clarissa Wilson to their eldest daughter Almira and then to their youngest son Frederick. Frederick's daughter Ensena, who lived in Portland, sold the property to Roscoe Phillips, who in turn sold it to the Pejepscot Paper Company.<sup>14</sup>

During the 1920s the Topsham city directories show Charles Morgan, a machinist (employer unknown) here in 1924 and 1926 and F. Thaxter Barrows and Robert French, both employees of the Pejepscot Paper Company, in 1928. In 1930 Frank Willis purchased the property from the paper company. The 1930 Census does not show an occupation for Willis, though in 1910 he is shown as working in a paper mill. The property passed to Frank's wife Mary. The 1940 Census shows Mary with two adult children, one employed as a clerk in a retail store and the other an insurance agent, and a grandchild. The 1951 Topsham city directory shows Ethel Willis as a clerk and her brother-in-law James Adams as a salesman. The property remained in the Willis family through Ethel Willis Leighton and Chester Leighton until 1982.

- 27 and 29 Summer Street (Berry House)

Ebenezer and Martha Farren, early settlers of Topsham, sold this property to George Berry in 1826. (Martha Farren was the daughter of Hugh Wilson.) The property passed through the Berry family, from George to his grandson Frank, and finally to Frank's wife Addie, and their children. The 1900 Census shows Frank as a merchant. Addie and her children sold the property to Roscoe Phillips in 1919. Phillips deeded the property to the Pejepscot Paper Company.<sup>15</sup>

In the 1920s, as detailed in Topsham city directories, Albert Bourassa is consistently shown living at this location. He was a plumber at the Pejepscot Paper Company. He later purchased this property from the paper company in 1931.<sup>16</sup> The 1951 Topsham city directory shows 27 and 29 Summer Street separately. Albert Bourassa, now retired, is at 29 Summer Street, while Merle Orme, an employee at the Pejepscot Paper Company is at 27 Summer Street. The property stayed in the Bourassa family until 1988, when granddaughter, Eva Jeanne Racine Becket sold the property to Kenneth P. Toner. The property was officially split into two parcels in 2005. Paul

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<sup>12</sup> Mary Wilson to Stephen and Hannah Cram, 30 January 1843, Book 20, Page 63; Olive Gilman to Lyman Chaney, 12 November 1887, Book 71, Page 221; Roscoe Phillips to Pejepscot Paper Company, 15 April 1919, Book 141, Page 467, Sagadahoc County Registry of Deeds, Bath, Maine.

<sup>13</sup> Summer Street ISR.

<sup>14</sup> Esther Wilson to Jesse D. Wilson, 27 March 1826, Book 2, Page 195, Lincoln County Records; Roscoe Phillips to Pejepscot Paper Company, 15 April 1919, Book 141, Page 467; Pejepscot Paper Company to Frank Willis, 20 October 1930, Book 172, Page 232; Chester F. Leighton to Murial Adams Sanford, 23 October 1982, Book 614, Page 305; Sagadahoc County Registry of Deeds, Bath, Maine.

<sup>15</sup> Ebenezer & Martha Farren to George Berry, 29 January 1826, Book 134, Page 257, Lincoln County Records; Roscoe Phillips to Pejepscot Paper Company, 15 April 1919, Book 141, Page 467, Sagadahoc County Registry of Deeds, Bath, Maine.

<sup>16</sup> Pejepscot Paper Company to Albert Bourassa, 2 May 1931, Book 175, Page 238, Sagadahoc County Registry of Deeds, Bath, Maine.

Seaquist and Martha Dillard retain 29 Summer Street (and are the current owners) and Charles and Ann Carroll obtained 27 Summer Street. The current owner of 27 Summer Street is Josephine Seymour.

The deed research does not provide specifics about the structures located on these lots. These structures do not follow the Cape form prevalent along Summer Street. A 2010 survey effort lists an approximate date for 29 Summer Street as c.1850, which fits with the context outlined above and with the form and massing of the structure. The 2010 survey effort notes that 27 Summer Street was moved to this location c.1930 from Flagg's Brick Yard, which was located on Summer Street just west of Main Street. The brick yard opened in 1798 and continued into (at least) the latter part of the 1870s. The survey also indicates that building was originally constructed in the nineteenth century.<sup>17</sup> Based on form and massing, the moved structure was likely originally constructed c.1880.

Summer Street was laid out in 1826 and accepted by the Town of Topsham the following year. This date correlates well with the deed research documented above. Early settler, Hugh Wilson sold numerous lots along Summer Street in 1826. As a result, Summer Street contains several houses (15 Summer Street, 17 Summer Street, possibly 19 Summer Street, 23 Summer Street, and 25 Summer Street) built during this early development period, 1826-1827.

The Pejepscot Paper Company originated in the mid-nineteenth century. Originally known as the Topsham Paper Company, the mill was constructed in 1868 under the leadership of Sanford A. Perkins and Samuel R. Jackson. The company failed in 1874 and was sold at auction. In 1875 the Bowdoin Paper Manufacturing Company formed to operate out of the mill. By 1877 the mill employed 75 workers. The mill produced paper products into the 1980s. The mill is listed in the National Register under Criterion A and C for Architecture and Industry. The mill is one of the earliest pulp and paper mills constructed in Maine.<sup>18</sup>

The Cabot Manufacturing Company was established in 1857. The company bought a 1830s mill and enlarged it in the 1860s. The existing Cabot mill building was constructed in 1891 and 1892 and replaced the previous mill building. The company manufactured cotton into cloth.<sup>19</sup>

Five of the eight residences located on Summer Street predate the establishment of the Pejepscot Paper Company and Cabot Manufacturing Company. Additionally, none of the original owners of these five residences were involved with the establishment or later operations of either mill. Similarly, the original owners of 21 Summer Street (built c.1887), 27 Summer Street (built c.1880, moved c.1930), or 29 Summer Street (built c.1850) did not have any association with the mills. Therefore, the establishment of Summer Street and these properties was not related to the rise of the mills.

No owners or occupants of the eight buildings on Summer Street have any association with the Pejepscot Paper Company or the Cabot Manufacturing Company until the twentieth century. In general, most of the longtime and/or original owners of the properties on Summer Street sold these houses in the early twentieth century. As noted above, the new owners or renters of these properties from 1920 to 1950 worked for a variety of nearby employers, including the Pejepscot Paper Company, Cabot Manufacturing Company, Maine Feldspar Company, New England Telegraph and Telephone Company, C. A. Lemieux,

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<sup>17</sup> Wheeler, 609; Historic Building/Structure Survey Forms for 27 and 29 Summer Street, Scott Hanson, 20 April 2010, Maine Historic Preservation Commission.

<sup>18</sup> Wheeler, 608-609; National Register of Historic Places, Pejepscot Paper Company, Topsham, Sagadahoc, Maine, National Register #74000192.

<sup>19</sup> Historic Building/Structure Survey Form for Cabot Manufacturing Mill, Brunswick, Cumberland County, Christi Mitchell, 7 January 1992, Maine Historic Preservation Commission.

Bowdoin College, and Bath Iron Works. Other occupations noted for residents of Summer Street include a musician, barber, teamster, maid, carpenter, mechanic, and bartender. These employers were gleaned from the 1910, 1920, 1930, and 1940 Censuses and Topsham city directories.

The most direct link between Summer Street and either the Pejepscot Paper Company or the Cabot Manufacturing Company occurred in 1919. The Pejepscot Paper Company bought 21, 23, 25, and 27/29 Summer Street from Roscoe Phillips that year. Phillips, who lived in Portland, is shown as a salesman or realtor in the 1910 and 1930 Censuses, respectively. The company's ownership of these properties proved short-lived and by c.1930 the company sold the properties. Looking closely at these properties in the 1922, 1924, 1926, and 1928 Topsham city directories, reveals that while the paper company did rent to some of their own employees, they also rented to individuals outside of the company. The directories reveal that approximately half the properties were rented to paper company employees, while the other half were rented to employees of other firms, such as the Topsham General Store, Maine Feldspar Company, and D & C Scribners. Therefore, the Pejepscot Paper Company may have owned these properties, but they did not exclusively rent them to only their own workers.

The evidence collected does not show patterns of deliberate worker housing owned and operated by the Pejepscot Paper Company. Instead, Summer Street is located in close proximity to the paper company, which was attractive to some employees throughout the first half of the twentieth century. In fact, Summer Street is centrally located between both Brunswick and Topsham's industrial and commercial areas and provided a reasonable commute for a variety of workers.

The owner/occupancy trends detailed above further support the established period of significance for the Summer Street Historic District as fully in the nineteenth century. The period of significance should be refined to c.1826-c.1890, which fully encompasses the dates of construction for all houses originally constructed on Summer Street. The last wave of building is c.1887 with the construction of 21 Summer Street and the enlargement of 15 Summer Street, both in the Stick style. After 1900 many of the longtime families who built and lived in these houses sold them and by 1920 many of the houses are being rented. This rental trend is evident into the 1950s. This pattern signifies a shift in the use of these houses and notes that other areas in Topsham or Brunswick had become more fashionable to live in.

Thus, the owner/occupancy history of the SSHD does not warrant including the district in the nearby Brunswick-Topsham Industrial Historic District. The development of Summer Street occurred independently of the Pejepscot Paper Company and Cabot Manufacturing Company. While the Pejepscot Paper Company purchased five of the historic district's residences in 1919, the company only retained them for approximately ten years and did not restrict renting to only their own employees. No evidence of a formal endorsement of the properties within the SSHD as worker housing was located. Instead, the SSHD housed numerous workers from a variety of employers in Brunswick, Topsham, and even Bath.

# STATE OF MAINE

## MEMORANDUM

March 6, 2017

To: David Gardner, ENV/Maine Department of Transportation

From: Kirk F. Mohny, State Historic Preservation Officer *KFM*

Subject: 22603; bridge improvements/replacement, Brunswick; MHPC #1595-15

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I have reviewed the information received February 6, 2017 to continue consultation on the above referenced undertaking pursuant to the Maine Programmatic Agreement and Section 106 of the National Historic Preservation Act of 1966, as amended.

In a memo dated June 16, 2016, the Commission expressed its opinion that unless documentation could be found to establish a direct link between the construction and/or occupation of the houses along Summer Street with the operation of the mills, the area should not be included in the Brunswick-Topsham Industrial Historic District. The Supplemental Supporting Information for a Finding of Effect (SSIFE) states that intensive level survey information for the Summer Street properties is on file at the Maine Historic Preservation Commission. In addition, data from the 1940 U.S. Census provided by the Friends of the Frank J. Wood Bridge (undated letter to U.S. FHWA from John Graham) seems to indicate that a number of residents of Summer Street had an association with the mills at that time. Nonetheless, the discussion about the area in the SSIFE focuses only on the neighborhood's architectural significance, and its eligibility for listing in the National Register of Historic Places as a historic district under Criterion C. It does not delve into the history of the neighborhood, or address the nature and duration of any association its residents may have had with the mills. Such an evaluation may have yielded other areas of significance that are represented in the district, as well as a different period of significance.

The Friends of the Frank J. Wood Bridge have raised concerns about the National Register status of the Cabot Mill in Brunswick should the integrity of the potential industrial historic district be lost due to the removal of the bridge. During Section 106 consultation for the construction of a proposed telecommunications facility on the roof of the Cabot Mill in April, 2016 the Commission stated that the mill was individually eligible for listing in the National Register. Although we acknowledge that most if not all of the ancillary buildings historically associated with the mill have been removed, the existing structure retains sufficient integrity to merit listing under Criterion C, and perhaps Criterion A. We do not believe that the removal of the Frank J. Wood Bridge would jeopardize the Cabot Mill's individual National Register eligibility.

Based on new information, the MDOT has concluded that the Brookfield Dam does not contribute to the significance of the Brunswick-Topsham Industrial District because it was constructed in 1985, which is outside the district's period of significance. In addition, the dam has not achieved significance in the past 50 years. The Commission agrees with the MDOT's conclusions.

### Finding of Effect

The Commission concludes that Alternatives 1, 2 and 5 (as described in the Summary of Alternatives [“Summary”] document dated October 27, 2016) will have an adverse effect upon historic properties as defined in 36 CFR Part 800.4(d). Affected properties include the Brunswick-Topsham Industrial Historic District and all of its contributing resources, the individually listed Pejepscot Mill, and the individually eligible Cabot Mill. The effect of these alternatives on the proposed Summer Street neighborhood is, in part, related to the areas of significance represented in the district, as well as its period of significance. As noted above, our understanding of the neighborhood’s development and historic associations is incomplete at this time.

The description of Alternative 3 in the aforementioned Summary provides limited detail about how the proposed work would change the historic design and features of the Frank J. Wood Bridge. Nonetheless, it appears that this alternative would have no adverse effect upon historic properties.

According to the Summary, Alternative 4 is similar to Alternative 3, except that a 5’ wide sidewalk would be added to the downstream side of the bridge. No details have been provided about what this sidewalk would look like or how it would alter the character defining features of the Frank J. Wood Bridge. Given the scale of the historic bridge, the addition of such a feature may not have an adverse effect upon it. However, further information needs to be provided about the design of the sidewalk and any other alterations that are part of Alternative 4 to make a conclusive finding of effect.

The Friends of the Frank J. Wood Bridge and others have commented on the decline in the population of metal truss bridges in Maine since the 1999 bridge inventory was created. They have also suggested that the individual National Register eligibility of the Frank J. Wood Bridge should be re-evaluated in that context. In the SSIFE, the MDOT addressed this matter and reached the conclusion that the bridge lacks individual significance and is, therefore, not individually eligible for listing in the National Register. The Commission believes that it would be valuable for the MDOT and the FHWA to revisit and update the metal truss bridge inventory. However, we do not believe that the outcome of such a process would change the finding of effect for the current project.

If you have any questions regarding our comments, please do not hesitate to contact me.

**STATE OF MAINE**  
**Memorandum**

Date: February 6, 2017

To: Kirk F. Mohny, MHPC  
From: Megan M. Hopkin, Maine DOT/ENV  
Subject: Section 106 request for concurrence  
Project: Brunswick-Topsham 22603.00  
Scope: Bridge rehabilitation or replacement

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The Maine DOT has reviewed this project pursuant to the Maine Programmatic Agreement (PA) and Section 106 of the National Historic Preservation Act of 1966, as amended.

The project consists of improvement of Frank J. Wood Bridge #2016 on the Brunswick-Topsham town line, carrying Route 201 over the Androscoggin River. The Federal action for this project is Federal funding. The cultural review is scheduled to be completed by March 6, 2017.

In accordance with 36 CFR Part 800.4, the following identification efforts of historic properties were made:

- 800.4(a) (1) - The Area of Potential Effect (APE) includes properties/structures adjacent to the bridge and within the project limits. Properties/structures adjacent to the project limits are considered to be within the APE. The APE is shown as a red polygon on the attached map.
- 800.4(a) (2) – Review of existing information consisted of researching the National Register database. The Maine Historic Preservation Commission Archaeological staff has also reviewed the undertaking and is waiting on an alternative to be selected to continue with review.
- 800.4(a) (3) – The towns of Brunswick and Topsham were contacted via letter and asked to comment on knowledge of, or concerns with, historic properties in the area, and any issues with the undertaking's effect on historic properties. The town was also requested to provide information regarding local historic societies or groups. The towns have replied with information regarding their historic districts.
- 800.4(a) (4) – Letters obtaining project location and scope were sent to the 4 federally recognized Tribes in Maine. The Tribes have not replied to date.
- 800.4(c) – The Maine DOT conducted historic architectural surveys within the APE to determine if properties met National Register criteria. Several properties were determined eligible for the National Register as part of a proposed Historic District, including the Frank J. Wood Bridge. The Maine Historic Preservation Commission Archaeological staff has also reviewed the undertaking and is waiting on an alternative to be selected to continue with review.

In accordance with 36 CFR Part 800.4(d), ***the Maine DOT has determined the following: Alternatives 1, 2, and 5 would adversely affect historic architectural properties. Alternatives 3 and 4 would not adversely affect historic architectural properties.*** Please see attached supporting documentation.

In accordance with the PA and 36 CFR Part 800, please reply with your concurrence or objection to this determination within 30 days.

Once MaineDOT makes a final decision on which alternative to proceed forward with, MHPC will be informed of the decision. MaineDOT will be processing 4(f) individual or programmatic documentation with FHWA upon concurrence with this finding.

Please contact me at [megan.m.hopkin@maine.gov](mailto:megan.m.hopkin@maine.gov) or at 592-3486 if you have any questions. Thank you.

cc: CPD e-file  
enc: Supporting Information for Finding of Effect

## **Supplemental Supporting Information for a Finding of Effect**

Project: Bridge #2016 - Frank J. Wood Bridge / WIN 22603.00 / STP-2260(300)

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### **Introduction**

Title 36 of the Code of Federal Regulations Part 800-Protection of Historic Properties (36 CFR Part 800) is the Federal regulation which outlines compliance with Section 106 of the National Historic Preservation Act of 1966. 36 CFR 800.1 states:

The section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties...The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects to historic properties.

Parts 800.2 through 800.15 outline specific steps and aspects of the regulation, including the identification of the Area of Potential Effect (APE; see Appendix A), historic properties, documentation, and assessment of effects.

The first purpose of this document is to memorialize Section 106 consultation discussions at consulting parties meetings for the Frank J. Wood Bridge project. These discussions included the APE, National Register of Historic Places eligibility of the historic resources (including the Frank J. Wood Bridge and the surrounding landscape), and potential adverse effects. The second purpose of this document is to present the Federal Highway Administration (FHWA) finding of effect for each alternate presented in the Summary of Alternatives (Appendix C).

FHWA has elected to address Section 106 comments received by the Section 106 consulting parties related to the eligibility of and potential effects to historic properties within the text of this document. Appendix D is a matrix summarizing the comments received with a reference to where the comment was addressed and or a summary response to the comment. Note: FHWA has determined that some of the comments received between October 24, 2016 and January 20, 2017 are not best answered through because they are not related to the eligibility of and the potential effect to historic resources. They be addressed separately at a future date.

FHWA recommends that pertinent definitions and terms of the National Park Service (Appendix B) be utilized as a reference guide as well as documentation available from the National Park Service and 36 CFR part 800 while reviewing this finding of effect and while forming any subsequent comments on this finding. Those definitions are specific to the Section 106 and National Register processes. They are key influencers in the National Register eligibility of historic resources as well as the application of adverse effects. Any word using specific National Park Service meaning will be bolded throughout the document.

Additionally, readers may find Title 36 of the Code of Federal Regulations Part 61– Procedures for State, Tribal, and Local Government Historic Preservation Programs (36 CFR Part 61) and its Appendix A helpful.

The document outline is as follows:

1. Project Purpose and Need
2. Federal Action
3. Area of Potential Effect
4. Determinations of eligibility, including:
  - **significance**
  - **integrity**
  - and the **essential physical features** of each resource
5. FHWA Finding of Effects
  - a. Findings of effect for each alternate presented in the Summary of Alternatives (Appendix C)
  - b. Findings of effect for each resource by alternate
6. Archaeology
7. Bibliography
8. Appendices
  - a. Area of Potential Effect
  - b. Definitions and Terms of the National Park Service
  - c. Summary of Alternatives
  - d. Section 106 Comments Received
  - e. Documentation of previous determinations of eligibility for Cabot Mill
  - f. Maine Historic Preservation Commission concurrence on Section 106 Architectural Inventory
  - g. Photographs of resources included within the APE
  - h. Email from C.Anderson to N.Baker
  - i. Email from P.Adams to S.Landry

## 1. Purpose and Need

The purpose of the project is to address poor structural conditions and load capacity issues on the Frank J. Wood Bridge and to address pedestrian and bicycle mobility and safety concerns.

Bridge improvements are needed to improve the condition ratings of the superstructure and deck from a rating of 4 (poor condition) to 7 (good condition). Because of the age of the bridge, 85 years old, and the considerable number of heavy loading cycles it has already experienced, steel fatigue concerns on critical tension members need to be addressed to continue to carry heavy truck traffic on the existing truss. Additionally, the floor beams and stringers need improvements to bring their load rating factors to a 1.0 for all legal loads.

This bridge is classified by the Federal Highway Administration (FHWA) as structurally deficient with superstructure and deck condition ratings of 4 out of 9 (poor condition). The 3 truss spans are fracture critical, meaning that failure of certain steel tension members could cause any of the 3 spans to collapse. Some of the steel truss bridge components

are fatigue sensitive, susceptible to cracking and fracture as a result of heavy cyclic loading. The floor beams and stringers within the truss spans do not meet current design load or MaineDOT legal load standards.

Pedestrians on the east side of Routes 201/24 cannot cross the river without crossing the highway, and the existing mid-block pedestrian crossings are considered dangerous.<sup>1</sup> Bicycle traffic is seriously limited by the narrow, 2 ft, paved shoulder.

## 2. Federal Action

Federal funding from FHWA.

## 3. Area of Potential Effect (APE)

An APE is defined in 36 CFR Part 800.16, in part, as the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties.” The Maine Historic Preservation Commission (MHPC), representing the State Historic Preservation Office (SHPO) concurred with this APE on June 26, 2016.

The proposed project is located in the towns of Topsham, Sagadahoc County, and Brunswick, Cumberland County. A map illustrating the APE is included in Appendix A. The north and south **boundaries** reflect changes in the built environment (e.g. introduction of Route 1 south of the Cabot Mill and new construction north of the Frank J. Wood Bridge) precluding inclusion of properties outside the **boundaries**. Given the attention this project has garnered after the initial historic survey was undertaken and as a result from input from the Section 106 consulting parties, architectural historians revisited areas within the Topsham Historic District east of the bridge on Route 24 and Bridge Street in December 2016 to assess sight lines to the bridge. The visual survey confirmed that the bridge is not easily visible from these areas of the district. Therefore areas outside the APE remain excluded from the APE.

## 4. Determinations of Eligibility

The National Park Service, administrator of the National Register, uses requirements published by the Secretary of the Interior to identify those professionals who are qualified to perform identification, evaluation, registration, and treatment activities. These qualifications, found in 36 CFR Part 61 Appendix A, are generally referred to as the Secretary of Interior’s Professional qualifications. In the simplest terms, only those who meet the standards are qualified to make determinations of eligibility to be concurred with SHPO.

The National Park Service provides guidance that properties typically reveal **significance** at 50 years of age. Instances of properties gaining **significance** within 50 years are rare. Additionally, the National Park Service guides qualified professionals to consider historic use rather than current use and that physical embodiment of **significance** is generally based on exterior elements.

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<sup>1</sup> See Attachment I; email communication between Patrick Adams, Bicycle & Pedestrian Program Manager, MaineDOT, to Stephen Landry, State Traffic Engineer, MaineDOT.

*National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* (Bulletin 15) states “to qualify for the National Register, a property must be significant; that is, it must represent a significant part of the history, architecture, archaeology, engineering, or culture of an area, and it must have the characteristics that make it a good representation of properties with that aspect of the past.”<sup>2</sup> An important step in determining whether or not a property is significant is establishing context. Bulletin 15 also states “the significance of a property can be judged and explained only when it is evaluated within its historic context”.<sup>3</sup> A **historic context** identifies the circumstances of particular events. Context needs to be established to identify resources that may represent the physical embodiment a specific theme in American history. Establishing why something may be significant must be identified before physical embodiments of that **significance** can be identified. The National Register establishes thirty data categories and ten sub-categories as **areas of significance**. A property must have **significance** in at least one to be eligible for listing in the National Register. Typically, **historic contexts** exist somewhat separately from resources, e.g., context exists without physical embodiment.

#### Brookfield Dam

The Brookfield Dam was identified as a contributing resource to the National Register eligible (NR-E) Brunswick Topsham Industrial Historic District (BTIHD) during the initial survey. Ongoing Section 106 consultation has revealed its construction date is ca. 1985 which is outside the **period of significance (POS)** for the BTIHD (POS ends ca. 1950, see Determination of Eligibility of the BTIHD for more information). Additionally, it has not achieved **significance** in the last 50 years; therefore it is not eligible for listing in the National Register.

#### Frank J. Wood Bridge (#2016)

During the 2001 *MaineDOT Historic Bridge Survey: Phase II Final Report and Historic Context* review process, the Frank J. Wood Bridge was determined ineligible for individual listing, but determined a contributing resource to the NR-E BTIHD. This determination was again concurred with on June 16, 2016 (attached in Appendix F) as part of the Section 106 consultation process for this project. A property that contributes to a NR-E or listed historic district is afforded the same consideration under Section 106 as an individually eligible or listed property.

During the October 24, 2016 Section 106 Consulting Parties meeting it was questioned whether or not the individual eligibility of the bridge needed to be reconsidered due to the 15 years that have passed since completion of the bridge survey. FHWA determined that the individual eligibility should be re-examined.

Secretary of the Interior qualified Architectural Historians worked in concert with MaineDOT to gather information regarding events surrounding the construction of the bridge and the current status of Warren trusses in the state. Understanding these two

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<sup>2</sup> National Register Bulletin 15, 7.

<sup>3</sup> National Register Bulletin 15, 7.

conditions provide the basis of potential **significance** under National Register **Criterion A** and **Criterion C**.

Beginning in 1932, Maine State Highway Commission (MSHC; precursor to the MaineDOT) published *Maine Highways*, an overview of the previous year's construction projects. The November 1932 issue contained a one-page feature, "New Bridge at Topsham-Brunswick: An Important Link." The feature notes that "for several years prior to 1931 the old steel bridge . . . has been unsatisfactory for the steadily increasing volume of traffic passing over Route 201" and "in many places portions of the original members had been entirely eaten away by rust." The feature also describes the construction approach as well as men associated with the effort. It does note that the bridge is named for Topsham resident Frank J. Wood. Wood was a vocal advocate for the realignment of Route 201 from the mill yard of the Pejepscot Paper Company (PPC) to the current route. MSHC Annual Reports from 1930, 1931, and 1932 do not reveal any information regarding significant events associated with the development and construction of the bridge.

MHPC provided a draft Historic American Engineering Record (HAER) for the PPC for review.<sup>4</sup> The narrative section of the draft HAER references that the Frank J. Wood Bridge construction effort bypassed the island the mill is located on, eliminating direct access to the island. It also confirms the date of the first bridge between the two communities at 1798.

The *Brunswick Record* published articles about the events leading to the construction of the Frank J. Wood Bridge from Fall 1929 to Spring 1931. Interestingly, many of the issues facing the current bridge faced the previous bridge. As indicated in the October 31, 1929 article "State Engineer to Start Survey and Estimate on Topsham Bridge at Once," the existing bridge had been unsafe for approximately 10 years and selectmen from Topsham and Brunswick were awaiting approval from MSHC to post the bridge at 4,000 pounds.

The articles reveal that initially the MSHC considered four replacement alternates. All were on the existing alignment with 4 different set of changes at the approaches to correct what the MSHC considered "dangerous curves." Topsham farmer Frank J. Wood, along with 49 others, petitioned MHSC to consider an upstream alignment, stating that the reconstruction-on-alignment costs did not include the cost of a temporary bridge and the costs to repair and maintain the bridge spanning Granny Hole stream (access on/off Bowdoin Mill island; the realignment would bypass this crossing). The group also noted the increased traffic on Route 201, an important route between Maine and Canada, presented challenges.

The group opined realignment as the best option because the new bridge would carry three lanes of traffic (presumably one for a trolley) while minimizing disruptions around the bridge during construction. Wood unsuccessfully petitioned Central Maine Power to remove the half-moon dam so that it could be rebuilt slightly downstream and integrated

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<sup>4</sup> The HAER refers to the buildings and site at this location as the Bowdoin Mill.

into the bridge superstructure. The group's thought was a downstream dam would allow for a larger impoundment leading to increased power generation.

Research also showed numerous roadway and bridge projects in the area during the same period of the events described above. The additional research and investigation of the events surrounding the Frank J. Wood Bridge did not reveal any **significance** that would qualify the bridge individually eligible under **Criterion A** on the local, state, or Federal level.

Potential **significance** under **Criterion B** was also examined as the bridge was named for the man who proposed its alignment. Per NR bulletin 15, in order for the bridge to be eligible for listing under **Criterion B**, the bridge must be "associated with a person's productive life". In this case, the bridge would need to be associated with Frank J. Wood's productive life. All scholarly research shows that Frank J. Wood was a farmer; not a bridge engineer or builder. Therefore, the Frank J. Wood Bridge is not eligible for listing under **Criterion B**. Research did not reveal associations with other individuals' productive lives.

Potential **significance** under **Criterion C** was also examined, substantially through the MaineDOT historic bridge inventory. The bridge inventory was prepared by Lichtenstein Consulting Engineers (Lichtenstein) and the process was overseen by a Historic Bridge Committee (HBC) comprised of representatives from MaineDOT, FHWA, and MHPC. It is a comprehensive and accepted historic context for bridges in the State of Maine. The Phase II undertaking included: **historic context** for bridge technology, a narrative history of MSHC Bridge Division 1915-1955, electronic databases to store information, documentation of field investigations, survey forms, and eligibility determinations. The context developed for the bridge survey in 2000 remains pertinent today, even with the replacement of Warren trusses since that time.

After developing the context, Lichtenstein, working with the HBC, identified forty-six Warren truss bridges throughout the state. Thirty-eight of the forty-six were identified as constructed with riveted truss technology between 1888 and 1953, and the majority of which were constructed in response to the 1936 flood. The eight of the forty-six likely had more prominent features and are classified as another type of bridge, such as a moveable span, in addition to a Warren truss. Examples of these are the moveable spans of the former Memorial Bridge (Kittery), the former Sarah Mildred Long Bridge (Kittery), former Maine Kennebec Bridge (Richmond and Dresden), and Southport Bridge (Southport).

Of the forty-six bridges, seventeen were determined eligible for listing in the National Register. Of those seventeen bridges, fourteen were determined individually eligible under **Criterion A** and/or **Criterion C** for representations of early or late examples of riveted connection construction methodology, **associations** with Max Wilder, Chief Engineer of the MSHC, and/or associated with state-wide reconstruction after the devastating 1936 flood.

Three Warren truss bridges, the Frank J. Wood Bridge, Dock Bridge (#3284, Alna), and West Buxton Bridge (#3330, Buxton) were identified as contributing to historic districts

because the construction date of each bridge was within each district's **period of significance (POS)** and the bridge retained **integrity** of all seven aspects; however they did not have characteristics that convey **significance** individually under any **Criteria**. Since the conclusion of the bridge inventory, ten individually eligible Warren trusses have been replaced.

The bridge inventory identified an additional twenty-nine Warren truss bridges that were not determined eligible for listing in the National Register. Generally, the technology and events associated with each, including the 1936 flood event, were represented in earlier bridges. Since the conclusion of the bridge inventory twelve ineligible Warren trusses have been or are scheduled for replacement.

The **historic context** of steel truss bridges reveals that they were an established form and type by 1900 due to standardization. Standardization had been driven by a decrease in cost for raw material and advances in metallurgy, creating increased efficiency. The context notes, "Relatively few examples [of truss bridges] stand out as truly innovative or noteworthy from a history of bridge engineering."<sup>5</sup> All post-1920 truss bridges are riveted examples and are textbook designs with specifications regularly referenced by American Association of State Highway Officials (AASHO; now referred to as AASHTO) and American Society of Testing Materials (ASTM).

Examples of significant riveted Warren truss engineering are represented by the Ryefield Bridge (#0238, Harrison, 1912) and Gambo Falls Bridge (#0266, Windham, 1912). Each represent an early example of the established engineering of Warren trusses before an approximate 10-20 year period of statewide technological stagnation. At the same time, new technologies, such as steel stringers and reinforced concrete bridges, were emerging. These new technologies required less maintenance than trusses. While the engineering of post-1920 truss bridges is less noteworthy than previous truss design and construction methodology, there are some refinements of design that are significant, for example rolled sections (#2398, International Bridge, #3040 Piscataquis, #2565 Mill Pond, all 1929) and continuous design (trusses are uninterrupted over the pier; #3340, West Buxton, 1937).

While truss bridges have been replaced due to structural deficiency and functional obsolescence, the Frank J. Wood Bridge remains ineligible for individual listing. It does not represent emerging technology, nor is its construction associated with a significant event or person. Therefore it does not hold individual **significance** in any **area** under any **criteria**. However, the bridge remains eligible for listing as a contributing resource to the NR-E BTIHD and the FHWA is required to consider the effects its project may have on the bridge.

### Androscoggin River Falls

This is a response to a comment made at the October 24, 2016 Consulting Parties Meeting regarding individual eligibility of the falls within the APE. The Frank J. Wood

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<sup>5</sup> Bridge Survey, p II-2

Bridge spans the Androscoggin River slightly east of three natural falls, all of which have been slightly exposed in each site visit for this project.

Secretary of Interior Qualified Architectural Historians again consulted National Park Service Bulletin 15. The bulletin provides guidance on how landscapes interface with National Register Property and Resource Types (building, site, structure, object, and district) and the seven aspects of **integrity** (**location**, **design**, **materials**, **setting**, **workmanship**, **feeling**, and **association**). To be listed in the National Register, a property must fit the definition of one of the five resource types and retain sufficient **integrity** of the seven aspects.

The NR bulletin 15 defines a site as “a **location** of a significant event, a prehistoric or historic, occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the **location** itself possesses historic, cultural or archaeological value regardless of the value of any existing structure.” It continues, “When the **location** of a prehistoric or historic event cannot be conclusively determined because no other cultural **materials** were present or survive, documentation must be carefully evaluated to determine whether the traditionally recognized or identified site is accurate.”

Given these statements, architectural historians and archaeologists need to determine the following in regards to the falls:

- Was there an event there?
- Does the site, regardless of any building, structure, or object possess historic value?
- If neither are conclusive, does documentation prove the recognized or identified site accurately?

Throughout consultation, parties have indicated the falls were the site of early settlement. There is some evidence that prehistoric activity took place around the falls and the portages above and below the falls. Late 19<sup>th</sup>-century research cast doubt on the area’s ability to support more than a village of 50 people. Research shows that initial European settlement happened further south in Brunswick and further east in Topsham. See Section 6: Archaeology for additional information, including SHPO communication.

Ultimately, research did not reveal specific events or the **location** of assumed events. Certainly the falls were identified as a power source at some point during the establishment of both communities; however, “the National Register [generally] excludes from the definition of ‘site’ natural waterways or bodies that served as determinants in the **location** of communities or were significant in the locality’s subsequent economic development. While they may have been ‘avenues of exploration,’ the features most appropriate to document this **significance** are the properties built in **association** with the waterways.”

Due to these factors, the landscape of the Androscoggin River Falls is not eligible for listing on the National Register; however, it is an integral part of the **setting**, **design**,

**feeling** and **association** of each of the National Register eligible or listed properties within the APE.

Summer Street Historic District

*National Register-eligible*

**Criterion C—Architecture**

**Period of significance ca. 1830–1880**

The Summer Street Historic District (SSHD) was determined eligible for listing in the National Register as part of Section 106 consultation for this project. It was initially included as part of the BTIHD; however MHPC did not concur with that determination, but indicated that the area was likely a standalone NR-E historic district. Since SHPO concurrence on June 16, 2016, MHPC identified an intensive level survey from the 1990s on file at MHPC. The information provides **historic context** of the neighborhood by discussing its residents and the development of the built environment.

The SSHD consists of six residences and one associated former carriage house. The district embodies distinctive characteristics of the Queen Anne and Stick styles (seen at 15 Summer Street, 19 Summer Street, and 21 Summer Street). Additionally, the single story homes on Street houses embody characteristics of vernacular architecture found throughout New England from the late 18<sup>th</sup> century to the early 19<sup>th</sup> century. The period is partially represented by single-story, gable-front massing with symmetrical fenestration patterns, granite foundation, and heavy brick chimney stack. Generally, these elements are not distinguishable as individuals; but when considered as a district they represent residential development with high style architectural detailing during the **POS** for the SSHD.

*National Register Bulletin 16A: How to Complete the National Register Registration Form* provides direction on defining the **POS** for a district stating, “For districts enter construction dates of only those buildings that individually had an impact on the character of the district as a whole.”<sup>6</sup> As this district is significant for its Architecture under **Criterion C**, the **POS** is marked by the construction date of the earliest house and the end of the traditionally accepted period of its latest architectural style. The Frank J. Wood Bridge did not exist during the period for which the district’s is significant. The **POS** starts with the estimated construction date of 17 Summer Street in 1830 and ends in 1880, the generally accepted end of Stick Style’s evolution and influence. The context supports the **POS** for the district and its local **significance** under **Criterion C** for its Architecture. The SSHD is significant for its concentration of residential houses which embody distinctive characteristics of a type and period as well as possessing high artistic value.

The **essential physical features** of the district are the Stick and Queen Anne style details found on all but one of the properties, scale and massing of all the housing (which represents the styles and the period in which they were constructed), setback of each of

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<sup>6</sup> National Register Bulletin 16A, 43.

the houses, and size and configuration of the lots that front Summer Street. The **integrity** of the district is intact.

Paramount aspects of **integrity** are **design**, **materials**, and **workmanship**. These three aspects convey the **significance** of the district's embodiment of the Federal period building and the Queen Anne and Stick architecture styles. **Setting** includes the Androscoggin River, two mill complexes, and permanent crossing<sup>7</sup>.

The **POS** reflects the estimated construction date of the earliest Federal residence and the estimated construction of the latest Queen Anne/Stick style residence. A river crossing has always been a part of this historic district's **setting**. The **boundaries** includes the property's parcel lots and the area of land at the similar elevation across Summer Street. These small areas are included because of **association** through ownership identified in the intensive level survey **materials** at MHPC.

The Frank J. Wood Bridge is not part of the district's **integrity** of **setting**. Per NR Bulletin 15 "**setting** often reflects the basic physical conditions under which a property was built and the functions it intended to serve."<sup>8</sup> The Frank J. Wood Bridge, constructed later than the end of the **POS** of the SSHD, is therefore an intrusion and has no bearing on the basic physical conditions at the time of construction of the residences.

The district was intended to and continues to function as a residential neighborhood. An established river crossing likely played a role in its development; however, that bridge was not the Frank J. Wood Bridge. It has little bearing on the use in that it is one of three bridges at this **location** since the late 18<sup>th</sup> century. With each replacement the district retained its historic, intended use. The retention of a river crossing at this **location** will enable the district's current function to continue unimpeded.

### Cabot Mill

*National Register-eligible as Individual Resource*

*Contributing Resource to the NR-E Brunswick Topsham Industrial Historic District;*

**Criteria A & C—Industry and Engineering/Architecture**

**Period of significance ca. 1850—ca. 1950**

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<sup>7</sup> Note: A distinction can be made between a permanent crossing and a specific bridge at most locations where a span is required. A permanent crossing is a fixed structure (v. a ferry) and could include multiple specific bridges and may allow for slightly different alignment of those bridges. A permanent crossing may be associated with or the impetus for activity which qualify resources for listing under criteria in any number of areas of significance, e.g. tourism, community planning and development, industry, or commerce. This is particularly important when the POS for significant resources encompasses time prior to and after the construction of a particular crossing. The date of a first crossing may be the beginning of the POS for a larger district whose significance is contingent on a crossing. A specific bridge may hold significance as representation of a particular technology or due to its connection with a significant designer/contractor or significant activity **areas** commonly associated with **Criteria A**, such as community planning and development or industry. However, National Register eligibility depends on the integrity of the resource.

<sup>8</sup> National Register Bulletin 15, 45

The Cabot Mill is significant for its **association** with and physical representation of industrial activities on the site. This **significance** falls under **Criterion A** and **Criterion C**. The mill's **association** with the textile industry is well documented through scholarly research and it embodies characteristics of a period and type of construction. The **essential physical features** for this mill are its brick construction, rectangular massing, full-height, semi arched windows, and two projecting Renaissance Revival towers. These features are the manifestation of the engineering required to **design** an efficient, functional textile mill in the late 19<sup>th</sup> century coupled with high architectural style details. **Essential physical features** also include the proximity to a water source which provided power during the **period of significance**.

As the Cabot Mill is eligible for listing for its **association** with and physical embodiment of Industry, Architecture, and Engineering, four aspects of **integrity, design, materials, setting, and workmanship** are paramount to conveying its **significance**. **Design, materials, and workmanship** are in good condition; however, **setting** has been compromised.

The Route 1 Connector was constructed after the mill's significant industrial period ended. The effort removed many buildings within close proximity of the mill, some of which were likely associated with the mill. Additionally, dams associated with the mill have been removed and hydro-electric dams, unassociated with the mill, have been constructed after manufacturing ceased on site. The mill's industrial activity coincided with three different river crossings adjacent to the east. The Androscoggin River is an **essential physical feature** to the mill's **integrity of setting** as it served as its power source. Without such there would be no Industrial **significance**.

The Cabot Mill's **POS** is ca. 1850 to ca. 1950. It takes the aforementioned events into consideration while honoring that **design, materials, and workmanship** are the critical aspects of **integrity**. The dates mark the estimated beginning and end of manufacturing and contains the construction of the two Renaissance Revival-style towers.

The **POS** also includes construction of the Frank J. Wood Bridge; therefore, unlike the SSHD, it plays a larger role in the **setting** of the NR-E mill. The mill's **association** with Frank J. Wood Bridge is a characteristic and contributes to its **integrity of setting**. Additionally, while the Frank J. Wood Bridge plays a role in the **setting**, the **historic context** of the area reveals that at least two other bridges provided a permanent crossing between Topsham and Brunswick in proximity to the Cabot Mill. Therefore, a permanent crossing plays a role in the Cabot Mill's **integrity and essential physical features**.

Pejepscot Paper Company

*National Register-listed*

*Contributing Resource to the NR-E Brunswick Topsham Industrial Historic District*

**Criteria A & C—Industry and Engineering/Architecture**

**Period of significance ca. 1868–1966**

The Pejepscot Paper Company (PPC) was listed in the National Register in 1974 for its statewide **significance** in the paper industry and Italianate-style Architecture. Its **significance** is held as the earliest paper manufacturer in the state and as a distinguishable early example of the Italianate style applied to an industrial structure. This **significance** falls under **Criterion A** and **Criterion C**.

Its **integrity** of **design**, **materials**, **workmanship**, and **setting** are paramount to conveying its **significance**. All seven aspects are in good to fair condition. The character of the property changed when the construction of the Frank J. Wood Bridge removed Route 201 from the center of the mill yard west to the opposite side of Bowdoin Mill Island. Additionally, buildings have been lost in the last 10-20 years due to removal or fire. These losses suggest that the **boundaries** of the listed property could shrink to reflect the current understanding and interpretation of the PPC. It may also mean that it can no longer convey certain aspects of its **significance**. However, this determination of effect considers the **boundaries** as they are listed in the National Register; therefore consideration of effects is given to **significance** and **essential physical features** as noted or implied in the National Register nomination.

The nomination and subsequent documentation from MHPC shows the **POS** is 1868 to circa 1966. These dates reflect the construction of the Italianate mill at the south of the island and the end activities associated with paper manufacturing on site. The mill functioned as a paper manufacturing company that processed raw **materials** into paper, first with direct water power, and later hydroelectric power.

Its **essential physical features** are the rectangular massing, gambrel roof, brick construction, and large windows set in a recessed panel. Additionally, its **association** with a permanent crossing is a critical part of the PPC's **setting** as well as its physical relationship with the Androscoggin River. The use of the resource was contingent on its proximity to a water power source and a suitable site to harness potential energy. Additionally, while the Frank J. Wood Bridge plays a role the **setting**, the **historic context** of the area reveals that at least two other bridges provided a permanent crossing between Topsham and Brunswick in near proximity to the PPC. Therefore, a permanent crossing plays a role in the PPC's **integrity** and **essential physical features**.

Brunswick Topsham Industrial Historic District  
*National Register-eligible*  
*Criteria A & C—Industry and Engineering/Architecture*  
*Period of significance ca. 1850–1966*

The NR-E BTHID was identified during the MaineDOT bridge inventory for its local **significance** in Industry and Architecture/Engineering. The BTHID represents a small industrial area. The presence of the mills on opposite sides of the Androscoggin River are a physical embodiment of the economic successes represented by water power created by a natural falls. The communities on each bank share similar histories and development patterns. A permanent connection between the two, spanning the Androscoggin River, provided a link between the mills and continuity to Route 201. The district's **POS** has

borne witness to at least three bridges, all of which were critical to the districts' **association** with Industry. The crossings have been a transportation route for goods and employees.

The district is comprised of the following contributing resources: the Cabot Mill, PPC, and Frank J. Wood Bridge. The district represents industrial activity in two differing communities based around a single water power source, the Androscoggin River. It represents the local area's history of manufacturing economy and its architecture embodies the characteristics of the Italianate and Renaissance Revival styles in an industrial context. The district's **setting** of the Androscoggin River and its falls are a critical part of the district's **essential physical features**.

The district has been the site of three different bridge crossings, at least two on different alignments. A bridge crossing in this **location** is a critical **essential physical feature** of the district. Each bridge has provided a continuous transportation route between the two communities as well as points north and south.

The **POS** for the district begins in 1850 and ends circa 1966. Its **significance** coincides with the earliest and latest dates of **significance** of the two mills which contribute to this district. The Frank J. Wood Bridge is a contributing resource to this NR-E district due to its age of construction falling within the **POS** for the district and retention of its **integrity**.

The **essential physical features** of the district are two mill complexes, the physical formations of the Androscoggin River, and a permanent crossing. Its characteristics also include the three-span Warren truss Frank J. Wood Bridge. Additionally, while the Frank J. Wood Bridge plays a role the **setting**, the **historic context** of the area reveals that at least two other bridges provided a permanent crossing between Topsham and Brunswick in near proximity to the PPC. Therefore, a permanent crossing plays a role in the BTIHD **integrity** and **essential physical features**.<sup>9</sup>

## 5. Determination of Effects

One of the critical steps of Section 106 consultation is the Assessment of Effects (commonly referred to as a Determination of Effect). 36 CFR 800.5 states: "In consultation with the SHPO...the agency official shall apply the criteria of adverse effect to historic properties within the area of potential effects."

One finding of effect is made for a single project. The first sub-section below lists the finding of effects for each alternative. The second sub-section provides details of FHWA's assessment of effects to each historic resource (individual properties or districts) within the APE.

The second sub-section will begin with a brief overview of the **significance** of each resource, **essential physical features**, **integrity**, and the **POS**. It will be followed by a discussion of effect on the property for each alternate.

The criteria of adverse effect is defined at 36 CFR Part 800.5, in part, as when “an undertaking may alter, directly or indirectly, any of the characteristics of a history property that qualify the property for inclusion in the National Register in a manner that would diminish the **integrity** of the property’s **location, design, setting, materials, workmanship, feeling, or association.**”

**Integrity** is assessed in part by defining the **essential physical features** that must be present to represent **significance**, determine whether or not those **essential physical features** are visible to convey **significance**, and determine which aspects of **integrity** are particularly vital to the property.

In assessing the criteria of adverse effects, FHWA and MaineDOT considered the **significance, POS, integrity**, and the **essential physical features** as described above in concert with the proposed action of each Alternate presented in the Matrix of Alternatives. Some of the language used will be similar throughout.

MaineDOT and FHWA acknowledge that the actions associated with either rehabilitation option will be done in a manner that is consistent with the Secretary of the Interior’s Standards for the Treatment of Historic Properties; therefore, FHWA finds that there is no adverse effect as a result of either rehabilitation alternative.<sup>10</sup>

Finally, while some minimization of harm has been identified for each alternate, further identification occurs when an alternate is selected.

## **Determinations of Effect for Each Alternate**

### No Build

#### No Historic Properties Affected

This alternate would result in a finding of no historic properties affected because aspects of **integrity** of all properties would remain the same. The planned maintenance of the Frank J. Wood Bridge would prevent demolition by neglect. Additionally, the maintenance methodology includes using **materials** that fit characteristics, **design**, and **materials** of the bridge and therefore, retain **integrity** without diminishing it.

### Alternate 1 – Replacement Bridge on Existing Alignment

#### Adverse Effect

This alternate results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD. The removal represents a degradation of the **integrity** of **design, materials, workmanship, feeling, and association** of the BTIHD. Additionally, the **integrity** of **setting** of the Cabot Mill and PPC would be diminished because the bridge represents one of the last remaining pieces of transportation infrastructure originating from the mills’ **POS**.

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<sup>10</sup> 36 CFR 800.5(a)(2)(ii).

