Supplemental Supporting Information for a Finding of Effect

DRAFT - PUBLIC COMMENT COPY

Project: Bar Harbor 26574.00 Scope: Bridge Replacement Finding of Effect: **Adverse Effect**

This report describes the Maine Department of Transportation and the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act (36 CFR Part 800). It details the finding of effect to historic properties listed in or eligible for listing in the National Register of Historic Places (NRHP) that are located in the subject project's Area of Potential Effects (APE). This report also assesses how the proposed project may directly or indirectly affect and/or diminish those characteristics and aspects of integrity that qualify a historic property for inclusion in the NRHP. This report is specific to the Section 106 assessment of effects, as opposed to general environmental impacts. Consultation with coordinating agencies and the public is ongoing.

Purpose and Need

The purpose of this project is to address the structural deficiency of the Cromwell Brook #3 Bridge (#0452) in Bar Harbor and improve public safety within the project limits in a cost-effective manner.

The need for the project is because the superstructure and the substructure of the exiting bridge are in poor condition. The rating condition for the bridge elements are 3 (serious) for the pre-cast concrete beam superstructure and 4 (poor) for the stacked stone substructure. The load capacity of the bridge is unknown due to the lack of design plans. The bridge width (18') does not meet current design standards. A successful project will result in a two-lane bridge that is not classified as structurally deficient and meets current design standards.

Cromwell Brook #3 Bridge carries Ledge Lawn Avenue over Cromwell Brook, which empties into Frenchman Bay approximately ½ mile northeast of the bridge. The road carries local traffic to the transfer station located on White Spruce Road as well as connecting to the Acadia Park Loop. The existing bridge was built in 1945 and is an early example of a prestressed concrete bridge. It rests on dry-laid stone abutments. At an unknown date, the superstructure was replaced with prestressed concrete double tee beams. The bridge is in poor condition with longitudinal cracks and exposed prestressing strands in the double T-beams. A temporary bridge that only allows for one-way traffic has been placed over the bridge due to its deteriorated condition. With the current opening of 120 SF, based on modeled flood scenarios, at Q100 (100-year flood flow), the water from Cromwell Brook would impact the superstructure and at Q500 (500-year flood flow), water would overtop the bridge deck.

Proposed Action

The proposed action (Alternative 1) would replace Cromwell Brook #3 Bridge with a girder bridge with a concrete deck and curbs. The exact design of the superstructure would be finalized during the construction process. The roadway would be a minimum of 24'-0" in width and the span would be 50'-0". The deck would be composite concrete using corrosion resistant reinforcing with a 1" integral concrete wearing surface. The rail would be standard 3-bar steel bridge rail. The structure depth, from the wearing surface to the girders, would be between 1'-11" and 3'-0". The abutments would be cast-in-place concrete with footings on bedrock. Riprap would

be installed in front of the abutments. The northwest and southeast wingwalls would be extension wings. The northeast wingwall would be flared. The southwest wingwall would be a return wing due to the proximity of the existing pedestrian bridge. The new bridge would have a much longer span than the existing, resulting in lower outlet velocity flow rates. The project would also include 400' of approach work.

There is a town-owned pedestrian bridge west of the bridge that will remain in place.

Federal Action

Federal funding.

Definition of Area of Potential Effect (APE)

The proposed project is located in Bar Harbor. The map below shows the APE.



BAR HARBOR 26574.00 APE

Figure 1. Bar Harbor 26574.00 Area of Potential Effect

Historic Properties

The proposed project is located in Bar Harbor, Hancock County, Maine. The descriptions are based on Maine Historic Preservation Commission (MHPC) forms.