Minimization of harm to resources includes retention of the current alignment, therefore, effects are limited or prevented (e.g. SSHD). Additionally pier placement will likely avoid area sensitive for archaeology.

*Alternate 2 – Replacement Bridge on Curved Upstream Alignment*

Adverse Effect

This alternate results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD. The removal represents a degradation of the **integrity** of **design, materials, workmanship, feeling, and association** of the BTIHD. Additionally, the **integrity** of **setting** of the Cabot Mill and PPC would be diminished because the bridge represents one of the last remaining piece of transportation infrastructure that originated during the mills' **POS**. This alternative would also require a small right-of-way take from the Cabot Mill property.

Minimization of harm includes tying the current approaches to limit the number of right of way takes and impacts to other historic resources outside the APE.

*Alternate 3 – Rehabilitation with Westerly Sidewalk Retention*

No Adverse Effect

This alternate results in a finding of no adverse effect as the rehabilitation retains the Frank J. Wood Bridge, a contributing resource to the BTIHD. Rehabilitation would follow the Secretary of the Interior's standards for the Treatment of Historic Properties to include the replacement in kind of **materials** in the deck, super, and sub structures, to reflect the original **design** of the bridge, while keeping original **materials** in the trusses. A finding of no adverse effect acknowledges a change to the features that qualify a resource for listing in the National Register, but does not diminish them.

Minimization of harm include application of and compliance with the Secretary of Interior's Treatment of Historic Properties, therefore effects to surrounding resources are avoided.

*Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction*

No Adverse Effect

This alternative results in a finding of no adverse effect because the sidewalk would be designed following Secretary of the Interior's standards for the Treatment of Historic Properties. It would be constructed in a manner that is consistent with **materials**, type, and **design** of the Frank J. Wood Bridge. A finding of no adverse effect acknowledges a change to the features that qualify a resource for listing in the National Register, but does not diminish them.

Minimization of harm include application of and compliance with the Secretary of Interior's Treatment of Historic Properties, therefore effects to surrounding resources are avoided.

### Alternate 5 – Replacement Downstream Parallel Alignment

#### Adverse Effect

This alternate results in a finding of adverse effect due to the removal of the Frank J. Wood Bridge, a contributing resource to the BTIHD. The removal represents a degradation of the **integrity** of **design, materials, workmanship, feeling, and association** of the BTIHD. Additionally, the **integrity** of **setting** of the Cabot Mill would be diminished because the bridge represents one of the last remaining pieces of transportation infrastructure that originated during the Cabot Mill's **POS**. This alternate would require a small take from the PPC property.

Ways to minimize adverse effects for this alignment is limited to due to a need for increased right of way and a take from the PPC.

### **Detailed Descriptions of Effects to Each Historic Resource by Alternate**

#### Summer Street Historic District

*National Register-eligible*

**Criterion C—Architecture**

**Period of significance** ca. 1830–1880

**Essential physical features**—*Queen Anne & Stick Style architectural details, Federal-era massing and design, including single-story, gable-front massing with symmetrical fenestration patterns, granite foundation, and heavy brick chimney stack, parcel size, orientation to the road*

#### *Alternate 1 – Replacement Bridge on Existing Alignment – No Effect*

The introduction of a replacement bridge would not diminish the district's seven aspects of **integrity**. The architecturally significant district would still be able to convey that **significance** through its **essential physical features**. Its use would remain the same.

#### *Alternate 2 – Replacement Bridge on Curved Upstream Alignment – No Adverse Effect*

This alignment would introduce a small portion of new transportation infrastructure into the **setting**; however it does not diminish the **setting** because the new bridge will be of similar size. The removal of a truss from the area does not affect the setting because the truss of the Frank J Wood Bridge is not connected with the **significance** of the bridge.

A comment was made at the October 24, 2016 consulting parties meeting that a change in alignment may result in more light from cars crossing the bridge at night entering Summer Street houses, potentially changing the use.

A Professional Engineer specializing in Electrical Engineering was consulted regarding changes in headlight projection resulting from this alternative.<sup>11</sup> He found headlight projection lines and distances indicates that illumination from both low beam and high beam headlights would fall far short of the residences in the Summer Street neighborhood. When vehicles are headed north toward Topsham, vehicles would be

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<sup>11</sup> Anderson, Carl, L. Electronic Communication with Norman Baker, PE.. January 19, 2017 (*Appendix H*).

approximately between 800' and 1000' from two Summer Street residences when the headlights are aligned in that direction. Typical headlight illumination is reported to be approximately 150'-160' for low beam, while the best high beams could illuminate only as far as 500'. As this is an urban setting, it is anticipated that a vast majority of vehicles will utilize low beams in this situation. Considering no interference from traffic or bridge railings and a maximum allowable high-beam projection of light, the increase in intensity of light on a house at a distance of 800', or the closest residential house, would be equal to 0.1 foot-candles. It is also anticipated that headlight projection toward Summer Street will be significantly diminished by the bridge rail.

FHWA maintains that these changes do not represent a change in use of the residential neighborhood, therefore there is no adverse effect to the SSHD as a result of this alternate.

*Alternate 3 – Rehabilitation with Westerly Sidewalk Retention – No Effect*

The rehabilitation of the bridge would not diminish the district's **integrity**. The bridge would be retained in its current configuration and the intended use of the district would remain the same.

*Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction – No Effect*

The rehabilitation of the bridge would not diminish the district's **integrity**. The bridge would be retained in its current configuration and the intended use of the district would remain the same.

*Alternate 5 – Replacement Downstream Parallel Alignment – No Effect*

A replacement bridge on a downstream alignment would not diminish the district's **integrity** as outlined in Alternates 2 and 3. The use would stay the same. Unlike Alternate 2, there is no change in the skew of the bridge; therefore light from passing cars would be projected at the same angles to near exactly to how it is currently, albeit further away from the SSHD.

Cabot Mill

*National Register-eligible*

*Contributing Resource to the NR-E Brunswick Topsham Industrial Historic District*

*Criteria A & C—Industry and Engineering/Architecture*

**Period of significance** ca. 1850–ca. 1950

**Essential physical features**—*rectangular massing, proximity to water power source, full height semi-arched windows, permanent crossing*

*Alternate 1 – Replacement Bridge on Existing Alignment – Adverse Effect*

A replacement bridge would result in a finding of adverse effect to the Cabot Mill's **integrity** of **setting** by removing one of the last pieces of the built environment constructed during the mill's established **POS**. While the Frank J. Wood Bridge is a part of the mill's **setting**, so is a permanent crossing connecting Topsham and Brunswick. Therefore, retention of a crossing on this alignment is considered a minimization of harm

to the BTIHD. Retention of this alignment, which is associated with the mill's **significance** is also considered a minimization of harm.

*Alternate 2 – Replacement on Curved Upstream Alignment – Adverse Effect*

A replacement bridge would result in a finding of an adverse effect to the Cabot Mill's **integrity of setting** by removing one of the last pieces of the built environment constructed during the mill's established **POS**. While a permanent crossing is considered a minimization of harm, this alternative represents an alignment not previously associated with the **significance** of the district. Therefore it has a greater magnitude of harm than Alternate 1.

*Alternate 3 – Rehabilitation with Westerly Sidewalk Retention – No Adverse Effect*

This alternate would result in a finding of no adverse effect because the current crossing would be retained and no change in use would occur.

*Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction – No Adverse Effect*

This alternate would result in a finding of no adverse effect because the current crossing would be retained and no change in use would occur.

*Alternate 5 – Replacement Downstream Parallel Alignment – Adverse Effect*

A replacement bridge would result in a finding of adverse effect to the Cabot Mill's **integrity of setting** by removing one of the last pieces of the built environment constructed during the mill's established **POS**. While retention of a permanent crossing is considered a minimization of harm; this alternative represents an alignment not previously associated with the **significance** of the district. Therefore it has a greater magnitude of harm than Alternate 1.

Pejepscot Paper Company

*National Register-listed*

*Contributing Resource to the NR-E Brunswick Topsham Industrial Historic District*

**Criteria A & C—Industry and Engineering/Architecture**

**Period of significance ca. 1868–1966**

**Essential physical features—***rectangular massing, gambrel roof, brick construction, tall windows set in a recessed panel, a permanent crossing, and physical relationship with the Androscoggin River.*

*Alternate 1 – Replacement Bridge on Existing Alignment – Adverse Effect*

This alternate would diminish the **integrity of setting**. While the Frank J. Wood Bridge is a part of the PPC's **setting**, so is a permanent crossing connecting Topsham and Brunswick. Therefore, retention of a crossing on this alignment is considered a minimization of harm to the PPC.

*Alternate 2 – Replacement Bridge on Curved Upstream Alignment – Adverse Effect*

This alternate would result in a finding of adverse effect because the removal of the Frank J. Wood Bridge would diminish the **integrity of setting** for the PPC. However, the **association** with a river crossing would be retained with a replacement bridge. The use of PPC would be retained as it is dependent on the crossing providing access. While a permanent crossing is considered a minimization of harm; this alternative represents an alignment not previously associated with the **significance** of the district. Therefore it has a greater magnitude of harm than Alternate 1.

*Alternate 3 – Rehabilitation with Westerly Sidewalk Retention – No Adverse Effect*

This alternate would result in a finding of no adverse effect because the current bridge would be retained and no change in use would occur. Rehabilitation would occur in concert with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties; therefore, the **integrity of setting** would not be diminished.

*Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction – No Adverse Effect*

This alternate would result in a finding of no adverse effect because the current bridge would be retained and no change in use would occur. Rehabilitation would occur in concert with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties; therefore, the **integrity of setting** would not be diminished.

*Alternate 5 – Replacement Downstream Parallel Alignment – Adverse Effect*

This alternate would result in a finding of adverse effect as the removal of the Frank J. Wood Bridge would diminish the PPC's **integrity of setting**. While a permanent crossing is considered a minimization of harm; this alternative represents an alignment not previously associated with the **significance** of the district. Therefore it has a greater magnitude of harm than Alternate 1.

Brunswick Topsham Industrial Historic District

*National Register-eligible*

*Criteria A & C—Industry and Engineering/Architecture*

**Period of significance** ca. 1850–1966

**Essential physical features**—two mill complexes, Frank J. Wood Bridge, physical formations of the Androscoggin River, and a permanent crossing

*Alternate 1 – Replacement Bridge on Existing Alignment – Adverse Effect*

This alternate would result in an adverse effect to the BTIHD due to the removal of the Frank J. Wood Bridge, a contributing resource.

*Alternate 2 – Replacement Bridge on Curved Upstream Alignment – Adverse Effect*

This alternate would result in an adverse effect to the BTIHD due to the removal of the Frank J. Wood Bridge, a contributing resource.

*Alternate 3 – Rehabilitation with Westerly Sidewalk Retention – No Adverse Effect*

This alternative would result in a finding of no adverse effect because the sidewalk would be constructed in a manner that is consistent with **materials**, type, and **design** of the Frank J. Wood Bridge. Rehabilitation would occur in concert with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties.

*Alternate 4 – Rehabilitation with Westerly Sidewalk Retention and Easterly Sidewalk Construction – No Adverse Effect*

This alternative results in a finding of no adverse effect because the sidewalk would be constructed in a manner that is consistent with **materials**, type, and **design** of the Frank J. Wood Bridge. Rehabilitation would occur in concert with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties.

*Alternate 5 – Replacement Downstream Parallel Alignment – Adverse Effect*

This alternate would result in an adverse effect to the BTIHD due to the removal of the Frank J. Wood Bridge, a contributing resource.

## 6. Archaeology

The MaineDOT has initiated preliminary consultation with MHPC regarding prehistoric and historic archaeology to identify areas to avoid within the APE. Only archaeologists that meet the Secretary of the Interior's Professional Standards can make determinations of eligibility and MHPC staff archaeologists will review and concur with these determinations. The specific locations of National Register-eligible Archaeological Sites are protected from public disclosure under the National Historic Preservation Act, as amended and Maine Statute 27 MRSA Section 371-378. Therefore the memorandum has not been included within determination of effect and instead is summarized.

On November 18, 2016 Dr. Arthur Spiess, Senior Archaeologist at MHPC provided MaineDOT a memorandum outlining known or suspected archaeological sensitive areas within the APE, specifically those near to all alignments presented in the Summary of Alternatives.

The memo informed MaineDOT of fourteen sensitive areas for historic archaeology. Site 1 also holds potential for pre-historic archaeology. However, at this time, no alternative under consideration is in the immediate area of Site 1. If the project changes and this site can no longer be avoided, testing would likely be required. Most historic sites are potentially associated with the development of the mills on either side of the river and the power generation dams.

Dr. Spiess noted, "Because there is no soil left on Shad Island and other exposed bedrock, archaeological excavation would be impossible. However, traces of building foundations cut in to the bedrock or affixed to the rock might be present. These would have be recorded (rather than excavated)." He continues, "Impacts to other areas with substantial soil depth would probably need testing by remote sensing or excavation."

MHPC, MaineDOT, and FHWA acknowledge that a field assessment may be necessary to identify the sites and their state of preservation when an alternative is selected.

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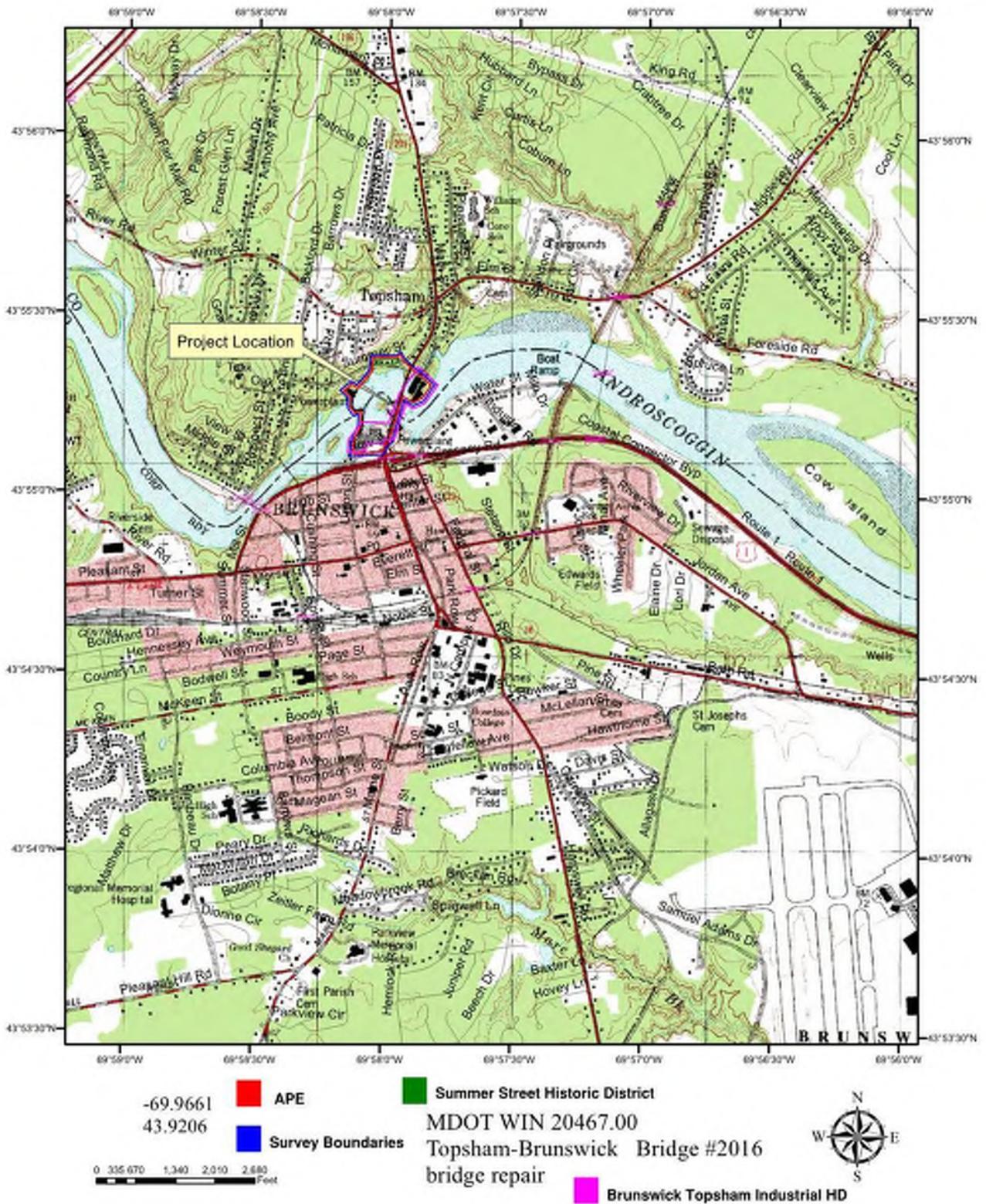
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## 8. Appendices

**Appendix A**  
Area of Potential Effect



Frank J. Wood Determination of Effect  
 January 2017

**Appendix B**  
National Park Service Language

This appendix will provide the specific descriptions and definitions of key terms and language as each is applied in the Section 106 consultation process. The descriptions and definitions have come from two National Park Service National Register of Historic Places Program publications: National Register Bulletin Number 15: *How to Apply the National Register Criteria for Evaluation* and National Register Bulletin Number 16A: *How to Complete the National Register Form*. Additionally, language from 36 CFR Part 800: Protection of Historic Properties is referenced.

**Areas of significance:** Themes important in American history as demonstrated by scholarly research (NR Bulletin 15). Listed in NR Bulletin 16A as thirty data categories and ten data subcategories.

**Association:** One of the seven aspects of integrity; the direct link between an important historic event or person and a historic property; association requires the physical presence of physical features that convey a property's historic character; for example: a Revolutionary War battlefield whose natural and manmade elements have remained intact since the 18<sup>th</sup> century retains integrity of association.<sup>12</sup>

**Boundary:** Terminus of full extent of the significant resources and the land making up the property; should not include buffer zones; considers visual barriers that mark a change in historic character of the area that break the continuity of the district and visual changes in the character due to different architectural styles, types or periods, or a decline in the concentration of contributing resources.

**Criterion A:** [Resources] that are associated with events that have made a significant contribution to the broad patterns of our history. "The events or trends...must be important within the associated context. Moreover, the property must have an important association with the event or historic trends." (16A, then 15)

**Criterion B:** [Resources] that associated with lives of persons significant in our past.

**Criterion C:** [Resources] that embody the distinctive characteristics of type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

**Criterion D:** [Resources] that have yielded, or may be likely to yield, information important in prehistory or history.

**Design:** One of the seven aspects of integrity: "the combination of elements that create the form, plan, space, structure, and style of a property. It includes...massing, arrangement of spaces, pattern of fenestration, textures, and style of ornamental detailing." For districts significant primarily for historic association or architecture value design applies to the relationship of the structures with landscape, streetscape rhythm, layout and materials of walkways and road.

**Essential physical features:** Features without which a property can no longer be identified as, for instance, a late 19<sup>th</sup> century dairy farm or an early 20<sup>th</sup> century commercial district.

**Feeling:** One of the seven aspects of integrity; a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical

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<sup>12</sup> A note for **Association** and **Feeling**: "because [they both] depend on individual perceptions their retention *alone* is never sufficient to support eligibility of a property for the National Register.

features that, taken together, convey the property's historic character. See footnote 6.

Historic context: "Those patterns or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear."

Integrity: "The question of integrity is answered by whether or not the property retains the identity for which it is significant" "the ability of a property to convey its significance...always...grounded in an understanding of a property's physical features and how they relate to its significance." There are seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. The specific use of each in Section 106 is defined within this appendix.

Local historic context: Often referred to as a 'local level of significance', "an aspect of history of a town, city, county, cultural area, or region, or any portions thereof. It is defined by the importance of the property, not necessarily the physical location."

Location: One of seven aspects of integrity; "the place where the historic property was constructed or the place where the historic event occurred. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons."

Materials: One of the seven aspects of integrity; physical elements that were combined...during a particular period of time and in particular pattern or configuration to form a historic property. A property must retain key exterior materials dating from its period of historic significance.

National historic context: Often referred to as "National level of significance", "represent an aspect of the history of the United States...it must be of exceptional value in representing an important theme in the history of the nation." (15)

Period of significance (POS): "The length of time when a property was associated with important events, activities, or persons, or attained characteristics which qualify it for National Register listing. Base the period of significance on specific events directly related to the property, for example, the date of construction for a building significant for its design or the length of time a mill operated and contributed to local history."

Setting: One of the seven aspects of integrity; the physical environment of a property; refers to the character of the place in which the property played its historic role and "reflects the basic physical conditions under which a property was built and the functions *it was intended* [emphasis added] to serve."

Significance: Pages 45 through 50 of Bulletin 16A provide guidance on evaluating and stating significance. Generally, the guidance for evaluation is: what events took place on the significant dates, and why are those events important to the property, in what ways does the property physically represent its POS, and in what ways does it represent change after its POS, and what is the POS based on? Significance is inherently carried not by a single definition rather how a property fits within the National Park Service Criteria for Evaluation.

State historic context: Often referred to as a 'state level of significance', "represent an aspect of the history of the State as a whole. The property's historic context must be important statewide."

Workmanship: One of the seven aspects of integrity; is the physical evidence of the crafts of a particular culture during any given period. It can be based on common traditions or innovative period techniques. Examples include tooling, carving, painting, graining, turning, and joinery.

**Appendix C**  
Summary of Alternatives

# Frank J. Wood Bridge: Summary of Alternatives

Prepared by T.Y. Lin International  
October 27, 2016

## BACKGROUND

The Frank J. Wood Bridge is a critical link spanning the Androscoggin River between the Towns of Brunswick and Topsham, carrying US 201 and ME 24 and about 19,000 vehicles a day. Just 500 feet upriver of the bridge is a power generation dam harnessing the power of Brunswick Falls. On the southern, Brunswick side of the bridge sits the 250<sup>th</sup> Anniversary Park on the east and the bustling Fort Andross Mill Complex on the west. The Topsham approach adjoins a bank on the west side, and a dentist office and the Bowdoin Mill Complex on the east side. Both the Fort Andross and the Bowdoin mill complexes house a variety of shops, businesses, and restaurants, and the Frank J. Wood Bridge is a key pedestrian connection between the two of them and between the larger business districts and communities on each side. The bridge links the hearts of the two communities across the Androscoggin River, connecting Brunswick and Topsham.



**Figure 1: The Frank J. Wood Bridge spanning the Androscoggin River between Brunswick and Topsham**

The Frank J. Wood Bridge is an 85-year-old, 805 ft long steel truss that is now in poor condition. It was rehabilitated most recently in 1985, 2006, and 2015. It is a “fracture critical” structure, indicating it is vulnerable to sudden collapse if certain components fail. Because of this designation, more detailed and frequent inspections are required. Detailed inspections by MaineDOT in 2012, June 2016 and August 2016 found many deteriorated areas. A load rating done by MaineDOT in 2013 and updated in August 2016 found several truss members are not strong enough to meet load-carrying standards. The bridge is now posted for 25 tons. The

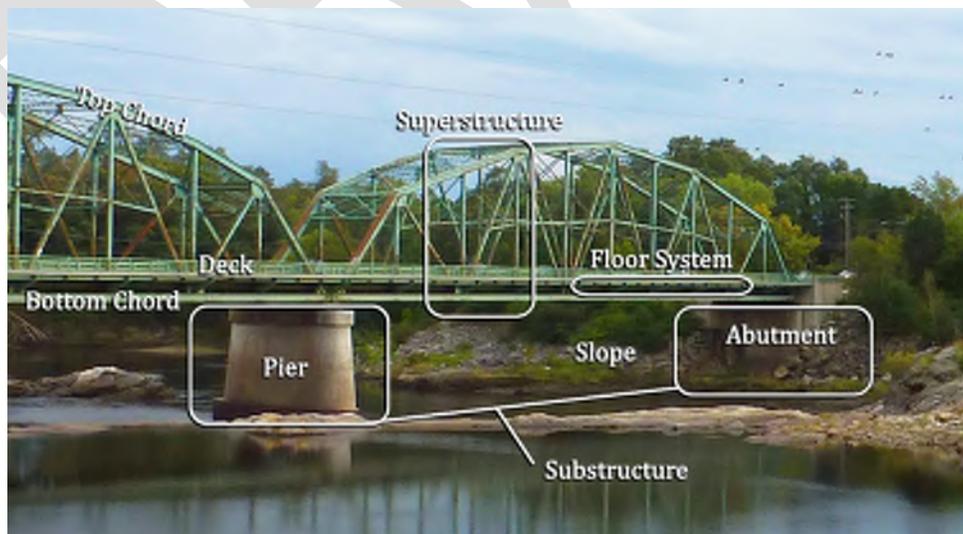
three-span steel through-truss (with spans of 310'-310'-175') and the concrete deck are currently in poor condition, and the bridge has a FHWA Sufficiency Rating of 25.4. There is corrosion and steel loss in the floor system supporting the deck (the transverse cross beams, longitudinal stringers, and transverse floor beams). Corrosion is continuing and speeding up, and will do so until the truss is rehabilitated comprehensively or the truss is removed.

Because of the ongoing deterioration of the truss, MaineDOT plans to do temporary repairs to address the worst issues so the truss can maintain its current load rating for up to five years. Steel will be added to the worst sections of the floor system beneath the deck and missing and deteriorated rivets will be repaired or replaced. These temporary repairs are needed to keep the 25 ton weight limit from being reduced more. As maintenance, this 5-year repair will be funded separately from the longer-term "capital improvement" project. However, a long-term solution needs to be implemented within the 5 year timeframe this maintenance buys. This report examines what the alternatives are for the long-term solution.

The travelway over the truss is 30 ft wide, with two 11 ft travel lanes and 4 ft shoulders. Though there are sidewalks on both sides of the road approaching the bridge, the existing truss carries a single sidewalk on the west side of the bridge. Because the outer 2 feet of the shoulders is made of an open steel grid, the usable shoulder width for bicycle travel is reduced to just 2 ft.

This bridge is eligible for listing on the National Register of Historic Places as part of the Brunswick-Topsham Industrial Historic District. It is also adjacent to the National Register-Listed Pejepscot Paper Company Historic District.

Accident data from 2009-2013 shows 27 accidents at the intersection of Maine Street and Bow/Cabot Street in Brunswick and 11 accidents at Summer Street and Main Street in Topsham. Also, there were 24 accidents just off the bridge on the Brunswick approach. The accident reports show that these accidents were primarily caused by driver inattention and distraction or by following too closely.



**Figure 2: This report uses technical terms to describe various parts of the bridge. The superstructure is what many think of as a “bridge”, including the floor system or girders below the deck, while the substructure is what supports the superstructure. The deck (what cars drive on) rests on the floor system, which is made up of floorbeams, stringers, and sometimes crossbeams. The floor system carries load from the deck to the truss bottom chord.**

## **PURPOSE AND NEED**

The purpose of the project is to address poor structural conditions and load capacity issues on the Frank J. Wood Bridge and to address pedestrian and bicycle mobility and safety concerns.

Bridge improvements are needed to improve the condition ratings of the superstructure and deck from a rating of 4 (poor condition) to 7 (good condition). Because of the age of the bridge, 85 years old, and the considerable number of heavy loading cycles it has already experienced, steel fatigue concerns on critical tension members need to be addressed to continue to carry heavy truck traffic on the existing truss. Additionally, the floor beams and stringers need improvements to bring their load rating factors to a 1.0 for all legal loads.

This bridge is classified by the Federal Highway Administration (FHWA) as structurally deficient with superstructure and deck condition ratings of 4 out of 9 (poor condition). The 3 truss spans are fracture critical, meaning that failure of certain steel tension members could cause any of the 3 spans to collapse. Some of the steel truss bridge components are fatigue sensitive, susceptible to cracking and fracture as a result of heavy cyclic loading. The floor beams and stringers within the truss spans do not meet current design load or legal load standards.

Pedestrians on the east side of Routes 201/24 cannot cross the river without crossing the highway, and the existing mid-block pedestrian crossings are considered dangerous. Bicycle traffic is seriously limited by the narrow, 2 ft, paved shoulder.

## **SUMMARY OF ALTERNATIVES**

The following alternatives were considered:

1. New 800 ft bridge on the existing alignment.
2. New 835 ft bridge on a curved alignment upstream of the existing bridge.
3. Rehabilitation of the existing steel truss bridge.
4. Rehabilitation of the existing steel truss bridge, including the addition of a new east side sidewalk.
5. New 800 ft bridge on a parallel alignment downstream of the existing bridge.

The No Build alternative was also considered. The No Build alternative was included as a benchmark against which impacts of other alternatives can be compared. Short-term maintenance and minor rehabilitation is considered as part of the No Build alternative.

On Point Construction Services, a private consultant firm specializing in construction scheduling and estimating, joined the Project Team to review the constructability of the proposed alternatives, to develop construction schedules, and to estimate temporary bridge costs.

All of the alternatives were compared based on hydraulic requirements; environmental, right of way, and utility impacts; maintenance of traffic, constructability, maintainability, geotechnical site conditions; and construction, life cycle, and user costs.

## REPLACEMENT ALTERNATIVES

Alternatives 1, 2, and 5 would provide a new bridge. Many characteristics of the new bridge would be the same for each of the replacement alternatives; these will be discussed below before the specifics of each alternative are presented.

A new bridge would be a multi-span steel girder bridge, with 4 or 5 spans. Steel girder bridges are easily the most cost-effective new structure type for this site. To increase the life span of the new structure, the concrete deck would likely be reinforced with Glass Fiber Reinforced Polymer (GFRP) rebar and the steel girders would be metalized. Metalization of the girders will reduce corrosion from spray from the turbulent river beneath the bridge. The new bridge would have concrete wall abutments and solid shaft piers, all founded on the shallow bedrock at this site.



Figure 3: Artist's rendering of a steel girder bridge

Any new bridge would include 11 foot lanes, 5 foot shoulders, and 5 foot sidewalks on each side. Having sidewalks on both sides of the bridge would connect the existing sidewalks on the approaches and would improve safety by reducing the need for pedestrians to cross the road. Having 5 foot shoulders and no adjacent bridge railing or truss verticals would dramatically improve the bridge for bicyclists. The current bridge has only 2 foot paved shoulders.

For new bridges on this site, the contractor would need a work trestle for access to construct the cofferdams and piers, to erect the structural steel superstructure, to place deck concrete, and to remove the existing bridge. A cost premium of \$1 million is included in the estimate for each new bridge to account for this trestle. Installation of a work trestle at this site is unique due to the exposed and highly variable bedrock, exposure to high velocity flows, and proximity to the upstream dam.

Railings for a new bridge would meet all standards for vehicle and pedestrian safety. Railings go through stringent testing programs to ensure appropriate safety in a variety of situations. Only those railings that meet appropriate criteria can be used on a new bridge, based on the specific constraints of this site. MaineDOT's standard 4-bar steel pedestrian and traffic rail is recommended for this bridge, but input from the Towns of Brunswick and Topsham and the Section 106 consulting parties would be considered for the final selection of the rail type.

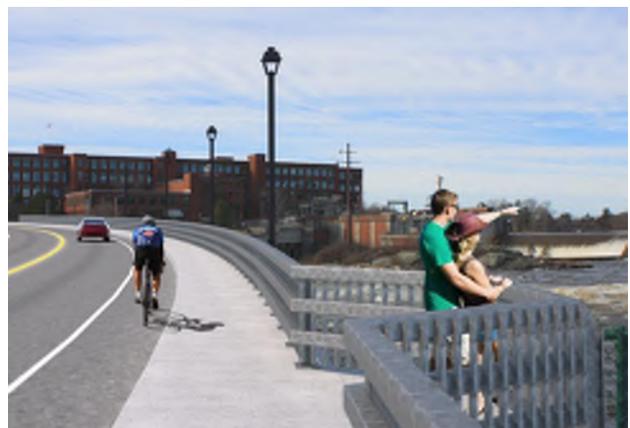


Figure 4: Rendering of a Possible New Bridge

During meetings with Officials from both Towns, requests were made to enhance the “River Walk Loop” that exists over the existing bridge and continues to the pedestrian bridge upstream of the dam. A new bridge at this site would include deck overlooks, where the sidewalk widens out to provide viewpoints of the river upstream and downstream. In addition, the bridge would be lighted and lamp posts and fixtures would be ornamental and closely match the street lighting in the approaches. The MaineDOT would consider input from the Towns of Brunswick and Topsham and the Section 106 consulting parties for the final selection of the bridge lighting during final design.

### **Alternative 1: New 800 ft Bridge on Existing Alignment**

Alternative 1 is a new 800 ft, five span, steel girder bridge on the existing alignment. The new bridge would have the characteristics discussed above that are similar for any replacement bridge on this site.

Because the new bridge would be constructed on the existing alignment, the old truss would have to be removed completely before new construction could begin. The limitations on in-water work add to the construction duration. Without a temporary bridge, this alternative would have a traffic disruption period of over 2 years.

Given the tremendous user costs and other impacts such a disruption would cause, a temporary bridge is required for this alternative. This adds another year to the construction duration, bringing the total construction time to 3.5 years. Unfortunately, this also increases the river impacts even further—this alternative would need a work trestle and a temporary bridge beyond the impacts of the new structure itself. Permanent environmental impacts would include the wetland footprint impact of 4 piers and riprap protected abutment slopes within the river channel. Two of the piers would be located near the edges of the Brunswick side powerhouse outfall channel.

The construction cost of this alternative is estimated at \$16,000,000 (including the cost of a temporary bridge).

#### Alternative 1 Summary:

- New 800 ft bridge on the existing alignment
- 11 ft travel lanes with 5 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$16 million
- Life Cycle Cost: \$16.7 million
- Construction Duration: approximately 3.5 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary work trestle, temporary bridge, 4 in-water piers, new slopes at abutments
- Meets Purpose and Need

### **Alternative 2: New 835 ft Bridge on Curved Upstream Alignment**

Alternative 2 is a new 835 ft, five span, steel girder bridge on a curved upstream alignment. A curved bridge reduces the length of approach roadway construction and reduces right of way impacts to abutting properties. This structure would have a short southern span to better align the spans to bridge the Brookfield power station outflow channel with a minimum

of impact. The remaining four spans would be continuous haunched steel girder spans with a concrete deck. The span arrangement and number of piers would be selected to minimize footprint impact within the channel and within the FERC Boundary and to maximize the efficiency of steel girder superstructure. Also, the existing hydraulic clearance over the river would be maintained as a minimum.

The estimated construction duration for this alternative is approximately 2.5 years. No temporary bridge is required since traffic could be maintained on the existing bridge during construction. A short term (about 2 month) single lane northbound road closure and detour as described in the “Maintenance of Traffic” section for the New Alignment maintenance of traffic option would be needed during the final tie-in.

The four piers and the abutment slopes would be permanent wetland environmental impacts. Two of the piers would be located near the edges of the Brunswick side powerhouse outfall channel. Temporary environmental impacts would include the construction of a work trestle from the Topsham bank of the river out to the proposed Pier 2 location.



**Figure 5: A Possible Curved Upstream Bridge**

The construction cost of this alternative is estimated to be \$13,000,000.

The life cycle construction cost of this alternative (Alternative 2 – Replacement Bridge on Parallel Upstream Alignment) is estimated to be \$13,700,000. The life cycle cost includes costs for future inspection and maintenance (painting and wearing surface replacement) anticipated to be needed out to 100 years.

**Alternative 2 Summary:**

- 835 ft replacement bridge on a curved, upstream alignment
- 11 ft travel lanes with 5 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$13 million
- Life Cycle Cost: \$13.7 million
- Construction Duration: approximately 2.5 years

- Maintenance of Traffic: on existing bridge
- River Impacts: temporary work trestle, 4 in-water piers, slopes at abutments
- Meets Purpose and Need

### Alternative 5: New 800 ft Bridge on Parallel Downstream Alignment

Alternative 5 is listed here, since like Alternatives 1 and 2 it is a new bridge. It would be a new 800 ft, five span steel girder bridge located downstream of the existing bridge on a straight alignment, between the current bridge and the Bowdoin Mill Complex parking lot. For all of the bridge alternatives, a hydraulic analysis was run to estimate how the river would behave with new piers added in the river. This analysis showed that a downstream replacement bridge will raise water levels at the Bowdoin Mill Complex, particularly the end of the mill building where the Sea Dog Brewing Company is located. The models suggested that during the design flood, floodwaters would rise more than 6 feet higher than existing conditions near the deck area of the Sea Dog. No reasonable approach to reduce that water rise could be found, so Alternate 5 was rejected.

### REHABILITATION ALTERNATIVES

Alternative 3 and Alternative 4 are both rehabilitation options, where the existing truss bridge is repaired. Detailed inspections of the truss were done by MaineDOT in 2012, June 2016 and August 2016, and a load rating was done by MaineDOT in 2013 and updated in August 2016. These reports outline what needs to be done to bring the existing truss bridge up to the standards established as the “Purpose & Need” for this project, which were described above.

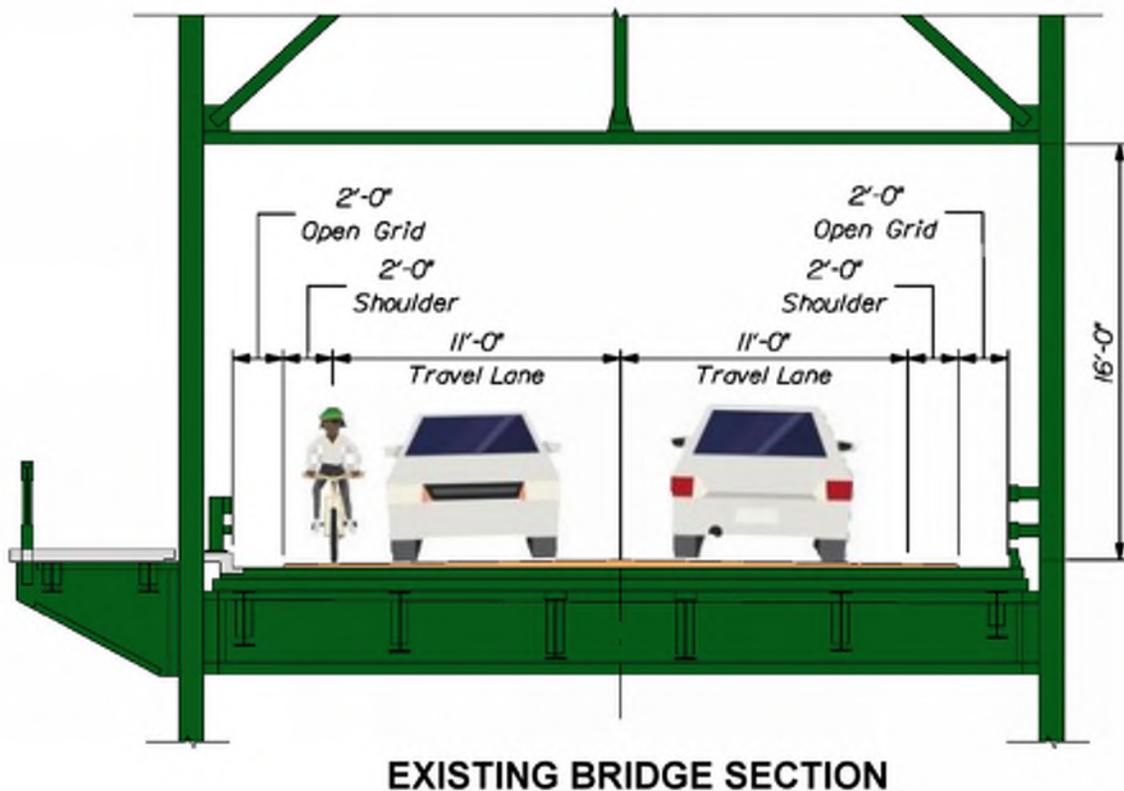


Figure 6: The existing truss bridge cross section

These repair needs will be described here, and the differences between the two rehabilitation alternatives will be discussed later. The needs are:

1. Replace existing bridge deck with a new reinforced concrete bridge deck with an integral concrete wearing surface. This includes the removal of the badly deteriorated transverse cross beams seen in Figure 7.
2. Repair the top of steel sidewalk support brackets. The top of each bracket is non-existent now due to corrosion or other past modifications.
3. Replace the bridge joints. Although these were replaced in 2015, replacement of the existing deck will require these to be replaced.
4. Replace the entire steel flooring system, including the longitudinal stringer beams and transverse floor beams. The floor system is heavily deteriorated and is below load carrying standards (see Figures 8 and 9).



**Figure 7: Deteriorated cross beams & deck**



**Figure 8: Hole in floorbeam**



**Figure 9: Deteriorated floorbeam**



**Figure 10: Bottom chord corrosion and debris**

5. Replace portions of the bottom chord of main trusses due to corrosion and distortion from pack rust, as seen in Figure 10.
6. Paint the entire steel truss superstructure, including all above and below deck components. Doing a comprehensive paint job on this structure is expected to cost about \$4,000,000.
7. Replace all existing utility brackets that support the conduit and water lines on the truss. See Figure 11.

8. Remove and reuse the existing pedestrian sidewalk rail and bridge traffic rails. They will have to be removed to replace the deck and floor system.

9. Replace the abutment back walls due to the overall poor condition of these elements.

10. Repair areas of stone masonry with missing and loose stones at the south abutment by encasing the masonry in concrete due. See Figure 12.

11. Replace cracked concrete bearing pedestals at Pier 2 supporting the east side truss of Span 3 near the Topsham end of the bridge. This work will also include removal, refurbishing, and resetting of the truss bearing at this support. See Figure 13.



**Figure 11: Utility brackets**



**Figure 12: Abutment masonry**



**Figure 13: Damaged concrete pedestals**

Once all of the listed repairs are completed, the structure will meet all design strength requirements for the foreseeable future. All repairs would be completed using modern design standards and construction practices to help them last as long as possible.

The existing bridge deck is a lightweight, concrete-filled steel grid deck. To keep from adding more weight to the truss, a new bare concrete bridge deck without a paved surface will be required. Some of the main truss members already have borderline load ratings, so increasing the weight of the structure is not acceptable. To improve durability of the new deck, it would likely be reinforced with non-corrosive GFRP rebar. A comprehensive drainage system would be added to limit moisture and salt on the lower parts of the truss; the existing deck has open drainage which lets salt and water from the road drop right onto the steel.

The existing 30 ft available travelway matches the existing approaches and would provide two 11 ft travel lanes with 4 ft shoulders bound by rails located along the inside of the trusses. 10 ft travel lanes with 5 ft shoulders for bicyclists were considered briefly but dismissed as an option. The Department considers these narrower travel lanes as less safe given the high traffic volume, almost 19,000 vehicles per day, this bridge has.

A full road closure is needed to complete all major truss rehabilitation activities except painting. The construction and traffic disruption duration for this alternative is approximately 20 months. The user costs and other impacts require a temporary bridge for this alternative. When the temporary bridge is added in, construction duration for this alternative is approximately 3 years.

Rehabilitating the existing truss would preserve the existing river flow conditions and would have the least permanent environmental, right of way and utility impacts. It would also have the least impact to the National Register-Eligible historic bridge and districts. However, construction of a temporary bridge will still have temporary environmental impacts. Utilities on the truss will have to be temporarily relocated on the bridge during the rehab process.

Despite all efforts, a bridge rehabilitation will probably still require significant future maintenance. To get 75 more years of life, the bridge will need approximately 3 future paintings, 1 deck replacement, and 2 substructure rehabilitations, beyond the current project. All of these activities will disrupt traffic to varying degrees. Painting will disrupt traffic for about 8 months, and each deck replacement will disrupt traffic for about 6 months.

Based on past performance of the modern paint systems used by MaineDOT on similar truss bridges that also had pack rust, the truss will need to be painted about every 20 years. The current paint systems used today perform very well, replacing the previous lead-based paint systems. The paint successfully seals the steel and stops corrosion when installed. It spans the seams of the built-up steel members and prevents water and air from getting to the steel. However, once the paint cracks at all, existing pack rust will immediately reactivate (see Figure 14). The existing truss has pack rust in numerous locations. To effectively maintain structures with this condition, paint systems need replacement more frequently. Painting a truss like this currently costs an estimated \$4,000,000. To prevent pack rust and other corrosion issues from destroying the truss, future paint jobs would have to be budgeted for and done on a regular cycle.



**Figure 14: Pack rust is corrosion in the crevice between two plates of steel that are bolted or riveted together. As the rust progresses, it gradually pushes the pieces of steel apart, bending them and sometimes breaking bolts or rivets. The only way to truly fix pack rust is to take apart the plates of steel and clean them, which is usually not feasible.**

Use of GFRP reinforcement would extend the life of a bare concrete deck, but without a high performance membrane and paved wearing surface that can be regularly replaced, 50 years of life is a good estimate. Based on the historic performance of similar aged bridges (currently 85 years old) and the age of the most recent major substructure rehabilitation (2006), additional substructure rehabilitations would be expected at years 20 and 50 following this current project.

Besides these major future maintenance efforts, there will be more frequent smaller repair efforts needed on the steel, bridge joints, and the aging substructure. This truss will also require Routine and Fracture Critical Bridge Inspections, costing about \$60,000 every two years. These inspections will also disrupt traffic, requiring a single lane closure for 1 to 2 weeks. If

cracks in fatigue sensitive or fracture critical members are found in these inspections, more frequent inspections or immediate repairs will be required.

### **Alternative 3: Rehabilitation of Existing Steel Truss Bridge:**

Alternative 3 would rehabilitate the existing truss as outlined above. It would still have only one sidewalk, so pedestrian mobility and safety would not be improved. The open grid decking along the outside of the existing shoulders would be replaced with a solid concrete deck, improving the situation for bicyclists. However, the shoulders would still be only 4 feet wide and the railing right at the edge of the shoulder restricts the useable width for bicyclists even more. It would still not be a very good bridge for bicyclists. Therefore, this alternative does not fully meet the pedestrian and bicyclist portion of the Purpose and Need for this project.

The construction cost of this alternative is estimated at \$15,000,000. This cost includes a 15 percent contingency above the repair work that has already been identified. Rehabilitation projects nearly always discover issues not previously found in inspections, causing budget overruns.

The overall life cycle construction cost of this alternative, including estimates for all future maintenance on the truss out to 75 years of life, is projected to be \$20,800,000.

Early in the investigation of alternatives at this site, this alternative was examined as a 30 year rehabilitation and either maintaining one lane of traffic on the bridge or allowing a 5 to 7 month bridge closure. A replacement after 30 years would yield the lowest life cycle cost of any rehabilitation option. Given changes to the rehabilitation scope since the latest bridge inspection and recognition of the user costs of the maintenance of traffic options, the initial cost of this alternative now must include a temporary bridge. The originally estimated construction cost of \$8 million to rehabilitate the bridge now is \$15 million after adding a full floor system replacement and an on-site temporary bridge detour.

#### Summary of Alternative 3:

- Rehabilitation of existing steel truss bridge
- 11 ft travel lanes with 4 ft shoulders each side and a 5 ft sidewalk on the West side
- Construction Cost: \$15 million
- Life Cycle Cost: \$20.8 million
- Construction Duration: approximately 3 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary bridge, Abutment 1 repair work
- **Does not** meet Purpose and Need (pedestrian needs)

### **Alternative 4: Rehabilitation of Existing Steel Truss Bridge with Added East Sidewalk**

Alternative 4 is also a rehabilitation of the existing truss, but with a second 5 foot sidewalk added on the opposite side of the bridge. This fully addresses the pedestrian issues at this site. Like Alternative 3, bicyclists would have 4 foot shoulders with adjacent traffic rails, a less than ideal situation. However, this would still be better than the current condition for bicyclists. Alternative 4 adequately meets the Purpose and Need for this project.

To add the additional weight of a second sidewalk, weight must be taken off the truss somewhere else. The existing bridge deck would need to be replaced with a new lightweight concrete filled Exodermic deck. An Exodermic deck system can be as much as fifty percent lighter than a conventional concrete deck of the same span. An Exodermic deck has exposed steel on the bottom of the deck, so future maintenance would be anticipated. Other lightweight deck configurations were also considered but no others were found light enough without even more expense. This alternative includes the addition of new structural steel framing, concrete deck, and pedestrian rail for the added 5 ft wide sidewalk on the east side of the bridge. Between the more expensive deck and the new sidewalk and framing, this option will have a construction cost about \$2,000,000 more than Alternative 3.

The estimated construction duration for this alternative is approximately 3 years (similar to Alternative 3).

Hydraulic conditions, environmental impacts, right-of way impacts, utility impacts, maintenance of traffic and maintenance concerns for Alternative 4 would be the same as those noted for Alternative 3 with the exception of the impacts to the NR-Eligible Historic Bridge and Districts. The additional sidewalk is an addition that is not part of the NR-Eligible Historic Bridge.

The construction cost of this alternative is estimated at \$17,000,000. The life cycle cost of this alternative, including estimates for all future maintenance on the truss out to 75 years of life, is estimated to be \$23,200,000.

#### Summary of Alternative 4:

- Rehabilitation of existing steel truss bridge with added east sidewalk
- 11 ft travel lanes with 4 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$17 million
- Life Cycle Cost: \$23.2 million
- Construction Duration: approximately 3 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary bridge, Abutment 1 concrete work
- Meets Purpose and Need

### **Repurpose Existing Bridge and Build a New Replacement Bridge**

An additional alternative suggested by the public was to *'Restore and repurpose the historic bridge for pedestrian and bicycle use, and as a public historic park. Build a new bridge on alternative alignment.'* This is a combination of two alternatives discussed above, Alternatives 2 and 3. All work to preserve the existing bridge under Alternative 3 would still be required, except possibly rehabilitating the sidewalk. Conservatively, the construction cost of this rehabilitation could be reduced to \$9.5 million (with the removal of the sidewalk), and there would be no need for a temporary bridge. This alternative would also require the cost of a new replacement bridge, Alternative 2, at \$13 million, for a total construction cost of \$22.5 million. The question of future ownership and maintenance responsibility for the truss would have to be addressed. Also, the effect on river water levels from having more piers permanently in the river channel would need investigation.

## MAINTENANCE OF TRAFFIC

Four options were investigated to maintain traffic at this site during construction. They are not all feasible for all of the bridge improvement alternatives. Specifics for each alternative, along with estimated traffic disruption durations and user costs, are discussed later in this report.

1. Complete road closure with a detour. Detour all traffic along U.S. Route 1, State Route 196, and State Route 24.
2. Single lane closure with staged construction. One way, southbound traffic will be carried across the bridge on a 12 foot travelway and all northbound traffic will be detoured. This option can only work for certain construction activities, like painting. This traffic control method has been used successfully in the past on the Frank J. Wood Bridge.
3. On-site detour on temporary bridge. Construct a 2 lane temporary bridge parallel to the existing bridge and detour all traffic onto it. Traffic would only be disrupted during the construction of tie-ins to the existing roadway and to the new roadway upon conclusion of the project. These disruptions could be limited by requiring work be done during off-peak hours. Construction and removal of the temporary bridge would likely extend the total construction duration by about 1½ years (1 construction season for construction of the temporary bridge and half a season for its removal). The cost for a temporary bridge is estimated to be about \$4 million.
4. New alignment. If a new bridge is constructed on a new alignment, the existing bridge could be used to maintain traffic during construction. Traffic would primarily be disrupted during construction of the final tie-in. Again, this could be mitigated by requiring work during off-peak hours. This option would result in the least traffic disruption.

Staged construction maintaining two-way traffic is not feasible due to the existing structure type and needed rehabilitation repairs. Alternating one-way traffic is not feasible because of the traffic volume and proximity of signalized intersections.

Traffic disruption results in indirect costs to the users of the bridge and to the surrounding businesses. A user cost may be estimated for the delays to the traveling public, assigning a dollar value to the disruption. Daily user costs were prepared by MaineDOT estimating costs associated with delays at intersections and additional miles traveled. The user cost for a complete road closure is estimated at almost \$22,000 per day, while the user cost for a northbound lane closure is estimated at over \$10,000 per day. This cost will be compared with that of a temporary bridge to determine whether paying for a temporary bridge is justified for a given construction alternative.

## UTILITIES

A hydropower dam operated by Brookfield Renewable Energy Partners (Brookfield) is located about 500 ft upstream of the existing bridge crossing. No impacts (including hydraulic

impacts) to this facility are anticipated for any of the bridge improvement alternatives investigated.

Overhead utilities and a water main are carried by the existing bridge. Temporary support or relocation of these facilities within the limits of the existing bridge would be needed during a bridge rehabilitation.

With a bridge replacement, these facilities would need to be relocated. Some of the utility poles in the approaches would also need to be relocated. The overhead utilities would need to transition to underground in the approaches close to the replacement bridge ends. The overhead utilities and the waterline would be carried on the bridge below the bridge deck, between girders, out of sight.

## **RIGHT OF WAY**

A bridge rehabilitation or bridge replacement on the existing alignment would not require permanent property impacts. However, temporary property rights would be needed for any temporary bridge.

Construction of a replacement bridge on a new upstream alignment would require permanent property acquisitions of parts of two properties on the west side of the south approach and one property on each side of the north approach. The south approach property impacts would include reconstruction of a retaining wall between the drive entrances to the small Fort Andross parking lot and the Brookfield hydroelectric station at the dam. The 250<sup>th</sup> Anniversary Park located at the southeast corner of the bridge is a Brunswick town park constructed on land leased from Brookfield. The only park impacts would be fill slopes within the existing State-owned right of way. The north approach would have a new 130-ft-long retaining wall along the northwest approach to limit impacts to the property and parking area. Reconstruction of the drive entrance to the Bowdoin Mill complex will require impacts beyond the existing MaineDOT right of way.

Temporary property rights would be needed to construct work access platforms like work trestles. These rights would be similar to temporary rights needed for a temporary bridge.

Additionally, for an upstream bridge replacement alternative, the abutments and three of the four bridge piers would be located within the limits of the Federal Energy Regulatory Commission (FERC) Boundary of the dam. Temporary property rights would be needed for construction access along the north side of the approaches and within the FERC Boundary.

## **ENVIRONMENTAL**

Endangered species such as the shortnose sturgeon and Atlantic sturgeon spawn in the project area. This project is within Essential Fish Habitat and permanent and temporary impacts need to be avoided or minimized. In-water work must be avoided during crucial migrating periods. This restriction is in place from April 7 to August 30, and will be a significant constraint on construction durations. Impacts to the Brunswick Fishway at the Brookfield dam will be avoided and requests to shade the Fishway from moving shadows produced by construction equipment and the traveling public will be considered.

The existing bridge is eligible for listing on the National Register of Historic Places as part of the Brunswick-Topsham Industrial Historic District, which is considered National Register-Eligible. It is also abutting the National Register-Listed Pejepscot Paper Company Historic District.

If a temporary bridge is used to maintain traffic for either a bridge rehabilitation or bridge replacement, then temporary environmental impacts would be needed within the existing river channel to support the temporary bridge.

Construction of a new replacement bridge would have environmental impacts that would need to be minimized or mitigated. Permanent impacts would include the piers and pier foundations within the channel. Foundation locations should avoid the Brunswick side powerhouse outfall river channel that leads to the dam fishway by taking advantage of ledge outcrops where possible. Also, if a temporary work trestle is needed for the construction of a new replacement bridge, temporary environmental impacts would need to be addressed.



Figure 15: Two types of temporary impacts

Historic impacts and avoidance and minimization strategies will be determined through the ongoing Section 106, 4(f) and NEPA processes.

### **LIFE CYCLE COST ESTIMATE**

Life cycle costs are considered in the comparison of bridge improvement alternatives. A life cycle cost estimate (LCCE) totals all estimated bridge costs throughout the life of each bridge improvement alternative and translates them to current dollar equivalents. The LCCE accounts for estimated construction costs on the current project and the translated present value of anticipated future inspection, maintenance, and rehabilitation. It also accounts for anticipated future bridge replacement dates for each alternative. Specifics of the life cycle costs for each alternative are discussed later in this report.

## GRAPHIC COMPARISON

The graphic below compares Alternative 2 (the low cost replacement or new option) and Alternative 4 (the best rehab option). Three main areas are contrasted: maintenance of traffic during construction, future rehabilitation and maintenance, and total costs.

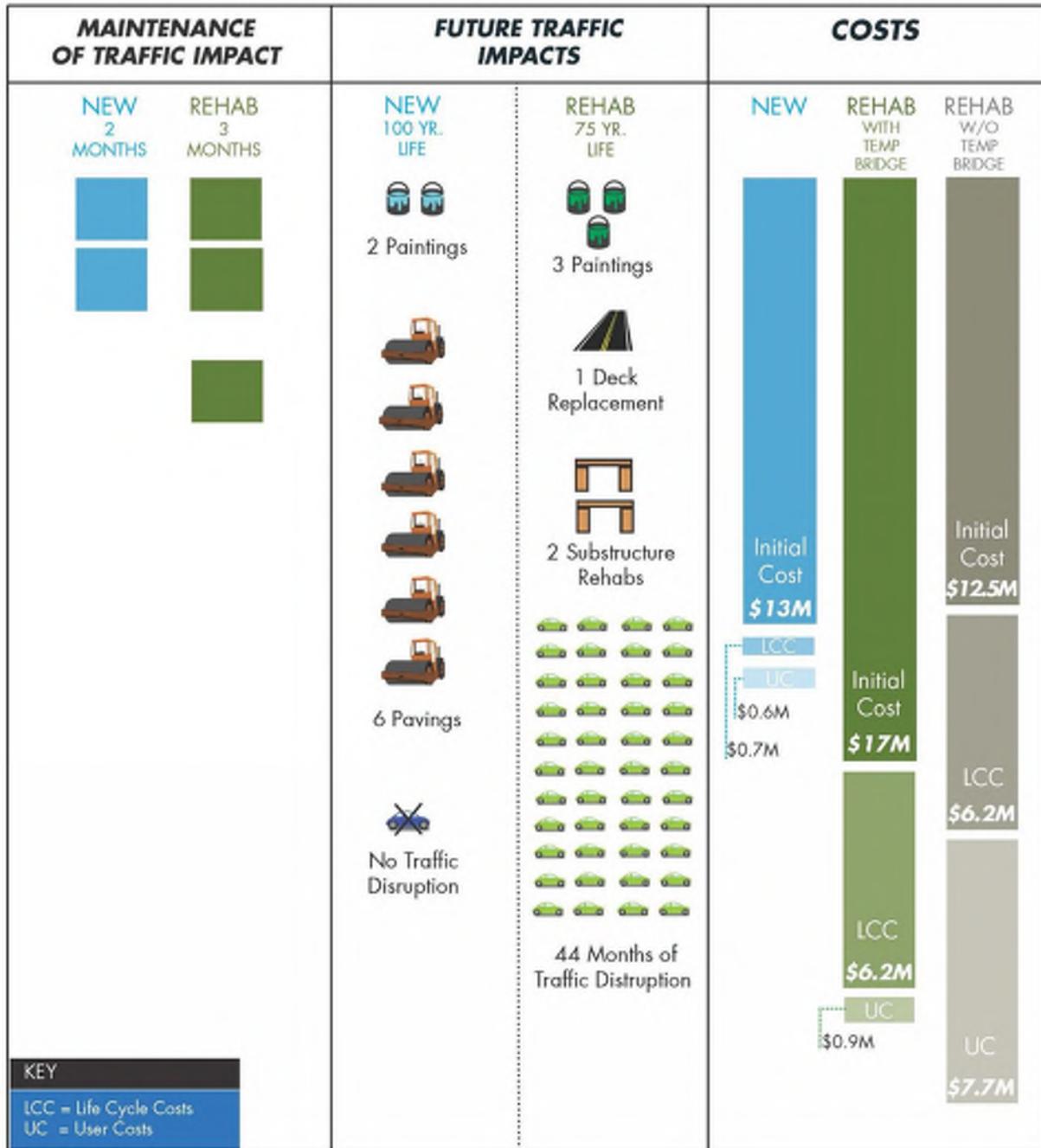


Figure 16 Graphical Comparison

**Appendix D**  
Comments Received from October 27, 2016  
to January 20, 2017

**Frank J. Wood Bridge Project - Comments on the Section 106 process, draft Alternatives Matrix and draft Summary of Alternatives**  
 (Meeting held on October 27, sent request for comments on November 4th with due date of December 2nd, 2016)

COMMENT #	COMMENTOR and DATE COMMENT RECEIVED	SUMMARY OF COMMENT	RESPONSE TO COMMENT
1	Nathan Holth representing HistoricBridges.org, (10/27/2016 via e-mail)	Focused on Alternatives and Rust removal.	This comment will be addressed outside this Finding of Effect. Furthermore, pack rust removal would be an aspect of either rehabilitation options. FHWA-ME has found that rehabilitation will not result in an adverse effect to historic districts.
2	John Graham representing Friends of the Frank J. Wood Bridge, (11/21/2016 via e-mail)	Request for the PDR.	This comment will be addressed outside of this Finding of Effect. However, any one of the replacement options will result in a finding of adverse effect to historic resources while the rehabilitation options will not.
3	Nathan Holth representing HistoricBridges.org, (11/21/2016 via e-mail)	Presents methodology to remove pack rust.	This comment will be addressed outside this Finding of Effect. Furthermore, pack rust removal would be an aspect of either rehabilitation options. FHWA-ME has found that rehabilitation will not result in an adverse effect to historic districts.
4	John Graham representing Friends of the Frank J. Wood Bridge, (11/21/2016 via e-mail)	Requests additional information regarding the current status of Warren Truss bridges in the Maine.	Please see Section 4: Determinations of Eligibility
5	Douglas C. Bennett, resident of Topsham and member of Topsham Lower Village Development Committee (11/23/2016 via e-mail)	Includes Op-Ed's published in local newspapers.	Comments received and will be considered.
6	John Graham representing Friends of the Frank J. Wood Bridge, (11/23/2016 via e-mail); notes on Summary of Alternatives	Request to clarify why P&N has changed, presents sidewalk location and terminus, requests MaineDOT look at specific bridge in Pennsylvania and New Jersey, general comment on style of PDR.	Most of comments will be addressed outside this Finding of Effect as it is more suited for the general project stakeholders process. However, one comment regarded the use of Route 24 (Elm Street) as a detour during construction. A significant concentration of the Topsham Historic District is located on Elm Street. A detour along this route would require the expansion of the APE to these areas and it is likely that the Topsham Historic District would experience an adverse effect due to the introduction of audible and visual elements not previously experienced due to the volume of traffic routed through this area.
7	John Shattuck, representing the Town of Topsham Board of Selectmen, (12/2/2016 via e-mail)	Highlights' Town of Topsham Select board's knowledge and opinion of historic aspects, costs, and preferred alternative.	Please see Section 4: Determination of Eligibility
8	John Shattuck, representing the Town of Topsham, (12/2/2016 via e-mail)	Town of Topsham's opinion and preference on alternative, includes general NEPA/public involvement issues.	This comment will be addressed outside this Finding of Effect it is more suited for the general project stakeholders process.
9	John Graham representing Friends of the Frank J. Wood Bridge, (12/2/2016 via e-mail)	106, reiterate eligibility, Summer St effects & Summer St & industrial HD; bridge & bridge survey	Please see Section 4: Determination of Eligibility and Section 5: Determination of Effect
10	John Shattuck, representing the Town of Topsham, (12/2/2016 via e-mail)	Section 106	Properties, individually or within a district, do not require inclusion, even support, from local entities or owners, to be determined eligible for listing in the National Register. That said, a majority of owners do need to support the formal listing on the National Register before a property is listed. Both listed and determined eligible properties are afforded the same consideration under Section 106.
11	Residents of Summer Street (rec'd 12/5/2016 via mail)	Section 106 and NEPA	Please see Section 4: Determination of Eligibility.
12	MaryAnn Naber, representing ACHP (12/7/2016 via e-mail)	Section 106; Alternative Analysis	Please see Section 5: Determinations of Effect. Alternatives analysis concerns will be addressed through a separate communication from FHWA-ME/MaineDOT.
13	Bill Morin (January 2017)	Eligibility and Effects	Please see Section 4: Determination of Eligibility and Section 5: Determination of Effect

**From:** [Nathan Holth](#)  
**To:** [Chase, Cassandra \(FHWA\)](#)  
**Subject:** Re[2]: Frank J. Wood - Draft Summary to Accompany Alternatives Matrix  
**Date:** Thursday, November 03, 2016 11:14:13 AM

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Cassie,

I will be out of office for the next week as well, but will try to get formal comments the week when I return. Meanwhile, any chance you can supply any additional supporting documentation to go along with the documents presented to date? (See concern #1 in my previous email below).

Thanks,  
-Nathan

----- Original Message -----

From: "Chase, Cassandra (FHWA)" <[Cassandra.Chase@dot.gov](mailto:Cassandra.Chase@dot.gov)>  
To: "Nathan Holth" <[nathan@historicbridges.org](mailto:nathan@historicbridges.org)>  
Sent: 10/31/2016 2:16:40 PM  
Subject: RE: Frank J. Wood - Draft Summary to Accompany Alternatives Matrix

Hi Nathan,

Thank you for calling in to last week's Section 106 consulting party meeting. I apologize for providing the Summary and Matrix to the group at the last minute. We were still working on drafting and compiling the information right up until the meeting. But, that's no excuse and I understand that it does not give the Consulting Parties a fair chance to review the information and provide input. As we committed to in last Thursday's meeting, we will be accepting comments on the draft alternatives matrix, draft alternatives summary, and our proposed effect determinations for the next three weeks. I will be sending a separate e-mail out to everyone indicating the specific date. I'm still coordinating with MaineDOT, but I should be sending that e-mail out soon.

I am on leave for a few days, returning to the office on November 2<sup>nd</sup>. But, if you want to chat about any of this, I'd be more than happy too. I will make sure your other questions/comments are addressed too.

Cassie

Sent from my iPhone

---

**From:** Nathan Holth [mailto:[nathan@historicbridges.org](mailto:nathan@historicbridges.org)]  
**Sent:** Thursday, October 27, 2016 1:33 PM  
**To:** Chase, Cassandra (FHWA); [kitty@historicbridgefoundation.com](mailto:kitty@historicbridgefoundation.com); [s.t.hanson@comcast.net](mailto:s.t.hanson@comcast.net); John Graham; [sstern@gwi.net](mailto:sstern@gwi.net); John Shattuck; [lsmith@brunswickme.org](mailto:lsmith@brunswickme.org); Hopkin, Megan M; Chamberlain, Kristen; [robin.k.reed@maine.gov](mailto:robin.k.reed@maine.gov); Kittredge, Joel; Martin, Cheryl (FHWA); Frankhauser Jr, Wayne;

Kate Willis; Emington, Wayne (FHWA); John Eldridge; Norman Baker; Drozd, Maria (FHWA); [stevehinchman@gmail.com](mailto:stevehinchman@gmail.com); [amorris@zwi.net](mailto:amorris@zwi.net); [sebordwell@gmail.com](mailto:sebordwell@gmail.com); Nancy BikeMaine.org; Folsom, Jeff; [ckrussell@zwi.net](mailto:ckrussell@zwi.net); Curtis Neufeld ([cneufeld@sitelinespa.com](mailto:cneufeld@sitelinespa.com)); Rod Melanson ([rmelanson@topshammaine.com](mailto:rmelanson@topshammaine.com)); Carol Eyerman ([ceyerman@topshammaine.com](mailto:ceyerman@topshammaine.com)); Douglas C. Bennett ([dougb@earlham.edu](mailto:dougb@earlham.edu)); Victor Langelo ([vlangelo@eclipseservices.com](mailto:vlangelo@eclipseservices.com)); Richard Cromwell ([richcromwell1@gmail.com](mailto:richcromwell1@gmail.com)); Androscoggin Dental Care ([fredwigand@zwi.net](mailto:fredwigand@zwi.net)); [katzthal@comcast.net](mailto:katzthal@comcast.net); [mnaber@achp.gov](mailto:mnaber@achp.gov); [david.gardner@maine.gov](mailto:david.gardner@maine.gov); Pulver, William; Pelletier, Steve ([steve.pelletier@stantec.com](mailto:steve.pelletier@stantec.com)); Deb Blum ([dblum@brunswickme.org](mailto:dblum@brunswickme.org)); [kirk.mohney@maine.gov](mailto:kirk.mohney@maine.gov)

**Subject:** Re: Frank J. Wood - Draft Summary to Accompany Alternatives Matrix

Cassie,

I wanted to give you and the other consulting parties a heads-up. This document is a very important part of the Section 106 process, and having received it only a couple hours prior to the meeting, this is not a lot of time for me to review and provide consultation input on a document of this importance. I have to schedule these meetings around a busy work schedule, and in preparation for this meeting today I have been too busy to review this document in full. It is therefore my request that no final decisions on a preferred alternative be decided at this meeting. I request more time (30 days would be typical) for the consulting parties to review the data after today's meeting before we come to final consensus on an alternative.

In briefly scanning the document, I have the following concerns that support my request:

1. In my experience with Section 106, a document like this is typically accompanied by additional supporting documents (often in an appendix). Is this information forthcoming at a later date?

Specifically, I am looking for: detailed itemized cost estimate and scope of work breakdown for each alternative consider (standard table of work items with columns for quantity, price, total). Additionally, a more detailed explanation for the life cycle costs provided, including an itemized breakdown similar to the initial rehab breakdown I have described above. This is all important because I find the cost estimates for rehab to be unusually high with unusually little long-term benefit, and I believe the scope of work can be adjusted to better rehab this bridge for lesser life cycle cost.

2. A brief scan of the document reveals a critical factual error presented in one of the photo captions: "The only way to truly fix pack rust is to take apart the plates of steel and clean them." This is not true. DOT-approved procedures exist in multiple states for pneumatic removal of pack rust. The procedure simultaneously removes the pack rust, while also bringing the separated plates back into alignment and contact. I am particularly proud of my home state of Michigan which just completed this type of work using a DOT-approved procedure for pack rust removal on a fracture critical girder of a bridge for a limited access highway, with the work completed without closure to traffic. While I could bring this up verbally at the meeting, I would rather not have you take me at my word, but give me time to put together some specific information for you, the procedure used, photos of the work, etc.

I hope you can give my concerns some consideration.

Thanks,  
-Nathan Holth

=====  
**Nathan Holth**

Author/ Photographer/Webmaster

-----**HistoricBridges.org**-----

"Promoting the Preservation Of Our Transportation Heritage"

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[www.historicbridges.org](http://www.historicbridges.org)  
=====

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=====

----- Original Message -----

From: "Chase, Cassandra (FHWA)" <[Cassandra.Chase@dot.gov](mailto:Cassandra.Chase@dot.gov)>

To: "[kitty@historicbridgefoundation.com](mailto:kitty@historicbridgefoundation.com)" <[kitty@historicbridgefoundation.com](mailto:kitty@historicbridgefoundation.com)>; "Nathan Holth" <[nathan@historicbridges.org](mailto:nathan@historicbridges.org)>; "[s.t.hanson@comcast.net](mailto:s.t.hanson@comcast.net)" <[s.t.hanson@comcast.net](mailto:s.t.hanson@comcast.net)>; "John Graham" <[John@johngrahamrealestate.com](mailto:John@johngrahamrealestate.com)>; "[sstern@gwi.net](mailto:sstern@gwi.net)" <[sstern@gwi.net](mailto:sstern@gwi.net)>; "John Shattuck" <[jshattuck@topshammaine.com](mailto:jshattuck@topshammaine.com)>; "[lsmith@brunswickme.org](mailto:lsmith@brunswickme.org)" <[lsmith@brunswickme.org](mailto:lsmith@brunswickme.org)>; "Hopkin, Megan M" <[Megan.M.Hopkin@maine.gov](mailto:Megan.M.Hopkin@maine.gov)>; "Chamberlain, Kristen" <[Kristen.Chamberlain@maine.gov](mailto:Kristen.Chamberlain@maine.gov)>; "[robin.k.reed@maine.gov](mailto:robin.k.reed@maine.gov)" <[robin.k.reed@maine.gov](mailto:robin.k.reed@maine.gov)>; "Kittredge, Joel" <[Joel.C.Kittredge@maine.gov](mailto:Joel.C.Kittredge@maine.gov)>; "Martin, Cheryl (FHWA)" <[Cheryl.Martin@dot.gov](mailto:Cheryl.Martin@dot.gov)>; "Frankhauser Jr, Wayne" <[Wayne.FrankhauserJr@maine.gov](mailto:Wayne.FrankhauserJr@maine.gov)>; "Kate Willis" <[kwillis@kleinfelder.com](mailto:kwillis@kleinfelder.com)>; "Emington, Wayne (FHWA)" <[wayne.emington@dot.gov](mailto:wayne.emington@dot.gov)>; "John Eldridge" <[jeldridge@brunswickme.org](mailto:jeldridge@brunswickme.org)>; "Norman Baker" <[norman.baker@tylin.com](mailto:norman.baker@tylin.com)>; "Drozd, Maria (FHWA)" <[Maria.Drozd@dot.gov](mailto:Maria.Drozd@dot.gov)>; "[stevehinchman@gmail.com](mailto:stevehinchman@gmail.com)" <[stevehinchman@gmail.com](mailto:stevehinchman@gmail.com)>; "[amorris@gwi.net](mailto:amorris@gwi.net)" <[amorris@gwi.net](mailto:amorris@gwi.net)>; "[sebordwell@gmail.com](mailto:sebordwell@gmail.com)" <[sebordwell@gmail.com](mailto:sebordwell@gmail.com)>; "Nancy BikeMaine.org" <[Nancy@BikeMaine.org](mailto:Nancy@BikeMaine.org)>; "Folsom, Jeff" <[Jeff.Folsom@maine.gov](mailto:Jeff.Folsom@maine.gov)>; "[ckrussell@gwi.net](mailto:ckrussell@gwi.net)" <[ckrussell@gwi.net](mailto:ckrussell@gwi.net)>; "Curtis Neufeld ([cneufeld@sitelinespa.com](mailto:cneufeld@sitelinespa.com))" <[cneufeld@sitelinespa.com](mailto:cneufeld@sitelinespa.com)>; "Rod Melanson ([rmelanson@topshammaine.com](mailto:rmelanson@topshammaine.com))" <[rmelanson@topshammaine.com](mailto:rmelanson@topshammaine.com)>; "Carol Eyerman ([ceyerman@topshammaine.com](mailto:ceyerman@topshammaine.com))" <[ceyerman@topshammaine.com](mailto:ceyerman@topshammaine.com)>; "Douglas C. Bennett ([dougb@earlham.edu](mailto:dougb@earlham.edu))" <[dougb@earlham.edu](mailto:dougb@earlham.edu)>; "Victor Langelo ([vlangelo@eclipseservices.com](mailto:vlangelo@eclipseservices.com))" <[vlangelo@eclipseservices.com](mailto:vlangelo@eclipseservices.com)>; "Richard Cromwell ([richcromwell1@gmail.com](mailto:richcromwell1@gmail.com))" <[richcromwell1@gmail.com](mailto:richcromwell1@gmail.com)>; "Androscoggin Dental Care ([fredwigand@gwi.net](mailto:fredwigand@gwi.net))" <[fredwigand@gwi.net](mailto:fredwigand@gwi.net)>; "[katzthal@comcast.net](mailto:katzthal@comcast.net)" <[katzthal@comcast.net](mailto:katzthal@comcast.net)>; "[mnaber@achp.gov](mailto:mnaber@achp.gov)" <[mnaber@achp.gov](mailto:mnaber@achp.gov)>;

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Sent: 10/27/2016 11:53:42 AM

Subject: Frank J. Wood - Draft Summary to Accompany Alternatives Matrix

Good Morning,

Attached, please find a draft Summary of Alternatives to accompany the Alternatives Matrix that I sent out yesterday. We just finished putting this draft together. I will bring some copies of this and the draft alternatives matrix to this afternoon's meeting.

See you all then!

Cassie

Cassie Chase  
Environmental Engineer  
Federal Highway Administration – Maine Division  
Office: 207-512-4921  
Cell: 207-689-8007  
[Cassandra.chase@dot.gov](mailto:Cassandra.chase@dot.gov)

November 21st, 2016

Friends of The Frank J. Wood Bridge  
10 Pleasant Street  
Topsham, ME 04086

U.S. Federal Highway Administration  
40 Western Avenue  
Augusta, ME 04330

Attention Ms. Cassandra Chase, Environmental Engineer

Frank J. Wood Bridge MHPC # 1595-15

Dear Ms. Chase,

On behalf of the Friends of the Frank J. Wood Bridge and in response to your email of Nov. 4, 2016 seeking public comment, I wish to again request that the Preliminary Design Report(PDR) for all alternatives be released to the public. It is impossible to effectively and responsibly comment on the limited materials released by FHWA and MDOT to date without being able to review the underlying data, reports, engineering and cost estimates, traffic and pedestrian studies, and all other source information.

At the meeting held at the Topsham Public Library on February 25, 2015, MDOT promised that by the Fall of 2015 it would provide the public with a report of their findings and their recommendations. This never occurred. Rather, in April 2016 MDOT held a series of public meetings at which they declared that the decision had been made to build a new bridge - apparently before the Preliminary Design Report was completed.

Again at the July 106 Meeting I asked about the PDR and was informed it was a few weeks out and would be available by August. In the August 106 meeting my questioning was met with a similar postponed answer.

It is now November and no report has been made available. It is impossible for the public to verify and weigh the alternatives without any of the details, data or supporting information.

Please either release the full report with all of the details or provide a realistic date when the Preliminary Design Report will be released.

Sincerely,

John Graham

President- Friends of the Frank J Wood Bridge



**Nathan Holth**  
2767 Eastway Drive  
Okemos, MI 48864

269-290-2593  
nathan@historicbridges.org

**November 21, 2016**

Cassie Chase  
Environmental Engineer  
Federal Highway Administration – Maine Division  
Office: 207-512-4921  
Cell: 207-689-8007  
[Cassandra.chase@dot.gov](mailto:Cassandra.chase@dot.gov)

Subject: Comments: Section 106 Consulting Party Comments: Frank J. Wood Bridge

Dear Ms. Chase:

I wish to offer the following comments in regards to above listed project.

First, I request an itemized scope of work and cost estimate for the proposed scope of work in regards to the rehabilitation of this bridge.

The October 27 Summary document in Figure 15 states the following: "*The only way to truly fix pack rust is to take apart the plates of steel and clean them, which is usually not feasible.*" This suggests that the Department's position on pack rust is that pack rust cannot be corrected or repaired without full disassembly of built-up members. This statement is not correct, and I request the re-evaluation of rehabilitation using methods of pneumatic pack rust removal currently in-use in other states. A summary follows:

Pack rust removal has been a part of historic truss bridge restoration for many years in states where historic truss preservation is common, such as the states of Indiana and Michigan. It may be new to Maine, in which case I hope I can educate and inspire its practice here. There is a special all-in-one procedure that both drives the actual pack rust out, while also bringing the deformed plates back into shape. The steel is heated to a specific temperature, and then hammered with a pneumatic hammer. Just this year, in Michigan, the DOT took this process which it had previously reserved for historic bridge projects, and expanded it for use on non-historic bridges as well with the rehabilitation of a riveted deck plate girder on a busy limited access highway. The Michigan Department of Transportation worked with Bach Steel, a Michigan fabricator/contractor that specializes in this work, to develop a procedure that worked well for the contractor, but also ensured it met the standards of the Department. Of additional interest, the work was completed without closure to traffic. This being the case, and being as the girders were fracture critical members, the DOT limited the number of rivets that could be removed at one time during the work. As it turned out however, the contractor was able to remove most of the pack rust without even removing the rivets, and without causing the rivets to break or otherwise fail. Also of concern is the temperature of the metal during the heating process. The procedure developed specified a maximum temperature that was allowed, and required the contractor to actively monitor the temperature of the steel throughout the heating process. The work was monitored by an on-site inspector.

Pack rust removal will not repair existing cracks in gusset plates, but it can prevent damage of this type by removing pack rust and reversing the effects of existing pack rust (bending of steel). I recommend the

Department consider this repair, and re-evaluate the project cost and life-cycle value in light of this procedure. I am including a brief project description from Bach Steel (which has a few photos), and I am also including the procedure as specified by the Michigan Department of Transportation.

Sincerely,

A handwritten signature in cursive script that reads "Nathan Holth".

Nathan Holth

Author/Webmaster, [HistoricBridges.org](http://HistoricBridges.org)



# Project: M-14 Huron River Bridge

Project Completed: 2016

Overview: The restoration methods Bach Steel uses for historic bridges can also be used to cost-effectively prolong the use of any metal bridge (whether historic or not). This is why we are excited to be part of the Michigan DOT's decision to employ pack rust removal repairs as part of the M-14 Huron River Bridge project in Ann Arbor. As far as we know MDOT has not done this work on non-historic bridges in the past. Elected officials are always talking about how bad America's bridges are... fixing what we have is a way to improve this problem at lesser cost than replacing existing bridges.

Doing this work properly involves careful heating of the steel. The experienced Bach Steel crew closely monitors the temperature of the steel throughout the heating process to insure the integrity of the steel is not compromised. Working with MDOT, Bach Steel developed a procedure to ensure this work could safely be performed with the bridge open to traffic.



Overview of bridge.



Overview of the crew.



Driving the pack rust out.



Careful temperature monitoring during heating was a requirement on this job.



**Phone:**

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Bach Ornamental and Structural Steel, Inc.  
4140 Keller Road  
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**Website:**

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**Facebook:**

[facebook.com/bachsteel](https://facebook.com/bachsteel)

## Pack Rust Removal Work Plan

### DESCRIPTION:

This work shall be in accordance with the 2012 Standard Specifications for Construction of the Michigan Department of Transportation. This Work Plan shall cover work associated with removing pack rust between the bottom cover plates at the bearing areas of the primary girders and other areas of the primary girders on the R01 structure over the Huron River.

### GENERAL:

The work shall include heating up areas of pack rust to 800°F with an oxy-fuel torch with a rosebud tip, temporarily placing a protective piece of steel over the heated area, applying impact force with a rivet gun or similar device. Apply a combination of heat and impact until the pack rust between the built up sections is removed. Moderate the application of heat to avoid annealing the steel or otherwise changing its properties by only heating short sections at a time.

MDOT personnel will oversee any heating operations to ensure area the temperatures do not exceed the per plan temperatures.

A video demonstration of this technique may be found at:

<http://www.historicbridgerestoration.com>

Areas chosen for pack rust removal shall be reasonably accessible to the Contractor to perform the above discussed procedure. Areas subject to this item shall be marked by the Engineer and completed by the Contractor prior to bridge cleaning operations. These areas are typically between the bottom cover plates at the bearing areas of the primary girders where they are exposed to the elements.

Areas selected for pack rust removal will be abrasive blasted to in accordance with section 715 of the Standard Specifications.

Rivets that are damaged during the pack rust removal work, or rivets that interfere with the work, shall be removed and replaced with high strength bolts of matching length and diameter.

### **The following job specific procedures will be followed for rivet removal on the R01 Structure:**

Rivet Replacement in bottom girder flange plates at Piers 7 thru 10

#### **Assuming Live Load (approx. 20% of total load):**

- At the 3/8" cover plate, 10'-11" long, with rivet pitch = 4 ½", the maximum unbraced length allowed is 22 inches
- Therefore: Four rivets, in 1 outside row, can be concurrently removed.
  
- At the 5/8" cover plate, 17'-0" long (6'-1" exposure along flange), with rivet pitch = 4 ½", the maximum unbraced length allowed is 35 inches
- Therefore: Seven rivets, in 1 outside row, can be concurrently removed.
- See sketch (detail A)

Assuming No Live Load:

- At the 3/8" cover plate, 10'-11" long, with rivet pitch = 4 1/2", the maximum unbraced length allowed is 26 inches
- Therefore: Five rivets, in 1 outside row, can be concurrently removed.
  
- At the 5/8" cover plate, 17'-0" long (6'-1" exposure along flange), with rivet pitch = 4 1/2", the maximum unbraced length allowed is 43 inches
- Therefore: Eight rivets, in 1 outside row, can be concurrently removed.

Upon completion of pack rust removal, areas affected by this operation shall be re-cleaned and coated in accordance with Section 715 of the Standard Specification.

Beam Plate Sealant shall be applied to all areas of the built up sections and plate areas of the bottom flange in the areas of pack rust removal to ensure sealing of any remaining voids. Sealant material shall be chosen from the QPL.

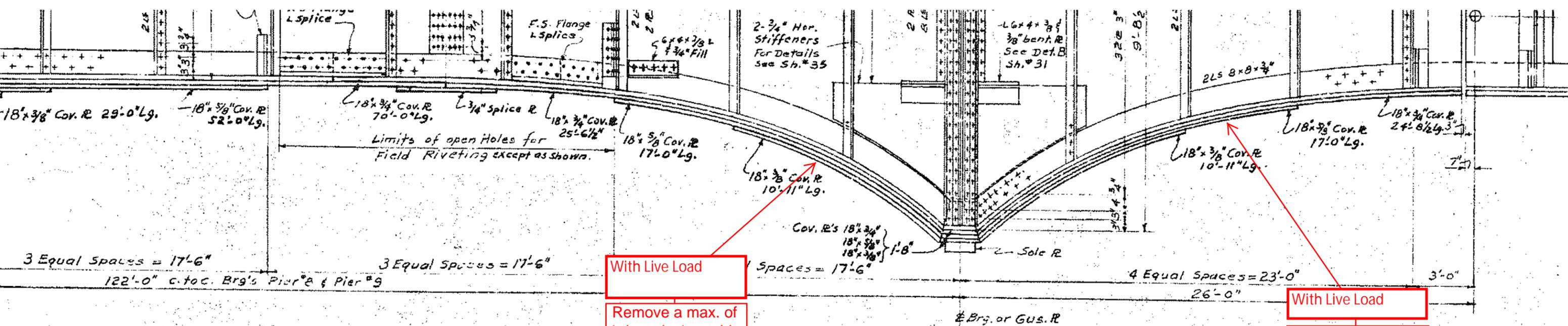
**METHOD OF PAYMENT:**

The work associated with this work plan shall be paid for in accordance with section 109.05.D (Force Account) of the 2012 Standard Specifications for Construction.

It is the intention of the contract team, to perform this work on one girder line under section 109.05.D and calculate the cost for this work to be prorated into a per linear foot (LFT) unit price for the remainder of the work.

The completed work as measured for pack rust removal will be paid for at the prorated unit contract unit price (LFT) for the following extra work and includes all material, equipment, access, incidentals, and labor to complete this item.

Work includes pack rust removal, rivet replacement with high strength bolts, cleaning and coating of these areas and sealant.

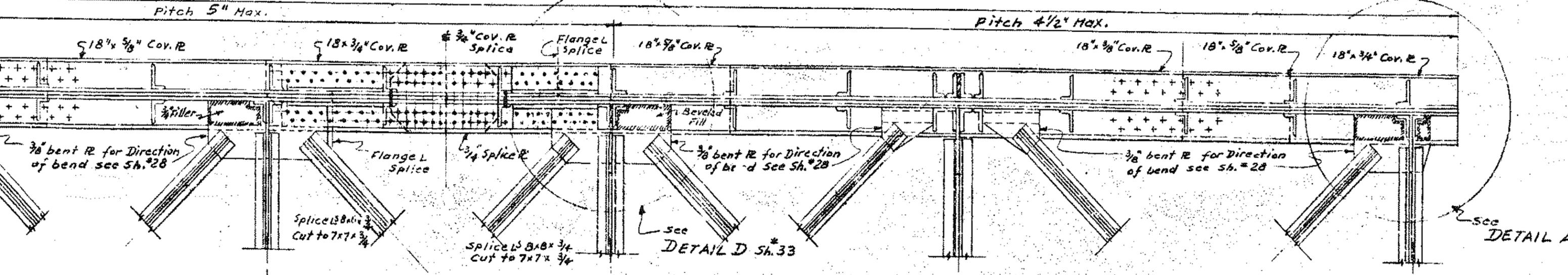


With Live Load  
 Remove a max. of 4 rivets in 1 outside row for a length of approx 10'-11"

With Live Load  
 Remove a max of 7 rivets in 1 outside row for a length of approx. 6'-1"

ELEVATION  
 GIRDERS G5, G6, G6<sup>R</sup> & G5<sup>R</sup>  
 G5<sup>L</sup> & G6<sup>R</sup> SHOWN

NOTE - Floor Beams and Sidewalk Brackets on G6<sup>L</sup> & G5<sup>R</sup> are located on sides opposite to those shown.



Piers 7 thru 10

Cassandra Chase and others involved in the Section 106 consideration of the Frank J. Wood Bridge--

I am forwarding to you for the section 106 comments a column I wrote for the *Brunswick Times Record* on November 11, and a subsequent piece in the *BTR* by John Graham, of the Friends of the Frank J. Wood Bridge on November 22:

[http://www.timesrecord.com/news/2016-11-11/Opinion/Bringing\\_Economics\\_Into\\_the\\_Bridge\\_Decision.html](http://www.timesrecord.com/news/2016-11-11/Opinion/Bringing_Economics_Into_the_Bridge_Decision.html)

[http://www.timesrecord.com/news/2016-11-22/Opinion/Adding\\_Apples\\_and\\_Oranges.html](http://www.timesrecord.com/news/2016-11-22/Opinion/Adding_Apples_and_Oranges.html)

I would add that the cost figures in the column I wrote are not mine but rather those of MDOT, and are drawn from the 10/26/2016 "Matrix of Alternatives Investigated" distributed at the 10/27 meeting of the section 106 process. As I wrote in the first piece, "when MDOT has put forward numbers showing renovation to be a costly proposition, the Friends have challenged the competence and integrity of those making the estimates."

Challenging the competence or integrity of public servants is the right of every citizen under the First Amendment. But it is a serious charge, and I see no reason, presented here or elsewhere, for others to join them in their aspersions.

Douglas C. Bennett  
53 Elm Street, Topsham, ME 04086



# The Times Record

Think locally.

Midcoast Maine's Only Daily Newspaper

2016-11-11 / Opinion

## Bringing Economics Into the Bridge Decision

BY DOUG BENNETT

Guest Column

I hope you are paying attention, citizens of Brunswick and Topsham. A federally mandated legal process is playing out in the meeting rooms of our two town halls that could affect the economic viability of many businesses in our towns and affect the taxes we pay as well.

It's a section 106 process. People are speaking on your behalf, and you should know what they are saying.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their activities on historic properties. The historic property in question is the Frank J. Wood Bridge, which was constructed in 1932. The question is whether the Maine Department of Transportation can replace the bridge or whether instead it should renovate the bridge.

No one doubts that something needs to be done. Rust is degrading the bridge's structural integrity. Following an inspection this summer, it was posted with a maximum weight of 25 tons. Said Maine Department of Transportation (MDOT), "The inspection team of MaineDOT bridge engineers found rapid deterioration of structural steel which triggered a drop in the ranking of the bridge deck and superstructure from fair condition to poor condition."

Last spring, MDOT announced a plan to replace the bridge. That is when the section 106 process was triggered because replacement of the bridge could have an "adverse impact" on historic properties. An organization, the "Friends of the Frank J. Wood Bridge," was formed to press the case that the bridge is too important, too historic, to discard.

The section 106 process began in July. At a succession of meetings MDOT has laid out its understanding of the condition of the bridge, the alternatives (replacements or renovation) and the likely effects on recognized historic structures. At each meeting, the Friends of the Frank J. Wood Bridge have pressed their case. They question almost every assertion MDOT makes about condition, costs, setting and historic significance. Theirs are nearly the only voices from Topsham or Brunswick to be heard. Sometimes they suggest that they speak for nearly all of us.

Costs rarely play any part in the public arguments of the Friends of the Frank J. Wood Bridge. And when MDOT has put forward numbers showing renovation to be a costly proposition, the Friends have challenged the competence and integrity of those making the estimates. MDOT's estimates, however, are very much in line with the costs of bridge renovation projects elsewhere.

I admire citizen advocacy. I respect the conviction of the Friends of the Frank J. Wood Bridge that saving the bridge is of paramount importance to them. But I disagree with them and I expect most others in the community would as well in taking a fuller, sober look at choice before us.

At some point, the economics of the bridge have to be weighed. This state (as many others) is already struggling to find enough money to maintain its bridges and roads. What is the cost to taxpayers of historic renovation vs. the cost of replacement with a new bridge? How much would pursuing either course disrupt now-thriving businesses at either end of the bridge?

A recent study by MDOT's consultants on the bridge project put the construction cost of a new bridge expected to last 100 years at \$13 million. Life cycle costs (adding in the costs of future repairs) would push this to \$13.7 million.

On the other hand, renovation of the existing bridge to last 75 years, they estimate, would cost \$17 million. This includes the cost of erecting a temporary bridge to carry traffic while the renovation proceeded.

Because of its age and manner of construction, such a renovated bridge would need considerably more maintenance than a new one, pushing its life cycle costs to \$23.2 million. Moreover, that needed maintenance would cause much more traffic disruption, with recurring negative consequences for the businesses at either end of the bridge.

Agreed, the Frank J. Wood Bridge is "historic". But is it worth \$10 million more in taxpayer cost to save it? Is it worth months of traffic disruption each of the many times such a renovated bridge would need to be repaired? (Think about that while the bridge is again being repaired this summer.)

Perhaps it is time we stopped letting the Friends of the Frank J. Wood be the only voices heard. The economic vitality of the towns at either end of the bridge is at stake. History counts, but the bridge is an artery that gives present life to both Brunswick and Topsham.

*Doug Bennett is a member of the Brunswick/Topsham Bridge Design Committee.*



# The Times Record

Think locally.

Midcoast Maine's Only Daily Newspaper

2016-11-22 / Opinion

## Adding Apples and Oranges

BY JOHN GRAHAM

Guest column

On Nov. 11, The Times Record published a guest column written by Doug Bennett on the fate of the Frank J. Wood bridge between Brunswick.

The thrust of Mr. Bennett's column was that the decision whether to renovate the current steel truss bridge or replace it with a concrete and steel highway bridge is basically an economic question. Mr. Bennett cited figures to "prove" that the difference between renovation and replacement is on the order of \$10 million over the lifespan of each alternative.

The accuracy of the figures cited is highly questionable. The difference he cites is based on an assumption that renovation of the existing span will require \$6.2 million for maintenance during its lifespan, an average of about \$82,000 per year. He contrasts this with the life cycle cost of a new bridge, and concludes that a new concrete and steel bridge would be nearly maintenance-free over its 100 year life, and would cost only an average of \$7,000 per year to maintain. If anyone imagines that concrete structures can have a 100-year life with little maintenance, a brief visit to Bath to observe the condition of the overhead viaduct that is being demolished would indicate the reality about concrete structures. In fact, the technical literature on the life span of concrete bridges indicates a hot debate on their useful life, with some engineers contending that for the ordinary concrete bridge built today, a lifespan of 50 to 60 years is more appropriate.

Even more inaccurate is the method of the calculation Mr. Bennett uses. Adding future maintenance costs to today's cost of construction is like adding apples and oranges. The calculations which financial analysts actually use to compare life cycle costs is to bring all costs back to their present value, to today's value. That method takes account of the fact that a dollar to be spent 75 years from now is worth far less than a dollar today. When the \$ 6.2 million in maintenance Mr. Bennett projects over 75 years are reduced to their present value, they amount to about \$2.5 million in today's terms. If that is added to the cost of renovation of the current bridge that Mr. Bennett uses, the total in present day terms is about \$ 19.5 million, about \$4 million less than what he gets by adding apples and oranges.

But the question of cost and lifespan is really secondary to what is far more important. The decision of whether to renovate a historic structure is really a question of values. For example, no doubt that one can often replace an historic structure with an ordinary new building at a cheaper cost. For example, the historic Bowdoin Mill and Fort Andross could have been demolished and replaced by modern office buildings, more efficient and perhaps less costly. But what a tragedy that would have been.

The replacement of the Frank Wood Bridge would likewise be a tragedy, as well as economically shortsighted. Financially, the difference cited by Mr. Bennett is minuscule compared to income that tourism brings to our area. Eighteen million tourists in Maine spend over \$5 billion every year, the

largest industry in the state. And how do we in this area fare in the competition for those tourist dollars? Pretty well, it would seem. And why? Because we have made a conscious effort in this community to preserve its historic nature. The Frank J. Wood Bridge, and the mills at either end, are a major part of our historic environment. Literally tens of thousands of tourists come to our area because we have honored our historic past, bringing in tens of millions of dollars every year. Some communities in this country have even made their historic bridges into magnets for tourism, with art festivals, music festivals, community festivals centered on their historic bridges.