<u>Cromwell Brook Bridge #3 Bridge #0452 (Town of Bar Habor; Sta. 13+55 to Sta. 13+95)</u>

National Register-Eligible Criterion C, Engineering

The bridge is an early example of a prestressed concrete bridge on the state level. Pre-stressed technology was developed in Europe in the early twentieth century. While concrete possesses compressive strength, it has comparatively weak tensile strength, limiting the length it can be used in bridge construction. Prestressed concrete allowed concrete to be used for lengths up to 130'. Steel reinforcement is stretched prior to the casting and curing of the concrete. After the concrete is cured, the tension on the steel is released. The structure is then able to counterbalance tensile forces with the internal compressive forces created by the pre-tensioning of the steel. Frenchman Eugene Freyssinet was the major pioneer of prestressed concrete in bridge construction, obtaining a patent in 1928.

The first major prestressed bridge in the U.S. was built in 1951 in Philadelphia, designed by Belgian engineer Gustave Magnel. Cromwell Brook #3 Bridge #0452 is likely one of the earliest prestressed concrete bridges in the state. It appears to be the only prestressed concrete bridge built by the Maine DOT in the 1940s; the next oldest prestressed bridges are located in Albany Township (Main Road Bridge #0720) and Calais (MCRR Overpass #5517), both built in 1950. Prestressed bridges were used sporadically until the 1980s when the technology became more widely applied by the MaineDOT and continues to be used in bridge construction today. At an unknown date, the superstructure was replaced with prestressed concrete double tee beams. Its period of significance is 1945.



Figure 2: Cromwell Brook Bridge #3 Bridge (#0452)

Archaeological Resources

There are no archaeological resources in the project area.

Impacts to Property

The following addresses potential impacts to properties as a result of the proposed action.

Cromwell Brook Bridge #3 Bridge #0452 (Town of Bar Habor; Sta. 13+55 to Sta. 13+95L)

National Register-Eligible

Criterion C, Engineering

The proposed action would result in an **Adverse Effect** to Cromwell Brook Bridge #3. The proposed action would replace the Cromwell Brook Bridge #3 with a girder bridge with a concrete deck and concrete abutments. The removal of the bridge would result in a total loss of all aspects of integrity.

Archaeological Resources

There are no archaeological resources in the project area.

Avoidance, Minimization, and Mitigation Efforts

The MaineDOT sought ways to avoid removing the bridge, including constructing a bridge at a new location while retaining the historic bridge. This alternative would require extensive site work and potentially require construction of a longer structure. It was dismissed for being cost prohibitive. Rehabilitation was also considered. However, in order to rehabilitate the bridge, most, if not all, of the historic fabric would be destroyed in the process. Rehabilitation would also not meet current design standards and this alternative was dismissed.

In February of 2023, the MaineDOT posted a public notice in the Ellsworth American to solicit proposals for the adaptive reuse of the bridge. The MaineDOT proposed to offer the 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. No proposals were received.

In order to take into account the effect of the undertaking on historic properties, the MaineDOT will record the bridge using the "Outline Format" narrative of the Maine Historic Engineering Recordation (MHER) recordation standards.

Dismissed Alternatives

Three alternatives were analyzed as part of the preliminary engineering of this project.

- <u>No Build</u> The No Build alternative takes no action and would result in further deterioration of the structure, making it unsafe for passage. As this alternative does not meet the purpose and need, it was removed from consideration.
- Alternative 2 Multiple Alternative 2 would construct a new bridge at a new location and leave the existing bridge in place. Due to the surrounding terrain, this alternative would require extensive site work at either a new downstream or new upstream location. A downstream bridge

would also require a longer span on a skew. This alternative would be cost prohibitive and therefore does not meet the purpose of the project and was removed from consideration.

<u>Alternative 3</u> Alternative 3 would rehabilitate the existing bridge. Due to the poor condition of the bridge, removal and replacement of the structurally deficient concrete would be nearly impossible and beyond standard engineering practice. The current roadway width of 18' would also not meet current design standards. This does not meet the purpose and need, and the alternative was removed from consideration.

Public Involvement

MaineDOT contacted the four federally recognized Native American tribes in Maine. The Mi'kmaq Nation, Houlton Band of Maliseet Indians, Penobscot Nation, and Passamaquoddy Tribes have replied with no concerns about the undertaking.