I understand that both Topsham and Brunswick and their business sectors want to preserve and improve the business climate. But it is a delusion to imagine that destroying an historic bridge, one of the last ones of its type in Maine, and replacing it with a concrete and steel highway bridge will make the community more attractive and more prosperous. Surely we can be more creative than that.

*John Graham is president of the Friends of Frank J Wood Bridge and a member of the Topsham Historical Commission.*

**From:** [Douglas C. Bennett](#)  
**To:** [Chase, Cassandra \(FHWA\)](#)  
**Cc:** [Martin, Cheryl \(FHWA\)](#); [Hopkin, Megan M; kitty@historicbridgefoundation.com](#); [Scott Hanson](#); [John Graham; sstern](#); [John Shattuck](#); [lsmith@brunswickme.org](#); [Chamberlain, Kristen](#); [robin k reed](#); [Kittredge, Joel](#); [Frankhauser Jr, Wayne](#); [Kate Willis](#); [Emington, Wayne \(FHWA\)](#); [John Eldridge](#); [Norman Baker](#); [Drozd, Maria \(FHWA\)](#); [stevehinchman@gmail.com](#); [admorris](#); [sebordwell@gmail.com](#); [Nancy BikeMaine.org](#); [Folsom, Jeff](#); [Russell, Caroline](#); [Curtis Neufeld \(cneufeld@sitelinespa.com\)](#); [Rod Melanson](#); [Carol Eyerman](#); [Victor Langelo \(vlangelo@eclipseservices.com\)](#); [Richard Cromwell \(richcromwell1@gmail.com\)](#); [Fred Wigand](#); [katzthal@comcast.net](#); [mnaber@achp.gov](#); [david gardner](#); [Pulver, William](#); [steve pelletier](#); [Deb Blum \(dblum@brunswickme.org\)](#); [kirk mohney](#); [Nathan Holth](#)  
**Subject:** Economic Considerations on the Frank J. Wood Project -- Request for Comments on Section 106 Documents  
**Date:** Wednesday, November 23, 2016 7:50:55 AM  
**Attachments:** [DCB, Comments on Economic Considerations 16.11.23.pdf](#)

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Cassandra Chase and others involved in the Section 106 consideration of the Frank J. Wood Bridge--

I am forwarding to you for the section 106 comments a column I wrote for the *Brunswick Times Record* on November 11, and a subsequent piece in the *BTR* by John Graham, of the Friends of the Frank J. Wood Bridge on November 22:

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Challenging the competence or integrity of public servants is the right of every citizen under the First Amendment. But it is a serious charge, and I see no reason for others to join them in their aspersions.

*This is my home, the country where my heart is;  
Here are my hopes, my dreams, my sacred shrine.  
But other hearts in other lands are beating,  
With hopes and dreams as true and high as mine.*  
--Lloyd Stone, poet, 1912-93

**From:** [John Graham](#)  
**To:** [Chase, Cassandra \(FHWA\)](#)  
**Cc:** [Joel.C.Kittredge@maine.gov](mailto:Joel.C.Kittredge@maine.gov); [Scott Hanson](#); [Steve Hinchman](#)  
**Subject:** 106 Comments  
**Date:** Wednesday, November 23, 2016 10:33:48 AM  
**Attachments:** [Comments to draft report- john graham1.pdf](#)  
[B-14\\_DawsonBridgeRehab.pdf](#)

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Hi Cassie,

Please see my personal comments in RED on the Draft Report, which I have attached. I find it very difficult if not impossible to comment on this without the full information, thus the need to have the formal request for the PDR earlier this week.

I do take serious issue with the change in the Purpose and Needs statement. This is unacceptable. The purpose keeps changing. It was originally an improvement and all notices to tribes, historical etc. went out with the original purpose. If the purpose has changed the process should start from the beginning again. Again the structural condition was not poor when this process started. A study needs to be done to prove that any pedestrian improvements are required- (MDOT guidelines say any bridge over 200' does not require 2 sidewalks). Mid-block cross walks will still exist with or without a new bridge. Bike lanes can be equal with either bridge. This new Purpose and Needs appears to be crafted to rule out the option of rehabbing the existing bridge and maintaining one sidewalk.

If one writes the purpose to fit the outcome they get the outcome they desire (which MDOT has made clear this April was a new bridge was their desire). The agency in charge of maintaining the bridge, lets it fall into disrepair and then uses that as a reason to get their desired outcome is also not acceptable.

I expect a lot more detail, sources, and breakdown of costs before I, or anyone, can fully comment on this.

There are also several falsehoods in the report. For example the sidewalks on the downriver side do not go right to the bridge. Instead they stop well short of it on both sides. These are details that are either omitted to make an argument stronger or omitted because no real study has been performed.

Further because of the lack of detail there are statements like : "Other lightweight deck configurations were also considered but no others were found light enough without even more expense." Which other options were considered, what are their costs, pros and cons? Please see the attached Dawsons Bridge rehab sheet below. It is impossible to know if this was considered or not? Again if the PDR in full would be released one could provide better comment to what was actually considered.

I would also like you to look into the New Hope-Lambertville Bridge between Penn and NJ.

<https://www.drjtbc.org/default.aspx?pageid=74> This bridge has only one sidewalk and connects two towns with robust shopping districts and can see as many as 14,000 people walk across it in a single weekend.

This is also a good example of a bypass bridge (further way then ours) where the State moved the main Route to the bypass to ease truck and traffic in general. Why is this prudent in between these towns and not between ours?

The bridge is narrower and longer than ours and they have managed to save it and keep it as a focal point between their two historical downtowns.

The report still reads like a rhetorical overview of the project and alternatives with both language and photos that without further understanding or study, leads one to believe that the only option is a new bridge. I have read several MDOT prepared PDR's on other projects and the engineers report this summer on the downgrade of the bridge; there are great examples of the neutral detail rich reports I am looking for. MDOT

is capable of providing the public the full information. Please release it and provide the public adequate time to comment on it before any decision is made.

Personally, John Graham

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# DAWSON BRIDGE REHABILITATION

EDMONTON, ALBERTA



# DAWSON BRIDGE REHABILITATION, EDMONTON, ALBERTA

## PROJECT OVERVIEW: NEW LIFE FOR A 100-YEAR-OLD STEEL TRUSS BRIDGE

In its 100th year of service, Dawson Bridge is now one of Edmonton's most modern bridges thanks to the innovative use of new technology. During its 2010 rehabilitation, its deteriorated concrete-on-timber deck was replaced with an SPS™ composite steel plate and elastomer lightweight deck system. Dawson is the largest bridge in the world with this innovative steel deck system, and the first designed with unique bolting details that entirely eliminate field welding.

The shop-fabricated lightweight steel deck drastically reduced the need for costly and difficult truss strengthening. Bolted quickly into position, the speed of deck installation allowed the entire rehabilitation project—truss strengthening, painting, deck replacement, and sidewalk widening—to be completed in one year, months faster and millions less expensive than a traditional concrete deck.

## BRIDGE HISTORY

A five-span riveted steel through-truss, Dawson Bridge was originally constructed to carry electric trains to a coal mine located on the east bank of the North Saskatchewan River. With five simply supported spans of 43.3 m, 43.3 m, 43.3 m, 76.2 m, and 30.5 m from west to east, its overall length between abutment walls is 236.5 m. Today the bridge carries one lane of vehicular traffic in each direction—about 16,000 vehicles per day—along with many pedestrians and cyclists on its two sidewalks as part of the River Valley trail system.

The City of Edmonton commissioned a condition assessment for Dawson Bridge in 2007. That study revealed the superstructure was in need of significant repair, including total bridge deck replacement and truss repainting. Field inspection and structural analysis also identified numerous truss members that required strengthening or replacement in order to increase the level of safety to modern standards and to extend the service life of the bridge. The original narrow sidewalks were also identified as a detraction and potential safety hazard for pedestrians and cyclists.

Dawson Bridge is listed on the register of historic resources in The City of Edmonton and is one of very few structures in the city—of any kind—to reach its centenary. The project team was given the mandate to respect the historical appearance of the existing structure and make certain that the rehabilitation measures would not be apparent to the public once construction was complete.

## INNOVATIVE REHABILITATION

During the design phase, a load rating of Dawson Bridge was conducted using an Alberta CS3 rating vehicle, the heaviest vehicle that might practically access the bridge considering its vertical clearance restrictions and location. That assessment concluded that numerous truss members must be strengthened or replaced in order to increase the level of safety and to extend the lifespan of the bridge.

The analysis work also showed that the scope of strengthening work could be reduced significantly by choosing a deck replacement option that lightens dead load on the bridge. By replacing the existing, deteriorated 165 mm semi-lightweight concrete deck with a lightweight steel deck, those weight savings could be applied to carrying additional live load and widening the sidewalks.

Two lightweight deck options were considered for the project: orthotropic steel deck and an innovative composite steel plate and elastomer decking system. Ultimately, the deck design best suited to the project was determined to be a composite steel plate and elastomer decking system patented by Intelligent Engineering (Canada) Ltd. of Ottawa. Called the Sandwich Plate System (SPS™), the system was originally developed for use in the marine industry for ship hulls and decks. Application of this new technology has recently begun in the bridge industry.

SPS makes use of two relatively thin steel face plates—10mm thick, in the case of Dawson Bridge—connected by an injected elastomer core. The final product is a composite panel with high stiffness and strength, but relatively low weight. The deck plates are fabricated in the shop using conventional steel fabrication techniques, and the liquid elastomer, which cures into solid form within an hour, is injected to form the core. For Dawson Bridge, the 10mm 350AT steel face plates sandwich a 25mm elastomer core, forming a composite deck panel only 45mm in total thickness.

## DAWSON BRIDGE REHABILITATION, EDMONTON, ALBERTA

The design team recommended to the City of Edmonton an intensive risk control program for the application of a new technology, especially considering that Dawson Bridge is a large and expensive asset for the City. Only a handful of bridges around the world have been built using SPS technology, and all have involved significant field welding that is both costly and difficult to maintain consistent quality.

As the first and most important step of the risk control program, the design team set out to develop new details for connection of the SPS deck panels in order to eliminate entirely the need for field welding. The new details, developed by the design team and detailed by Intelligent Engineering, involve using splice plates to connect adjacent deck panels with countersunk ASTM A325 bolts. To save weight and complexity, the top flange of the new floor stringers act as the bottom splice plate. Also as part of the risk control plan, full three-scale samples of the new connection detail were built and tested under fatigue loading at the structural engineering laboratory at the University of Alberta. Those tests demonstrated that the new connection detail can withstand fatigue loads nearly double in magnitude to those expected in actual in-service conditions.

Because the composite steel deck panels could be fabricated entirely in the shop and bolted quickly into position on the bridge, erection of the deck was completed in only six weeks. This speed allowed construction to be completed in 12 months, with the bridge closed on January 4, 2010 and reopened on December 20, 2010. If a traditional concrete deck had been used, the difficulty and expense of strengthening truss members would have been far greater and the construction schedule would have taken at least 18 months.

### CONCLUSION

The rehabilitation project involved removing the existing deteriorated concrete deck, erecting new floor stringers, installing 1850 m<sup>2</sup> of innovative composite steel plate and elastomer decking, removing 17,500 rivets, tightening 37,500 new bolts, and blast cleaning and recoating of the entire structure with high-performance zinc/epoxy/urethane paint. New sidewalks 2.65m wide were also installed. Under budget at \$17 million, Dawson Bridge reopened to traffic almost exactly on schedule on December 20, 2010.

The Dawson Bridge project has successfully advanced the state of the art in bridge engineering and has achieved millions in cost savings for the City of Edmonton, while allowing the rehabilitation work to be completed within a single construction season. Today, Dawson Bridge is fully rehabilitated with the world's largest SPS deck--and the only installation built entirely without field welding--standing prepared to serve generations of Edmontonians.

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### PROJECT AWARDS

CISC Alberta Steel Design Award of Excellence - Sustainability, March 2011

# INNOVATIVE REHABILITATION GIVES NEW LIFE TO A 100-YEAR-OLD STEEL TRUSS BRIDGE



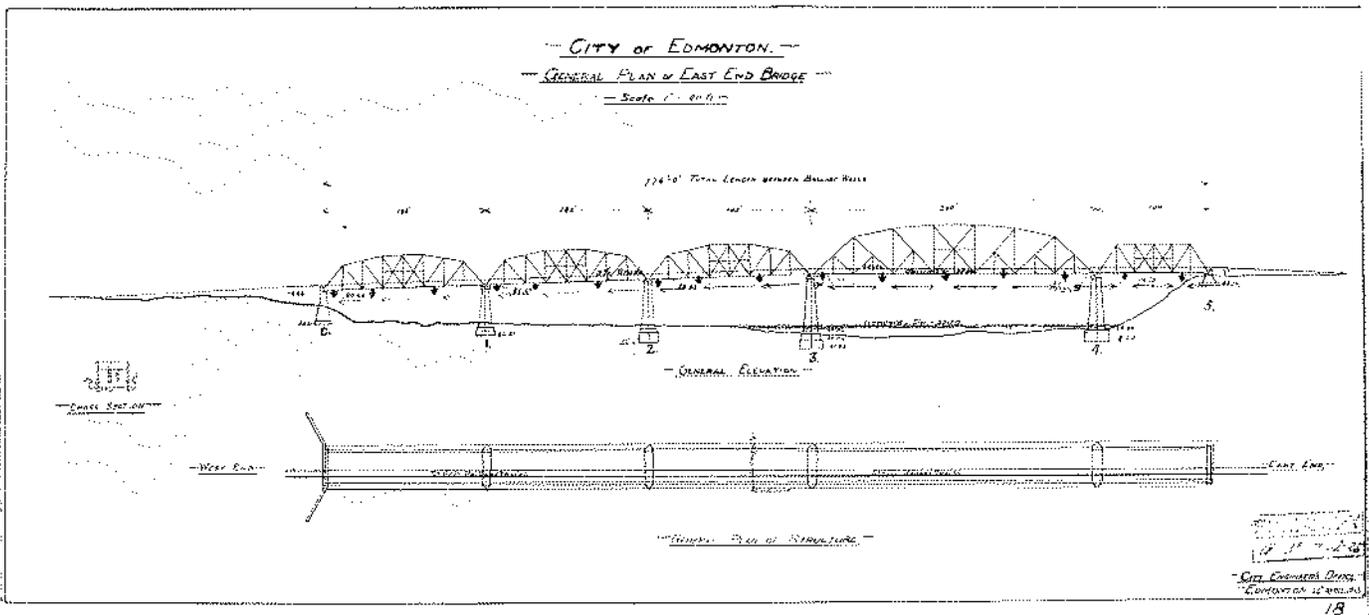
## BRIDGE HISTORY

The North Saskatchewan River winds its way from the Rocky Mountains, across Alberta, and through the heart of Edmonton on its way toward Lake Winnipeg. Its shores have been populated at Edmonton by aboriginal peoples for millennia, with the first European influence appearing in the late eighteenth century. During World War II, Edmonton acted as a staging area for construction of the Alaska Highway, and today is the capital of Alberta with a regional population of over one million.

Historic Dawson Bridge has been a vital link for the people of Edmonton for generations, entering its 100th year of service in 2011. Originally known as the East End Bridge, it is a five-span riveted steel through-truss with a clear width of 8.1 m and a total length of 236.6m: three spans of 43.3 m, a navigation span of 76.2 m, and an east approach span of 30.5 m.



DIALOG™



Originally constructed to carry horse-drawn wagons and electric trains to the Dawson Coal Company mine located on the east bank, the bridge opened on October 8, 1912 with a construction cost of \$145,000. Only the second bridge to cross the North Saskatchewan River at Edmonton, Dawson Bridge quickly became a vital link for the city's growth, allowing coal to be transported quickly into the heart of the city for industry and home heating.

After closure of the Dawson Mine in 1944, the bridge was converted to carry only highway vehicles. Today, the bridge has one lane of traffic in each direction and accommodates about 17,000 vehicles each weekday. As a link to Edmonton's extensive multi-use river valley trail system, the two sidewalks on Dawson Bridge serve many pedestrians and cyclists.

## CONDITION ASSESSMENT

In 2007 The City of Edmonton commissioned DIALOG™ to conduct a condition assessment for Dawson Bridge. Field inspection revealed the superstructure in need of significant repair, including total replacement of the bridge deck and complete repainting of all steelwork. Structural analysis also identified numerous truss members requiring strengthening or replacement in order to increase the service life of the bridge and meet the safety requirements of the Canadian Highway Bridge Design Code 2006. In addition, the original narrow sidewalks—only 1.5 m wide—caused safety concerns due to mixed use by pedestrians and cyclists.



Especially problematic was the existing 165 mm steel-fibre-reinforced semi-lightweight concrete deck, cast in 1986 on top of old timber subdecking from the 1940's. Though its relatively light weight was beneficial for limiting dead loads, the thin concrete deck was too flexible to resist cracking. In particular, The City of Edmonton was experiencing continual maintenance problems with the methyl methacrylate thin membrane wearing surface at details where the concrete deck passed over the transverse floor beams. The concrete deck section was reduced to only 65 mm thick to clear the top flange of the floor beams, making it nearly impossible to control cracking.

As part of the assessment, a load rating of Dawson Bridge was conducted using a 4-axle, 63.5 tonne Alberta CS3 rating vehicle, the largest vehicle that might practically access the bridge considering its vertical clearance restrictions and location. That assessment concluded that numerous truss members must be strengthened or replaced in order to meet the required level of safety and to extend the lifespan of the bridge.

Dawson Bridge is listed on the register of historic resources in The City of Edmonton and is one of very few structures in the city—of any kind—to reach its centenary. The project team was given the mandate to respect the historical appearance of the existing structure and make certain that the rehabilitation measures would not be apparent to the public once construction was complete.

## TRUSS REHABILITATION

The original truss members of Dawson Bridge are built-up rivetted members with an I-shaped cross-section, with steel angles forming the flanges and lattice plates crossing back and forth between the flanges to form the web. All members were originally connected by 19 mm or 22 mm rivets.

The load rating results showed that it was necessary to strengthen or replace several of the existing truss members. For the replacement members, the new members are constructed to the same dimensions as the original, but they have solid plates welded together to form the flanges and the webs. The original lattice pattern of the web is duplicated by plasma-cut holes in the new web plate, an economical modern construction technique that maintains the historical appearance of the members.



An analysis of estimated remaining fatigue life showed that the fatigue life of many of the riveted connections on the bridge has theoretically been consumed. Fortunately, the steel inspection carried out as part of this assessment did not reveal any fatigue cracking. In response, a simple fatigue strengthening strategy was implemented by to reduce the risk of structural problems over the remaining service life of the Dawson Bridge replacing all rivets at critical connection locations with high strength pre-tensioned bolts.



After completion of all truss strengthening and rivet replacement work, the entire superstructure was blast cleaned and recoated with a three-part organic zinc/epoxy/polyurethane system. This system is anticipated to last 25 years before overcoating is required.

One change from the original appearance is that the new sidewalks are nearly twice as wide as the original sidewalks. However, steelwork detailing for the new sidewalk brackets was done using geometry that matches the historical nature of the bridge. The new, wider sidewalk dramatically improves the experience for pedestrians and cyclists using this bridge as part of the River Valley trail system.

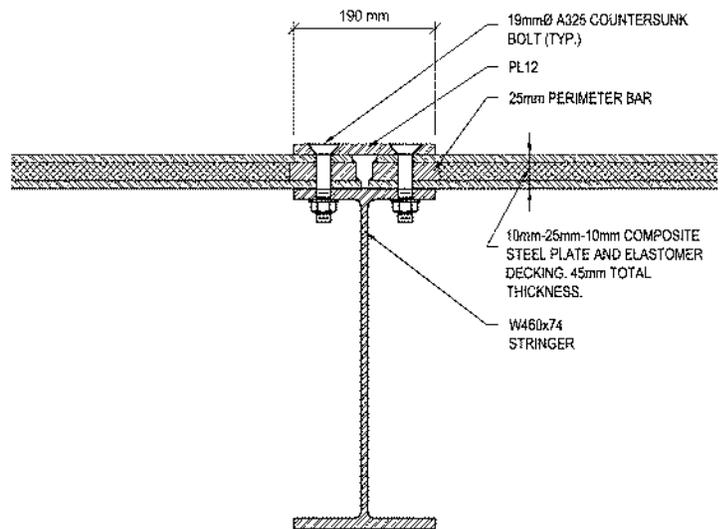
## LIGHTWEIGHT DECK: INNOVATION AND RISK CONTROL

As options for rehabilitation were developed, it became clear that the bridge could be rehabilitated economically only if a lightweight deck replaced the existing deteriorated concrete deck. A traditional concrete deck would require costly replacement or strengthening of many truss members along with difficult upgrading of existing connections. Additionally, it might cause overload for the piers, abutments, and foundations. By replacing the existing semi-lightweight concrete deck with a lightweight steel deck, the design team concluded that the dead load savings could be applied to carrying additional live load and widening the sidewalks. Only steel offered viable lightweight deck options: grating, orthotropic deck, or an innovative composite steel plate and elastomer system called the Sandwich Plate System (SPS™) patented by Intelligent Engineering (Canada) Ltd.

Grating was quickly eliminated as an option for the deck because increased road noise would be detrimental to the nearby Riverdale community. Orthotropic steel deck was judged a suitable option, but detailing would be challenging where the deck had to clear the tops of the floor beams without raising the grade line, and orthotropic deck may be susceptible to fatigue cracking. After considerable research, the design team recommended SPS to The City of Edmonton, judging that SPS technology offered the best combination of light weight, thin profile, and ease of erection for the Dawson Bridge Rehabilitation project.

The SPS composite steel plate and elastomer system was originally developed by Intelligent Engineering Ltd. for ship hulls and decks in the marine industry. Application of this technology began about a decade ago in the bridge industry, and SPS has been installed on several bridges worldwide. The technology is gradually gaining acceptance by bridge engineers.

SPS makes use of two relatively thin steel face plates connected by an injected thermosetting elastomer core. The final product is a composite panel with high stiffness and strength, but relatively low weight.



Deck panels are fabricated in the shop using conventional steel fabrication techniques. First, solid “perimeter bars” are welded along each edge of the bottom plate using a continuous fillet weld. The top plate is then lowered onto the perimeter bars and fillet welded all around forming a panel with a sealed void. The liquid elastomer, which cures into solid form within an hour, is injected through a port to form the core. For Dawson Bridge, the 10 mm steel face plates sandwich a 25 mm elastomer core, forming a composite deck panel with a total thickness of only 45 mm. These prefabricated panels are typically 1.9 m wide and 8.5 m long.

Risk is inherent in the application of all new technologies in all industries. Perceived risk—and its associated liability—often dissuades engineers from trying innovations that might advance the state of the art in their area of practice. Potential liability places a constriction on the pace of innovation that, in the long run, is most often a disservice to society. Striking the right balance between innovation and risk control is the key to success. Thus, when DIALOG recommended SPS—a relatively new technology—to the City of Edmonton, that recommendation came with the proviso that an intensive risk control program must be implemented, especially since Dawson Bridge is an important and expensive asset. The City of Edmonton is a progressive bridge owner that welcomes innovation, and they directed the design team to proceed with SPS as the basis of design for the deck.

The risk control plan developed for the deck comprised six key elements:

- Extensive background research in the available literature;
- Site visits by the design team to other bridges with SPS decks, and interviews with the bridge authority managing those structures;
- Development of improved connection details in consultation with Intelligent Engineering;
- Fatigue testing of full-scale sample connections in the laboratory;
- Enhanced quality control and quality assurance programs during deck fabrication and erection; and,
- Monitoring of deck performance over the lifetime of the bridge as part of the City of Edmonton’s bridge maintenance program.

DIALOG judged the most important aspect of the risk control plan to be the development of new connection details between adjacent SPS deck panels. Of the handful of bridges around the world built using SPS technology, all have involved significant field welding—a method that is costly and makes quality control difficult. Risks associated with field welding include fit-up out-of-tolerance, the potential for excessive heat input that might debond the elastomer from the steel, and undesirable weld flaws that might inadvertently result in premature fatigue cracking.

Taking to heart the golden rule “shop weld and field bolt,” the DIALOG design team developed unique bolted details for connecting the SPS deck panels. These details completely eliminate the need for field welding. Bolted connections drastically increase speed of erection, significantly reduce cost, and improve fatigue performance from Detail Category D (depending on the specifics of the weld geometry) to Detail Category B when using slip-critical connections.



To connect adjacent SPS deck panels, a top splice plate is fastened by a single row of countersunk pretensioned 19 mm ASTM A325 bolts. Countersunk bolts provide a flat surface for the finished deck, except for the thickness of the splice plate itself. This surface, once grit blasted, is prepared to receive a waterproof membrane and asphalt. In order to make deck detailing and construction simpler, the SPS deck in each span is planar with no cross-fall. To achieve positive drainage, the asphalt varies in thickness from 100 mm at the crown to 40 mm at the shoulders.

Longitudinal deck splices are designed to align with floor stringers below. This arrangement enables the top flange of the stringers to act as the bottom splice plate for the connection, saving both weight and complexity. The new stringers chosen—W460x74—are larger than required for flexural strength but offer a flange wide enough to accept a row of bolts on each side. At transverse deck joints, located away from floor beams to avoid clashes, bolted splice plates are used both top and bottom. In all cases enough bolts are used so that sealing requirements are met and negative moments in the deck can be transferred across the supporting stringers. This very simple approach to connections makes the deck very easy to fabricate and simple to erect. Using similar bolting details, the traffic barriers along the length of the bridge are also bolted down through the deck to the edge stringer.

Also as part of the risk control plan, three small 1:1-scale samples of the longitudinal bolted deck connection detail were built and tested under fatigue loading at the University of Alberta with the assistance of Professor Gilbert Grondin, Ph.D., P.Eng. Those tests demonstrated that the new connection detail can withstand fatigue loads nearly double in magnitude to those expected in actual in-service conditions.

### **REAPING THE BENEFITS OF INNOVATION**

Because the composite steel deck panels could be fabricated entirely in the shop and bolted quickly into position on the bridge, erection of the deck was completed in only six weeks during July and August 2010. This speed allowed the \$17 million rehabilitation to be finished in only 12 months: the bridge closed to traffic on January 4, 2010, and reopened on December 20, 2010. A traditional concrete deck would have extended the project schedule to at least 18 months, added millions of dollars of extra truss strengthening work, and caused numerous other technical issues.

The Dawson Bridge project has successfully advanced the state of the art in bridge technology and has achieved cost savings for the City of Edmonton, while allowing the rehabilitation work to be completed within a single construction season. Today, Dawson Bridge is fully rehabilitated with the world's largest SPS deck—the only installation built entirely without field welding—and it stands prepared to serve Edmontonians for many generations to come.



## **DAWSON BRIDGE REHABILITATION - PROJECT CREDITS**

### **Owner**

The City of Edmonton

### **Prime Consultant Bridge Engineering**

DIALOG

### **Civil Engineering**

Al-Terra Engineering Ltd.

### **General Contractor**

ConCreate USL Ltd.

### **Steel Detailing and Fabrication - Stringers and Connections**

Empire Iron Works Ltd.

### **Steel Detailing and Fabrication - Sidewalks and Truss Upgrades**

Steel Design and Fabricators Ltd. (SDF)

### **Steel Design and Detailing - Composite Steel Plate and Elastomer Decking**

Intelligent Engineering Canada Ltd.

### **Steel Fabricator - Composite Steel Plate and Elastomer Decking**

Cemilas B.V.

### **Steel Erector**

Steel Design and Fabricators Ltd. (SDF)

### **Paint**

Certified Coatings Specialists Inc.

## Comments- John Graham

### Frank J. Wood Bridge: Summary of Alternatives

Prepared by T.Y. Lin International October 27, 2016

#### BACKGROUND

The Frank J. Wood Bridge is a critical link spanning the Androscoggin River between the Towns of Brunswick and Topsham, carrying US 201. **Has a study been done as to why 201 still needs to connect to route 1 through Topsham's Main Street rather than the 196 bypass?**

and ME 24 and about 19,000 vehicles a day. Just 500 feet upriver of the bridge is a power generation dam harnessing the power of Brunswick Falls. On the southern, Brunswick side of the bridge sits the 250<sup>th</sup> Anniversary Park on the east and the bustling Fort Andross Mill Complex on the west. The Topsham approach adjoins a bank on the west side, and a dentist office and the Bowdoin Mill Complex on the east side. Both the Fort Andross and the Bowdoin mill complexes house a variety of shops, businesses, and restaurants, and the Frank J. Wood Bridge is a key **there is also a pedestrian bridge 1000' +/- feet upstream** pedestrian connection between the two of them and between the larger business districts and communities on each side. The bridge links the hearts **(or is the heart)** of the two communities across the Androscoggin River, connecting Brunswick and Topsham.

**It should be also noted that less than a half mile down street is a bypass bridge.**

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FRANK J. WOOD BRIDGE

**Figure 1: The Frank J. Wood Bridge spanning the Androscoggin River between Brunswick and Topsham**

The Frank J. Wood Bridge is an 85-year-old, 805 ft long steel truss that is now in poor (the deck and lower cords are in poor condition- the upper upper structure is in fair or better- condition. It was rehabilitated (this is miss leading- it has had repairs but rehabilitation leads one to think more than repairs where done.- repairing the bridge joints in 2015 is not “rehabilitating the structure...”) most recently in 1985, 2006, and 2015. It is a “fracture critical” structure, indicating it is vulnerable to sudden collapse if certain components fail. Because of this designation, more detailed and frequent inspections are required. Detailed inspections by MaineDOT in 2012, June 2016 and August 2016 (all bridges are required to be inspected every two years. Is it MDOT’s policy to remove all “fracture critical” bridges? It must be also stated that the bridge was not in that condition when the original conclusion to replace the bridge was made. If one waits long enough and is responsible to maintain they can always make this conclusion... the deck and carrying cords can feasibly and prudently be replaced so this argument should be left out of any final conclusion. )found many deteriorated areas. A load rating done by MaineDOT in 2013 and updated in August 2016 found several truss members are not

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strong enough to meet load-carrying standards (this is not accurate- it was the deck and one lower true cord....) The bridge is now posted for 25 tons. The three-span steel through-truss (with spans of 310’-310’-175’) and the concrete deck are currently in poor condition, and the bridge has a FHWA Sufficiency Rating of 25.4. There is corrosion and steel loss in the floor system supporting the deck (the transverse cross beams, longitudinal stringers, and transverse floor beams). Corrosion is continuing and speeding up, and will do so until the truss is rehabilitated comprehensively or the truss is removed.

Because of the ongoing deterioration of the truss, MaineDOT plans to do temporary repairs to address the worst issues so the truss can maintain its current load rating for up to five years. Steel will be added to the

worst sections of the floor system beneath the deck and missing and deteriorated rivets will be repaired or replaced. These temporary repairs are needed to keep the 25 ton weight limit from being reduced more. As maintenance, this 5-year repair will be funded separately from the longer-term “capital improvement” project. However, a long-term solution needs to be implemented within the 5 year timeframe this maintenance buys. This report examines what the alternatives are for the long-term solution.

The travelway over the truss is 30 ft wide, with two 11 ft travel lanes and 4 ft shoulders. Though there are sidewalks on both sides of the road approaching the bridge, (this is also false. on the downriver side the Topsham sidewalk is 100’ plus feet and on the Brunswick side it is 300’ plus feet away from the bridge. the existing truss carries a single sidewalk on the west side of the bridge. Because the outer 2 feet of the shoulders is made of an open steel grid, the usable shoulder width for bicycle travel is reduced to just 2 ft.

This bridge is eligible for listing on the National Register of Historic Places as part of the Brunswick-Topsham Industrial Historic District. It is also adjacent to the National Register-Listed Pejepscot Paper Company Historic District.

Accident data from 2009-2013 shows 27 accidents at the intersection of Maine Street and Bow/Cabot Street in Brunswick and 11 accidents at Summer Street and Main Street in Topsham. Also, there were 24 accidents just off the bridge on the Brunswick approach. The accident reports show that these accidents were primarily caused by driver inattention and distraction or by following too closely. (none of this seems relevant- since none of the accidents happened on the bridge and a new bridge improves none of the intersections where the accidents happened- why include it? And if you do include it please explain how a new bridge with increased speeding will help?)

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**Figure 2: This report uses technical terms to describe various parts of the bridge. The superstructure is what many think of as a “bridge”, including the floor system or girders below the deck, while the substructure is what supports the superstructure. The deck (what cars drive on) rests on the floor system, which is made up of floorbeams, stringers, and sometimes crossbeams. The floor system carries load from the deck to the truss bottom chord.**



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## **PURPOSE AND NEED**

The purpose of the project is to address poor structural conditions and load capacity issues on the Frank J. Wood Bridge and to address pedestrian and bicycle mobility and safety concerns. (this I have serious concerns with. The purpose keeps changing. It was originally an improvement and all notices to tribes, historical etc. went out with the original purpose. If the purpose has changed the process should start from the beginning again. Again the structural condition was not poor when this process started. A study needs to be done to prove that any pedestrian improvements are required- (they are not and MDOT guidelines say any bridge over 200' does not require 2 sidewalks. Bike lanes can be equal with either bridge.

If one writes the purpose to fit the outcome they get the out come. This is not acceptable!

Bridge improvements are needed to improve the condition ratings of the superstructure and deck from a rating of 4 (poor condition) to 7 (good condition). Because of the age of the bridge, 85 years old, and the considerable number of heavy loading cycles it has already experienced, steel fatigue concerns on critical tension members need to be addressed to continue to carry heavy truck traffic on the existing truss. Additionally, the floor beams and stringers need improvements to bring their load rating factors to a 1.0 for all MaineDOT legal loads.

This bridge is classified by the Federal Highway Administration (FHWA) as structurally deficient with superstructure and deck condition ratings of 4 out of 9 (poor condition). The 3 truss spans are fracture critical, meaning that failure of certain steel tension members could cause any of the 3 spans to collapse. Some of the steel truss bridge components are fatigue sensitive, susceptible to cracking and fracture as a result of heavy cyclic loading. The floor beams and stringers within the truss spans do not meet current design load or MaineDOT legal load standards. (again is it MDOT's policy to remove all Fracture critical bridges?)

Pedestrians on the east side of Routes 201/24 cannot cross the river without crossing the highway, and the existing mid-block pedestrian crossings are considered dangerous. Bicycle traffic is seriously limited by the narrow, 2 ft, paved shoulder. (There are six mid-block cross walks from Route 196 to the bridge and at least that many on Maine Street in Brunswick. MDOT's sponsored bike path across from the Topsham town hall just had one installed. A pedestrian study needs to be done. If one looks at pedestrian patterns a second side walk does not stop the requirement for mid block crossings.



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## **SUMMARY OF ALTERNATIVES**

The following alternatives were considered:

1. New 800 ft bridge on the existing alignment.
2. New 835 ft bridge on a curved alignment upstream of the existing bridge.
3. Rehabilitation of the existing steel truss bridge.
4. Rehabilitation of the existing steel truss bridge, including the addition of a new east side sidewalk.

5. New 800 ft bridge on a parallel alignment downstream of the existing bridge.

The No Build alternative was also considered. The No Build alternative was included as a benchmark against which the impacts of other alternatives can be compared. Short-term maintenance and minor rehabilitation is considered as part of the No Build alternative.

On Point Construction Services, a private consultant firm specializing in construction scheduling and estimating, joined the Project Team to review the constructability of the proposed alternatives, to develop construction schedules, and to estimate temporary bridge costs.

All of the alternatives were compared based on hydraulic requirements; environmental, right of way, and utility impacts; maintenance of traffic, constructability, maintainability, geotechnical site conditions; and construction, life cycle, and user costs.

## **REPLACEMENT ALTERNATIVES**

Alternatives 1, 2, and 5 would provide a new bridge. Many characteristics of the new bridge would be the same for each of the replacement alternatives; these will be discussed below before the specifics of each alternative are presented.

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A new bridge would be a multi-span steel girder bridge, with 4 or 5 spans. Steel girder bridges are easily the most cost-effective new structure type for this site. To increase the life span of the new structure, the concrete deck would likely be reinforced with Glass Fiber Reinforced Polymer (GFRP) rebar and the steel girders would be metalized. Metalization of the girders will reduce corrosion from spray from the

**Figure 4: Artist's rendering of a steel girder bridge**

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turbulent river beneath the bridge. The new bridge would have concrete wall abutments and solid shaft piers, all founded on the shallow bedrock at this site.

Any new bridge would include 11 foot lanes, 5 foot shoulders, and 5 foot sidewalks on each side. Having sidewalks on both sides of the bridge would connect the existing sidewalks on the approaches and would improve safety by reducing the need for pedestrians to cross the road. Having 5 foot shoulders and no adjacent bridge railing or truss verticals would dramatically improve the bridge for bicyclists. The current bridge has only 2 foot paved shoulders.

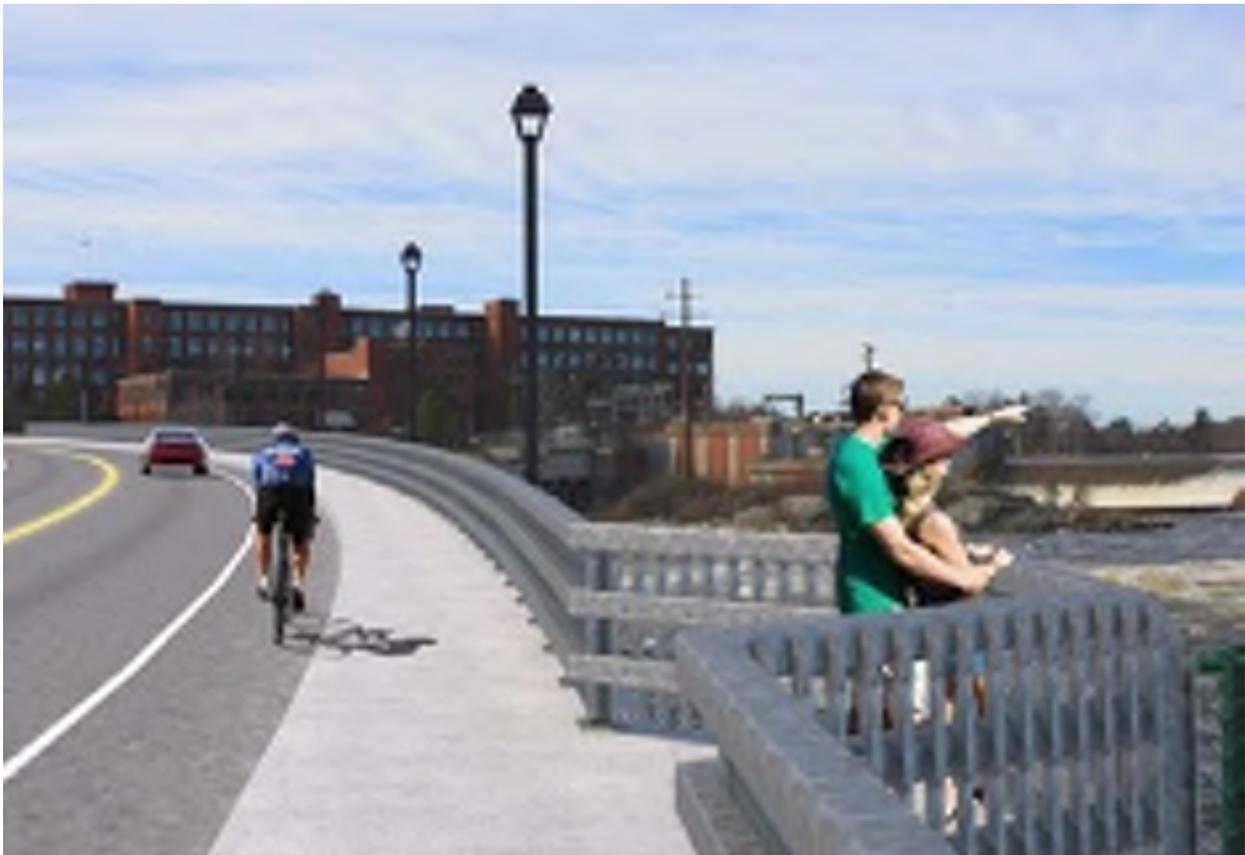
For new bridges on this site, the contractor would need a work trestle for access to construct the cofferdams and piers, to erect the structural steel superstructure, to place deck concrete, and to remove the existing bridge. A cost premium of \$1 million is included in the estimate for each new bridge to account for this trestle. Installation of a work trestle at this site is unique due to the exposed and highly variable bedrock, exposure to high velocity flows, and proximity to the upstream dam.

Railings for a new bridge would meet all standards for vehicle and pedestrian safety. Railings go through stringent testing programs to ensure appropriate safety in a variety of situations. Only those railings that meet appropriate criteria can be used on a new bridge, based on the specific constraints of this site. MaineDOT's standard 4-bar steel pedestrian and traffic rail is recommended if a new replacement bridge ends up being the preferred alternative, but input from the Towns of Brunswick and Topsham and the Section 106 consulting parties would be considered for the final selection of the rail type.

#### **Figure 5: Rendering of a Possible New Bridge**

During meetings with Officials from both Towns, requests were made to enhance the "River Walk Loop" that exists over the existing bridge and continues to the pedestrian bridge upstream of the dam. A new bridge at this site would include deck overlooks, where the sidewalk widens out to

provide viewpoints of the river upstream and downstream. In addition, the bridge would be lighted and lamp posts and fixtures would be ornamental and closely match the street lighting in the approaches. The MaineDOT would consider input from the Towns of Brunswick and Topsham and the Section 106 consulting parties for the final selection of the bridge lighting during final design.





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### **Alternative 1: New 800 ft Bridge on Existing Alignment**

Alternative 1 is a new 800 ft, five span, steel girder bridge on the existing alignment. The new bridge would have the characteristics discussed above that are similar for any replacement bridge on this site.

Because the new bridge would be constructed on the existing alignment, the old truss would have to be removed completely before new construction could begin. The limitations on in-water work add to the construction duration. Without a temporary bridge, this alternative would have a traffic disruption period of over 2 years.

Given the tremendous user costs and other impacts such a disruption would cause, a temporary bridge is required for this alternative. This adds another year to the construction duration, bringing the total construction time to 3.5 years. Unfortunately, this also increases the river impact even further—  
this alternative would need a work trestle and a temporary bridge beyond the impacts of the new structure itself. Permanent environmental impacts would include the wetland footprint impact of 4 piers and riprap protected abutment slopes within the river channel. Two of the piers would be located near the edges of the Brunswick side powerhouse outfall channel.

The construction cost of this alternative is estimated at \$16,000,000 (including the cost of a temporary bridge).

*Alternative 1 Summary:*

- New 800 ft bridge on the existing alignment
- 11 ft travel lanes with 5 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$16 million
- Life Cycle Cost: \$16.7 million
- Construction Duration: approximately 3.5 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary work trestle, temporary bridge, 4 in-water piers, new slopes at abutments
- Meets Purpose and Need



## **Alternative 2: New 835 ft Bridge on Curved Upstream Alignment**

Alternative 2 is a new 835 ft, five span, steel girder bridge on a curved upstream alignment. A curved bridge reduces the length of approach roadway construction and reduces right of way impacts to abutting properties. This structure would have a short southern span to better align the spans to bridge the Brookfield power station outflow channel with a minimum of impact. The remaining four spans would be continuous haunched steel girder spans with a concrete deck. The span arrangement and number of piers would be selected to minimize footprint impact within the channel and within the FERC Boundary and to maximize the efficiency of steel girder superstructure. Also, the existing hydraulic clearance over the river would be maintained as a minimum.

The estimated construction duration for this alternative is approximately 2.5 years. No temporary bridge is required since traffic could be maintained on the existing bridge during construction. A short term

(about 2 month) single lane northbound road closure and detour as described in the “Maintenance of Traffic” section for the New Alignment maintenance of traffic option would be needed during the final tie-in.

The four piers and the abutment slopes would be permanent wetland environmental impacts. Two of the piers would be located near the edges of the Brunswick side powerhouse outfall channel. Temporary environmental impacts would include the construction of a work trestle from the Topsham bank of the river out to the proposed Pier 2 location.





**Figure 6: A Possible Curved Upstream Bridge**

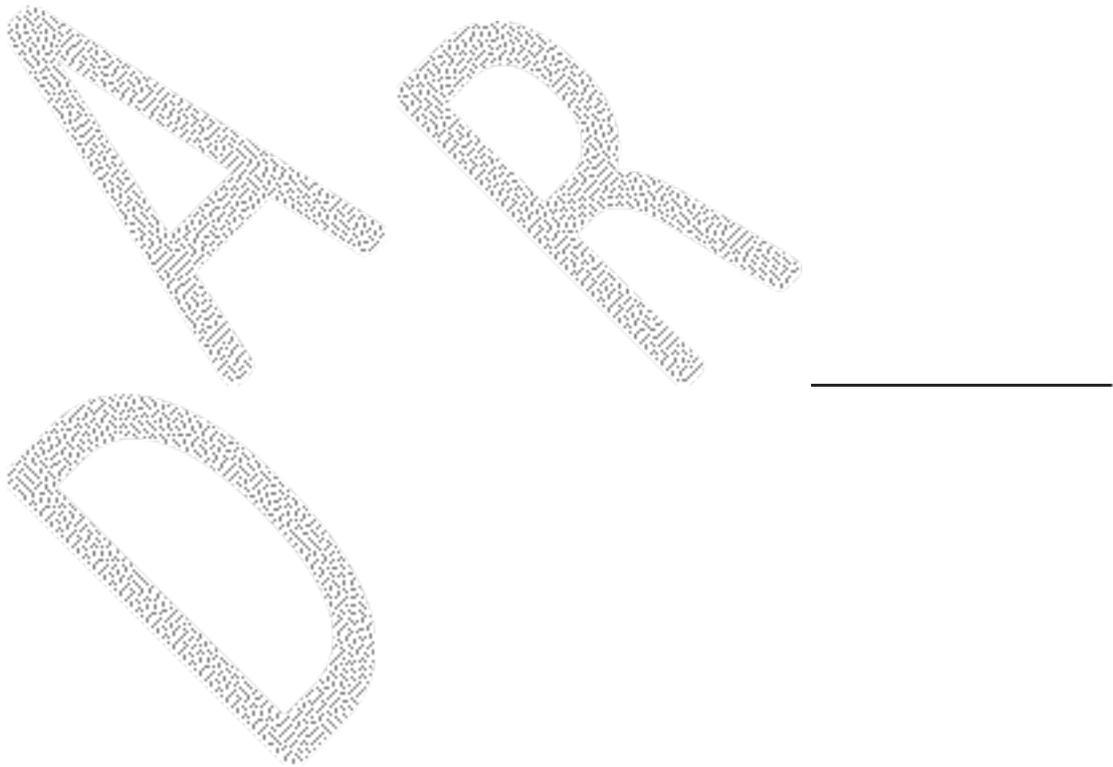
The construction cost of this alternative is estimated to be \$13,000,000.

The life cycle construction cost of this alternative (Alternative 2 – Replacement Bridge on Parallel Upstream Alignment) is estimated to be \$13,700,000. The life cycle cost includes costs for future inspection and maintenance (painting and wearing surface replacement) anticipated to be needed out to 100 years.