A preliminary public meeting was held via virtual public involvement on August 24, 2022. No concerns were raised related to the historic status of the bridge or the Section 106 review process.

The public process is ongoing.

Proposed Materials

Concrete, gravel, steel bridge rail, loam and seed.

Plans

Bar Harbor, Hancock County, Cromwell Brook Bridge #3 over Cromwell Brook Ledgelawn Avenue, Federal Project No. 2657400

Attachments

J. N. Leith Smith, MHPC, to Julie Senk, MaineDOT, June 3, 2022 Kirk Mohney, MHPC, to Julie Senk, MaineDOT, July 27, 2022 Draft Memorandum of Agreement



Date:11/17/2023

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EXISTING TRANSVERSE SECTION



PROPOSED TRANSVERSE SECTION Example detail-build superstructure shown, other beam and deck construction types may be used.



STATE OF MAINE Memorandum

Date: June 3, 2022

To: Julie Senk, Historic Preservation Coordinator, Maine DOT/ENV

From: J. N. Leith Smith, MHPC

Subject: Initial Archaeology Review

Project: MHPC #861-22, WIN 26574: Bar Harbor Improvements to Cromwell Brook #3 Bridge #0452 carrying Great Meadow Drive over Cromwell Brook, located 0.03 of a mile north of White Spruce Road.

Dear Julie,

After reviewing our archaeological survey records and maps, including historic maps and surficial geology maps, and comparing this information with a predictive model of archaeological site locations, we find that no archaeological fieldwork is necessary for the project listed above, based on the project location and general project description information provided May 23, 2022. It is extremely unlikely that an 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.

STATE OF MAINE

Memorandum

To: Kirk F. Mohney, MHPC From: Julie Senk, Maine DOT/ENV Subject: Section 106 request for concurrence Project: Bar Harbor 26574.00, MHPC #861-22 Scope: Bridge Improvements



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 proposed project is bridge improvements to Cromwell Brook #3 Bridge #0452 carrying in Ledgelawn Avenue Extension over Cromwell Brook, located 0.03 of a mile north of White Spruce Road in Bar Harbor.

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. The project limits are defined by the bridge and the immediately adjacent area. Properties/structures adjacent to this project limit 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 and MHPC survey databases. The Maine Historic Preservation Commission Archaeological staff has reviewed this undertaking.
- 800.4(a) (3) The Town of Bar Harbor and applicable historical societies were contacted by email 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. No replies have been received.
- 800.4(a) (4) Emails outlining project location and scope were sent to the 4 federally recognized Tribes in Maine. The Mi'kmaq, Houlton Band of Maliseet Indians, and Passamaquoddy Tribes have replied with no concerns about the undertaking.
- 800.4(c) The Maine DOT conducted historic architectural surveys within the APE to determine if properties met National Register criteria. Maine Historic Preservation Commission Archaeological staff has reviewed the undertaking and recommended "a finding that there will be no archaeological properties affected by the proposed undertaking." The MaineDOT has determined that one architectural property is eligible for listing in the National Register.

In accordance with the PA and 36 CFR Part 800, please reply with your concurrence or objection to the determination of eligibility for listing in the National Register of Historic Places within 30 days. If more information is deemed necessary, please supply a list of the specific resources in question.

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

cc: CPD e-file

enc: Architectural survey package

CONCUR	1 1
	7/27/22
Kuft. Mohney	Date
Kirk F. Mohney,	- History of Fernand

MEMORANDUM OF AGREEMENT

BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION,

THE MAINE DEPARTMENT OF TRANSPORTATION,

AND THE MAINE STATE HISTORIC PRESERVATION OFFICER

REGARDING MAINEDOT WIN 26574.00

CROMWELL BROOK #3 BRIDGE #0452 REPLACEMENT

BAR HARBOR, HANCOCK COUNTY, MAINE

WHEREAS, the Federal Highway Administration (FHWA) plans to fund the Cromwell Brook #3 Bridge (#0452) Replacement Project (undertaking) in Bar Harbor, Maine, pursuant to the National Historic Preservation Act of 1966, 54 U.S.C. 306101 et seq; and

WHEREAS, the FHWA 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 undertaking consists of replacing the Cromwell Brook #3 Bridge with a girder bridge; and

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

WHEREAS, the FHWA has determined that the undertaking has an adverse effect on the Cromwell Brook #3 Bridge, which is eligible for listing in the National Register of Historic Places (NRHP), through its removal; and

WHEREAS, the FHWA has consulted with the Maine State Historic Preservation Officer (Maine SHPO) pursuant to 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108); and

WHEREAS, the FHWA has ensured that the significance of the National Register-eligible resource will be captured in compensatory mitigation; and

WHEREAS, the FHWA has consulted with the Mi'kmaq Nation, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation of the proposed action in accordance with 36 CFR Section 800.3 (f)(2). Emails were sent to the Tribes on May 23, 2022, in accordance with their preferred method of receiving information from the Department of Transportation. The Mi'kmaq Nation, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation replied with no concerns; and

WHEREAS, in accordance with 36 CFR 800.2(c), the FHWA has requested input from consulting parties in a manner that reflects the nature and complexity of the undertaking and its effects on the historic property; and

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

WHEREAS, in accordance with 36 CFR Section 800.6(a)(1), the FHWA has notified the ACHP of the adverse effect determination. The FHWA has invited the ACHP to consult on XX, and the ACHP has chosen *to/to not* participate in the consultation pursuant to 36 CFR Section 800.6(a)(1)(iii); and

WHEREAS, in accordance with 36 CFR Section 800.6(c)(2), the FHWA has invited the MaineDOT to be an invited signatory and in accordance with 36 CFR Section 800.6(c)(3);

NOW, THEREFORE, the 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

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

I. Recordation

The Cromwell Brook #3 Bridge (#0452) will be recorded using the "Outline Format" narrative of the Maine Historic Engineering Recordation (MHER) recordation standards.

II. 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, the FHWA may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation VII.

III. Post-Review Discoveries

If potential historic properties are discovered or unanticipated effects on historic properties found, the 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, the FHWA shall notify within 24 hours the ACHP, the Maine SHPO, and the Mi'kmaq Nation, Houlton Band of Maliseet Indians, Passamaquoddy Tribe, and Penobscot Nation. 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.

IV. 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 the 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); and

V. Reporting

Each year 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

VI. Dispute Resolution

Should any signatory party to this agreement object at any time to the manner in which the terms of this MOA are implemented, the FHWA shall consult with the objecting signatory party(ies) to

resolve the objection. If the FHWA determines, within 30 days, that such objection(s) cannot be resolved, the 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 the 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 the 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, the FHWA may render a decision regarding the dispute. In reaching its decision, the FHWA will take into account all comments regarding the dispute from the signatory parties to the MOA.

C. The FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the objection remain unchanged. The FHWA will notify all signatory parties of its decision in writing. The FHWA's decision will be final.

The signatory party objection is required to be in regard to this agreement and the manner in which the stipulations to address the undertaking's adverse effects on National Register-eligible or listed historic properties are being carried out. Signatory party objections regarding the Section 106 process (36 CFR 800.3 – 800.6) for the undertaking will not be reevaluated.

VII. Amendments

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 of 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 in accordance with Stipulation VIII.

VIII. Termination

If the MOA is not amended following the consultation set out in Stipulation VII it may be terminated by any signatory or invited signatory. Within 30 days following termination, the 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.

IX. 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, Maine SHPO, and the ACHP that it intends to do so, and adherence to the terms of this MOA.

SIGNATORIES:

Federal Highway Administration

	Date
Todd D. Jorgensen	
Division Administrator	
Maine State Historic Preservation Offi	cer
	Date
Kirk Mohney	
State Historic Preservation Officer	

INVITED SIGNATORY:

Maine Department of Transportation

	Date	
Joyce Taylor P.E., Chief Engineer		

ATTACHMENT A

BAR HARBOR 26574.00 APE