*Alternative 2 Summary:*

- 835 ft replacement bridge on a curved, upstream alignment

- 11 ft travel lanes with 5 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$13 million
- Life Cycle Cost: \$13.7 million
- Construction Duration: approximately 2.5 years
- Maintenance of Traffic: on existing bridge
- River Impacts: temporary work trestle, 4 in-water piers, slopes at abutments
- Meets Purpose and Need



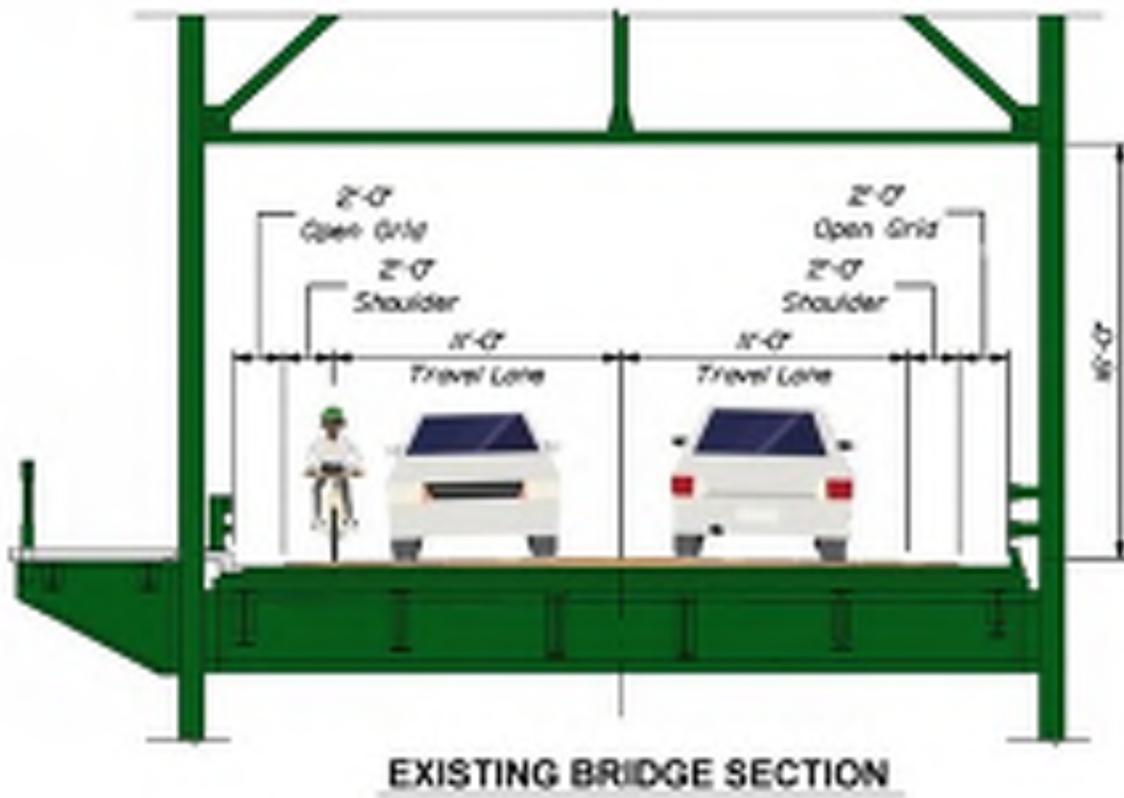
### **Alternative 5: New 800 ft Bridge on Parallel Downstream Alignment**

Alternative 5 is listed here, since like Alternatives 1 and 2 it is a new bridge. It would be a new 800 ft, five span steel girder bridge located downstream of the existing bridge on a straight alignment, between the current bridge and the Bowdoin Mill Complex parking lot. For all of the bridge alternatives, a hydraulic analysis was run to estimate how the river would behave with new piers added in the river. This analysis showed that a downstream replacement bridge will raise water levels at the Bowdoin Mill Complex, particularly the end of the mill building where the Sea Dog Brewing Company is located. The models suggested that during the design flood, floodwaters would rise more than 6 feet higher than existing conditions near the deck area of the Sea Dog. No reasonable approach to reduce that water rise could be found, so Alternate 5 was rejected.

### **REHABILITATION ALTERNATIVES**

Alternative 3 and Alternative 4 are both rehabilitation options, where the existing truss bridge is repaired. Detailed inspections of the truss were done by MaineDOT in 2012, June 2016 and August 2016, and a load rating was done by MaineDOT in 2013 and updated in August 2016. These reports outline what needs to be done to bring the existing truss bridge up to the standards established as the “Purpose & Need” (because of “newly drafted Purpose and Need” this alternative has still not been seriously looked into) for this project, which were described above.

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Figure 7: The existing truss bridge cross section

These repair needs will be described here, and the differences between the two rehabilitation alternatives will be discussed later. The needs are:



1. Replace existing bridge deck with a new reinforced concrete bridge deck with an integral concrete wearing surface. This includes the removal of the badly deteriorated transverse cross beams seen in Figure 8.
2. Repair the top of steel sidewalk support brackets. The top of each bracket is non-existent now due to corrosion or other past modifications.

3. Replace the bridge joints. Although these were replaced in 2015, replacement of the existing deck will require these to be replaced.

**Figure 8: Deteriorated cross beams & deck**



4. Replace the entire steel flooring system, including the longitudinal stringer beams and transverse floor beams. The floor system is heavily deteriorated and is below load carrying standards (see Figures 9 and 10).

PERMANENT MARK





**Figure 10: Hole in floorbeam**

**Figure 9: Deteriorated floorbeam**

5. Replace portions of the bottom chord of main trusses due to corrosion and distortion from pack rust, as seen in Figure 11.

6. Paint the entire steel truss superstructure, including all above and below deck components. Doing a comprehensive paint job on this structure is expected to cost about \$4,000,000.



**Figure 11: Bottom chord corrosion and debris**



7. Replace all existing utility brackets that support the conduit and water lines on the truss. See Figure 12.

8. Remove and reuse the existing pedestrian sidewalk rail and bridge traffic rails. They will have to be removed to replace the deck and floor system.

9. Replace the abutment back walls due to the overall poor condition of these elements.

10. Repair areas of stone masonry with missing and loose stones at the south abutment by encasing the masonry in concrete due. See Figure 13.

**Figure 12: Utility brackets**



11. Replace cracked concrete bearing pedestals at Pier 2 supporting the east side truss of Span 3 near the Topsham end of the bridge. This work will also include removal, refurbishing, and resetting of the truss bearing at this support. See Figure 14.

**Figure 13: Abutment masonry Figure 14: Damaged concrete pedestals**

Once all of the listed repairs are completed, the structure will meet all design strength requirements for the foreseeable future. All repairs would be completed using modern design standards and construction practices to help them last as long as possible. (So this is Prudent?)

The existing bridge deck is a lightweight, concrete-filled steel grid deck. To keep from adding more weight to the truss, a new bare concrete bridge deck without a paved surface will be required. Some of the main truss members already have borderline load ratings, so increasing the weight of the structure is not acceptable. To improve durability of the new deck, it would likely be reinforced with non-corrosive GFRP rebar. A comprehensive drainage system would be added to limit moisture and salt on the lower parts of the truss; the existing deck has open drainage which lets salt and water from the road drop right onto the steel. (this needs further study. There are other alternatives that exist that provide light weight and are able to be paved

The existing 30 ft available travelway matches the existing approaches and would provide two 11 ft travel lanes with 4 ft shoulders bound by rails located along the inside of the trusses. 10 ft travel lanes with 5 ft shoulders for bicyclists were considered briefly but dismissed





as an option. The Department considers these narrower travel lanes as less safe given the high traffic volume, almost 19,000 vehicles per day, this bridge has. (this is not acceptable. I require more details then the Department decided. The bridge is posted at 25 mile per hour. We want safe slow traffic not a highway. Please provide studies and sources. We also know the Department wants a new bridge. The burden of proof is on the Department and statements like this do not build the department credit.

A full road closure is needed to complete all major truss rehabilitation activities except painting. The construction and traffic disruption duration for this alternative is approximately 20 months. The user costs and other impacts require a temporary bridge for this alternative. When the temporary bridge is added in, construction duration for this alternative is approximately 3 years. (has serious thought been given to using the bypass? It takes an extra 2 minutes to drive around. With proper signage and a temp light at the elm street bypass connection in Topsham this is a feasible alternative if it cuts down on the closure time significantly).

Rehabilitating the existing truss would preserve the existing river flow conditions and would have the least permanent environmental, right of way and utility impacts. It would also have the least impact to the National Register-Eligible historic bridge and districts. However, construction of a temporary bridge will still have temporary environmental impacts. Utilities on the truss will have to be temporarily relocated on the bridge during the rehab process.

Despite all efforts, a bridge rehabilitation will probably still require significant future maintenance. To get 75 more years of life, the bridge will need approximately 3 future paintings, 1 deck replacement, and 2 substructure rehabilitations, beyond the current project. All of these activities will disrupt traffic to varying degrees. Painting will disrupt traffic for about 8 months, and each deck replacement will disrupt traffic for about 6 months. (yes maintenance is required. The deck option needs further study and all road maintenance causes disruption. Main Street Topsham was paved this summer and it took over 2 months of disruption).

Based on past performance of the modern paint systems used by MaineDOT on similar truss bridges that also had pack rust, the truss will need to be painted about every 20 years. The current paint systems used today perform very well, replacing the previous lead-based paint systems. The paint successfully seals the steel and stops corrosion when

installed. It spans the seams of the built-up steel members and prevents water and air from getting to the steel. However, once the paint cracks at all, existing pack rust will immediately reactivate (see Figure 15). The existing truss has pack rust in [\(see Nathan Holt's reply\)](#)

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**Figure 15: Pack rust is corrosion in the numerous locations. To effectively maintain crevice between two plates of steel that are**

structures with this condition, paint systems need replacement more frequently. Painting a truss like

**bolted or riveted together. As the rust progresses, it gradually pushes the pieces of steel apart, bending them and sometimes**

this currently costs an estimated \$4,000,000. To **breaking bolts or rivets. The only way to**

prevent pack rust and other corrosion issues from destroying the truss, future paint jobs would have to be budgeted for and done on a regular cycle.

**truly fix pack rust is to take apart the plates of steel and clean them, which is usually not feasible.**

Use of GFRP reinforcement would extend the life of a bare concrete deck, but without a high performance membrane and paved wearing surface that can be regularly replaced, 50 years of life is a good estimate. Based on the historic performance of similar aged bridges (currently 85 years old) and the age of the most recent major substructure rehabilitation (2006), additional substructure rehabilitations would be expected at years 20 and 50 following this current project.

Besides these major future maintenance efforts, there will be more frequent smaller repair efforts needed on the steel, bridge joints, and the aging substructure. This truss will also

require Routine and Fracture Critical Bridge Inspections, costing about \$60,000 every two years. **(can I get details on this... this seems extremely high- MDOT just did 2 inspections this summer and it cost \$60,000 for a truck and two guys? They wrote an excellent report in less than 2 weeks. Please provide a detailed breakdown of costs and man hours.** These inspections will also disrupt traffic, requiring a single lane closure for 1 to 2 weeks. If cracks in fatigue sensitive or fracture critical

members are found in these inspections, more frequent inspections or immediate repairs will be required.

### **Alternative 3: Rehabilitation of Existing Steel Truss Bridge:**

Alternative 3 would rehabilitate the existing truss as outlined above. It would still have only one sidewalk, so pedestrian mobility and safety would not be improved. **(this is a false statement and used only to disqualify this option.** The open grid decking along the outside of the existing shoulders would be replaced with a solid concrete deck, improving the situation for bicyclists. However, the shoulders would still be only 4 feet wide and the railing right at the edge of the shoulder restricts the useable width for bicyclists even more. **how is a railing any different then a 9" curb- ones bike peddle is still restricted by the same?** It would still not be a very good bridge for bicyclists. Therefore, this alternative does not fully meet the pedestrian and bicyclist portion of the Purpose and Need for this project. **Again if one changes the purpose and need to fit the desired outcome of course it doesn't. There are feasible and prudent options and a lot more studies that are required before this statement can be thrown out there.**

The construction cost of this alternative is estimated at \$15,000,000. This cost includes a 15 percent contingency above the repair work that has already been identified. Rehabilitation projects nearly always discover issues not previously found in inspections, causing budget overruns.

The overall life cycle construction cost of this alternative, including estimates for all future maintenance on the truss out to 75 years of life, is projected to be \$20,800,000.

Early in the investigation of alternatives at this site, this alternative was examined as a 30 year rehabilitation and either maintaining one lane of traffic on the bridge or allowing a 5 to 7 month bridge closure. A replacement after 30 years would yield the lowest life cycle cost of any

rehabilitation option. Given changes to the rehabilitation scope since the latest bridge inspection and recognition of the user costs of the maintenance of traffic options, the initial cost of this alternative now must include a temporary bridge. The originally estimated construction cost of \$8 million to rehabilitate the bridge now is \$15 million after adding a full floor system replacement and an on-site temporary bridge detour.

*Summary of Alternative 3:*

- Rehabilitation of existing steel truss bridge
- 11 ft travel lanes with 4 ft shoulders each side and a 5 ft sidewalk on the West side
- Construction Cost: \$15 million
- Life Cycle Cost: \$20.8 million
- Construction Duration: approximately 3 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary bridge, Abutment 1 repair work
- **Does not meet Purpose and Need (pedestrian needs)**  
**Alternative 4: Rehabilitation of Existing Steel Truss Bridge with Added East Sidewalk**

Alternative 4 is also a rehabilitation of the existing truss, but with a second 5 foot sidewalk added on the opposite side of the bridge. This fully addresses the pedestrian issues at this site. Like Alternative 3, bicyclists would have 4 foot shoulders with adjacent traffic rails, a



less than ideal situation. However, this would still be better than the current condition for bicyclists. Alternative 4 adequately meets the Purpose and Need for this project. (so in the above one side walk option- the bike lanes are not adequate but on this one they aren't? One can't use the same argument for and against the same Purpose and needs. I have repeatedly asked for a study that proves a second side walk is necessary. If a proper study was done it would show that mid block cross walks are necessary- on the Topsham side the next block is 1/2 mile to Elm Street. There are solutions like under the abutments(below the bridge cross walks)... This needs further study.

To add the additional weight of a second sidewalk, weight must be taken off the truss somewhere else. The existing bridge deck would need to be replaced with a new lightweight concrete filled Exodermic deck. (if this deck will last 75 years with maintenance and without the second sidewalk take pavement- why wasn't it used in the first rehab option? An Exodermic deck system can be as much as fifty percent lighter than a conventional concrete deck of the same span. An Exodermic deck has exposed steel on the bottom of the deck, so future maintenance would be anticipated. Other lightweight deck configurations were also considered this is great- can you provide a list and explanation of each option considered, its pros and cons, cost and why it was ultimately not used. DETAILS. but no others were found light enough without even more expense. This alternative includes the addition of new structural steel framing, concrete deck, and pedestrian rail for the added 5 ft wide sidewalk on the east side of the bridge. Between the more expensive deck and the new sidewalk and framing, this option will have a construction cost about \$2,000,000 more than Alternative 3.

The estimated construction duration for this alternative is approximately 3 years (similar to Alternative 3).

Hydraulic conditions, environmental impacts, right-of way impacts, utility impacts, maintenance of traffic and maintenance concerns for Alternative 4 would be the same as those noted for Alternative 3 with the exception of the impacts to the NR-Eligible Historic Bridge and Districts. The additional sidewalk is an addition that is not part of the NR-Eligible Historic Bridge.

The construction cost of this alternative is estimated at \$17,000,000. The life cycle cost of this alternative, including estimates for all future maintenance on the truss out to 75 years of life, is estimated to be \$23,200,000. Every figure in this needs an appendix that breaks it down to specifics, materials, man hours, contingencies, etc...

*Summary of Alternative 4:*

- Rehabilitation of existing steel truss bridge with added east sidewalk
- 11 ft travel lanes with 4 ft shoulders and 5 ft sidewalks each side
- Construction Cost: \$17 million
- Life Cycle Cost: \$23.2 million
- Construction Duration: approximately 3 years
- Maintenance of Traffic: on-site temporary detour
- River Impacts: temporary bridge, Abutment 1 concrete work

- Meets Purpose and Need

**Repurpose Existing Bridge and Build a New Replacement Bridge**

An additional alternative suggested by the public was to ‘*Restore and repurpose the historic bridge for pedestrian and bicycle use, and as a public historic park. Build a new bridge on alternative alignment.*’ This is a combination of two alternatives discussed above, Alternatives 2 and 3. All work to preserve the existing bridge under Alternative 3 would still be required, except possibly rehabilitating the sidewalk. Conservatively, the construction cost of this rehabilitation could be reduced to \$9.5 million (with the removal of the sidewalk), and there would be no need for a temporary bridge. This alternative would also require the cost of a

new replacement bridge, Alternative 2, at \$13 million, for a total construction cost of \$22.5 million. The question of future ownership and maintenance responsibility for the truss would



have to be addressed. Also, the effect on river water levels from having more piers permanently in the river channel would need investigation.

## **MAINTENANCE OF TRAFFIC**

Four options were investigated to maintain traffic at this site during construction. They are not all feasible for all of the bridge improvement alternatives. Specifics for each alternative, along with estimated traffic disruption durations and user costs, are discussed later in this report.

1. Complete road closure with a detour. Detour all traffic along U.S. Route 1, State Route 196, and State Route 24. **Can this be explained and the cost of \$22,000 per day be broken down as with**

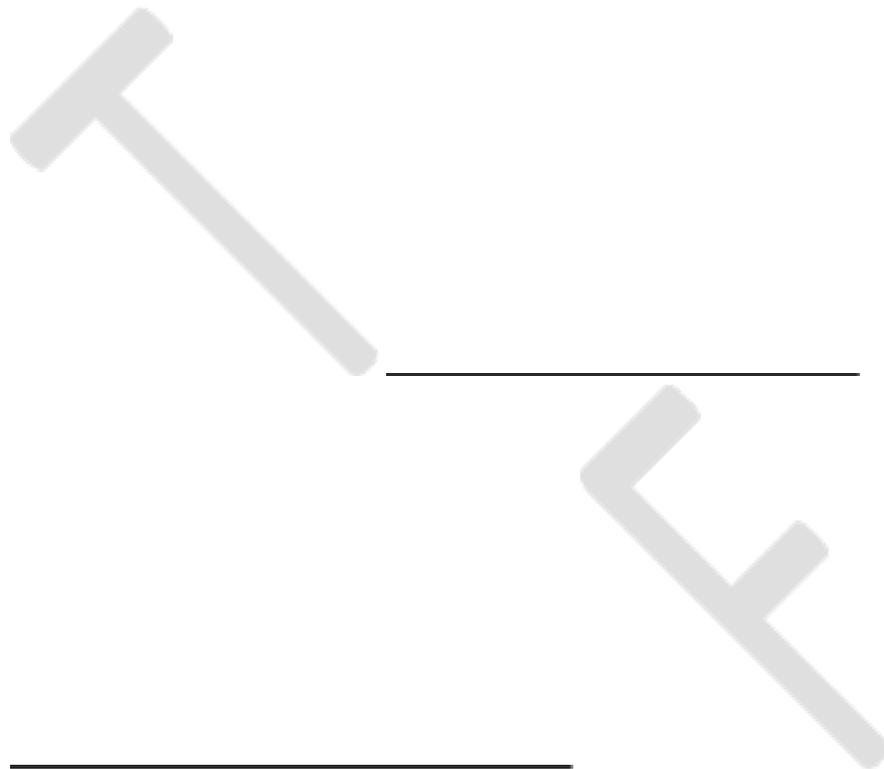
the increased speed in which the rehab could be achieved?

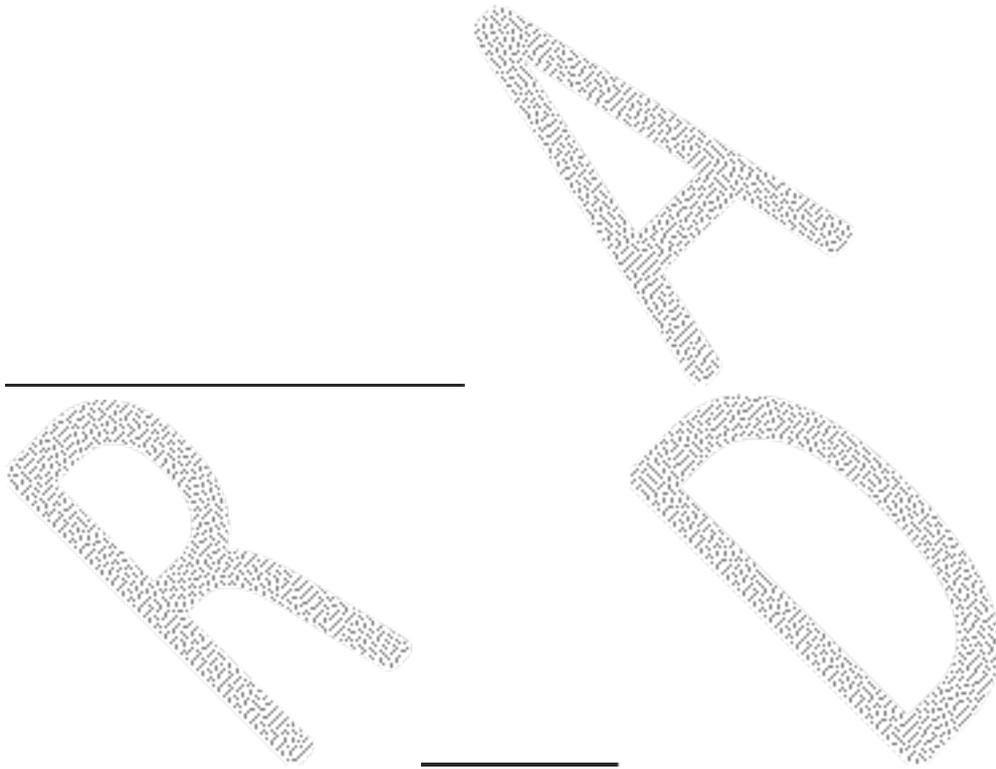
2. Single lane closure with staged construction. One way, southbound traffic will be carried across the bridge on a 12 foot travelway and all northbound traffic will be detoured. This option can only work for certain construction activities, like painting. This traffic control method has been used successfully in the past on the Frank J. Wood Bridge.
3. On-site detour on temporary bridge. Construct a 2 lane temporary bridge parallel to the existing bridge and detour all traffic onto it. Traffic would only be disrupted during the construction of tie-ins to the existing roadway and to the new roadway upon conclusion of the project. These disruptions could be limited by requiring work be done during off-peak hours. Construction and removal of the temporary bridge would likely extend the total construction duration by about 1 1/2 years (1 construction season for construction of the temporary bridge and half a season for its removal). The cost for a temporary bridge is estimated to be about \$4 million.
4. New alignment. If a new bridge is constructed on a new alignment, the existing bridge could be used to maintain traffic during construction. Traffic would primarily be disrupted during construction of the final tie-in. Again, this could be mitigated by requiring work during off-peak hours. This option would result in the least traffic disruption.

Staged construction maintaining two-way traffic is not feasible due to the existing structure type and needed rehabilitation repairs. Alternating

one-way traffic is not feasible because of the traffic volume and proximity of signalized intersections.

Traffic disruption results in indirect costs to the users of the bridge and to the surrounding businesses. A user cost may be estimated for the delays to the traveling public, assigning a dollar value to the disruption. Daily user costs were prepared by MaineDOT estimating costs associated with delays at intersections and additional miles traveled. The user cost for a complete road closure is estimated at almost \$22,000 per day, while the user cost for a northbound lane closure is estimated at over \$10,000 per day. This cost will be compared with that of a temporary bridge to determine whether paying for a temporary bridge is justified for a given construction alternative. (can we see this in details?)





## **UTILITIES**

A hydropower dam operated by Brookfield Renewable Energy Partners (Brookfield) is located about 500 ft upstream of the existing bridge crossing. No impacts (including hydraulic impacts) to this facility are anticipated for any of the bridge improvement alternatives investigated.

Overhead utilities and a water main are carried by the existing bridge. Temporary support or relocation of these facilities within the limits of the existing bridge would be needed during a bridge rehabilitation.

With a bridge replacement, these facilities would need to be relocated. Some of the utility poles in the approaches would also need to be relocated. The overhead utilities would need to transition to underground in the approaches close to the replacement bridge ends. The overhead utilities and the waterline would be carried on the bridge below the bridge deck, between girders, out of sight.

## **RIGHT OF WAY**

A bridge rehabilitation or bridge replacement on the existing alignment would not require permanent property impacts. However, temporary property rights would be needed for any temporary bridge.

Construction of a replacement bridge on a new upstream alignment would require permanent property acquisitions of parts of two properties on the west side of the south approach and one property on each side of the north approach. The south approach property impacts would include reconstruction of a retaining wall between the drive entrances to the small Fort Andross parking lot and the Brookfield hydroelectric station at the dam. The 250<sup>th</sup> Anniversary Park located at the southeast corner of the bridge is a Brunswick town park constructed on land leased from Brookfield. The only park impacts would be fill slopes within the existing State-owned right of way. The north approach would have a new 130-ft-long retaining wall along the northwest approach to limit impacts to the property and parking area. Reconstruction of the drive entrance to the Bowdoin Mill complex will require impacts beyond the existing MaineDOT right of way.

Temporary property rights would be needed to construct work access platforms like work trestles. These rights would be similar to temporary rights needed for a temporary bridge.

Additionally, for an upstream bridge replacement alternative, the abutments and three of the four bridge piers would be located within the limits of the Federal Energy Regulatory Commission (FERC) Boundary of the dam. Temporary property rights would be needed for construction access along the north side of the approaches and within the FERC Boundary.



## **ENVIRONMENTAL**

Endangered species such as the shortnose sturgeon and Atlantic sturgeon spawn in the project area. This project is within Essential Fish Habitat and permanent and temporary impacts need to be avoided or minimized. In-water work must be avoided during crucial migrating periods. This restriction is in place from April 7 to August 30, and will be a substantial constraint on construction durations. Impacts to the Brunswick Fishway at the Brookfield dam will be avoided and requests to shade the Fishway from moving shadows produced by construction equipment and the traveling public will be considered.

The existing bridge is eligible for listing on the National Register of Historic Places as part of the Brunswick-Topsham Industrial Historic District, which is considered National Register- Eligible. It is also abutting the National Register-Listed Pejepscot Paper Company Historic District.



If a temporary bridge is used to maintain traffic for either a bridge rehabilitation or bridge replacement, then temporary environmental impacts would occur within the existing Androscoggin River.

Construction of a new replacement bridge would have environmental impacts that would need to be minimized or mitigated. Permanent impacts would include the piers and pier foundations within the channel. Foundation locations should avoid the Brunswick side powerhouse outfall river channel that leads to the dam fishway by taking advantage of ledge outcrops where possible.

**Figure 3: Two types of temporary impacts**



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Also, if a temporary work trestle is needed for the construction of a new replacement bridge or to rehabilitate the existing bridge, temporary environmental impacts would occur and would need to be addressed.

Historic impacts and avoidance and minimization strategies will be determined through the ongoing Section 106, 4(f) and NEPA processes.

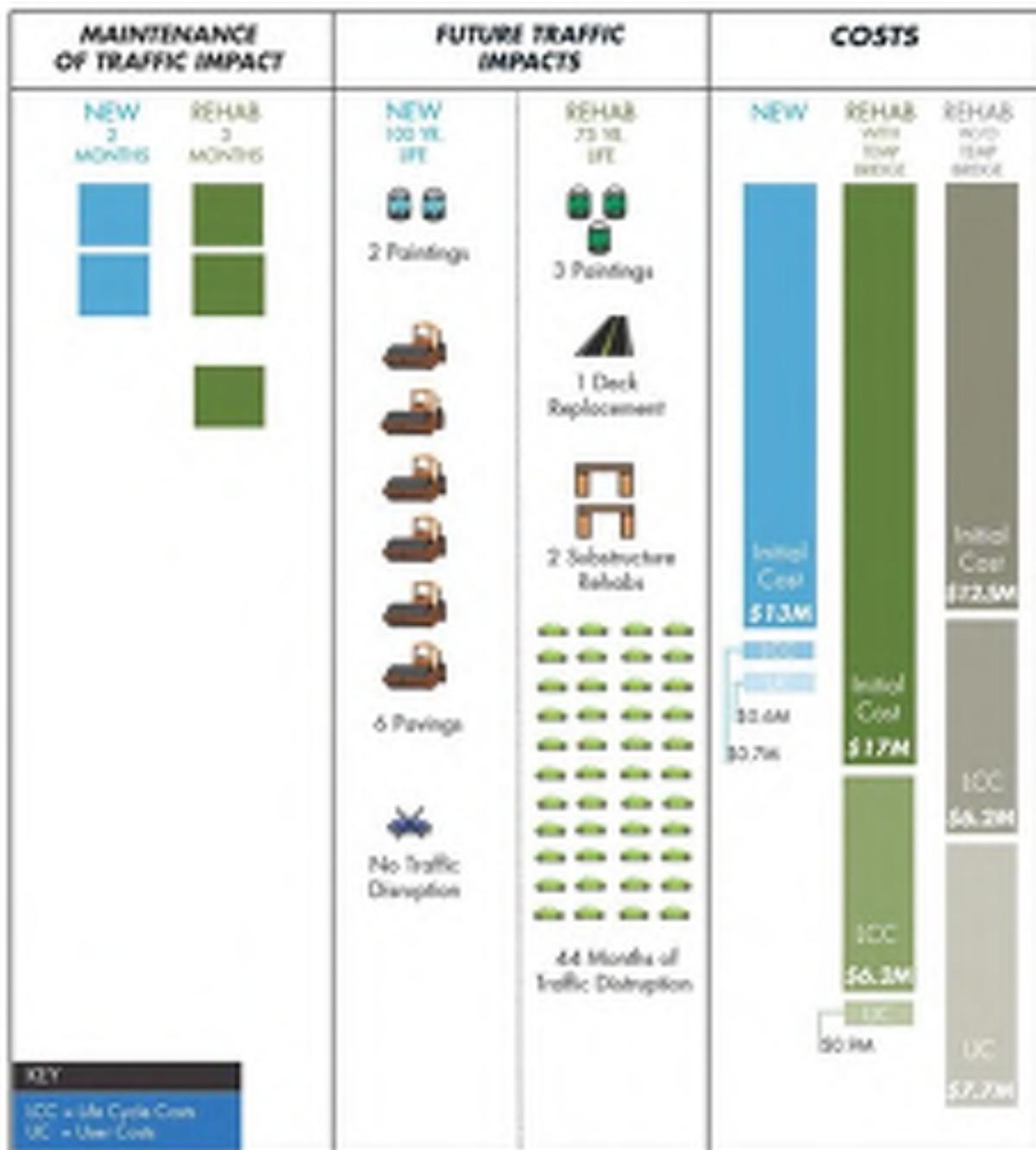
## **LIFE CYCLE COST ESTIMATE**

Life cycle costs are considered in the comparison of bridge improvement alternatives. A life cycle cost estimate (LCCE) totals all estimated bridge costs throughout the life of each bridge improvement alternative and translates them to current dollar equivalents. The LCCE accounts for estimated construction costs on the current project and the translated present value of anticipated future inspection, maintenance, and rehabilitation. It also accounts for anticipated future bridge replacement dates for each alternative. Specifics of the life cycle costs for each alternative are discussed later in this report.

## **GRAPHIC COMPARISON**

The graphic below compares Alternative 2 (the low cost replacement or new option) and Alternative 4 (the best rehab option). Three main areas are contrasted: maintenance of traffic during construction, future rehabilitation and maintenance, and total costs.

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pavingings have impacts- even at night they effect local night time businesses.

THE  
ROAD

**From:** [John Shattuck](#)  
**To:** [Chase, Cassandra \(FHWA\)](#); [Kittredge, Joel](#)  
**Cc:** [Dave Douglass](#); [Marie Brilliant](#); [Roland Tufts](#); [Ruth Lyons \(Seleperson\)](#); [Bill Thompson](#); [Rich Roedner](#)  
**Subject:** Topsham Selectmen's §106 Review comments  
**Date:** Friday, December 02, 2016 12:35:03 PM  
**Attachments:** [2016-12-01 Topsham BOS §106 Comments.pdf](#)

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CASSIE & JOEL: Attached please find the Topsham Selectmen's comments submitted for your consideration as you develop your report on the §106 Review. Please don't hesitate to let me know if you would like the original hardcopy of the attached letter. Thank you, John

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John Shattuck  
Director, Economic & Community Development  
Town of Topsham  
100 Main Street  
Topsham ME 04086

Office: (207) 373-5097  
Mobile: (207) 650-0012  
Email: [jshattuck@TopshamMaine.com](mailto:jshattuck@TopshamMaine.com)

Topsham because: [http://youtu.be/Y\\_luU6wJMOU](http://youtu.be/Y_luU6wJMOU)

Per 1 MRSA § 402(3), all communications with public officials (with limited exceptions) are considered public records and available for review by any interested party.



**Board of Selectmen**

100 Main Street  
Topsham, ME 04086

Phone: 207-725-5821  
Fax: 207-725-1731

December 1, 2016

Cassandra Chase  
Environmental Engineer  
Federal Highway Administration – Maine Division  
US Department of Transportation

Joel Kittredge  
Project Manager  
Maine Department of Transportation

Re: Frank J. Wood Bridge §106 Review

Dear Ms. Chase & Mr. Kittredge:

Please accept our thanks for your attention to the critically important issues of historic and environmental impacts involved in deciding whether the current Frank Wood Bridge should be rehabilitated or replaced.

As you are aware, in June of this year we unanimously adopted a resolution supporting the replacement of the Frank Wood Bridge for a variety of reasons enumerated in the resolution, which is attached. We write today to reiterate our conviction that replacement is still the best option and that the case for replacement has only grown stronger as additional information has been made available by the Maine Department of Transportation, as well as through your review process and the efforts of the Brunswick-Topsham Bridge Design Advisory Committee.

This §106 Review has attracted strong interest and requests for consulting party status designation from a wide array of individuals and organizations, including a number located far from our community and many without any prior history of involvement in historic preservation, or involvement in local government as elected officials, staff professionals or even as volunteers. In a review process that includes relatively few statutorily entitled consulting parties under 36 CFR §800.2, we would respectfully note that we are such a statutorily designated consulting party, as well as being the only Review participant representing a local government.

We agree that a careful review of historic and environmental impacts are essential to a balanced and fully informed decision on the disposition of the bridge, but we also recognize that they cannot be the

sole and controlling considerations in reaching that decision. Accordingly, we respectfully request that you carefully consider the following additional input of duly-elected local officials with respect to the environmental, historic, and financial impacts of this decision.

### **Environmental impacts**

With regard to the differing environmental impacts of rehabilitation or replacement, we believe that there can be little doubt that replacement will present far less risk of environmental degradation to the river than would inevitably result from a major, lengthy initial rehabilitation and reconstruction project, followed by many recurring (if smaller scale) rehabilitation, repair and rebuilding cycles to ensure that this incredibly intricate web of aged and continuously corroding metal remains structurally sound and safe to use. This is a bridge that has been shedding lead paint and lead-impregnated steel into the Androscoggin River for more than eight decades. The obsolete materials and the equally obsolete structural technology employed in the design of this bridge guarantees that corrosion will continue to occur at the thousands of joints, through-bolts and layered plates throughout the bridge and will require repeated repainting to slow, but not defeat, the ongoing decay.

Despite improvements in paint formulations, and the best efforts at containment during repeated reconstruction and repainting, it's indisputable that this structure will continue to deposit far more paint and metal corrosion byproducts into the river than would a new bridge. A replacement bridge, built with vastly more corrosion-resistant modern materials, and with far less (and enormously less fragmented) exposed metal will require much less extensive and less frequent painting and maintenance – with the result that adverse environmental impacts will be hugely reduced.

Our State and riverfront communities have invested substantial resources in the restoration of the shamefully degraded environment of the Androscoggin River. If maintaining that success and further restoring our river is important – and it definitely is – then the choice between rehabilitation and replacement should not be a close call.

### **Historical impacts**

With regard to the differing historical impacts of rehabilitation or replacement, we believe that replacement offers far superior opportunities to recognize, celebrate and enjoy the historic significance of both the natural and built environments at this unique site. To date, the §106 Review has included repeated assertions that the Frank Wood Bridge is historically important from both engineering and aesthetic perspectives, and that it constitutes an inseparable, intrinsic piece of a single fabric incorporating the bridge and our two communities' waterfront mills.

Based on the historic record, we respectfully disagree.

While the Boston Bridge Works certainly built some beautiful bridges, this technologically simple bridge, with little consideration or expense devoted to aesthetic elements, is not one of their artistic successes – a comparison to the company's Tyngsborough Bridge is illustrative. In the 1930s, as is still the case today, Maine was a state with limited economic resources and a disproportionately high number of road miles and river crossings in relation to its small population. The current bridge was

chosen from a pattern book, with cost considerations paramount, to meet critical transportation needs, not to make an aesthetic statement.

Another telling comparison lies just a few hundred yards upstream from the current bridge: the Androscoggin Swinging Bridge. This 124-year-old bridge was built by the John A. Roebling's Sons Company, one of the premier bridge designers and builders of their day, perhaps best known for building the Brooklyn Bridge. Even though it was built 40 years earlier, the Swinging Bridge's tower and cable suspension engineering was a far more sophisticated building technique than the through-truss method employed in the Wood Bridge. Truss bridge technology was the predominate approach in bridge construction beginning in the 1870s, but, when the Wood Bridge was built, this method was already being abandoned across the most of country in favor of concrete girder and beam bridges or suspension bridges, for longer spans.

The Swinging Bridge is not simply a National Register eligible structure; it has been listed on the National Register of Historic Places since 2004, and in 2011 the Maine Section of the American Society of Civil Engineers recognized it as a Maine Historic Civil Engineering Landmark. This bridge is intimately tied to the history of both our towns and the mill workers it was built to serve, and is particularly significant in illuminating the social and cultural history of that time.

While aesthetic evaluations are necessarily subjective, we believe that most in our communities would agree that, with its elegant arcs and lines, the Swinging Bridge is far more appealing than the boxy, asymmetrical Wood Bridge superstructure, which obscures views of Topsham's and Brunswick's historic waterfronts, and the river itself, from all of us.

The contention that the Wood Bridge constitutes an inseparable, intrinsic piece of a single fabric incorporating the bridge and our two communities' waterfront mills is discredited by the history of the bridge. The Wood Bridge was built well over a century later than the Brunswick mill, and more than 60 years later than Topsham's Pejepscot Mill. Indeed, the Wood Bridge replaced a bridge that actually connected directly to the Pejepscot Mill, where Topsham's Main Street ran through the center of the mill complex. So, the placement of Wood Bridge actually disregarded this historic connection to the mill and realigned Main Street, substantially disrupting the fabric of Topsham's historic Lower Village and displacing long-standing buildings to make way for the rerouted Main Street.

By contrast, the Maine Department of Transportation's proposed replacement bridge would tie in to the existing road alignments in both Topsham and Brunswick with minimal disruption, and with no buildings displaced.

Even a relatively casual review of the history of the Pejepscot Falls reveals that the current bridge is merely one of at least nine bridges constructed in this area and, more importantly, that the enduring historic significance of this location arises from the existence of the Pejepscot Falls across centuries, not from the ephemeral bridges that have been built nearby. The falls were the site of very lengthy habitation and intensive fishing by Native Americans long before European colonists arrived. This was the site of the earliest Colonial precursors of our two towns, as settlers were drawn here by the abundant fishing resource and, later, by the hydro power provided by the falls.

Insisting on the preservation of what is only the most recent of the many bridges at this site disproportionately elevates an ancillary structure, and a brief instant of time, over the full and rich historical context of this location. Such an approach is historic distortion, not meaningful historic preservation. Simply put, the history of this site is much bigger than any one bridge.

We believe that the construction of the proposed replacement bridge would do far more to preserve and respect our local historic legacy – both natural and built – than would the protracted and repeated rehabilitation of a single structure that is not historically significant on technological, aesthetic or cultural grounds. The mere accumulation of years does not create significance.

Unlike the Wood Bridge, the proposed replacement bridge would enable all of us to enjoy unobstructed views of the historic waterfronts of both towns, particularly the historic and appealing Cabot and Pejepscot Mills, which both preceded the Wood Bridge by many years and which were both built with far more attention to aesthetic impact. We would also gain open, sweeping views of our beautiful river for the first time in living memory.

These views constitute a genuine historic – and natural - legacy that is worthy of restoration, preservation and celebration.

We recognize that, by law, the §106 Review is focused solely on historic and environmental issues. And, for the reasons set forth above, we believe that replacement of the exiting bridge is clearly the superior alternative, even based solely on historic and environmental impacts.

But, as elected officials, we are also accountable to our constituents for thoughtful, effective and efficient use of their taxes and for prudent stewardship of public property and resources, including infrastructure.

### **Financial impacts**

The Maine Department of Transportation's draft Matrix of Alternatives, released on October 26<sup>th</sup>, 2016, includes preliminary cost information, which compellingly reinforces the already strong case for the replacement alternative. We understand that the two alternatives that are most likely to be the final options are: Upstream replacement (Alternative 2) and Rehabilitation with the addition of a second sidewalk (Alternative 4). The Matrix projects that the initial construction cost for Alternative 2 will be 13 million dollars, while for Alternative 4 the initial rehabilitation cost will be 17 million dollars, nearly a third more expensive. The Matrix reports that estimated life cycle costs, even discounted for present value, would be nearly 10 million dollars more for the rehabilitation alternative.

Although our municipality would not bear these costs directly, Topsham's residents, and all the residents of Maine, will bear these costs. Given our State's limited economic resources, and our growing but chronically underfunded infrastructure needs, expending 10 million dollars more than necessary for this bridge infrastructure would be neither prudent nor reasonable.

It is our understanding that some advocates for the rehabilitation alternative have proposed eliminating key elements of the preferred rehabilitation plan (Alternative 4), apparently for the sole purpose of

bringing down the higher cost of rehabilitation in comparison to replacement. The much enhanced pedestrian and cycling facilities of a new bridge enjoy broad public support and would be a major contributor to our Board's long-term efforts to develop the Lower Village and improve the connection between Topsham's and Brunswick's Main/e Streets and historic downtowns.

In addition to unnecessary maintenance costs, a decision to rehabilitate will impose a dramatically greater financial hardship on local business and travelers. Closures would be more frequent with a rehabilitated bridge, as clearly documented in MDOT's 2016-10-27 draft Summary of Alternatives. Each one of these closures will mean less business for our local businesses, and will generate losses that they must simply endure without compensation. Even though we understand that these business losses are not a formal part of your evaluation, they are nonetheless the very real and substantial consequences of a rehabilitation decision. By contrast, a replacement decision would minimize business losses in the short and long term. With the daily trip count at this crossing already approaching 19,000 vehicles a day, closures will impose a heavy burden not just on our town, but will disrupt traffic and commerce across our region.

In summary, we believe that expending 10 million more discounted dollars than necessary to maintain a decaying bridge would be irresponsible and indefensible in this period of limited finances, especially when one considers that a rehabilitated bridge will:

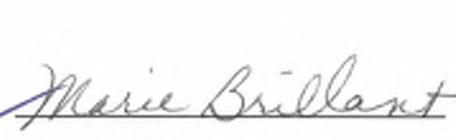
- be less accessible and functional for all users,
- be more detrimental to the environment,
- obstruct our shared legacy of historic built and natural view-sheds,
- repeatedly disrupt travelers and businesses with far more frequent and longer closures,
- have a shorter functional life,
- and cost substantially more to maintain.

Thank you for your attentive consideration of our concerns.

Sincerely,



David Douglass



William Thompson

Marie Brilliant



Ruth Lyons



Roland Tufts

**From:** [John Shattuck](#)  
**To:** [Chase, Cassandra \(FHWA\)](#); [Kittredge, Joel](#)  
**Cc:** [Dave Douglass](#); [Marie Brilliant](#); [Roland Tufts](#); [Ruth Lyons \(Seleperson\)](#); [Bill Thompson](#); [Rich Roedner](#)  
**Subject:** §106 Review comments - local resolutions, letters and published comments  
**Date:** Friday, December 02, 2016 3:04:23 PM  
**Attachments:** [2106-12-02 §106 comments - resolutions, letters & published comments.pdf](#)

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CASSIE & JOEL: Attached please find a packet of the below-listed local resolutions, letters and published comments in support of the replacement of the Frank Wood Bridge with a new bridge. Please note that the packet includes resolutions from the Topsham Selectmen, the municipal economic development corporations of both Topsham and Brunswick, the Southern Midcoast Maine Chamber of Commerce representing over 500 businesses in the Brunswick-Topsham region served by the bridge, as well as the Brunswick Bicycle Pedestrian Advisory Committee and the Bicycle Coalition of Maine. Please don't hesitate to let me know if you would like the hardcopies of these documents of the attached letter. Thank you, John

## **RESOLUTIONS & LETTERS SUPPORTING NEW BRUNSWICK-TOPSHAM BRIDGE**

### **RESOLUTIONS**

2016-05-12 Topsham Lower Village Development Committee  
2016-05-26 Southern Midcoast Maine Chamber of Commerce  
2016-06-01 Brunswick Development Corporation  
2016-06-01 Topsham Development, Inc. Board of Directors  
2016-06-02 Topsham Board of Selectmen  
2016-06-22 Brunswick Bicycle Pedestrian Advisory Committee  
2016-08-15 Bicycle Coalition of Maine

### **LETTERS**

2016-06-01 Curtis Picard to Topsham Board of Selectmen  
2016-06-03 Douglas Bennett to Topsham Board of Selectmen  
2016-10-26 Sue Spann-ReMax Riverside to §106 Review  
2016-10-27 Kevin Clark-Sitelines to §106 Review

### **PUBLISHED COMMENTS**

2016-05-04 Bruce Van Note guest column – Times Record  
2016-07-20 Douglas Bennett guest column – Times Record  
2016-11-11 Douglas Bennett guest column – Times Record

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Topsham because: [http://youtu.be/Y\\_luU6wJMOU](http://youtu.be/Y_luU6wJMOU)

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2016-11-11 Douglas Bennett guest column – Times Record

# RESOLUTIONS

**Resolution Regarding the Bridge Between Topsham and Brunswick**  
**Topsham Lower Village Development Committee**  
**Adopted: May 12, 2016**

The Lower Village Development Committee endorses construction of a new bridge to replace the current Frank J. Wood Bridge, noting that the new bridge will connect the two village centers of Topsham and Brunswick and should be designed, in function and appearance, to further the residential and commercial purposes of the two historic village centers. More specifically:

1. We want a new bridge design that works in a manner that complements the 196 Coastal Connector Bridge, which is really a by-pass bridge. Each should be expected to serve different purposes, and drivers should be encouraged to choose which bridge they use based on those intended different purposes.  
*The By-Pass Bridge should*
  - move traffic quickly around the towns to destinations beyond the town centers.*The Maine/Main Street Bridge should*
  - connect meaningfully and purposefully to two village centers.
2. We want a new bridge design that encourages economic development in the two villages the bridge connects. It should
  - facilitate walkability in the village centers at either end, and
  - facilitate cars parking and turning in the villages at either end and allowing cars to turn left or right onto Main/Maine Street when errands are completed.
3. We want a new bridge design that provides both safety and the feeling of safety for cyclists and pedestrians as well as motor vehicle drivers. More specifically, the design should
  - facilitate pedestrian crossing at either end where the bridge connects to the villages.
  - move traffic in a manner that makes the village streets at either end *complete streets*: streets that work for cars, bicycles and pedestrians, streets that work for children and seniors as well as other adults, and streets that work for those with disabilities.
4. We want a new bridge design that is attractive and appropriate in appearance to its setting because we know that viewscape is important to people choosing to live in Brunswick and Topsham. More specifically, the design should
  - be appropriate in appearance to the historic setting when viewed from the villages.
  - allow views of the river.
  - allow views of the mills and surrounding historic settings from the bridge.

---

Douglas Bennett  
On behalf of the Lower Village Redevelopment Committee



**Southern Midcoast Maine Chamber**

**RESOLUTION REGARDING THE TOPSHAM-BRUNSWICK BRIDGE**

**Adopted: May 26, 2016**

<http://www.midcoastmaine.com/blog/post/southern-midcoast-maine-chamber-resolution-regarding-the-topsham-brunswick-bridge-adopted-may-26-2016>

WHEREAS: The Directors of the Southern Midcoast Maine Chamber of Commerce acknowledge and respect the long service of the Frank J. Wood Bridge, but also express the following very strong concerns regarding continued reliance on this 84-year-old bridge:

- Accelerating deterioration in the condition of the existing bridge
- Increasing maintenance and inspection costs associated with a rehabilitated bridge
- Very substantial adverse impacts to local businesses arising from the repeated, lengthy closures required for rehabilitation of the existing bridge
- Much lower life-cycle costs of a new bridge
- Significantly improved and safer transportation facilities provided by a new bridge for all users, including pedestrians and bicyclists
- The fact that the bridge would still need to be replaced – at even higher cost – at the end of the limited additional useful life resulting from a rehabilitation
- The recommendation of the Maine Department of Transportation that the existing bridge be replaced, based upon more than a year of careful consideration of all alternatives, including rehabilitation

BE IT RESOLVED, THEREFORE: That the Directors of the Southern Midcoast Maine Chamber of Commerce fully support the replacement of the Frank J. Wood Bridge with a new bridge that includes improved access and safety for all users, including pedestrians and bicyclists, and minimizes the current and future financial impacts on our communities. Furthermore, to ensure local input on the design of the bridge, the Directors encourage the Towns of Brunswick and Topsham to establish a joint Design Advisory Committee to work with the Maine Department of Transportation to optimize the final design for the new bridge.

**Brunswick Development Corporation  
85 Union Street  
Brunswick, Maine 04011**

June 1, 2016

Joel Kittredge, Project Manager  
Maine Department of Transportation  
# 16 State House Station  
Augusta, Maine 04333-0016

Dear Mr. Kittredge:

The Brunswick Development Corporation (BDC) was created in 1995 to encourage and promote the development of business enterprises within the Town of Brunswick, Maine for purposes of stimulating economic development by, among other things, providing incentives for businesses to locate and expand in Brunswick and to construct and expand facilities incorporating new techniques, and for purposes of maintaining and improving the economic health of the Town, lessening the burdens of government, and providing for additional employment opportunities and increased tax base within the Town. Infrastructure improvements, such as rehabilitating or replacing the current Brunswick-Topsham bridge, fall within the parameters of stimulating economic development in Brunswick and as such are of concern to the BDC.

Based on the presentations that the Maine Department of Transportation (DOT) has made to the Brunswick Town Council and the general public in the Brunswick-Topsham area on April 19, 2016 and April 27, 2016 respectively, it appears that continued investment in the 84 year old Frank J. Wood bridge would not be the preferred option, due to the rehabilitation costs, limited life cycle, and expensive, labor-intensive follow-up maintenance. While the BDC Board recognizes that the existing bridge has advocates for its rehabilitation, we also appreciate the benefits that can accrue to the Brunswick and Topsham communities if a new bridge is put in place, such as improved access and safety for pedestrians and bicyclists, observation "bump-outs" for upstream and downstream viewing of the river, reduced maintenance and inspection costs, and a longer life cycle. In addition, the prospect of the potential closures, associated with the rehabilitation of the existing bridge, that are anticipated to be for five to seven months per year for two or three years, constitutes an unacceptable burden on our Town's businesses, particularly those in our downtown.

Therefore, the BDC Board voted at its May 20, 2016 meeting to support the recommendation of the Maine DOT that the existing bridge be replaced, based upon more than a year of careful consideration of all alternatives, including rehabilitation. We appreciate the Maine DOT opportunity to provide comments on its recommendation and applaud its invitation to Brunswick and Topsham municipalities to appoint representatives to a Design Advisory Team to help increase the new bridge's aesthetic appeal for both communities.

Sincerely,



Larissa Darcy  
BDC President

Cc: John Eldridge, Brunswick Town Manager

TOPSHAM DEVELOPMENT, INC.  
RESOLUTION REGARDING THE TOPSHAM-BRUNSWICK BRIDGE  
Adopted: 2016-06-01

WHEREAS: The Directors of Topsham Development, Inc. acknowledge and respect the long service of the Frank J. Wood Bridge, but also express very strong concerns regarding continued reliance on this 84-year-old bridge and note that the following considerations all demonstrate the need for a new Topsham-Brunswick bridge:

- Accelerating deterioration in the condition of the existing bridge
- Increasing maintenance and inspection costs associated with a rehabilitated bridge
- Very substantial adverse impacts to local businesses arising from the repeated, lengthy closures required for rehabilitation of the existing bridge
- Much lower life-cycle costs of a new bridge
- Significantly improved and safer transportation facilities provided by a new bridge for *all* users, including pedestrians and bicyclists
- The fact that the bridge would still need to be replaced – at even higher cost – at the end of the limited additional useful life resulting from a rehabilitation
- The recommendation of the Maine Department of Transportation that the existing bridge be replaced, based upon more than a year of careful consideration of all alternatives, including rehabilitation

BE IT RESOLVED, THEREFORE: That the Directors of Topsham Development, Inc. fully support the replacement of the existing bridge with a new bridge that includes improved access and safety for all users, including pedestrians and bicyclists. Furthermore, to ensure local input on the design of the bridge, the Directors encourage the Towns of Brunswick and Topsham to establish a joint Design Advisory Committee to work with the Maine Department of Transportation to optimize the final design for the new bridge.



Don Spann  
Chair, Topsham Development, Inc.

TOPSHAM BOARD OF SELECTMEN  
RESOLUTION REGARDING THE TOPSHAM-BRUNSWICK BRIDGE  
ADOPTED: June 2, 2016

WHEREAS: The Topsham Selectmen acknowledge and respect the long service of the Frank J. Wood Bridge and its familiar presence as an admired element of Topsham's Lower Village.

AND WHEREAS: We also take notice and assert our deep concern regarding the following critical issues in connection with our community's continued reliance on this 84-year-old bridge:

- Accelerating deterioration in the condition of the existing bridge
- Increasing maintenance and inspection costs associated with a rehabilitated bridge
- Very substantial adverse impacts to local businesses arising from the repeated, lengthy closures required for rehabilitation of the existing bridge
- Much lower life-cycle costs of a new bridge
- Significantly improved and safer transportation facilities provided by a new bridge for all users, including pedestrians and bicyclists
- The fact that the bridge would still need to be replaced – at even higher cost – at the end of the limited additional useful life resulting from a rehabilitation
- The recommendation of the Maine Department of Transportation that the existing bridge be replaced, based upon more than a year of careful consideration of all alternatives, including rehabilitation.

BE IT RESOLVED, THEREFORE: The Topsham Selectmen fully support the replacement of the existing bridge with a new bridge that includes improved access and safety for all users, including pedestrians and bicyclists.

BE IT FURTHER RESOLVED: To ensure that the final design of the new bridge best meets both the State's responsibility to meet the public's transportation needs, and incorporates, to the degree that is financially feasible, the aesthetic and functional needs and preferences of Topsham and Brunswick, we will appoint, jointly with Brunswick, a Design Advisory Committee to work with the Maine Department of Transportation to optimize the final design for the new bridge.

BE IT FURTHER RESOLVED: Pursuant to 36 CFR § 800.2(c)(3), a representative of a local government with jurisdiction over the area in which the effects of an undertaking may occur is entitled to participate as a consulting party. The Town of Topsham asks that its status as an entitled consulting party be recognized and hereby appoints John Shattuck, Topsham Economic and Community Development Director, to be the Town's representative in the §106 process for the Frank J. Wood Bridge.



**TOWN OF BRUNSWICK  
BICYCLE & PEDESTRIAN ADVISORY COMMITTEE**

To: Members of Town Council

Date: June 22, 2016

At BBPAC's May 19, 2016 monthly meeting, BBPAC Committee members voted unanimously to recommend Council support of the construction of a new bridge rather than the restoration of the Frank S. Wood Bridge.

At our June 16, 2016 BBPAC meeting, we unanimously reaffirmed our support for the new bridge option.

In addition, we disagree with some of the public statements made by the Friends of the Frank J. Wood Bridge.

- In order to cut costs, they recommend the elimination of the downriver center-levered side walk (page 13); We feel that having a sidewalk in both directions is a positive enhancement for pedestrians in the new bridge design and a necessity if the old bridge is restored,
- The report states that 'safe pedestrian sidewalks are still lacking on both sides' (page 15) of the new bridge. A raised five foot sidewalk, separated from the travel lane by a five foot bicycle lane, seems relatively safe. Most Town sidewalks do not meet that standard.
- The assertion that 'bike lanes will be equal on either bridge' (page 15) is misleading. The 5' bike lanes are only possible as in the FJWB Report they have reduced the travel lane width on the old bridge to ten feet to accommodate two 5' bike lanes. The Committee does not feel 10' is sufficient for unrestricted opposing vehicular traffic, and therefore, this renders the bike lanes unsafe.

Respectfully Submitted,

BBPAC Co-Chair Will Wilkoff,  
BBPAC Co-Chair Rich Cromwell

*All Bicycle & Pedestrian Advisory Committee meetings are televised and open to the public. All are invited to attend and participate. For additional information please call the Brunswick Department of Planning & Development (725-6660).*



**Public Comment Regarding:**  
**Frank J. Wood Bridge (BR #2016)**  
**Route 201, Brunswick & Topsham, ME**  
**MaineDOT WIN: 22603.00**

**August 15, 2016**

Reference File: Maine DOT Record of Public Meeting "Public+Meeting+Minutes 4-27-16.pdf"

#### **Summary Statement**

The Bicycle Coalition of Maine is a statewide organization that works to make Maine better for bicycling and walking. We support well-designed development and streets that create environments that are safe and welcoming for those traveling on foot or bike.

**We are writing to comment on the proposed rehabilitation or replacement of the Frank J. Wood Bridge, and its impacts on the safety and convenience of vulnerable users of the bridge. Because the proposed replacement bridge appears to offer more benefits for similar costs than rehabilitating the existing bridge (including better accommodation for vulnerable users and a longer lifespan), we believe that the best use of public funds is to replace the Frank J. Wood Bridge.**

#### **Project Discussion**

The Frank J Wood Bridge is an approximately 84 year old bridge that serves as a critical connection between Topsham and Brunswick. The bridge needs considerable maintenance, and is being considered for either rehabilitation or replacement.

The bridge is a truss design that some people find very attractive and historic, and a vocal group of proponents prefers rehabbing the existing bridge to preserve its aesthetic and historical qualities. According to Maine DOT, the cost of rehabilitating the existing bridge will run approximately \$10 million dollars, and will add about 30 years to the life of the bridge.

Alternatively, the bridge could simply be replaced with a lower profile, more modern design that some locals also find very attractive, and which significantly improves the conditions for walkers and bicycle riders. According to Maine DOT, the cost of replacing the bridge will run to approximately \$10-12 million, and will create a bridge with an expected life span of 100 years or more.

We choose to make no comment on the relative aesthetic merits of the new versus the old bridge, but rather to focus on the fact that this bridge is an important piece of transportation infrastructure that needs to serve all users safely. In our view, the *function* of the bridge is more significant than its historic or aesthetic properties, and in our view, the existing bridge is deficient in providing safe transportation functionality for vulnerable users.

The existing bridge has one sidewalk on the west, upstream side, which appears to provide decent accommodation for pedestrians. The proposed rehab would include an additional sidewalk on the other side, which we do feel would further improve pedestrian access to both sides of Rt. 201.



The existing bridge has no bicycle accommodations and is a very uncomfortable, and for some, unsafe, place to ride. The shoulders include approximately 2 foot storm water grates running the length of the bridge that reduce a nominal 4 foot shoulder to about 2 feet of space outside the travel lanes. As a result, bicycles currently are advised to take the lane while crossing the bridge, as the travel lane is too narrow to be safely shared by bicycles and motor vehicles. This creates real and perceived conflicts between bicycle riders and motor vehicle drivers. Even if the existing travel lanes were reduced to 10 feet, the usable space for bicycle riders would remain too narrow for acceptable accommodation on a bridge in this urban location. Options like cantilevering on a multi-use path or widening the deck are likely to not be feasible due to cost and structural challenges. For this reason, rehabilitation does not appear to offer much in the way of improved conditions for bicycle riders.

**The proposed replacement bridge will offer much better conditions for both walkers and bicycle riders.**

The proposed replacement bridge features 5 foot bike lanes and 5 foot sidewalks, with small expansions apparently possible to include fishing or overlook spots near the ends. Travel lanes appear to be spec'd at 11 feet. **While we feel that these accommodations are a significant improvement over current conditions, we strongly urge that even narrower travel lanes be considered to improve compliance with posted 25 mph speed limits and to create additional space for wider or buffered bike lanes.** FHWA design guidelines do not warrant 11 foot travel lanes unless there is more than 8% heavy truck traffic on the roadway, which would need to be studied.

**Ultimately, the Bicycle Coalition of Maine's position is that the best use of public funds would be to replace the bridge.** The costs of the two alternatives are roughly comparable (\$10 million versus \$12 million), but the benefits are not. Rehabbing the existing bridge only extends the life of the bridge by about 30 years, while outright replacement provides up to 100 years of use. Rehabbing the existing bridge would preserve the currently sub-standard and unacceptable bicycle and pedestrian accommodations. Replacing the bridge would provide expanded and improved conditions for vulnerable users.

Thank you for the opportunity to comment, and please contact us if you have any questions.

Sincerely

A handwritten signature in black ink that reads "Nancy Grant".

Nancy Grant  
Executive Director  
Bicycle Coalition of Maine

A handwritten signature in red ink that reads "James C. Tassé".

James C. Tassé, PhD  
Assistant Director  
Bicycle Coalition of Maine

# LETTERS

# CURTIS PICARD

18 Roberts Hill Road • Topsham, ME 04086

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June 1, 2016

David Douglass, Chair  
Members of the Board of Selectmen  
Town of Topsham  
Topsham, ME 04086

**RE: Letter of Support for the Replacement of the Frank J. Wood Bridge**

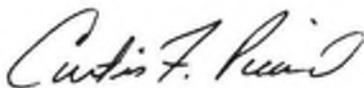
Dear Chairman Douglass and members of the Board of Selectmen:

I am writing as a resident of Topsham on the issue of the Frank J. Wood Bridge. After having attended more than one of the information sessions regarding either replacing or rehabbing the bridge, I feel that I have enough information to support replacement. Here's why:

- In my view, the reasonable extra cost with replacing the bridge will provide a better, safer structure connecting Topsham and Brunswick.
- The useful life of a new bridge is dramatically longer than a restored existing structure. A new bridge for \$13 million for 100 years is a much better investment of limited resources than spending \$10 million for another 30 years useful life of the existing bridge.
- The new design will open up views of the river; provide safer bike and pedestrian lanes and I like the idea of adding scenic view bump outs along the bridge in key areas.
- The length of time needed to do the work along with the expected bridge closures / lane shut down is dramatically lessened by replacement because the replacement bridge work can go on while the existing bridge continues to be open.
- I have strong concerns that extended periods of lane closures or bridge shut downs will irreparably harm the businesses on both sides of the bridge.
- Finally, I also support the creation of a bridge advisory task force to work with MDOT on the final designs of new bridge.

Thank you for considering my comments.

Sincerely,



Curtis Picard

53 Elm Street  
Topsham, Maine 04086  
June 3, 2016

To Members of the Board of Selectmen:

I was present at last evening's meeting of the Board of Selectmen, and listened to the public comments about the question of replacing or renovating the Frank J. Wood Bridge. I did not offer comments myself having spoken at the previous meeting urging replacement but also urging a redesign of the proposed new bridge. I have also joined other members of the Lower Village Development Committee in a resolution you have received urging replacement and also outlining considerations in designing a new bridge.

I did hear the passionate comments of those urging renovation and their urging that "all the facts be heard." I took notes on the renovation bridge projects they named as examples of successful renovations. It caught my attention that while they criticized the cost estimates of MDOT, they used those same estimates as a basis for what renovation would cost if (say) a second sidewalk were eliminated. What I did not hear was any statement of costs of the other renovation projects they held up as exemplars. The costs of those projects are, of course, a matter of public record. The report they submitted to you as members of the BOS has much information about those projects, but nothing about their costs. I know the five of you to be attentive to taxpayer dollars, and I appreciate that about each of you. Here is what the Friends of the Frank J. Wood omitted to include in their presentations:

The Tyngsborough Bridge (Tyngsborough, MA) project (2009-12) cost \$19 million for a bridge 547 feet in length, took three years to complete with the use of a constructed temporary bridge.

The Duck Bridge (Lowell, MA) project (2010-12) cost \$16 million for a bridge 610 feet in length, and took two years to complete with a temporary pedestrian bridge. (Vehicular traffic was re-routed.)

I could not find cost figures for the Aiken Street Bridge (Lowell, MA). This 780 foot bridge was renovated in 1998.

In the past, the Friends of the Frank J. Wood Bridge have held up the Checkered House bridge (Richmond, VT) as an exemplar, and it appears on their Facebook page. This 350 foot bridge renovation (2011-13) cost \$13.9 million, and took two years to complete with a temporary bridge. The Friends Facebook page also features the Healdsburg Bridge (Healdsburg, CA), a 438 foot bridge that was closed for a year when it was renovated (2015) at a cost of \$12 million.

These figures strongly suggest that the cost of a renovated bridge might well exceed the cost of a new bridge. Our bridge is longer than each of these and passes over a river with stronger water flow. When I found these cost figures this morning, they led me to question the sincerity of the 'we need all the information' posture of the Friends of the Frank J. Wood Bridge.

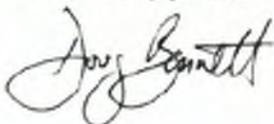
What especially catches my attention beyond the cost of renovation is the length of time each bridge was closed to allow renovation. We have businesses at each end of the bridge that would be seriously harmed by a lengthy bridge closure. Both Topsham and Brunswick have worked hard to encourage economic development as something both good in its own right and also as something that generates tax revenues that ease tax burdens on homeowners. A bridge closure of a year or two or three would be devastating to the businesses at either end of the bridge.

Economic development was hardly mentioned last evening and it should be a driving consideration in how to proceed. That consideration speaks strongly for replacement.

Of course I do not know the end resolute of the section 106 process, but I expect it will be a recommendation not that we renovate the bridge but rather that we document the 1932 bridge with text and photos as we move to replace it. I salute your resolution supporting replacement last evening.

There are serious design issues with the preliminary sketches of the new bridge. A few of those were mentioned last evening, but the question of design got lost in the campaign to save the bridge. I urge you to appoint Topsham members of a joint Topsham/Brunswick committee to work with MDOT on design of a new bridge.

Sincerely yours,



Douglas C. Bennett

**COST PROJECTIONS TO FRANK J. WOOD BRIDGE – John Shattuck 2016-06-06** To the below excerpts from Douglas Bennett's letter to the Topsham Selectmen, I have inserted (in blue) my simple projections of FJWB rehab costs based on the lineal rehab costs of the completed projects cited by the Friends of the Frank J. Wood Bridge. All these bridges (like the Frank J. Wood Bridge) are two lane bridges with deck widths of 30' or less.

**EXCERPTS - Douglas Bennett letter:**

Here is what the Friends of the Frank J. Wood omitted to include in their presentations:

The Tyngsborough Bridge (Tyngsborough, MA) project (2009-12) cost \$19 million for a bridge 547 feet in length, took three years to complete with the use of a constructed temporary bridge.

**FJWB is 1.5 times longer – projected cost: \$28.3 million**

The Duck Bridge (Lowell, MA) project (2010-12) cost \$16 million for a bridge 610 feet in length, and took two years to complete with a temporary pedestrian bridge. (Vehicular traffic was re-rerouted.)

**FJWB is 1.3 times longer – projected cost: \$21.4 million**

In the past, the Friends of the Frank J. Wood Bridge have held up the Checkered House Bridge (Richmond, VT) as an exemplar, and it appears on their Facebook page. This 350 foot bridge renovation (2011-13) cost \$13.9 million, and took three years to complete with a temporary bridge.

**FJWB is 2.3 times longer – projected cost: \$32.4 million**

The Friends Facebook page also features the Healdsburg Bridge (Healdsburg, CA), a 438 foot bridge that was closed for a year when it was renovated (2015) at a cost of \$12 million.

**FJWB is 1.9 times longer – projected cost: \$22.3 million**

These figures strongly suggest that the cost of a renovated bridge might well exceed the cost of a new bridge. Our bridge is longer than each of these and passes over a river with stronger water flow. When I found these cost figures this morning, they led me to question the sincerity of the 'we need all the information' posture of the Friends of the Frank J. Wood Bridge.

**Per MDOT 2015-11 estimate for the cost of a bridge replacement in the same location, a temporary bridge would cost \$4 million**



Cassandra Chase  
Environmental Engineer  
Federal Highway Administration – Maine Division  
US Department of Transportation

Kristen Chamberlain  
Bridge, Multi Modal and Traffic Team Leader  
Environmental Office  
Maine Department of Transportation

Re: Frank J. Wood Bridge §106 Review

I write this as a Lower Village business owner, to provide input to the work your committee is addressing in comparing the value of replacement vs repair of the Frank Wood Bridge.

I hope you will strongly consider the impact of repairing the bridge, as it will create significant disruption of the access and traffic flow during not only the time of initial repair/re-building (which will take months, if not years to complete), but also for years in the future as maintenance of the aged structure requires. Paramount in consideration during this discussion should be the issue of community safety, which is placed in jeopardy with a repair process as well as ongoing structural concerns with the existing bridge.

The building process for a new structure will have much less impact on traffic to and from the Lower Village, and therefore less negative impact on the existing and future businesses. Personally, I believe the "open" concept appearance of the proposed bridge will be visually appealing. It will by design provide expansive views down the river in one direction, and of the rocks/falls in the opposing direction. One needs only to drive over the new bridge connecting Lisbon and Durham to recognize the astounding view and difference that we will have. It will be a staggeringly beautiful change for this community.

I support and certainly recognize the value of preserving history, evidenced by the investment my husband and I dedicated to restoring our office space in the Bowdoin Mill. That said, I also value the environment. Literally daily I think of the shedding of rusted surface and lead-based paint into the Androscoggin from the existing bridge. I support total removal of this contaminant from our area, and the river we all respect.

Thank you for considering my thoughts.

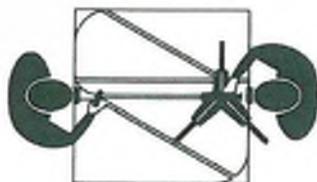
Sue Spann  
Owner/Broker   
RE/MAX Riverside  
1 Bowdoin Mill Island Suite 101  
Topsham, Maine 04086

**RE/MAX**

Riverside  
1 Bowdoin Mill Island, Suite 101  
Topsham, ME 04086  
Office: 207.725.8505  
Fax: 207.725.8509

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October 27, 2016

**RE: Frank J. Wood Bridge  
Topsham - Brunswick**

To whom it may concern,

As a local small business owner, local property owner and a taxpayer, it is unfathomable to me how it can be proposed that a single extra dollar be spent beyond that necessary to prolong the life of the current bridge until a replacement can be constructed. We are "kicking the can down the road" in two respects, forcing our children to both make a decision that we should be making today and then asking them to pay what will undoubtedly be a far greater cost for a replacement bridge, after millions have been wasted on extending the life of an obsolete structure.

The existing "green" bridge is neither the first nor the last bridge that will connect to the two villages. We should be celebrating the successes and the future of the two communities, as well as the extensive history that has taken place on the banks of the Androscoggin and the falls. The "green" bridge has existed for but a snippet in time compared to the broader history of the area and yes it should be commemorated for its contribution to that rich history.

Not only do the economics of the rehabilitation costs versus a replacement bridge not make sense, the economic impacts to the two downtowns during two to three years of seasonal closing will be devastating.

I urge all to support the construction of a new bridge and with it commemorate the rich history of fishing, living, industrial enterprises and previous bridges via visual and written documentation within a riverside park on each bank of the mighty Androscoggin.

Thank you,

*Kevin P. Clark*

Kevin P. Clark, PLS  
President

# PUBLISHED COMMENTS

## **GUEST COLUMN: We Will Love Our New Bridge**

**2016-05-04 By Bruce Van Note © Times Record**

<http://media.adfrontiers.com/CLICKMACRO/http://adserver.adtechus.com/?adlink/9402/2869461/0/225/AdId=-3;BnkId=0;irime=381457685>  
*Bruce Van Note owns a home near the bridge and is a Topsham Planning Board member. A UMaine engineering graduate, he has worked as a surveyor, lawyer, mediator and at MaineDOT in executive policy positions under three Maine governors. He is the director of Policy and Planning at the Maine Turnpike Authority.*

The 84-year old Frank J. Wood Bridge between Brunswick and Topsham is structurally deficient, doesn't have enough room for pedestrians and bicyclists, and needs to be replaced. Given the value that we place on history and local control, that can be a tough pill to swallow. Thus it is understandable that some good people will react with skepticism, want to save the old bridge, and maybe even take some unwarranted shots at the messenger, MaineDOT. Change is hard. But there is good news from experience in other Maine towns where some people felt the same way: We will love our new bridge.

The reasons we need a new bridge are straightforward:

### **Bridges Don't Last Forever**

When well built and maintained, bridges last about as long as people do. The existing bridge is 84 years old. That's a good long life. Even if the state spent the \$10 million or so that it would take to strengthen, patch, and paint it and add a second sidewalk as desired by the towns, we would get only 30 more years of bridge life. Of course, old bridge supporters will want a rehab to cost less and last longer. But as anyone who has renovated an old house knows, things usually get worse, not better, once you start tearing things apart. Most people will accept the unbiased judgments of state professional bridge engineers who have the training, experience and obligation to make state bridge engineering decisions.

### **Safety Must Be Primary**

Although the old bridge is safe today, it is what engineers call a "fracture critical, non-redundant structure." This means that there are few if any back-up support beams and if the old bridge fails, it could fail fast. To prevent that, even after a rehab the old bridge would require detailed inspections at least every two years, costing about \$60,000 each time.

### **Rehabilitation Would Be Very Disruptive**

To rehabilitate the old bridge, it will need to be closed or restricted to one-way traffic for most of 2 years, and possibly up to 3 years. This would inconvenience commuters and likely devastate local businesses. With a new bridge, the old bridge would continue to be used during construction, and the impact may be as little as a few weeks.

## **A New Bridge is the Only Cost Effective Solution**

The proposed new bridge will cost about \$13 million and will last 100 years. Again, the rehab option would cost about \$10 million and last 30 years. So for about 30 percent more money, we'll get more than three times the bridge life. Although we value preservation, we demand public financial discipline, and the new bridge is a fiscal "no-brainer." MaineDOT is footing the bill in a context of juggling 2,300 bridges and 8,800 miles of highways statewide with inadequate funding. Given this, doubters should ask themselves why MaineDOT would want to spend more up front if they could just "patch and pray" and spend the money elsewhere. The answer is because they have a duty to find a long-term, safe and cost effective solution.

Experience in other towns provides perspective. Near Bucksport, the Waldo-Hancock suspension bridge that carried Route 1 over the Penobscot River reached the end of its useful life after 72 years. Many mourned the loss and wanted to save it or build a larger replica with more sidewalks. Today, the new Penobscot Narrows Bridge seamlessly compliments nearby historic Fort Knox and is an icon to local communities.

In Naples, a moveable swing bridge that carried Route 302 over the waters between Long Lake and Brandy Pond needed improvement after 60 years of service. Again, some local residents wanted to save it, or replace it in kind with more sidewalks. Fast forward a few years, and local officials celebrated "our new bridge" at their ribbon cutting ceremony, the abutting causeway is humming with business activity and area kids take prom photos there this time of year.

The point is that once we engage in a respectful and grounded manner, the project will turn out great.

Let's work with MaineDOT on their design of the new bridge. My initial reaction to it was that it provides liberating open vistas, greatly enhances the pedestrian and bicycle experience, and has a simple and utilitarian look that fits the site's industrial past. Others disagree, and that's OK. Let's collaborate, evaluate, and offer reasonable suggestions to MaineDOT. They will continue to listen and work with us.

Perhaps we can honor the site's history with a riverfront park near its Topsham abutment including interpretive panels highlighting its early place name (Pejepscot Falls), previous bridges, mills, floods, etc. Perhaps we can calm traffic and add character through the use of materials, textures, colors, or striping. Perhaps we can make it "ours" with suggestions regarding railings, lighting, ties to the Riverwalk, and the pedestrian bump-outs. Other ideas will emerge. Some will work; some won't. But in the end, the process will work, and in a few years, we will love our new bridge.

## **GUEST COLUMN: To Honor the Frank J. Wood Bridge – And Much More**

**2016-07-20 By Douglass Bennett © Times Record**

*Douglas C. Bennett is a resident of Topsham's Historic District and a member of the town's Lower Village Development Committee*

[http://www.timesrecord.com/news/2016-07-20/Opinion/To\\_Honor\\_the\\_Frank\\_J\\_Wood\\_Bridge\\_\\_And\\_Much\\_More.html](http://www.timesrecord.com/news/2016-07-20/Opinion/To_Honor_the_Frank_J_Wood_Bridge__And_Much_More.html)

To insure the safety of all who use it, and also to insure the vitality of the two communities it links, the Frank J. Wood Bridge should be replaced, not renovated. Because the Frank J. Wood Bridge is a historical structure beloved by those who use it, we need to find appropriate ways to memorialize and celebrate this bridge as we replace it.

It is the river and the weather that are weakening the Frank J. Wood through rust. No act of preservation can reverse the damage already incurred. Repair and paint might extend the life of the bridge a few decades at most, but at nearly the cost of a new bridge and requiring long closures during renovation. Even with conscientious maintenance (something not seen in decades), a repaired Frank J. Wood Bridge would be vulnerable to failure. In that case, a vital artery between the two towns would be lost for years with ruinous economic consequences. A new bridge would last decades longer, require much less closure in its construction, and present much less risk.

This is not, however, a simple trade-off between historic preservation, on the one hand, and current community needs, on the other. Sometimes the best way to preserve history is not by freezing our attention at some point in the past but rather by telling the story of the changes that have transformed a place.

Today, nearly all of us picture the Frank J. Wood Bridge as the crossing between the towns of Brunswick and Topsham Maine. Connecting Maine Street (Brunswick) to Main Street (Topsham), town center to town center, it allows passage of cars, trucks, bicycles and pedestrians across the Androscoggin at the river's head of tide, just below the Androscoggin Dam. Cabot Mill and Pejepscot Mill stand sentinel at either end. Countless recent photographs of this apparently timeless scene show the bridge spanning the river, the dam in the background, the two mills at either end, a sunny sky dotted with puffy clouds.

But this iconic picture obscures more than it reveals about the river crossing point. Change not constancy has been the normal state of affairs. It has not been one timeless bridge that has spanned the river. The seasons and the currents have broken down a succession of bridges.

For Native Americans in the centuries before white settlement, there was no bridge. The lower falls of the Androscoggin were a place where they fished for salmon and sturgeon. In the first century of white settlement, there was still no bridge. White settlers, too, fished the lower falls, salted their catch and shipped it elsewhere. Before 1795, passage across the river was by foot in winter and otherwise by boat. On some days in some seasons, that passage was perilous because the river raged.

1795 was the year of the first bridge, a wooden bridge of course and likely covered like its several wooden successors. Fifteen years later, in 1811, a 'freshet' (a spring flood) carried off this first bridge. The bridge was built again.

In 1814 and again in 1827 these bridges were also carried off by a flood and rebuilt, in 1827 with stone abutments. In 1842 a fire destroyed the bridge and again it was rebuilt. All these bridges were privately built and maintained, their owners charging a fee for passage. In 1871, the two towns bought the still-wooden bridge.

In 1877, the towns replaced the wooden bridge with an iron bow bridge. A wrought iron bridge built by the King Iron Company (Cleveland) was washed away in 1914, and replaced.

In 1932, after all these others (at least eight), the current Frank J. Wood Bridge, a riveted Warren thru truss bridge was purchased from Boston Bridge Works and erected.

Each of these bridges might have been a worthy candidate for preservation had any of them stood up to the elements. It would be great to see each and every one of them today as we view the crossing.

Through all these years this river crossing has been a site of intense economic activity. Fishing was a significant activity until industry turned the river too foul to support any living thing. In the early 19th century, there were shipyards just below the current bridge site on the Topsham side. These are long gone, but today recreational fishing has returned to the lower Androscoggin.

Beginning in the late 18th century, making use of water-power from the falls, mills were constructed on both sides, first sawmills, then paper and cotton mills. These mills, too, were regularly wrecked by spring floods, then rebuilt, often larger. Parts of the Cabot Mill (Fort Andross) on the Brunswick side date from the early 19th century. The Pejepscot Mill (originally the Topsham Paper Mill) was constructed in 1868. While today they frame our picture of the Frank J. Wood Bridge, both mills have looked out on several other bridges at the site.

Various dams have crossed the falls channeling, taming and harnessing the river's power. A dam at this site began generating electric power in the 1890s. The current

Androscoggin Dam was last rebuilt several decades ago.

It is not only the one bridge that stands today we should honor. Instead, it is this river crossing, its relentless changes, and its succession of bridges, mills, dams and shipyards that we should lift up. We should see them all.

There is already a park (the 200th Anniversary Park) on the Brunswick side, where several earlier bridges once abutted. Topsham is planning a park in its Lower Village. The abutments of

the Frank J. Wood and the adjacent land should be part of that new park. Those two parks could be used to show the succession of bridges and to help residents of the two communities and visitors, too, understand how Brunswick and Topsham were established, thrived together and changed.

One further aspect of a prospective park on the Topsham side should be lifted up because it, too, concerns a bridge. The Granny Hole stream powered the Pejepscot Mill. It is a partly natural, partly human-expanded channel that carried Androscoggin River water around the mill. Until recently, a small, iron 19th century through truss bridge allowed passage over the Granny Hole stream. It was removed for safety reasons, but it would be useful to again have a passage where it once crossed. The bridge is now in storage. It could be renovated and restored as part of this new park to carry light traffic and to help tell the wonderful story of the bridges, dams and mills that made the two towns. That would be history well preserved.

## **GUEST COLUMN: Bringing Economics Into the Bridge Decision**

**2016-11-11 By Doug Bennett © Times Record**

*Doug Bennett is a member of the Brunswick/Topsham Bridge Design Committee.*

[http://www.timesrecord.com/news/2016-11-11/Opinion/Bringing\\_Economics\\_Into\\_the\\_Bridge\\_Decision.html](http://www.timesrecord.com/news/2016-11-11/Opinion/Bringing_Economics_Into_the_Bridge_Decision.html)

I hope you are paying attention, citizens of Brunswick and Topsham. A federally mandated legal process is playing out in the meeting rooms of our two town halls that could affect the economic viability of many businesses in our towns and affect the taxes we pay as well. It's a section 106 process. People are speaking on your behalf, and you should know what they are saying.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the effects of their activities on historic properties. The historic property in question is the Frank J. Wood Bridge, which was constructed in 1932. The question is whether the Maine Department of Transportation can replace the bridge or whether instead it should renovate the bridge.

No one doubts that something needs to be done. Rust is degrading the bridge's structural integrity. Following an inspection this summer, it was posted with a maximum weight of 25 tons. Said Maine Department of Transportation (MDOT), "The inspection team of MaineDOT bridge engineers found rapid deterioration of structural steel which triggered a drop in the ranking of the bridge deck and superstructure from fair condition to poor condition."

Last spring, MDOT announced a plan to replace the bridge. That is when the section 106 process was triggered because replacement of the bridge could have an "adverse impact" on historic properties. An organization, the "Friends of the Frank J. Wood Bridge," was formed to press the case that the bridge is too important, too historic, to discard.

The section 106 process began in July. At a succession of meetings MDOT has laid out its understanding of the condition of the bridge, the alternatives (replacements or renovation) and the likely effects on recognized historic structures. At each meeting, the Friends of the Frank J. Wood Bridge have pressed their case. They question almost every assertion MDOT makes about condition, costs, setting and historic significance. Theirs are nearly the only voices from Topsham or Brunswick to be heard. Sometimes they suggest that they speak for nearly all of us.

Costs rarely play any part in the public arguments of the Friends of the Frank J. Wood Bridge. And when MDOT has put forward numbers showing renovation to be a costly proposition, the Friends have challenged the competence and integrity of those making the estimates. MDOT's estimates, however, are very much in line with the costs of bridge renovation projects elsewhere.

I admire citizen advocacy. I respect the conviction of the Friends of the Frank J. Wood Bridge that saving the bridge is of paramount importance to them. But I disagree with them and I expect most others in the community would as well in taking a fuller, sober look at choice

before us.

At some point, the economics of the bridge have to be weighed. This state (as many others) is already struggling to find enough money to maintain its bridges and roads. What is the cost to taxpayers of historic renovation vs. the cost of replacement with a new bridge? How much would pursuing either course disrupt now-thriving businesses at either end of the bridge?

A recent study by MDOT's consultants on the bridge project put the construction cost of a new bridge expected to last 100 years at \$13 million. Life cycle costs (adding in the costs of future repairs) would push this to \$13.7 million.

On the other hand, renovation of the existing bridge to last 75 years, they estimate, would cost \$17 million. This includes the cost of erecting a temporary bridge to carry traffic while the renovation proceeded.

Because of its age and manner of construction, such a renovated bridge would need considerably more maintenance than a new one, pushing its life cycle costs to \$23.2 million. Moreover, that needed maintenance would cause much more traffic disruption, with recurring negative consequences for the businesses at either end of the bridge.

Agreed, the Frank J. Wood Bridge is "historic". But is it worth \$10 million more in taxpayer cost to save it? Is it worth months of traffic disruption each of the many times such a renovated bridge would need to be repaired? (Think about that while the bridge is again being repaired this summer.)

Perhaps it is time we stopped letting the Friends of the Frank J. Wood be the only voices heard. The economic vitality of the towns at either end of the bridge is at stake. History counts, but the bridge is an artery that gives present life to both Brunswick and Topsham.

**OPINION: Letters to the Editor**

2016-05-03 By Nancy Randolph

<https://brunswicktimesrecord.our-hometown.com/news/2016-05-03/Opinion/LETTERS.html>

I attended the MDOT Public Hearing about the replacement or rehabilitation of the Frank J. Wood Bridge.

I agree that the bridge is iconic in this region. I don't think it is unique and we all know that although it was built in 1932 it is aging. The steel is pitted and its strength degraded. It is unsafe for people on bicycles, its sidewalk is inadequate to the need.

I did a little research about the metal truss bridges and about replacement rather than rehabilitation.

Virginia completed a study in 2006 about what it takes to rehabilitate a metal truss bridge. Based on my reading of this report, I think MDOT's estimate for rehabilitation is actually much too low.

I understand wanting to keep things the same. I also know that a true rehabilitation of this bridge would require (as with the historic Swinging Bridge) dismantling, testing every part, replacing many parts. Much of the replacement parts would be made in China where initiatives in low cost bridge building and repair methods have been exploding.

I do believe our bridge should be replaced. I think 8-10 inch esplanades [or separate bike lanes and sidewalks] should be on each side of the bridge for people on bicycles, people pushing strollers, people using their lunch time out for a stroll, maybe even benches for lunch or just for a waterside break in the day. I envision planters and lights (such as on Bowdoin Mill Island) being placed between the road bed and the pedestrian/bicycle/ park area.

Let's make our town connection better and safer. Spend the extra money not on retaining an icon that doesn't serve to a new icon of 21st century community building. Let's gather a group of engineers, citizens, architects and charrette a design for the 21st Century. This is possible. Let's do it.

Join your community neighbors Monday, May 9 from 6-8 p.m. in the Topsham Municipal Building's 1st floor conference room.

Nancy E. Randolph,  
Topsham

**From:** [John Graham](#)  
**To:** [Chase, Cassandra \(FHWA\)](#); [Joel.C.Kittredge@maine.gov](mailto:Joel.C.Kittredge@maine.gov)  
**Cc:** [nathan@historicbridges.org](mailto:nathan@historicbridges.org); [Kitty Henderson](#); [mnaber@achp.gov](mailto:mnaber@achp.gov); [Steve Hinchman](#); [Scott Hanson](#)  
**Subject:** Friends of the Frank J Wood Bridge formal response.  
**Date:** Friday, December 02, 2016 4:20:51 PM  
**Attachments:** [RE Cabot Mill DOE \(2\).pdf](#)  
[C. Mitchell email about Cabot Mill eligibility 10-2013.pdf](#)  
[FJWB-Cabot Mill 106.pdf](#)

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Hi Cassie,

Please see the attached formal response on the eligibility of the Cabot Mill plus two supporting documents. Please confirm that you received this.

Thanks,

John

President - Friends of the Frank J Wood Bridge

John Graham  
John Graham Real Estate  
[www.johngrahamrealestate.com](http://www.johngrahamrealestate.com)  
207-491-1660  
10 Pleasant Street  
Topsham, ME 04086

Friends of The Frank J. Wood Bridge  
10 Pleasant Street  
Topsham, ME 04086

U.S. Federal Highway Administration  
40 Western Avenue  
Augusta, ME 04330

Attention Ms. Cassandra Chase, Environmental Engineer

Frank J. Wood Bridge MHPC # 1595-15

Cabot Mill National Register eligibility:

Dear Ms. Chase,

The Friends of the Frank J. Wood Bridge requests that this be placed in the formal record of both the 106 and the 4f in response to Cabot Mill National Register eligibility and the adverse impacts of removing the bridge.

MDOT and their team have repeatedly stated that removal of the Frank J. Wood Bridge would have no impact on the National Register eligibility of the Cabot Mill property. We believe their confidence in this assertion is unfounded.

The determination of eligibility for the Cabot Mill property is found in a May 4, 1999 Memorandum from Earle G. Shettleworth, Jr., SHPO, to Judith Lindsey-Foster, MDOT, OES, subject: Historic Bridge Survey - Truss Bridges - National Register eligibility review. On pages 4-5 of that memo, it states:

"The bridges in Brunswick and Rumford are located in proximity to concentrations of historic resources that merit nomination to the Register as historic districts. In Brunswick, this includes the already listed Bowdoin Mill (located in Topsham) and the Cabot Mill on the other side of the river. The Frank J. Wood Bridge forms a link between these two industrial complexes and is, in its own right, a product of the industrial age. ..."

This determination of eligibility for the Cabot Mill unmistakably says that the Frank J. Wood Bridge is the link uniting the two mill complexes into a single district. There is no reasonable argument to assume that a district would still exist without the Frank J. Wood Bridge linking Cabot Mill to the Bowdoin Mill on the other side of the river.

It is also worth noting that this determination of eligibility does not include the hydro dam or power facilities. MDOT's team has continued to include those elements as contributing to a potential district in spite of having been informed that they date from the 1980's and are not historic. While there have been dams on the site since the early 19<sup>th</sup> century, this dam is considerably less than the 50 years old that is required for a resource to be contributing to a National Register district. Statements included in the report that claim this dam powered the two mill complexes are inaccurate. The existing dam had never powered either mill. The Bowdoin/Pejepscot Paper Company mill was powered by a lower dam that no longer exists.

Earlier dams approximately on the site of the current dam powered Cabot Mill, but the existing dam was constructed thirty years after production stopped in the Cabot Mill. It was built to produce electrical power for the grid and continues in that use. When the American Woolen Company - Foxcroft Mill historic district in Dover-Foxcroft, ME was nominated to the National Register in 2012 (NR #12001068) the dam was excluded from the district at the insistence of Christi Mitchell because it had been rebuilt in the 1980's. The existing dam at Brunswick-Topsham does not contribute to the potential industrial historic district comprised of the Cabot Mill, Frank J. Wood Bridge, and Bowdoin/Pejepscot Mill.

Kirk F. Mohney's June 16, 2016 letter to Megan M. Hopkin, Subject: Bridge Improvements/replacement, Brunswick; MHPC #1595-15 states, "The MDOT also concludes that the dam located upstream of these three resources is a contributing feature of the district, and although we do not disagree, we would also include any extant hydroelectric generating facilities constructed during the period of significance that retain integrity." This statement is clearly based on the inaccurate indication in the MDOT report that the dam was historic and related to the functioning of the two mills. Since neither the existing dam nor the existing hydroelectric facilities are from the period of significance or connected to the operation of either mill, MHPC needs to be provided with more accurate information and asked to clarify if they still don't disagree with the inclusion of the dam as a contributing resource in the potential district.

It appears that MDOT's team has attempted to include the dam in the potential district simply because the removal of the bridge would appear less impactful if it was one of four resources in the potential district, rather than one of three. There is no case for the dam's inclusion in a potential district and, in fact, removal of the Frank J. Wood Bridge would almost certainly eliminate the possibility of a district including the Bowdoin Mill and Cabot Mill properties based on past determinations by Maine Historic Preservation Commission.

The construction of a modern concrete bridge between the two mill properties would further weaken any argument for a district by introducing a major contemporary element that would negatively impact the setting, feeling, and associations of the historic mill properties.

MDOT's team has introduced a 2010 Section 106 review for cell phone towers on the Cabot Mill as evidence of a determination of individual NR eligibility for the mill. Based on the wording of that document, referencing an "industrial complex," and the absence of any evidence that an actual determination of individual eligibility for the mill has ever been done, it is clear that the "Industrial complex" referred to is the industrial complex described in the May 1999 memo above, the potential district that includes the Bowdoin Mill, Frank J. Wood Bridge, and Cabot Mill.

In an email to architectural historian Scott Hanson on the subject of the potential eligibility of the Cabot Mill property, dated October 13, 2013, Christi Mitchell wrote, "Roger Reed did a fairly intensive survey form for the Cabot Mill in 1992. Some time ago the mill was considered eligible within the context of a small historic district that included the Pejepscot Mill, the bridge, and the Cabot Mill. *However, if this is a tax credit question, I would say that it needs to be evaluated on its own.*"

This statement from Maine's National Register Coordinator (now Assistant Director of MHPC) clearly indicates that Cabot Mill's eligibility needs to be confirmed. It has only been determined eligible as part of a district including the Frank J. Wood Bridge and Bowdoin Mill. Demolition of the Frank J. Wood Bridge and construction of a modern concrete highway-style bridge between the two mills will fundamentally alter the basis of the 1999 determination of eligibility. The potential effect of demolishing the Frank J. Wood Bridge on the Cabot Mill (including the possible use of historic tax credits for rehabilitation) cannot be assessed without doing an individual determination of eligibility for the property.

Period of Significance. In the MDOT report, the period of significance for the eligible Brunswick-Topsham Industrial Historic District is identified as "ca. 1850 to ca. 1930." The oldest resource within the eligible district is the granite portion of the Cabot Mill Picker House, built in 1836. The period of significance needs to be changed to reflect this fact.

Summer Street:

MDOT's team has concluded that the demolition of the Frank J. Wood Bridge and construction of a modern concrete highway-style bridge would have no adverse impact on the eligible potential district on Summer Street.

According to statements made at the last Section 106 meeting on this project, that conclusion is based on a belief that "Setting" "Feeling" and "Association" do not need to be considered when considering the seven aspects of integrity.

The National Register Bulletin, *How to Apply the National Register Criteria for Evaluation* is the official guidance on the subject from the National Park Service. It addresses "Understanding the Aspects of Integrity."

Regarding "Setting," it states:

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the *character* of the place in which the property played its historical role. It involves *how*, not just *where*, the property is situated and its relationship to surrounding features and open space.

Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences.

The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as:

- Topographic features (a gorge or the crest of a hill);
- Vegetation;
- Simple manmade features (paths or fences); and
- Relationships between buildings and other features or open space.

These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings. This is particularly important for districts.

Regarding "Feeling" and "Association," it states:

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century. A grouping of prehistoric petroglyphs, unmarred by graffiti and intrusions and located on its original isolated bluff, can evoke a sense of tribal spiritual life.

Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character. For example, a Revolutionary War battlefield whose natural and manmade elements have remained intact since the 18th century will retain its quality of association with the battle.

Because feeling and association depend on individual perceptions, their retention *alone* is never sufficient to support eligibility of a property for the National Register.

It appears that MDOT's team has misunderstood the meaning of this last paragraph, specifically "their retention *alone* is never sufficient to support eligibility of a property for the National Register," and concluded that these aspects of integrity do not have to be considered at all. There is no basis for this conclusion.

In terms of Setting, the Summer Street neighborhood needs to be considered in relationship to topographic features and relationships between buildings and other features or open space. Specifically, the neighborhood needs to be considered in relationship to the river. From the identified period of significance through the present the neighborhood has had an open view across the river with visibility of the water, the falls, and the wildlife attracted to the water. Bridges crossing the river since the first built in 1796, including the Frank J. Wood Bridge, have all been far enough downstream of the neighborhood to leave the view of the river unimpeded.

The guidance in the Bulletin states, "These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings. This is particularly important for districts." It is not possible to make a reasonable argument that building a new concrete highway-style bridge that curves upstream of the location of the Frank J. Wood Bridge, blocking the views of the river from the Summer Street neighborhood, will not have an adverse impact on the setting of the potential district.

In Kirk Mohny's June 16, 2016 letter to Megan Hopkin, cited above, he states, "As to the inclusion of the houses along Summer Street in Topsham in this industrial district, it is the Commission's opinion that unless documentation can be found that establishes a direct link between their construction and/or occupants to the operation of the mills, this area should

not be included. However, these properties may be eligible for listing in the Register as a separate residential historic district, the extent of which has not been determined."

A review of the 1940 U.S. Census data for Summer Street shows that 16 residents from the 18 households on the street worked in the mills in various capacities. Earlier censuses were not reviewed but it is highly likely that similar results will be found in the Census data from the other decades of the period of significance for the potential industrial district. Additionally, the Pejepscot Paper Company owned the house at 15 Summer Street and used it to house the Mill Agent for a period of time.

If the relationship between these houses and the industrial properties and bridge is such that they collectively form an eligible district, as suggested in Kirk Mohnney's letter, the demolition of the Frank J. Wood Bridge and construction of a modern concrete highway-style bridge in the midst of all these resources would certainly have an adverse impact on the eligible district.

Frank J. Wood Bridge As an Example Of the Warren Truss Type To Be Preserved:

On page 5 of Earle Shettleworth's May 4, 1999 memo to MDOT regarding the bridge survey, he wrote:

We have two additional matters to raise at this time regarding the opinions of eligibility and ineligibility expressed in both your memo and this one. The first relates to the long term survivability of a particular truss type over time. As it stands, representative examples of each truss type (as well as visually distinctive subtypes) are included on our eligible lists. The Commission believes that the preservation of one or more of each example should be a high priority in managing these resources. Although we recognize that the bridge management phase of the survey will address this issue, we are concerned that until such time that this plan is developed and implemented, the bridges which we have identified may continue to deteriorate or be replaced with the potential result that a bridge type is no longer represented in the inventory. We recommend, therefore, the institution of a policy that enables our agencies to periodically review the status of the inventory, and to take any necessary measures (such as reevaluating our present non-eligibility determinations) in order to assure the continued existence of particular bridge types.

Unfortunately, the number of National Register eligible truss bridges in Maine has been dramatically reduced since this inventory was done in 1999. The recommendations of the Commission have not been followed to plan for preserving examples of each type and no update of the inventory has been done. Without an updated inventory it is not possible to state how many of each type of truss bridge have been demolished or how many, if any, of each type remain.

Friends of the Frank J. Wood Bridge have been saying since spring that this bridge should be preserved as an example of the type. Sited near the juncture of Route 1 and Interstate 295 and with the adjoining mills and adjacent historic districts, it is uniquely well suited to be the

example that is preserved. We reiterate our point on that and point to Earle Shettleworth's statement above as evidence that our position is well grounded and reasonable.

Sincerely,

John Graham

President- Friends of the Frank J Wood Bridge



ANGUS S. KING, JR.  
GOVERNOR

MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

EARLE G. SHETTLEWORTH, JR.  
DIRECTOR

**MEMORANDUM**

To: Judith Lindsey-Foster, MDOT, OES  
From: Earle G. Shettleworth, Jr., SHPO *ESJ*  
Date: May 4, 1999  
Subject: Historic Bridge Survey -- Truss Bridges -- National Register eligibility review

The Commission has completed its assessment of the 94 truss bridges which have been surveyed by Lichtenstein & Associates, as well as the National Register eligibility recommendations made by your consultant and discussed at the HBS Committee on April 15.

It is my opinion, in concurrence with the recommendations contained in your memo of April 1, 1999, that the following previously unevaluated bridges merit nomination to the National Register of Historic Places either under Criterion A or C or a combination thereof:

<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Arrowsic	Max L. Wilder Memorial	2026
Ashland	B&ARR/SA5	0159
Augusta	Memorial	5196
Biddeford	Elm Street Bridge	1351
Buxton	West Buxton	3340
Caribou	Aroostook River	5572
Durham	Durham	3334
Fort Kent	International	2398
Gardiner	New Mills	2605
Harmony	Bailey	1022
Hollis	Bar Mills	3333
Hollis	Canal	1525
Howland	Piscataquis	3040
Kittery	Memorial Bridge	2546
Kittery	Sarah Mildred Long	3641
Portland	St. John Street Underpass	0327
Salem Twp.	Mill Pond	2565



MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street  
 State House Station 65  
 Augusta, Maine 04333



<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Thomaston	Wadsworth Street	2904

Bridges that appear in the following list were previously determined to be eligible by the MHPC during Section 106 consultation on individual undertakings, and these determinations were affirmed by the present survey:

<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Auburn	South Bridge	3330
Berwick	Grants RR Overpass	5429
Berwick	Hobbs RR Overpass	5352
Fairfield	Kennebec River Center	1522
Fairfield	Kennebec River East	3106
Fairfield	Kennebec River West	1573
Gilead	Androscoggin River	5084
Harrison	Ryefield	0238
Madawaska	International	2399
New Sharon	New Sharon	2608
Windham	Gambo Falls	0266
Yarmouth	Granite Street Overpass	0210

The following wooden truss bridges are presently listed in the National Register:

<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Andover	Lovejoy	1001
Corinth	Robyville	1003
Fryeburg	Hemlock	1004
Lincoln Plt.	Bennett	1005
Littleton	Watson Covered	1006
Newry	Artist Covered	1007
Parsonsfield-Porter	Parsonsfield-Porter Covered	1010

The Commission concurs with MDOT's recommendations that the bridges contained in the following list do not appear to meet the National Register criteria:

MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street  
 State House Station 65  
 Augusta, Maine 04333



<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Abbot	Old Covered	3507
Andover	Merrill	3215
Auburn	Littlefields	3338
Bangor	Bangor-Brewer (replaced)	2038
Bath	Carlton	3007
Bowdoinham	Brooklyn	5190
Brownfield	Covered	3417
Brownfield	Boynton	0712
Brownville	Brownville Junction	3222
Canton	Gilbertville	2312
Chester	Penobscot River	3790
Chesterville	Williams #2	3181
Clinton	Sebasticook	3321
Coplin Pt.	Nash	3070
Detroit	Village	3309
Dresden	Middle Bridge	3341
East Machias	Jacksonville	3219
Edmunds Twp.	Tide Mill #2	3171
Falmouth	RR Crossing	2702
Greene	Turner Center	3426
Grindstone	Grindstone Twp.	0814
Guilford	Sangerville Station	2801
Hallowell	Vaughn Street (replaced)	0566
Hancock	Hancock-Sullivan	2973
Hollis	Bonny Eagle Covered	2190
Howland	Penobscot River	2660
Kenduskeag	Village	2975
Leeds	Foss	2290
Leeds	Stinchfield	5002
Limington	Nasons Mill	5165
Limington	Steep Falls	3328
Medford	Piscataquis River	0484
Medway	East Branch Penobscot	2256
Milbridge	Great North	3280

MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street  
 State House Station 65  
 Augusta, Maine 04333



<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Milford	Second Otter	2754
Milo	Pleasant River	3244
Naples	Songo Lock	3499
Old Town	Irving	2405
Passadumkeag	Hathaway	3505
Peru	Androscoggin River	2019
Phillips	Meeting Place	2545
Rumford	High Bridge	5188
Rumford	Ridlonville	3327
T3 Indian Purchase	West Branch Bridge	3666
Taunton	West Outlet	3113
Turner	Turner	2874
Union	Fairgrounds	6134
Upton	Andover Dam	3090
Willimantic	Arnold	2023
Yarmouth	MCRR Crossing	3313

During the Historic Bridge Committee's meeting on April 15, 1999, we indicated that the Dock Bridge (#3284) in Alna might be a contributing resource in a rural historic district that includes the village of Alna and the surrounding landscape that retains much of its agricultural character. Since then we have confirmed this observation, and have discussed this finding with Lisa Dickson. In addition, we raised a concern about the exclusion of the Back River Bridge (#3016) in Arrowsic as an example of a deck truss. After further deliberation about the visual distinctiveness of this bridge, the Commission believes that it should be considered eligible. Likewise, it is our opinion that the following four bridges -- which the MDOT considers to be ineligible -- appear to meet the National Register criteria:

<u>Town</u>	<u>Bridge Name</u>	<u>Bridge #</u>
Brunswick	Frank J. Wood	2016
Leeds	North Turner East	3214
Rumford	Martin Memorial	3248
Turner	North Turner West	1474

The bridges in Brunswick and Rumford are located in proximity to concentrations of historic resources that merit nomination to the Register as historic districts. In Brunswick, this includes the

MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street  
State House Station 65  
Augusta, Maine 04333



already listed Bowdoin Mill (located in Topsham) and the Cabot Mill on the other side of the river. The Frank J. Wood Bridge forms a link between these two industrial complexes and is, in its own right, a product of the industrial age. We consider the Martin Memorial Bridge in Rumford, like the Dock Bridge in Alna, to be part of an eligible historic district at Rumford Point. The North Turner East and North Turner West bridges offer an experience of moving through and over three different steel truss types (a camelback, a Parker, and a pony) in an undisturbed rural setting. The Commission believes that this group should be viewed as a district, in much the same way that the Kennebec River East, Center, and West bridges in Fairfield/Benton were found to be eligible. Inasmuch as the latter bridges will be replaced in the near future, the existence of such groupings is uncommon in Maine.

We have two additional matters to raise at this time regarding the opinions of eligibility and ineligibility expressed in both your memo and this one. The first relates to the long term survivability of particular truss types over time. As it stands, representative examples of each truss type (as well as visually distinctive subtypes) are included on our eligible lists. The Commission believes that the preservation of one or more of each example should be a high priority in managing these resources. Although we recognize that the bridge management phase of the survey will address this issue, we are concerned that until such time that this plan is developed and implemented, the bridges which we have identified may continue to deteriorate or be replaced with the potential result that a bridge type is no longer represented in the inventory. We recommend, therefore, the institution of a policy that enables our agencies to periodically review the status of the inventory, and to take any necessary measures (such as reevaluating our present non-eligibility determinations) in order to assure the continued existence of particular bridge types.

The second issue relates to how the MDOT will obtain public input on the methodology used to make determinations of eligibility. As you know, the Advisory Council's regulations for implementing Section 106 directs an Agency Official to seek input from the public in gathering information about historic properties (Part 800.4(a)(1)(iii)). In view of the fact that the bridge survey has not formally sought such input, and that such input may have a bearing on our evaluations of eligibility, we recommend that a strategy be devised to solicit the opinions of the public on the present phase of the survey. This information is important to consider before we finalize the list of eligible bridges.

If you have any questions relating to our findings and recommendations, please do not hesitate to contact me or Kirk Mohney of my staff.

From: [Mitchell, Christi](#)  
To: [Scott Hanson \(scotthanson@sutherlandcc.net\)](mailto:scotthanson@sutherlandcc.net)  
Subject: Cabot Mill  
Date: Thursday, October 03, 2013 3:39:19 PM

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Hi Scott,

Roger Reed did a fairly intensive survey form for the Cabot Mill in 1992. Some time ago the mill was considered eligible within the context of a small historic district that included the Pejepscot Mill, the bridge, and the Cabot Mill. However, if this is a tax credit question, I would say that it needs to be evaluated on its own.

Christi A. Mitchell  
Architectural Historian  
Maine Historic Preservation Commission  
55 Capitol Street  
State House Station 65  
Augusta, Maine 04333-0065  
(207) 287-2132 x 2  
fax: (207) 287-2335  
[www.maine.gov/mhpc](http://www.maine.gov/mhpc)

"People ought to know about the past. If it's something to be proud of, they ought to take example from it; if it ain't, then they ought to buckle down and see to it that the present times should be better." Ruth Moore, [The Walk Down Main Street](#).

**From:** [John Shattuck](#)  
**To:** [Chase, Cassandra \(FHWA\)](#); [Kittredge, Joel](#)  
**Cc:** [Dave Douglass](#); [Marie Brilliant](#); [Roland Tufts](#); [Ruth Lyons \(Seleperson\)](#); [Bill Thompson](#); [Rich Roedner](#)  
**Subject:** Town of Topsham §106 Review comments  
**Date:** Friday, December 02, 2016 7:31:09 PM  
**Attachments:** [2016-12-02 §106 comments - Town of Topsham.pdf](#)

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CASSIE & JOEL: Attached please find additional Town of Topsham comments, limited to more technical aspects of historic and financial impacts, submitted for your consideration as you develop your report on the §106 Review. Please don't hesitate to let me know if you would like a hardcopy of the comments. Thank you, John

--

John Shattuck  
Director, Economic & Community Development  
Town of Topsham  
100 Main Street  
Topsham ME 04086

Office: (207) 373-5097  
Mobile: (207) 650-0012  
Email: [jshattuck@TopshamMaine.com](mailto:jshattuck@TopshamMaine.com)

Topsham because: [http://youtu.be/Y\\_luU6wJMOU](http://youtu.be/Y_luU6wJMOU)

Per 1 MRSA § 402(3), all communications with public officials (with limited exceptions) are considered public records and available for review by any interested party.



## **TOWN OF TOPSHAM**

100 Main Street  
Topsham ME 04086

### **TOWN OF TOPSHAM §106 REVIEW COMMENTS**

#### **HISTORIC IMPACTS**

At the 2016-10-27 §106 Review meeting, the Preliminary Effect Determinations Presentation, regarding historic impacts of the various alternatives for the rehabilitation or replacement of the Frank Wood Bridge made frequent references to the “Brunswick-Topsham Industrial Historic District” and the “Summer Street Historic District.” While these districts were apparently demarcated for the purposes of the historic impact analysis, it should be noted that there is no “Brunswick-Topsham Industrial Historic District” that has been delineated or designated by either Brunswick or Topsham as a historic district. Additionally, there is no “Summer Street Historic District” that has been delineated or recognized by Topsham as a historic district. Topsham voters considered, but rejected, the inclusion of a portion of Summer Street in the Topsham Historic District, which has been listed on the National Register of Historic Places since 1978.

More tellingly, the Frank Wood Bridge is not included or referenced in either the Topsham Historic District or the Brunswick Commercial Historic District, which was added to the National Register of Historic Places in January of this year. Neither is the Cabot Mill included in the Brunswick Commercial Historic District.

As noted by the Topsham Selectmen in their 2016-12-01 comments submitted to the §106 Review:

The contention that the Wood Bridge constitutes an inseparable, intrinsic piece of a single fabric incorporating the bridge and our two communities’ waterfront mills is discredited by the history of the bridge. The Wood Bridge was built well over a century later than the Brunswick mill, and more than 60 years later than Topsham’s Pejepscot Mill. Indeed, the Wood Bridge replaced a bridge that actually connected directly to the Pejepscot Mill, where Topsham’s Main Street ran through the center of the mill complex. So, the placement of Wood Bridge actually disregarded this historic connection to the mill and realigned Main Street, substantially disrupting the fabric of Topsham’s historic Lower Village and displacing long-standing buildings to make way for the rerouted Main Street.

Finally, the Comprehensive Plans of Topsham and Brunswick do not identify the Frank Wood Bridge as an historic or economic asset, and neither Plan includes the preservation of the bridge as a community goal.

## FINANCIAL IMPACTS

The draft Matrix of Alternatives Investigated was provided to the §106 Review by the Maine Department of Transportation (MaineDOT) on 2016-10-26. This document estimated that the initial construction cost for the upstream replacement of the Wood Bridge (Alternative 2) would be 13 million dollars, while the initial construction cost for the rehabilitation of the Wood Bridge (Alternative 4) would be 17 million dollars, or nearly a third more expensive. This report also stated that the Life Cycle Cost Estimate (including initial construction) for the upstream replacement of the Wood Bridge (Alternative 2) would be 13.7 million dollars, while the estimated cost for the rehabilitation of the Wood Bridge (Alternative 4) would be 23.2 million dollars, or more than two thirds – and nearly 10 million dollars - more expensive.

As explained in MaineDOT's 2016-10-27 draft Summary of Alternatives, at p. 19, the Estimated Life Cycle Costs are discounted to provide the present value of estimated initial and future costs: "The LCCE accounts for estimated construction costs on the current project and the translated present value of anticipated future inspection, maintenance, and rehabilitation." A 4% discount rate was used to calculate the present values.

In order to ensure a fair and consistent comparison of alternative project costs, MaineDOT regularly uses such a present value calculation in determining Life Cycle Cost Estimates (LCCE). This is an entirely appropriate approach but, as is the case with a number of generally accepted auditing standards, such an fixed method can sometimes yield arbitrary results that do not reflect real-world economic realities.

The below table is excerpted from a document entitled "Summary Costs for Service Life of Alternatives," which I requested and received from the Maine Department of Transportation on 2016-11-21. The table is excerpted only in that I have included just the two bridge alternatives that appear to be the most likely potential outcomes of the §106 Review. This table provides the total estimated costs of initial construction plus anticipated future inspection, maintenance, and rehabilitation costs for replacement of the Wood Bridge (Alternative 2) and the rehabilitation of the Wood Bridge (Alternative 4) *without a present value discount*. The totals resulting from this method are most illuminating:

Work Effort	Alt #2 Repl 2 SW Serv. Life 100 yrs	Alt #4 Rehab 2 SW Serv. Life 75 yrs
Initial Construction Cost	\$13.0 M	\$17.0 M
Inspection	(50) \$0.1 M	(38) \$2.2 M
Maintenance	(100) \$0.1 M	(74) \$3.0 M
Paint	(2) \$3.5 M	(3) \$12.0 M
Deck Replacement	-----	\$2.0 M
Substructure Rehab	-----	(2) 2.0 M
Wearing Surface Replacement	(6) \$0.6 M	-----
Total	<b>\$17.3 M</b>	<b>\$38.2 M</b>

(x) – denotes number of times effort is completed during the alternative’s service life.

Without a present value discount, a simple arithmetic total of the estimated costs of initial construction plus anticipated future costs of inspection, maintenance, and rehabilitation results in a total, undiscounted cost for the upstream replacement of the Wood Bridge (Alternative 2) of 17.3 million dollars, while the total, undiscounted cost for the rehabilitation of the Wood Bridge (Alternative 4) would be 38.2 million dollars, or nearly 21 million dollars more expensive - more than twice the total cost of replacement.

No doubt some will argue that only costs with a present value discount provide an accurate comparison, but several simple, objective factors illustrate that costs calculated with a present value discount do *not* accurately reflect the real-world economic realities of the actual costs of funding these two bridge alternatives in the future.

A simple definition of present value is: “... the current worth of cash to be received in the future with one or more payments, which has been discounted at a market rate of interest.” (<http://www.accountingtools.com/present-value-definition>). In practical terms, present value is compound interest in reverse: in other words, present value is the amount of cash that would need to be *invested or saved today*, in order to have a specific amount (or pay a specific cost), at a specific date in the future. The prerequisite for a specific present value to yield a targeted amount in the future is that the present value amount, in cash, *is actually invested or saved today*, so that the rate of return/interest, compounded over the intervening years, will result in the desired future amount.

The problem with using this approach in connection with future bridge costs is that we all know that MaineDOT, unfortunately, will *not* be receiving sufficient funding to set aside and reserve that present cash amount so it can grow to meet those future costs. But if no present cash amount is actually being set aside to grow, then using a present value discount does not reflect real-world economic realities of what will be required to fund these costs in the future.

The hard truth is that *all* of these future costs, *at full value*, will have to be met by future year to year budgets, as there will be no reserve fund, established now, growing to meet these costs.

In fact, the reality is even harsher: The above table provides the total estimated costs of initial construction plus anticipated future inspection, maintenance, and rehabilitation costs for replacement or rehabilitation without a present value discount, but it uses *today's* costs for all anticipated future costs. In other words, these totals make no provision for the inevitable impact of inflation. We all know that we will not be able to purchase something that costs a dollar (or a million dollars) today for the same amount 20 years from now - much less 75 or 100 years from now.

While current inflation rates are exceptionally low (1.1% for the year ending 2016-08), we are looking at life cycle costs over the next 75 to 100 years. Given that timeline, the average inflation rate over the past century (3.29%) is much more likely to reflect inflation rates over the next century. And, at that unremarkable inflation rate, costs double every 22 years.

Whatever the actual inflation rate is over the next 75 to 100 years, it only takes simple arithmetic to see that the increased costs resulting from inflation will be much, much higher when applied to a current cost total of 38.2 million dollars than it will be for a total of 17.3 million dollars. And *all* those costs, including inflation, will have to be met by future year to year budgets.

It's not difficult to discern which alternative will be very substantially more burdensome to Maine taxpayers.

Ms. Cheryl Martin  
Assistant Division Administrator.  
Federal Highway Administration, Maine Division  
40 Western Avenue  
Augusta, ME. 04330.

November 28, 2016

Copy to Mr. Joel Kittredge, MDOT

Dear Ms. Martin. RE: Frank J. Wood Bridge, Androscoggin River

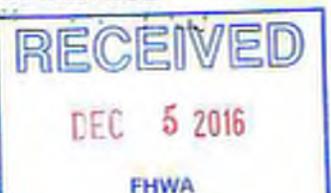
We understand it was stated by MDOT's historic preservation consultant, during the most recent Section 106 meeting, that the demolition of the Frank J. Wood Bridge and construction of a new bridge upstream would have no negative impact on the historic character and significance of our neighborhood on Summer Street, Topsham. We understand our neighborhood to be eligible as a National Register Historic district.

In case you are not familiar with the elements of Summer Street, it is a short street, consisting of 7 single family houses and 2 multifamily houses. All but one of the buildings were built in the 19th century, some as early as the 1830's. In addition, Summer Street is a part of the walking trail that goes along the river. It has, as well, a Prayer Wheel Garden and labyrinth which is dedicated to all spiritual traditions, and which is visited by many people, both local and tourists, each day. Residents have taken great care to preserve the character of the houses and the neighborhood. The neighborhood of is intimately connected to the existing bridge, as residents use it to walk and cycle into Brunswick, as well as view it daily from their windows.

Based on the seven Aspects of Integrity presented by the consultant, her statement of no negative impact is blatantly incorrect. In fact, it is so incorrect that her statement seems to be less of a finding, and more of a justification for the MDOT proposal. Three of the Aspects - Setting, Feeling, and Association - would all be very seriously impacted by the removal of the Wood Bridge and/or construction of a modern highway style bridge upstream, closer to our neighborhood. The consultant's "survey" of our neighborhood plainly did not provide her with any idea what the residents of Summer Street value and appreciate about the historic character of the existing bridge, and what it contributes to the neighborhood.

Looking out our windows at an open river framed by this historic truss bridge which has existed alongside our neighborhood for 85 years, bookended by 2 historic mills, is fundamentally different from looking out at the underside of a concrete slab on deep steel girders that hides the river and everything beyond it. The curved bridge proposed would cause vehicle headlights to sweep across our neighborhood and into our windows every night. The location of the proposed new bridge would bring the dirt and noise of the road much closer to our homes. Bringing the bridge closer to the concrete dam would amplify the noise even further.

In addition, the view presently includes the lower falls in which Native Americans fished for millennia. European settlement began nearby in 1628, with a trading post intended



to buy fish caught by Native Americans in the lower falls. Documentation exists too concerning European settlers who also fished in the falls beginning in the 1670's. The proposed plan would destroy the character of the falls. Piers for the proposed new concrete and steel bridge would be built in the falls themselves, destroying the natural character and view of this last and important falls on the Androscoggin. The view of this falls is a central part of the view from Summer Street. In addition, the alignment of the proposed new bridge over the lower falls is presently frequented by eagles, peregrine falcons, blue herons, kingfishers, and many others, who would be displaced by the proposed construction. In fact, during spring runoff, the area of the proposed alignment is used by hundreds of birds of all types.

There is simply no way a reasonable argument can be made that the loss of our historic bridge and its associations, the loss of our river view, and the impacts of a highway bridge veering into our neighborhood will not negatively affect the Setting, Feeling, and Association of this eligible National Register District. We respectfully request that our letter be included in the record of the proceedings of Section 106 and 4(f) hearings.

Sincerely

The residents of Summer Street whose names, and signatures appear below:

Name.	Address.	Signature
Kevin + Alison Quigley	17 Summer St.	alison quigley
	" " "	Kevin Quigley
PAUL SEQUIST	29 SUMMER ST	Paul Sequist
MARLA L DILLARD	29 Summer Street	Marla Dillard
JEFFREY MUMSON	15 Summer St	Jeffrey Mumson
Karen L Mumson	15 Summer St	Karen L Mumson
Charles H. Carroll	24 Summer St.	Charles H. Carroll
Josephine L. Seymour	27 Summer St.	Josephine L. Seymour
MAYNARD D. MCCOCKLE	23 SUMMER ST	Maynard D. McCockle
Claudia S. McCockle	23 Summer St	Claudia S. McCockle
William D. McCockle	23 Summer St.	William D. McCockle
Jill Brayman	25 Summer St.	Jill Brayman

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**\$6.00**  
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NOV 30 2018

RETURN RECEIPT  
REQUESTED

Ms. Cheryl Martin  
Asst. Division Administrator  
Federal Highway Administration, Maine Division  
40 Western Ave  
Augusta ME  
04303-0000





## Kate Willis

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**From:** Hopkin, Megan M <Megan.M.Hopkin@maine.gov>  
**Sent:** Wednesday, December 07, 2016 8:13 AM  
**To:** Kate Willis  
**Subject:** FW: Frank J. Wood Bridge Project - Request for Comments on Section 106 Documents

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**From:** Chase, Cassandra (FHWA) [<mailto:Cassandra.Chase@dot.gov>]  
**Sent:** Wednesday, December 07, 2016 8:12 AM  
**To:** Kittredge, Joel; Hopkin, Megan M; Chamberlain, Kristen  
**Cc:** Martin, Cheryl (FHWA)  
**Subject:** FW: Frank J. Wood Bridge Project - Request for Comments on Section 106 Documents

FYI.

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**From:** MaryAnn Naber [<mailto:mnaber@achp.gov>]  
**Sent:** Monday, December 05, 2016 4:53 PM  
**To:** Chase, Cassandra (FHWA)  
**Subject:** Re: Frank J. Wood Bridge Project - Request for Comments on Section 106 Documents

Hi, Cassie-

I realized when I saw your response to Mr. Graham's comments that I had never followed up our later discussion with written comments. I have concerns about both the preliminary assessment of effects and the manner in which alternatives were considered.

The overview of eligibility upon which the assessment of effects was based is inadequate to consider the full range of effects to the historic resources identified. The statements of eligibility should include a more complete discussion of all the contributing elements and the relative aspects of integrity in order that project effects may be assessed by applying the criteria of adverse effect. Integrity is not limited to "essential" physical features. It should be noted that the criteria of effect is based on the potential that a project "may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." In addition, the regulations at 36 CFR 800.5 state, "Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register." Accordingly, it may be necessary to re-visit, update, and expand the original determinations of eligibility to ensure all contributing features of the properties are identified and may be taken into account. The overview of resource eligibility is not adequate to capture the full range of potential impacts to the historic properties, in particular with regard to indirect impacts such as those to setting, feeling, and association. Furthermore, these aspects of integrity seem to have been discounted if they were at all previously "compromised." For example, the presence of a parking lot is implied to have negated any aspect of the integrity of setting. However the relationship of the mills with the source of water power which gave rise to both and the water crossing between them are nevertheless significant features of the respective settings of each of those elements, and may yet be diminished by removal of the historic bridge.

I am also concerned with the order and weight given the various alternatives. Both Section 106 and Section 4(f) set a higher bar for selecting an alternative which would replace the Frank J. Wood Bridge. As a historic

property, the approaches which would preserve the bridge must be given additional weight in evaluating the available alternatives. Cost and the degree to which the alternative meets the identified purpose and need are but two of the factors that should be evaluated in selecting the alternative. The rehabilitation alternatives that preserve the bridge to the greatest degree should first be considered fairly and eliminated before determining that replacement with a new bridge is the only prudent alternative. I am also concerned that the firm providing the initial evaluation seems to have a bias toward new construction and does not have the experience with rehabilitating historic bridges to make a full and fair assessment of the rehabilitation potential for the Wood Bridge. I recommend that you seek a second opinion from a firm with historic bridge experience to evaluate the rehabilitation alternatives from that perspective.

Thank you for the opportunity to provide comments on the preliminary effects assessment and draft alternatives matrix. I look forward to our next meeting and discussing the project in further detail.

MARYANN NABER  
Senior Program Analyst, FHWA Liaison  
Advisory Council on Historic Preservation

On Fri, Nov 4, 2016 at 8:56 AM -0400, "Chase, Cassandra (FHWA)" <[Cassandra.Chase@dot.gov](mailto:Cassandra.Chase@dot.gov)> wrote:

Good Morning,

Thank you all for attending the October 27<sup>th</sup> Section 106 Consulting Party Meeting for the Frank J. Wood Bridge Project. As mentioned at the meeting, we apologize for providing the materials just prior to the meeting. We were still working on compiling all of the information right up until the meeting, but we understand and recognize that this does not provide you with an adequate opportunity to review and come prepared to the meeting. In the future, we are committed to providing you with all documents to be discussed at future Section 106 consulting party meetings at least two weeks prior to the meeting.

Additionally, to ensure you are able to review and provide input on the draft alternatives matrix summary, the draft alternatives matrix, and the preliminary effect determinations, we are accepting and would appreciate any comments you have by COB on December 2, 2016. Please send your comments to both me ([cassandra.chase@dot.gov](mailto:cassandra.chase@dot.gov)) and Joel Kittredge ([joel.c.kittredge@maine.gov](mailto:joel.c.kittredge@maine.gov)). If you'd like to send your comments by mail, please either mail them to my attention at the Federal Highway Administration, Edmund S. Muskie Federal Building, 40 Western Avenue, Room 614, Augusta, Maine 04330; or Joel's attention at the Maine Department of Transportation, 16 SHS, Augusta, ME 04333-0016. We are currently working on addressing the comments received at last week's consulting party meeting. After we receive all of your comments by December 2<sup>nd</sup>, we will begin reviewing, addressing and considering those comments as well. You can expect to see another e-mail from me, in response to your comments particular to the Section 106 process, sometime in mid-December.

In addition to attaching the October 27<sup>th</sup> sign-in sheet, the draft alternatives matrix summary, draft alternatives matrix, and the preliminary effect determination presentation, I have attached a copy of the Cabot Mill Historic Survey, which indicates that the Cabot Mill is individually eligible for listing under the National Register of Historic Places. This was requested at the October 27<sup>th</sup> meeting. Also requested at the Section 106 consulting parties meeting was a link to view the architectural survey and eligibility package. This information can be found on MaineDOT's website at <http://www.maine.gov/mdot/env/documents/Brunswick22603.00106Package8.2.16.pdf>.

A public meeting, specific to the overall project, will be held in the near future and comments will also be received at that time on the project in its entirety. As always, feel free to contact me if you have any questions.

Cassie

Cassie Chase  
Environmental Engineer  
Federal Highway Administration – Maine Division  
Office: 207-512-4921  
Cell: 207-689-8007  
[Cassandra.chase@dot.gov](mailto:Cassandra.chase@dot.gov)

1/17/2017 3:55 PM

Ms. Martin,

I have enclosed a DVD of the Green Bridge in Topsham during high water on May 27, 2013.

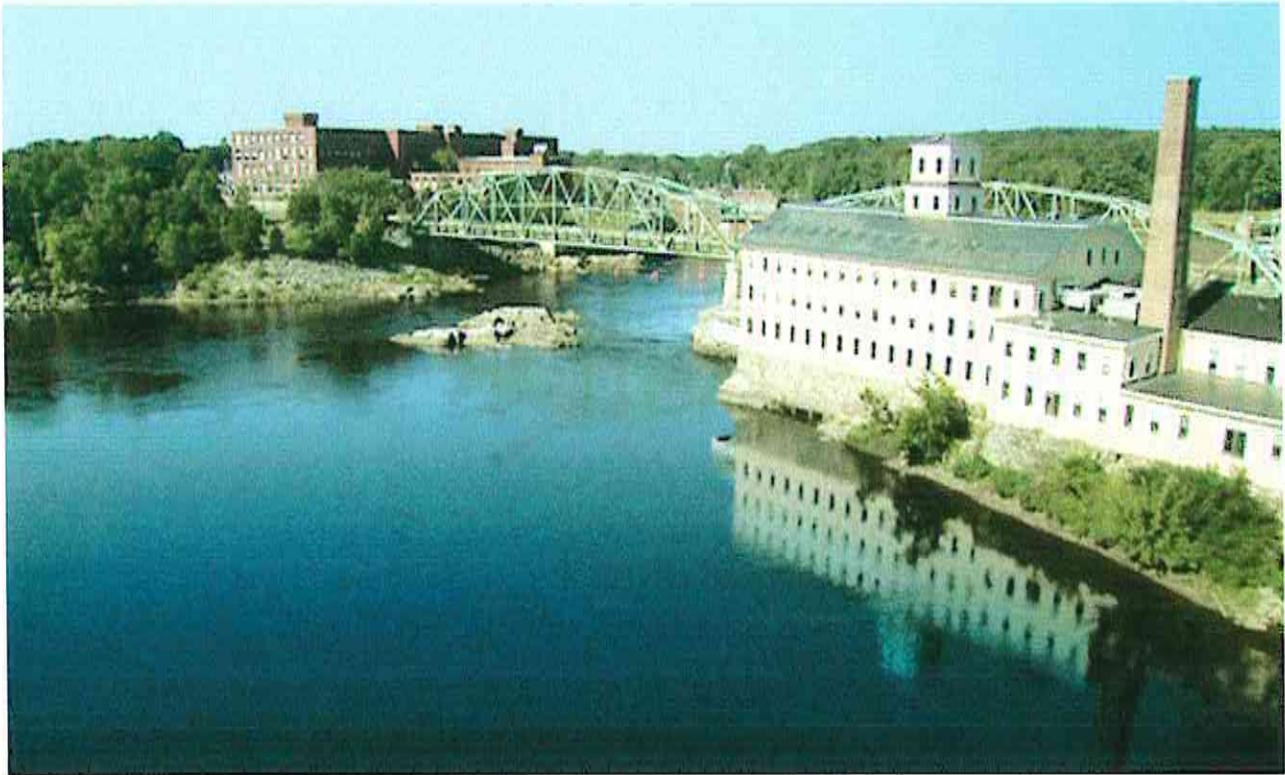
There are two separate file/movies, 2 and 5 minutes of length. Hope they play on your computer fine.

It was a great sight !

Bill Morin

A handwritten signature in black ink that reads "Bill Morin". The signature is written in a cursive style with a large, prominent "B" and "M".

Topsham



**Frank J Wood Bridge Androscoggin River Brunswick Topsham Maine**

**Tuesday, January 17, 2017**

**From The Desk of William F. Morin:**

6 Front Street Topsham, Maine 04086

207-729-1760

[williammorin@midmaine.com](mailto:williammorin@midmaine.com)

Cheryl Martin  
Assistant Division Administrator



Federal Highway Administration – Maine Division  
40 Western Ave  
Augusta, ME 04330

Dear Ms. Martin:

I wish to express my comments regarding the proposed plans for replacement of the Frank J. Wood Bridge # 2016 between Topsham and Brunswick Maine. Maine DOT has proposed a new bridge to be constructed to replace the current one and the Section 106 review process is under way to make an appropriate determination regarding historical prominence of the Wood Bridge.

### Designation of Frank J Wood Bridge for Historical Classification

The review process is to evaluate the effect of the undertaking by DOT to remove and replace the current bridge and also determine if any surrounding historical resources would be negatively affected. An undertaking such as this can potentially cause change, beneficially or adversely, to the quality of the historical, architectural, archeological, or cultural character of a resource that qualifies for listing on the NRHP. Each undertaking has an area of potential effect and it is to be determined by the HRO (Heritage Resource Specialist) and SHPO (State Historic Preservation Office) if the area is physically or visually affected by the proposed undertaking.

That portion of the process is currently being deliberated after a presentation by DOT and FHWA staff at the Topsham Town Office with Consulting Parties on October 27, 2016. The attendees were presented with a detailed Matrix of Alternatives Investigated – Draft 10-26-2016 for consideration and is discussed as follows.

The following is a description of the various impacts based upon Section 106 of the National Historic Preservation Act as presented in the Matrix of Alternatives Investigated – Draft 10-26-2016 and are summarized as follows.

**Alternative No Build:** No effect on the Brunswick-Topsham Industrial Historic District, Cabot Mill, Summer Street Historic District or the Pejepscot Paper Company Historic District.

**Alternate 1 Replacement Bridge:** Adverse Effect on the Brunswick – Topsham Industrial Historic District

**Alternate 2 Replacement Bridge:** Adverse Effect on the Brunswick – Topsham Industrial Historic District

**Alternate 5 Replacement Bridge:** Adverse Effect on the Brunswick – Topsham Industrial Historic District

**Alternate 3 Rehabilitate Bridge:** No Adverse Effect on the Brunswick – Topsham Industrial Historic District

**Alternate 4 Rehabilitate Bridge:** No Adverse Effect on the Brunswick – Topsham Industrial Historic District

Removal and replacement of the bridge will result in losing a structure that could well serve as a recognized historical asset in its own right and also would remove an historical corridor that connects all the other historical districts and have an adverse effect on the Brunswick-Topsham Industrial Historic District. I believe the loss of the Wood Bridge would somewhat diminish the sites of the surrounding area though not adversely affect them.

The replacement bridge would definitely not conform to the historical era of the Cabot Mill, Summer Street Historic District or the Pejepscot Paper Company Historic Districts and not add any significant qualification to the Industrial Historic District.

Replacement of the bridge would only have an adverse effect on the on the Brunswick-Topsham Industrial Historic District.

### **Environment of The Frank J. Wood Bridge Discussion**

These districts, of the Brunswick – Topsham Industrial Historic District, the Cabot Mill, the Summer Street Historic District and the Pejepscot Paper Company Historic Districts, the Wood Bridge, the Falls and the surrounding area are an exceptional, historical and distinctive locale and I believe that all their components enhance the site and the loss of any member would be detrimental. The site is an iconic attraction and many people frequent this area for dining, entertainment, antique shopping, and visits to the many and various business offices, and medical services among others and to view the scenic falls which many visitors marvel at. The entire site attracts many hundreds of people day and night most everyday of the week and is definitely a destination for these many purposes.

Observing the entire sight, one sees the importance of the river which brought the industries over the last 200 years and the harnessing of the river to produce energy and the resultant commercial and residential development adjacent to the river. Over this river, there are a number of bridges that serve the communities. One is a footbridge that harkens back to the 1890s and has significant historical prominence, another a Warren Truss railroad bridge built around 1910 and another railroad trestle bridge built in the early 20<sup>th</sup> century. Also, two modern style vehicular bridges also are present, one North and one South of downtown Brunswick. The five bridges described exist within a mile or so of each other between Brunswick and Topsham with the Wood Bridge being in a central position between these other bridges. This location is central to all other bridges and the central main streets in Brunswick and Topsham. The railroad bridges exist because of the Brunswick central rail lines that trail

along the Androscoggin River to Lewiston, Portland, and along the Maine coast and to Augusta.

There are certainly a large amount of bridges mentioned but they all have a useful purpose. The Wood Bridge is a local and not a thru corridor bridge and its predecessors have occupied the same locale for over two hundred years long before any of the previously mentioned bridges. At the site of the Wood Bridge, a crossing and the Falls were important to the indigenous inhabitants before settlement by the white man.

The functional structures of this area have changed over the course of over three centuries. They have ranged from a 18<sup>th</sup> century garrison fort near the Falls to rehabilitated sites of business and residences contained in the districts. The Wood Bridge is actually a new comer to this environment except for the two newer vehicular bridges. It seems a untimely consideration for this relatively new structure not to be preserved. It is older but a new enough bridge to continue serving as it has for over 80 years.

### Perspective Thoughts of The Frank J. Wood Bridge Discussion

In the 106 process, there are many and varied factors used to determine the historical representation of the subject property and I appreciate the difficulty in doing so. My interpretations are based on the previous Historical Classification and Environmental Discussion paragraphs.

First, I believe that the Wood Bridge has standing to be classified as an historical asset as defined under the Historical Act of 1966 as approved by President Johnson. The signed legislation has been the bedrock of historical preservation for 50 years. That Act was in response to many historical structures and sites being unprotected and subsequently destroyed. Here in Maine that movement especially began after the demolition of the admired Portland railroad station in 1961 and other railroad stations. By 1966, the Act was in place and one early recipient was the Brooklyn Bridge which was listed in October 1966.

When President Johnson visited Maine during the summer of 1966, his motorcade drove over the Wood Bridge and stopped at the Topsham Dairy Joy for a frozen treat. I can't help but believe he found the Wood Bridge appealing and of course, he did the touristy thing and stopped in Topsham.

As an observer of this bridge for many years, I have seen it grow in appreciation by local citizens and more recently visitors and tourists. The same reaction is also present in the recently rehabilitated Foot Bridge between Topsham and Brunswick. Its historical significance has become well known and widespread with daily visitors almost constantly all day long in the warmer months and throughout the year. I see the same happening at the Wood Bridge as visitors wish to see the Falls and this bridge (a favorite of photographers) draws them to view

the scenery. These two bridges are now popular tourist attractions and the Wood Bridge deserves also to be recognized as an historical bridge.

Few public assets in small town America are as revered as much as a local bridge. Perhaps it is the largeness of the structure, its design, the public events that can be identified with it, its usefulness in everyday life, its appearance over a running body of water and sometimes the drama of a flood that increases the watchfulness of a bridge by local citizens.

The Wood Bridge has been an familiar icon of the mid coast region of Maine for many years. Destruction of this icon would be inconsistent with the structure itself. It is a well-built bridge that was designed to accommodate two lanes of traffic plus a central railroad track to accommodate railroad cars and heavy steam engines. Granted, the travel lanes then were narrower than our current travel lane standards but because of the original wider design to accommodate three lanes, the width of the Wood Bridge is very suitable to present day two lane traffic of vehicles.

A bridge of this truss design consists of many girders and beams and if a deficiency is found, it can be replaced by a new member. Such a bridge like this is similar to a large old house which may have lower support sills that need replacing. The rest of the structure can have "good bones" and rehabilitation can restore it to a safe and attractive structure.

The Wood Bridge was built by the Boston Bridge Company which was active at the turn of the 19th century up to the time of the Wood Bridge construction. Most of their bridges were built in Massachusetts and with others constructed in all the other New England states starting in the 1880s to the 1930s. Only three Boston Bridge Company structures are accounted for in Maine and the Wood Bridge is by far the largest and most impressive. Bridges of this type and builder are getting scarce not unlike the covered bridges of yesteryear.

## Discussion and Designation of District for Historical Classification

I obtained and quote the following from an issue of The National Register Bulletin and it describes the distinguishable appearance of an historic district very well.

### ***"Significance"***

"A district must be significant, as well as being an identifiable entity. It must be important for historical, architectural, archeological, engineering, or cultural values. ..."

"A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development."

## ***“Concentration, Linkage, & Continuity of Features”***

“A district derives its importance from being a unified entity, even though it is often composed of a wide variety of resources. The identity of a district results from **the interrelationship of its resources**, which can convey a visual sense of the overall historic environment or be an arrangement of historically or functionally related properties. For example, a district can reflect one principal activity, such as a mill or a ranch, or it can encompass several interrelated activities, such as an area that includes industrial, residential, or commercial buildings, sites, structures, or objects. A district can also be a grouping of archeological sites related primarily by their common components; these types of districts often will not visually represent a specific historic environment.”

## ***“Types of Features”***

“A district can comprise both features that lack individual distinction and individually distinctive features that serve as focal points. It may even be considered eligible if all of the components lack individual distinction, provided that the grouping achieves significance as a whole within its historic context. In either case, **the majority of the components that add to the district’s historic character, even if they are individually undistinguished, must possess integrity, as must the district as a whole.**

A district can contain buildings, structures, sites, objects, or open spaces that do not contribute to the significance of the district. The number of noncontributing properties a district can contain yet still convey its sense of time and place and historical development depends on how these properties affect the district’s integrity. In archeological districts, the primary factor to be considered is the effect of any disturbances on the information potential of the district as a whole.”

## ***“Geographical Boundaries”***

“A district must be a definable geographic area that can be distinguished from surrounding properties by changes such as density, scale, type, age, style of sites, buildings, structures, and objects, or by documented differences in patterns of historic development or associations. It is seldom defined, however, by the limits of current parcels of ownership, management, or planning boundaries. The boundaries must be based upon a shared relationship among the properties constituting the district.” END OF ALL QUOTES

The following is a discussion and views regarding the historical classification with emphasis of the characteristics of the Wood Bridge. First, I must say that many of the features of historical properties as outlined in the previous quoted paragraphs are also clearly visible in the

structural assets of the Brunswick-Topsham Industrial Historic District, Cabot Mill, Summer Street Historic District or the Pejepscot Paper Company Historic District.

The characteristics are; Significance, Concentration and Linkage, Features, and Boundaries.

### **Significance:**

It is certainly a site of significance as it is a magnificent and collective grouping of historical and manufacturing structures and supporting housing and public bridges that portray a past industrial and economic age that emerged here and in other river towns of New England. This district was the recipient of the enormous and perpetual renewable energy of the Androscoggin River that turned the waterwheels and electric turbines of the mills. The river flows from the upper reaches of the White Mountains and is actually a large mountain stream subject to the melting snows and spring rains which cause flooding at times. The historical districts are the result of that freely available abundant energy and businesses that combined to build mills, bridges, houses and employ an industrious workforce that we physically still see in these assets. The original industries are gone as well as the people of those generations, but the properties of the districts remain to represent that culture and for us to interpret their lives and occupation.

### **Concentration, Linkage, & Continuity of Features:**

This area illustrates the industrial revolution that took place during the late 19<sup>th</sup> century to the 20<sup>th</sup> century. Paper and textile mills were a part of the expansion of industrial activity at this site and were enabled by abundant water power and much immigrant labor to thrive during this period. Much concentrated commercial and residential development occurred on both sides of the bridge at this time. Brunswick's Maine Street is now an historical district which is essentially adjacent to the Cabot Mill and the Brunswick-Topsham Industrial Historic District. It is virtually a unified area of historical designation. The Wood Bridge is a binding property in this location as it was and continues to be the only major vehicular and pedestrian corridor between the two towns connecting Brunswick's Maine Street and Topsham's Main Street. This bridge therefore certainly provides the continuity to relate all of the districts of concern and can accomplish this function for the foreseeable future.

Further, The Frank J Wood Bridge #2016 was previously inventoried as part of the Maine DOT Historic Bridge Survey. It was determined a contributing resource to a potentially eligible industrial district at the time. The eligible Brunswick – Topsham Industrial district is comprised of the NR eligible Summer Street Historic District, the NR eligible Cabot Mill, the Bridge and the National Register listed Pejepscot Paper Company. The Pejepscot Paper Company was listed in the National Register of Historic Places in 1974. It retains integrity to remain listed in the register. The important fact is that the bridge is an additional supporting asset for the potentially eligible industrial district.

### **Types of Features:**

The districts of concern and the Wood Bridge are of varying degree of prominence or function, but they are in a state of collocation and arrangement and integrity which substantiates that this area of the Wood Bridge and the districts is a locality that provides one the ability to recognize that this a historical site that reveals the period of its development. This is true because the majority of the district was built in the 19<sup>th</sup> century and structures like this no longer are built.

### **Geographical Boundaries:**

The districts of concern and the Wood Bridge occupy an area of the river and falls that would not be in any other area as they simply were built there to take advantage of water power to run the two mills. A bridge would be a part of it for transportation and communication between the two towns and the adjacent Summer Street Historic District dwellings were to provide residences for employees and management most likely in this case for the Pejepscot Paper Company. The four districts are exclusively related to each other as their function is wholly dependent upon the site of the river and falls and the boundaries of the districts are apparent by their relationship in the same surroundings.

### **Community Participation Comments:**

I attended the meeting of October 27<sup>th</sup>, when interested parties gathered to discuss the eligibility of the Frank J. Wood Bridge for the National Register of Historic Places with DOT and FHWA staff at the Topsham Town Office. I must say honestly, that I was somewhat surprised at the presentation known as 106 review and immediately started some research about this process.

I have always been interested in the Wood Bridge plus the Foot Bridge and the Black Bridge in Topsham as I am a local born resident and all my life I have crossed all three bridges tens of thousands times and have admired them and valued their existence. Last winter DOT made a presentation in Topsham regarding the condition of the Wood Bridge and a proposal to replace it. It seemed as presented as the best alternative and I felt there was no other approach that was conceivable. In October after hearing about the meeting on the 27<sup>th</sup> I went to the meeting and got exposed to the 106 process and learned there are options to replacing historic bridges by advocating for preservation. My impression now is that there was a rush of judgment in early 2016 to condemn this bridge with little serious attention given to consider the alternative of preserving this bridge.

The Topsham Board of Selectmen, at their June 2, 2016 meeting, adopted a resolution in support of the replacement of the existing bridge and voted that a Joint Design Advisory Committee (with Brunswick) be appointed to work with MDOT to create the best plan to meet MDOT's transportation needs and the Town's design and function preferences for a new bridge.

There was local input from citizens at the meeting and the following are quoted minutes of that meeting of The Topsham Board of Selectmen on June 2, 2016. This was not an advertised

public hearing but rather a regularly scheduled board meeting. I enclose these minutes as there were many attending respondents who wanted to address the fact that an action quoted as follows was to be considered: "16-46 CONSIDERATION AND ANY APPROPRIATE ACTION ON MAINE DOT PROPOSAL FOR REPLACING THE FRANK WOOD BRIDGE"

I and others at that time was not aware of any approval decision to be acted upon in June 2016 as I thought the previous public meetings were informational and not subject to a consensus or a decision action.

The following are the approved minutes of that discussion in quotes. I include the minutes as evidence that citizens who attended this June 2016 meeting do have strong opinions for or against and some felt that it wasn't necessary that the town pass a resolution regarding the replacement of the Frank Wood Bridge and that some members of the Board at that meeting "were not aware of the 106 Process and statement was made that that process will determine what will finally happen." The major purpose of including these minutes is the public comments where 2 citizens did not approve of rehabilitation for financial reasons; 1 citizen recommended making a recommendation to Maine DOT to replace the bridge; and 8 citizens opted in their comments for rehabilitation and 1 citizen said there was no hurry to adopt a resolution for replacement of the Wood Bridge for a total of twelve respondents. The dialogue is considerably in favor of rehabilitation and these respondents were also logical and informed in presenting their justifications. Please note first paragraph.

"APPROVED 6-16-16  
BOARD OF SELECTMEN MINUTES

Minutes of the Board of Selectmen

**"16-46 CONSIDERATION AND ANY APPROPRIATE ACTION ON MAINE DOT PROPOSAL FOR REPLACING THE FRANK WOOD BRIDGE**

Economic Development Director, John Shattuck, opened the discussion on this agenda item saying this is the 7th public meeting held on the Frank J. Woods Bridge. The Maine Department of Transportation has completed their study and both Topsham and Brunswick agree with MDOT that the bridge should be replaced.

Chairman Douglass asked how we arrived at naming Mr. Shattuck (our Economic and Development Director) as the Town's representation in the 106 Process. The Town Manager responded that the Town has a seat if we want one and it seemed easiest to have Mr. Shattuck represent the Town dealing with both historic and environmental purposes rather than several other department heads.

Although not a Public Hearing, the meeting was opened at this point to receive comments from members of the public. Several individuals spoke, including:

Scott Hanson - Mr. Hanson spoke on behalf of the group "Friends of the Frank J. Wood Bridge." He said the organization is registered with the State and has a facebook page also. Mr. Hanson spoke at length saying the group feels the MDOT decision to replace the bridge is premature and the 106 Process can demand that MDOT do further research. The group has 764 followers on facebook. The group prepared a booklet entitled "Frank J. Wood Bridge Improvement Project Considerations" and Mr. Hanson asked the Board to review the information it contained. (A copy is filed with these minutes.) The group questions the validity of the report done by T.Y.Lin. Mr. Hanson urged the Board to not take any action on this agenda item. Mr. Hanson said the Federal Highway Administration will fund the 106 Process.

Phiney White, Bridge Street - Mr. White displayed enlarged color photographs of three bridges in Massachusetts built in 1931 by Boston Bridge Works - same company that build the Frank J. Wood Bridge. They were rehabilitated in 2012. One was built in 1883 and rehabilitated in 2013.

He said rehabilitation of a bridge is not foreign to large firms. Mr. White said that T.Y. Lin's figures are not accurate. Wants to see the bridge rehabilitated.

Paul Loveless, 36 Williams Drive - Said he was here in Topsham during the last rehab. Said it will take more time and more money to rehab. Spending dollars to save this bridge is not a good idea. If one is stopped on the bridge when a big truck goes by, the bridge rocks back and forth. Bridge needs to be replaced.

Curt Neufeld, 14 Merrymeeting Drive - In favor of new bridge. Said bridges are being taken down because they need to be replaced. Bridge was built in 1932 for cars and trucks built in 1932 which are no comparison to cars and trucks of today. Agreed that the bridge is a hero, but should be replaced. Urged the Board not to throw good money after bad.

Don Russell, 80 Winter Street - Urged the Board to make a recommendation to MDOT relevant to replacing the bridge. You need to do that based on what you have heard. The one thing I did hear, I want to thank Scott for the work they did. In favor of proceeding with the 106 Process.

John Graham, Pleasant Street - In favor of restoring the bridge. Have walked across it many times. It is a historical structure and should be saved. The Town should have appointed the Historic District Commission to handle the 106 process, not a person in the town office.

Ann Carroll, Summer Street - Plea is emotional. It was insulting that no one in our neighborhood was notified of the meetings. It was like we didn't count. Urged the Board to take the human element into account. Thanked Don Russell for spending money to keep his property up. When you drive by Don's house you have a piece of history.

Jill Raymond, 25 Summer Street - I have never come to a meeting. I did not get a notice of these meetings. It is offensive that I heard nothing. Want to see a restoration project, not a new bridge. Does a village have a super highway?

Charles Carroll, Summer Street - This is a neighborhood built 200 years ago. Our house was built in 1825. This is a neighborhood 200 years old. People socialize on this bridge. We are closest to the bridge. Have lived there for 6,000 nights. I look at the bridge every single day. The folks that built the bridge gave it much thought. I don't feel that way about the design of the new bridge. It seems nonsensical for you as a Board to take a position. The better part of wisdom would be for you to say "No, we don't need to take a position."

Arlene Morris, 13 Main Street - Loves Topsham. Urged the Board not to vote one way or another. There is no hurry.

John Shattuck - Brief statement. When a public outreach is done, some people will be missed. However, the papers were plastered with announcements of these meetings. This is a process that has been on-going for over 14 months. The 106 Process will continue over the next 6 or 7 months.

Steve Stern, 13 Main Street - Said he has degrees in Civil and Structural Engineering from Maine and MIT. Is not unfamiliar with some of the issues being brought up. This bridge is safe. It has been deemed safe by the DOT. There are mistakes made in any profession. As an engineer, he can attest to some of the mistakes. TY Lin is the largest engineering firm in the world. They have about a \$3 billion overrun on a bridge that is now rusting. Some of the smaller projects they get...they are not as screened as they possibly should be. We are trying to save this historic bridge. Save money and make everybody happy. All we are asking, is...it is obvious we don't have all the information. If you go ahead and endorse the DOT's recommendations...we intend to have meetings with Joyce Taylor, the Chief Engineer at DOT. She is a reasonable person. I think you have to be very careful, because you can look very bad if you make the wrong decision here tonight.

Josey Seamore, Summer Street - Want to see the bridge saved. It is an important part of my life, my children's lives and my grandchildren's.

Having heard comments from all who wanted to speak, the Board entered into a lengthy discussion with each Board member contributing. Chairman Douglass read the letter mentioned earlier from Curtis Pickard speaking in favor of the new bridge. Some on the Board were not aware of the 106 Process and statement was made that that process will determine what will finally happen. Statement was made that the State does not take proper care, maintenance wise, and if the bridge is rehabilitated, would they let its care lapse.

Following discussion, motion was made by Selectman Tufts, seconded by Selectman Thompson, and it was unanimously ;

VOTED : To approve the Maine DOT proposal for replacement of the Frank J. Wood Bridge and to adopt the resolution regarding the Topsham-Brunswick Bridge."

## Final Comments and Discussion:

I trust that I was able to analyze and convey my assessment of the best outcome for the Wood Bridge to you. There is a lot a discussion and study in this matter and much is factual and of course many regulations and participants in this process. However, a decision must be made based upon all factual aspects and still consider subjective opinion.

I conclude that the impartial and fact based criteria used in determining historical prominence as applied to the Wood Bridge and surrounding districts support the endorsement of the Wood Bridge as a historical structure worthy of preservation. Subjectively, the Wood Bridge is also supported but by a more open type of reasoning from the general public. This source uses their opinions and preferences and general cultural connections to form a more independently and unrestricted conclusion. Thus, the decision is more apt to keep an asset than to replace it. I would say that is the prevailing reaction in this matter.

In closing, I hope I haven't been too verbose but I wanted to justify the historical prominence and to explain some historical and social aspect of the bridge and its relationship to other elements of this significantly historical area which is comprised of other historic districts. Also and very important, the inclusion of the meeting minutes shows an assortment of the rationales for preservation which is of course are immeasurable.

Thank you for your attention and time to review this letter as I and others appreciate your concerns. If I can be of any help or need for clarification, please do not hesitate to contact me.

Sincerely,

William F. Morin

A handwritten signature in cursive script that reads "William F. Morin". The signature is written in dark ink and is positioned below the typed name.

**Appendix E**  
Cabot Mill

INVENTORY NO. \_\_\_\_\_

MAINE HISTORIC PRESERVATION COMMISSION  
Historic Building/Structure Survey Form

1. PROPERTY NAME (HISTORIC): Cabot Mill  
2. PROPERTY NAME (OTHER): \_\_\_\_\_  
3. STREET ADDRESS: Mill Street  
4. TOWN: Brunswick 5. COUNTY: Cumberland  
6. DATE RECORDED: 1/7/92 7. SURVEYOR: R. Reed  
8. OWNER NAME: \_\_\_\_\_ ADDRESS: \_\_\_\_\_

9. PRIMARY USE (PRESENT):  
SINGLE FAMILY \_\_\_\_\_ AGRICULTURE \_\_\_\_\_ COMMERCIAL/TRADE  FUNERAR/ \_\_\_\_\_  
MULTI-FAMILY \_\_\_\_\_ GOVERNMENTAL \_\_\_\_\_ EDUCATION \_\_\_\_\_ HEALTH CARE \_\_\_\_\_  
INDUSTRY \_\_\_\_\_ RELIGIOUS \_\_\_\_\_ HOTEL \_\_\_\_\_ LANDSCAPE \_\_\_\_\_  
TRANSPORTATION \_\_\_\_\_ DEFENSE \_\_\_\_\_ SUMMER COTTAGE/CAMP \_\_\_\_\_ SOCIAL \_\_\_\_\_  
RECREATION/CULTURE \_\_\_\_\_ UNKNOWN \_\_\_\_\_  
OTHER \_\_\_\_\_

10. CONDITION: GOOD  FAIR \_\_\_\_\_ POOR \_\_\_\_\_ DESTROYED \_\_\_\_\_, DATE \_\_\_\_\_

ARCHITECTURAL DATA

11. PRIMARY STYLISTIC CATEGORY:  
COLONIAL \_\_\_\_\_ STICK STYLE \_\_\_\_\_ COLONIAL REV. \_\_\_\_\_ FEDERAL \_\_\_\_\_  
RENAISSANCE REV. \_\_\_\_\_ GREEK REVIVAL \_\_\_\_\_ SHINGLE STYLE \_\_\_\_\_ BUNGALOW \_\_\_\_\_  
ROMANESQUE \_\_\_\_\_ 19TH/20TH C. REV. \_\_\_\_\_ R. ROMANESQUE  ITALIANATE \_\_\_\_\_  
NEO-CLASSIC. REV. \_\_\_\_\_ SECOND EMPIRE \_\_\_\_\_ QUEEN ANNE \_\_\_\_\_ GOTHIC \_\_\_\_\_  
HIGH VIC. GOTHIC \_\_\_\_\_ ARTS & CRAFTS \_\_\_\_\_ OTHER \_\_\_\_\_

12. OTHER STYLISTIC CATEGORY:  
COLONIAL \_\_\_\_\_ STICK STYLE \_\_\_\_\_ COLONIAL REV. \_\_\_\_\_ FEDERAL \_\_\_\_\_  
RENAISSANCE REV. \_\_\_\_\_ GREEK REVIVAL \_\_\_\_\_ SHINGLE STYLE \_\_\_\_\_ BUNGALOW \_\_\_\_\_  
ROMANESQUE \_\_\_\_\_ 19TH/20TH C. REV. \_\_\_\_\_ R. ROMANESQUE \_\_\_\_\_ ITALIANATE \_\_\_\_\_  
NEO-CLASSIC. REV. \_\_\_\_\_ SECOND EMPIRE \_\_\_\_\_ QUEEN ANNE \_\_\_\_\_ GOTHIC \_\_\_\_\_  
HIGH VIC. GOTHIC \_\_\_\_\_ ARTS & CRAFTS \_\_\_\_\_ OTHER \_\_\_\_\_

13. HEIGHT: 1 STORY \_\_\_\_\_ 1 1/2 STORY \_\_\_\_\_ 2 STORY \_\_\_\_\_ 2 1/2 STORY \_\_\_\_\_  
3 STORY \_\_\_\_\_ 4 STORY \_\_\_\_\_ 5 STORY  OVER 5 ( ) \_\_\_\_\_

14. PRIMARY FACADE WIDTH (MAIN BLOCK; USE GROUND FLOOR):  
1 BAY \_\_\_\_\_ 2 BAY \_\_\_\_\_ 3 BAY \_\_\_\_\_ 4 BAY \_\_\_\_\_ 5 BAY \_\_\_\_\_ MORE THAN 5 ( )

15. APPENDAGES: SIDE ELL  REAR ELL  FRONT \_\_\_\_\_ ADDED STORIES \_\_\_\_\_ SHED \_\_\_\_\_ DORMERS \_\_\_\_\_ PORCH \_\_\_\_\_ TOWER   
CUPOLA \_\_\_\_\_ BAY WINDOW \_\_\_\_\_

PHOTOGRAPH:



16. PORCH: ATTACHED  FULL WIDTH  ENGAGED  WRAPAROUND  ONE STORY  SLEEPING PORCH  MORE THAN ONE STORY  SECONDARY PORCH
17. PLAN: HALL AND PARLOR  1/2 CAPE  CENTRAL HALL  SIDE HALL  BACK HALL  IRREGULAR  OTHER \_\_\_\_\_
18. PRIMARY STRUCTURAL SYSTEM: TIMBER FRAME  BRACED FRAME  BRICK  STONE   
BALLOON FRAME  CONCRETE  STEEL  LOG   
PLANK WALL  PLATFORM FRAME   
FRAME CONSTRUCTION - TYPE UNKNOWN  OTHER \_\_\_\_\_
19. CHIMNEY PLACEMENT: INTERIOR  INTERIOR FRONT/REAR  CENTER  INTERIOR END   
EXTERIOR  OTHER \_\_\_\_\_
20. ROOF CONFIGURATION: GABLE SIDE  GABLE FRONT  HIP  MANSARD   
FLAT  GAMBREL  PARAPET GABLE  SHED   
CROSS GABLE  COMPOUND  OTHER \_\_\_\_\_
21. ROOF MATERIAL: WOOD  METAL  TILE  SLATE  ASPHALT  ASBESTOS
22. EXTERIOR WALL MATERIALS: CLAPBOARD  BRICK  FLUSH SHEATHING  WOOD SHINGLE   
STONE  LOG  BOARD AND BATTEN  CONCRETE   
PRESSED METAL  STUCCO  ASPHALT  ALUMINUM/VINYL   
GRANITE  ASBESTOS  TERRA COTTA  OTHER \_\_\_\_\_
23. FOUNDATION MATERIAL: FIELDSTONE  BRICK  WOOD  CONCRETE  GRANITE   
ORNAMENTAL CONC. BLOCK  OTHER \_\_\_\_\_
24. OUTBUILDINGS/FEATURES: CARRIAGE HOUSE  FENCE OR WALL  CEMETERY   
BARN (CONNECTED)  BARN (DETACHED)  FORMAL GARDEN   
LANDSCAPE/PLANT MAT.  ARCHAEOLOGICAL SITE  GARAGE   
OTHER \_\_\_\_\_

#### HISTORICAL DATA

25. DOCUMENTED DATE OF CONSTRUCTION: 1891-92 26. ESTIMATED DATE OF CONSTRUCTION: \_\_\_\_\_
27. DATE MAJOR ADDITIONS/ALTERATIONS: 1896, 1909, c. 1920
28. ARCHITECT: Dunning + Campbell 29. CONTRACTOR (NOTE IF SAME AS 28): E.S. Hackett Son
30. ORIGINAL OWNER: The Cabot<sup>Mr.</sup> Company
31. SUBSEQUENT SIGNIFICANT OWNER: \_\_\_\_\_ DATES: \_\_\_\_\_
32. CULTURAL/ETHNIC AFFILIATION: ENGLISH  FRENCH ACADIAN  NATIVE AMERICAN  SCOTTISH   
FRENCH CANADIAN  EAST EUROPEAN  IRISH   
OTHER \_\_\_\_\_
33. HISTORIC CONTEXT(S): COMMERCE  INDUSTRY  TRANSPORTATION  AGRICULTURE   
MILITARY  RELIGION  CIVIC AFFAIRS  RECREATION   
HABITATION  EDUCATION  ART, LIT, SCIENCE  SOCIAL
34. COMMENTS/SOURCES: A stone wooden mill on this site, built in the 1830s and enlarged in the late 1860s, was acquired by the Cabot Manufacturing Company in 1857. In October, 1890, the Brunswick firm of Dunning + Campbell, architects and engineers, were hired to prepare plans for a new mill "on the Lockwood plan" (Brunswick Telegram 10/2/1890).
35. HISTORICAL DRAWINGS EXIST: YES  NO  LOCATION: \_\_\_\_\_

#### ENVIRONMENTAL DATA

36. SITE INTEGRITY: ORIGINAL  MOVED  DATE MOVED \_\_\_\_\_
37. SETTING: RURAL/UNDISTURBED  RURAL/BUILT UP  SMALL TOWN  URBAN  SUBURBAN
38. QUADRANGLE MAP USED: \_\_\_\_\_ QUADRANGLE #: \_\_\_\_\_
39. UTM NORTHING: \_\_\_\_\_ 40. UTM EASTING: \_\_\_\_\_
41. FACADE DIRECTION (CIRCLE ONE): N  **S**  E  W  NE  NW  SE  SW

\*\*\*\*\*  
MHPC USE ONLY

DATE ENTERED IN INVENTORY: \_\_\_\_\_ PHOTO FILE #: \_\_\_\_\_  
NR STATUS: L  HD  **E**  NE  ND  REVIEWER KM CM 7/12/2010  
DATA SOURCE: HPF  CLG  R&C  STAFF  STATE SURVEY  OTHER  LEVEL OF SURVEY: R  I

FORM HPSL7WFK.FRM

Inventory No.

MAINE HISTORIC PRESERVATION COMMISSION  
Historic Building/Structure Form

Continuation Sheet

No. 34, continued:

Construction of the main section of the mill occupied much of 1891 and 1892 as the old mill was kept in operation until each section was displaced by portions of the new mill. One wing from the old mill, dating from 1865-66 was retained and is still standing.

Additions continued to be made over the next three decades. For a description of the completed first section of the mill see, Lewiston Evening Journal December 7, 1891. Information of the first mill can be found in Wheeler's History of Brunswick. The 1865 addition is documented in the Brunswick Telegraph December 15, 1865, p.2. The following Industrial Journal items also provide documentation: March 18, 1892, p.3; Sept. 2, 1892, p.4; Oct. 28, 1892, p.1; April 11, 1893, p.1; Jan. 25, 1895, p.5; Dec. 4, 1896, p.8; Sept., 1909, p.31.



South Wing of Cabot Mill, c.1920

Inventory No.

MAINE HISTORIC PRESERVATION COMMISSION  
Historic Building/Structure Form

Continuation Sheet



Cabot Mill from Topsham, looking south.

Maine Street

Built Between  
1912-1928

Built  
1871-92

Built 1865-66

Built  
1872

Built  
1809

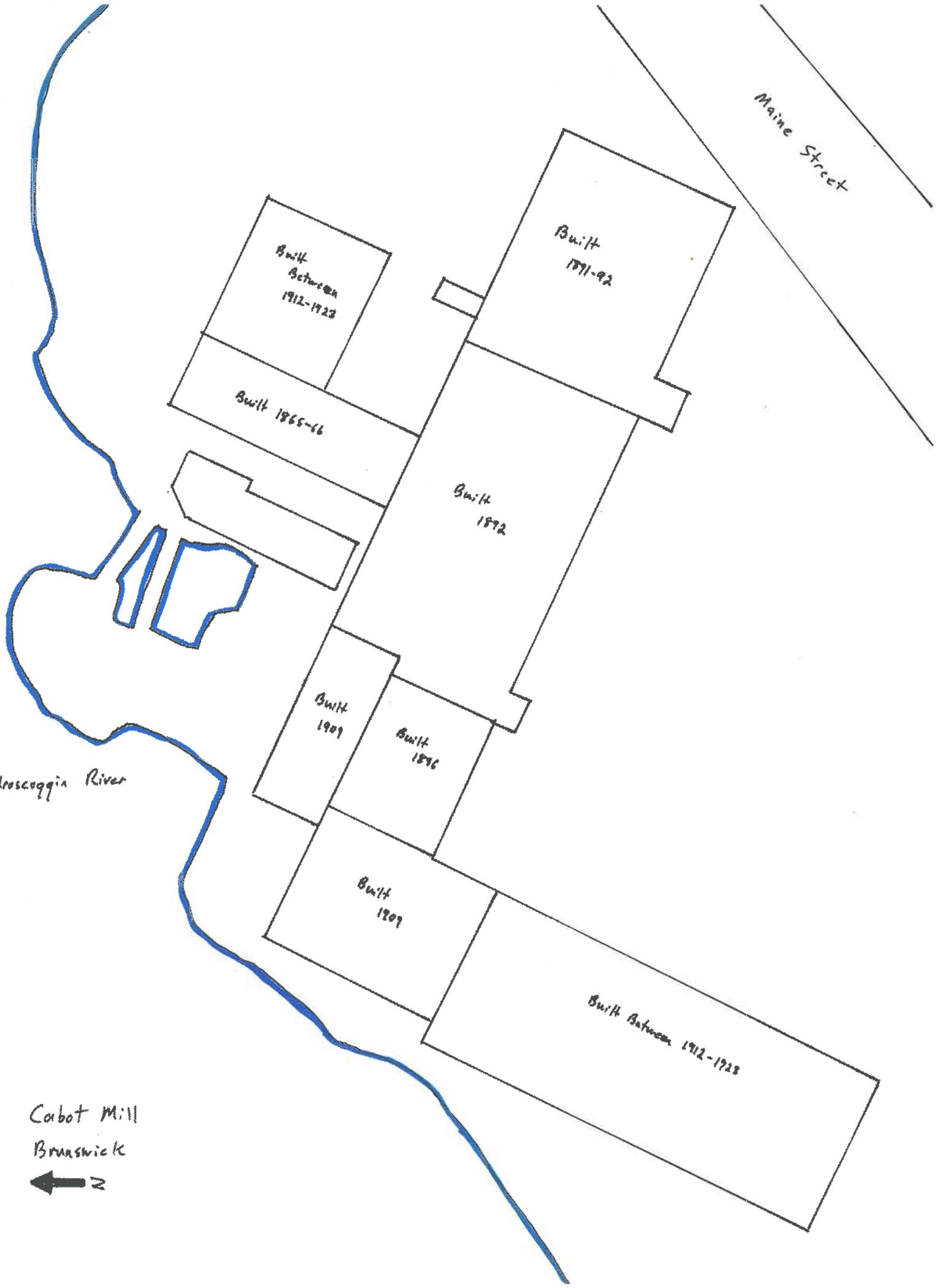
Built  
1876

Built  
1809

Built Between 1912-1928

Androscoggin River

Carbot Mill  
Brunswick  
←





MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

ANGUS S. KING, JR.  
GOVERNOR

EARLE G. SHETTLEWORTH, JR.  
DIRECTOR

March 22, 2000

Chantelle Goldthwaite  
ATC Associates, Inc.  
1 Richmond Square Tech Center  
Providence, RI 02906

Project: MHPC #524 - Rooftop Telecommunications Array, 14 Main Street (4PB-218-A)  
Location: Prospect, Maine

Dear Ms. Goldthwaite:

In response to your recent request, I have reviewed the information received March 16, 2000 to initiate consultation on the above referenced project. We are reviewing this project pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended.

Based upon the description of this project (addition of telecommunication array on top of subject building), I find that the proposed project will have no adverse effect to historic properties (potentially eligible industrial complex).

Please call Dana R. Vaillancourt of my staff if we can be of further assistance in this matter.

Sincerely,

Earle G. Shettleworth, Jr.  
State Historic Preservation Officer

EGS/drv



1 Richmond Square Te :nter  
Providence, Rhode Isla: 2906  
www.atc-e :com  
401. :3955  
Fax 401.. :894

March 15, 2000

Mr. Earle G. Shettleworth, Jr.  
Maine Historic Preservation Commission  
55 Capitol Street  
65 State House Station  
Augusta, ME 04333

MAR 16 2000 -3

RE: Section 106 Determination  
Proposed Telecommunication Facility  
Omnipoint Site Number 4PB-0218A  
14 Main Street  
Brunswick, ME

Dear Mr. Shettleworth,

In accordance with FCC regulations in 47 CFR 1.1307(a)(4), ATC requests that the MHPC make a Section 106 determination for the proposed wireless telecommunication facility at the above-referenced location.

Enclosed for your review is a site information sheet, location map and preliminary design drawings. Should you have any questions or comments concerning our request, contact the undersigned at 401/274-3955. Please reference Omnipoint site number 4PB-0218A in your correspondence.

Very truly yours,

ATC Associates, Inc.

A handwritten signature in black ink, appearing to read 'Chantelle Goldthwaite', is written over the typed name.

Chantelle Goldthwaite

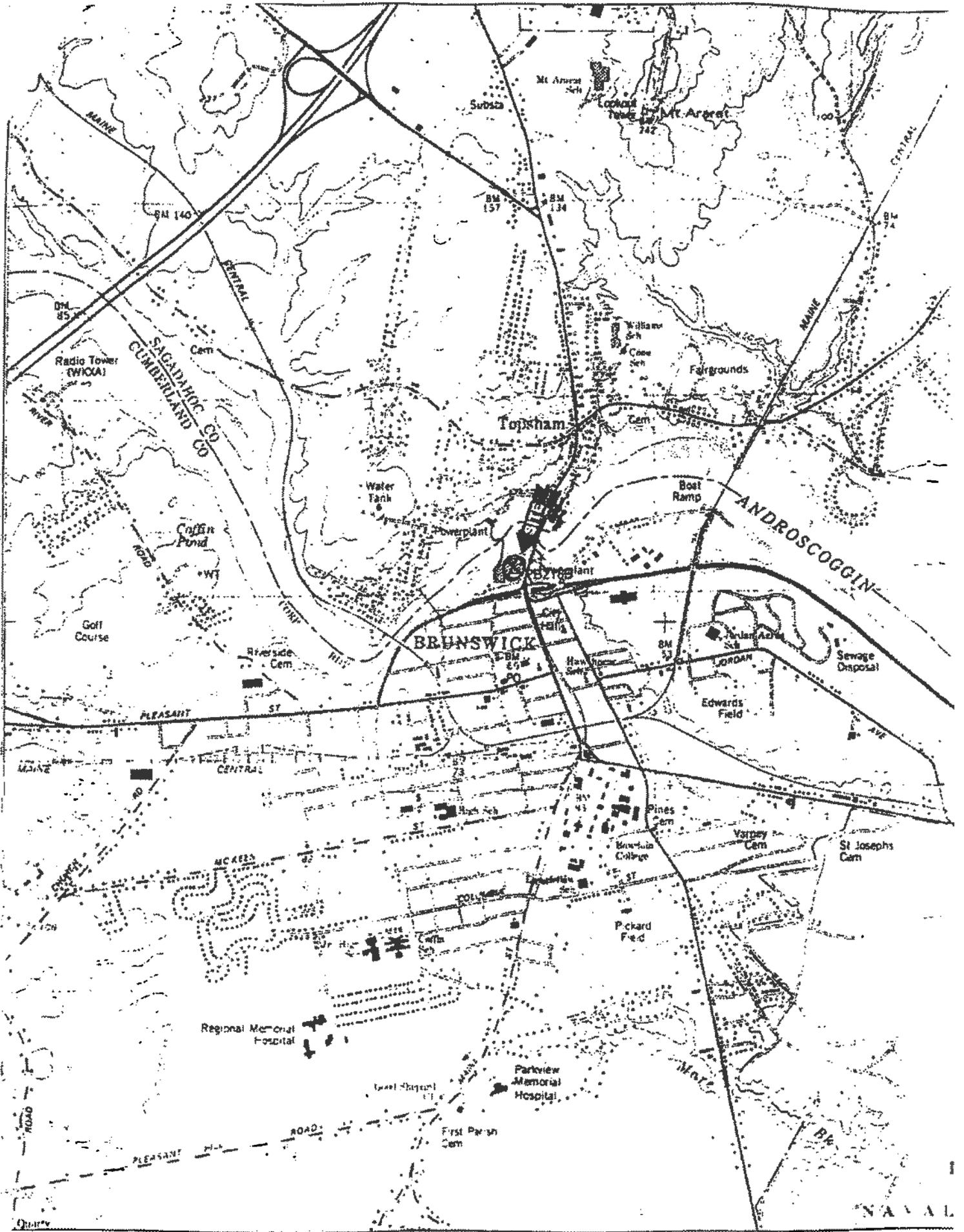
Enclosures

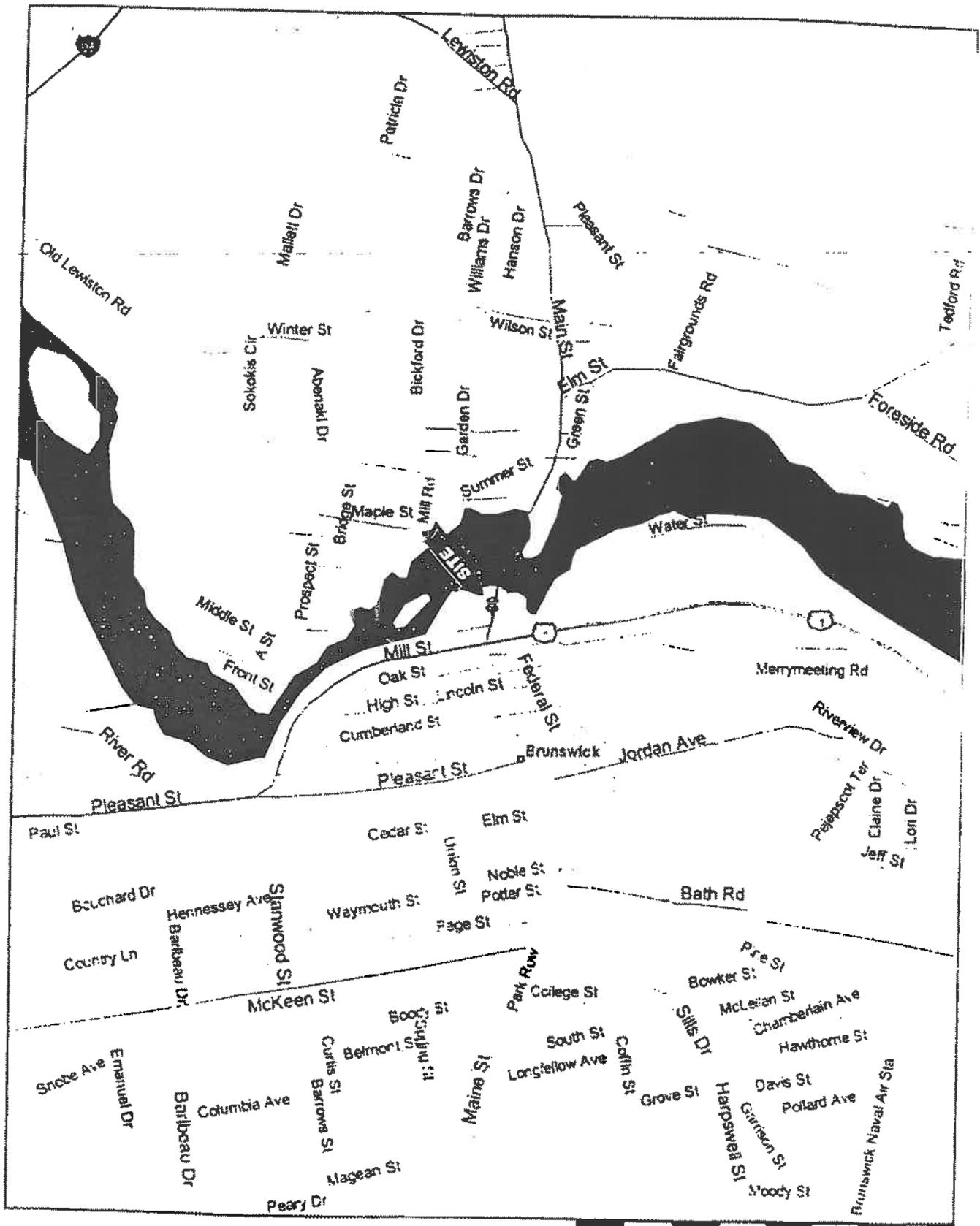
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## Wireless Telecommunication Facility Information Sheet

Site Reference: 4PB-0218A

- Site Location: 14 Main Street Brunswick, ME
- Antenna Location:     New tower     Existing tower     Roof top     Steeple     Smoke Stack  
                                  Water tank     Existing utility pole     Other: \_\_\_\_\_
- Overall Structure Height: 130 feet above ground level.
- Antenna Mounting Height: 140 feet above ground level.
- Antennas Type:     Panels     Canister     Whips/omnis    Total of 9 antennas
- Antenna Dimensions:     60"H x 8"W x 3"D     80"H x 16" dia.     Other: \_\_\_\_\_
- Antenna Configuration:     Three Sector     Dual Sector     Omni-directional
- Antennas Mounts:     Triangular Frame     Bailast Frame     Pipe Mount     Facade
- Stealth Treatment:     None     Paint to match     Special: \_\_\_\_\_
- Radio Cabinet Location:     Existing ground level     Roof top     Existing building floor \_\_\_\_\_  
                                  Existing equipment shelter     New equipment shelter
- Radio Cabinet: 2 total, approximately 70" high x 51" wide x 28" deep.
- Site Access Road:     No new site access required.     New gravel access road \_\_\_\_\_ feet long.
- Utilities (from existing demarc):     Inside building or structure     Underground     Overhead
- Additional Information Attached:     Street Level Map     Design Plans     Photos
- Comments: none.





Streets98

**Appendix F**  
MHPC Concurrence  
June 2016

STATE OF MAINE

MEMORANDUM

June 16, 2016

To: Megan M. Hopkin, ENV/Maine Department of Transportation

From: Kirk F. Mohny, State Historic Preservation Officer *KFM*

Subject: 22603; bridge improvements/replacement, Brunswick; MHPC #1595-15

---

In response to your recent request, I have reviewed the information received May 31, 2016 to continue consultation on the above referenced undertaking pursuant to the Maine Programmatic Agreement and Section 106 of the National Historic Preservation Act of 1966, as amended.

Identification of Historic Properties

The Commission agrees with the MDOT's conclusion that the Brunswick-Topsham Industrial Historic District is located within the proposed undertaking's area of potential effect. This district is eligible for listing in the National Register of Historic Places under Criteria A and C, and is comprised of the Pejepscot Paper Mill, the Cabot Mill and the Frank J. Wood Bridge. The MDOT also concludes that the dam located upstream of these three resources is a contributing feature of the district, and although we do not disagree, we would also include any extant hydroelectric generating facilities constructed during the period of significance that retain integrity. Finally, we believe that the district's period of significance should extend to 1966 as the Pejepscot Paper Mill was still in use as an industrial facility.

As to the inclusion of the houses along Summer Street in Topsham in this industrial district, it is the Commission's opinion that unless documentation can be found that establishes a direct link between their construction and/or occupants to the operation of the mills, this area should not be included. However, these properties may be eligible for listing in the Register as a separate residential historic district, the extent of which has not been determined.

If you have any questions regarding our comments, please do not hesitate to contact me.

**Appendix G**  
Photographs



Frank J Wood Bridge, February 2016



Pejepscot Paper Company, February 2016



Cabot Mill (rear), February 2016



Cabot Mill (front), February 2016



15 Summer Street, February 2016



17 Summer Street, February 2016



19 Summer Street, February 2016



21 Summer Street, February 2016



21 Summer Street, February 2016



23 Summer Street, February 2016

**Appendix H**  
Email from C.Anderson to N.Baker

---

**From:** Carl Anderson <carl.anderson@tylin.com>  
**Sent:** Thursday, January 19, 2017 1:01 PM  
**To:** Norman Baker  
**Cc:** Kevin Ducharme  
**Subject:** Potential impact of high beam vehicle lighting on Summer Street Topsham. (Revised)  
**Attachments:** CFR 571\_108 UPPER BEAM PHOTOMETRY.pdf; HEADLAMP - (HIGH\_LOW BEAM - WIKIPEDIA).pdf

Norman,

I have completed an analysis on the probable impact that vehicle headlight illumination might have on the area in question on Summer Street in the Town of Topsham. The worst case scenario, based on the following conditions: (vehicle traveling from Brunswick into Topsham on proposed new bridge alignment; no traffic traveling from Topsham to Brunswick on bridge; clear sightline from vehicle headlight (36 inches above roadway surface) to Summer Street area; no bridge rail or solid barrier at edge of bridge; maximum allowable high beam photometric intensity of 75,000 candela (cd) per CFR 571.108) the maximum probable impact would be to increase the existing ambient illumination on a vertical surface by 0.117 foot-candle (fc) at the point of maximum photometric intensity of the high beam. (See attachments)

The use of low beam setting of headlights is unlikely to have any measurable impact on the area in question due to the photometric performance at the low beam setting which displaces the peak beam candlepower in a downward to the right position from the drivers prospective. (See attachments)

As a result of this analysis and the fact that there will in many cases be two way traffic on the bridge and the bridge will be illuminated in compliance with AASHTO standards  
The need for the use of high beam on the bridge will be unnecessary and detrimental to oncoming drivers therefore minimizing further potential impacts to the area in question.

Illuminance (E) = I/D Sq.    E = 75,000/800 x 800 = 0.117 fc.

Where: E = Illuminance in footcandles (fc)

      I = Intensity in candelas (cd) toward point

      D = Distance in feet

See also attachments: CFR 571.108 Upper beam photometry & Headlamp (High Low Beam)

Carl L. Anderson, PE  
Senior Electrical Engineer

**TYLIN**INTERNATIONAL

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[carl.anderson@tylin.com](mailto:carl.anderson@tylin.com)

Visit us online at [www.tylin.com](http://www.tylin.com)

[Twitter](#) | [Facebook](#) | [LinkedIn](#) | [YouTube](#)

TABLE XVIII: HEADLAMP UPPER BEAM PHOTOMETRY REQUIREMENTS									
TEST POINT (degrees)	UPPER BEAM #1 (UB1)			UPPER BEAM #2 (UB2)			UPPER BEAM #3 (UB3)		
	MAXIMUM PHOTOMETRIC INTENSITY (cd)	MINIMUM PHOTOMETRIC INTENSITY (cd)	MAXIMUM PHOTOMETRIC INTENSITY (cd)						
2U V	-	1,500	-	-	1,500	-	-	1,000	-
1E 3L & 3R	-	5,000	-	-	5,000	-	-	2,000	-
H V	70,000	40,000	75,000	40,000	75,000	75,000	75,000	20,000	20,000
H 3L & 3R	-	15,000	-	-	15,000	-	-	10,000	-
H 6L & 6R	-	5,000	-	-	5,000	-	-	3,250	-
H 9L & 9R	-	3,000	-	-	3,000	-	-	1,500	-
H 12L & 12R	-	1,500	-	-	1,500	-	-	750	-
1.5D V	-	5,000	-	-	5,000	-	-	5,000	-
1.5D 9L & 9R	-	2,000	-	-	2,000	-	-	1,500	-
2.5D V	-	2,500	-	-	2,500	-	-	2,500	-
2.5D 12L & 12R	-	1,000	-	-	1,000	-	-	750	-
4D V	5,000	-	12,000	-	-	-	5,000	-	-
UPPER BEAM #4 (UB4)									
UPPER BEAM #5 (UB5)									
UPPER BEAM #6 (UB6)									
2U V	-	750	-	-	750	-	-	1,500	-
1E 3L & 3R	-	3,000	-	-	2,000	-	-	5,000	-
H V	60,000	18,000	15,000	7,000	70,000	70,000	70,000	40,000	40,000
H 3L & 3R	-	12,000	-	-	3,000	-	-	15,000	-
H 6L & 6R	-	3,000	-	-	2,000	-	-	5,000	-
H 9L & 9R	-	2,000	-	-	1,000	-	-	3,000	-
H 12L & 12R	-	750	-	-	750	-	-	1,500	-
1.5D V	-	3,000	-	-	2,000	-	-	5,000	-
1.5D 9L & 9R	-	1,250	-	-	750	-	-	1,000	-
2.5D V	-	1,500	-	-	1,000	-	-	1,000	-
2.5D 12L & 12R	-	600	-	-	400	-	-	1,000	-
4D V	5,000	-	2,500	-	-	-	5,000	-	-

View or download PDF

## Regulations and requirements

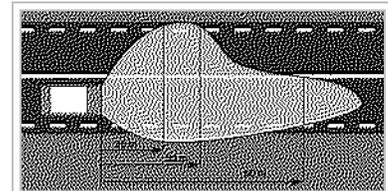
Modern headlamps are electrically operated, positioned in pairs, one or two on each side of the front of a vehicle. A headlamp system is required to produce a low and a high beam, which may be achieved either by an individual lamp for each function or by a single multifunction lamp. High beams (called "main beams" or "full beams" or "driving beams" in some countries) cast most of their light straight ahead, maximizing seeing distance, but producing too much glare for safe use when other vehicles are present on the road. Because there is no special control of upward light, high beams also cause backdazzle from fog, rain and snow due to the retroreflection of the water droplets. Low beams (called "dipped beams" or "passing beams" in some countries) have stricter control of upward light, and direct most of their light downward and either rightward (in right-traffic countries) or leftward (in left-traffic countries), to provide safe forward visibility without excessive glare or backdazzle.

### Low beam

Low beam (dipped beam, passing beam, meeting beam) headlamps provide a distribution of light designed to provide adequate forward and lateral illumination, with limits on light directed towards the eyes of other road users to control glare. This beam is intended for use whenever other vehicles are present ahead, whether oncoming or being overtaken.



ECE dipped/low beam

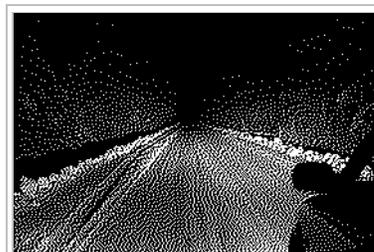


Asymmetrical low beam illumination of road surface – right-traffic beam shown

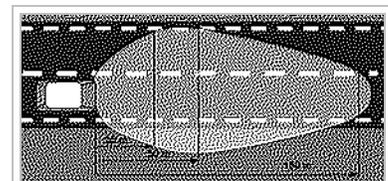
The international ECE Regulations for filament headlamps<sup>[19]</sup> and for high-intensity discharge headlamps<sup>[20]</sup> specify a beam with a sharp, asymmetric cutoff preventing significant amounts of light from being cast into the eyes of drivers of preceding or oncoming cars. Control of glare is less strict in the North American SAE beam standard contained in FMVSS / CMVSS 108.<sup>[21]</sup>

### High beam

High beam (main beam, driving beam, full beam) headlamps provide a bright, centre-weighted distribution of light with no particular control of light directed towards other road users' eyes. As such, they are only suitable for use when alone on the road, as the glare they produce will dazzle other drivers.



ECE high/main beam



Symmetrical high beam illumination of road surface

International ECE Regulations permit higher-intensity high-beam headlamps than are allowed under North American regulations.

<sup>[22]</sup>

### Compatibility with traffic directionality

Most low-beam headlamps are specifically designed for use on only one side of the road. Headlamps for use in left-traffic countries have low-beam headlamps that "dip to the left"; the light is distributed with a downward/leftward bias to show the driver the road and signs ahead without blinding oncoming traffic. Headlamps for right-traffic countries have low beams that "dip to the right", with most of their light directed downward/rightward.

**Appendix I**  
Email from P.Adams to S.Landry

**Subject:** FW: FJW DOE DISCUSSION FOLLOW-UP

**From:** Adams, Patrick  
**Sent:** Wednesday, November 02, 2016 4:09 PM  
**To:** Landry, Stephen  
**Subject:** Re: FJW

- We know that you increase risk to pedestrians whenever you increase the number of potential conflict points. Fewer crossing points would reduce the number of opportunities for Ped/car conflict.
- Drivers are more likely to anticipate pedestrian crossings at intersections since this is how we've been trained. Midblock crossings inherently have increased risk because drivers don't traditionally expect there to be pedestrians crossing at that location. Locals will anticipate, but others may not even be aware that there is a crossing point at that location.
- The need for sidewalks is driven by pedestrian activity that is built upon the generators in the area. In this case, the generators are found on both sides of the road and the reasonably anticipated need/use would be for pedestrian activity on both sides.
- In 2012, NHTSA data indicates that as a pedestrian you are 3.5 times more likely to be struck crossing the street at a non-intersection (midblock) compared to at the intersection itself.
- Construction of two sidewalks promotes walk ability and significantly improves access and mobility for those with mobility concerns, impairments, and disabilities.
- The more pedestrian crossings you provide, the greater the impact and impediments to traffic flow and movement.
- SRTS guidelines promote the inclusion of sidewalks on both sides of a roadway to improve safety.
- NACTO Guidelines support this recommendation.
- As a pedestrian, you are more than twice as likely to be struck by a vehicle in an area without a sidewalk for you to travel on than an area where you could utilize a sidewalk.
- [Pedbikesafe.org](http://Pedbikesafe.org) states that "Sidewalks, provided on both sides of a street, are generally the preferred pedestrian facility. They provide that greatest degree of comfort for pedestrians and the presence of sidewalks has been associated with increased safety for pedestrians."
- [Pedbikesafe.org](http://Pedbikesafe.org) also recommends that sidewalks on both sides of the road should be required on all suburban highways, major arterials, urban collectors, minor arterials, local streets, and on all commercial urban streets. Sidewalks on both sides are "preferred" on urban local streets and on all streets in industrial areas.

Patrick Adams  
Bicycle and Pedestrian Programs Manager

(207) 592-0873

Sent from my iPhone - So please excuse all my typos

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STATE OF MAINE

MEMORANDUM

June 16, 2016

To: Megan M. Hopkin, ENV/Maine Department of Transportation

From: Kirk F. Mohny, State Historic Preservation Officer *KFM*

Subject: 22603; bridge improvements/replacement, Brunswick; MHPC #1595-15

---

In response to your recent request, I have reviewed the information received May 31, 2016 to continue consultation on the above referenced undertaking pursuant to the Maine Programmatic Agreement and Section 106 of the National Historic Preservation Act of 1966, as amended.

Identification of Historic Properties

The Commission agrees with the MDOT's conclusion that the Brunswick-Topsham Industrial Historic District is located within the proposed undertaking's area of potential effect. This district is eligible for listing in the National Register of Historic Places under Criteria A and C, and is comprised of the Pejepscot Paper Mill, the Cabot Mill and the Frank J. Wood Bridge. The MDOT also concludes that the dam located upstream of these three resources is a contributing feature of the district, and although we do not disagree, we would also include any extant hydroelectric generating facilities constructed during the period of significance that retain integrity. Finally, we believe that the district's period of significance should extend to 1966 as the Pejepscot Paper Mill was still in use as an industrial facility.

As to the inclusion of the houses along Summer Street in Topsham in this industrial district, it is the Commission's opinion that unless documentation can be found that establishes a direct link between their construction and/or occupants to the operation of the mills, this area should not be included. However, these properties may be eligible for listing in the Register as a separate residential historic district, the extent of which has not been determined.

If you have any questions regarding our comments, please do not hesitate to contact me.