DEPARTMENT OF THE NAVY
PORTSMOUTH NAVAL SHIPYARD
PORTSMOUTH, N. H. 03804-5000

IN REPLY REFER TO:
5750
Ser 910/036
FEB - 4 2014

RECEIVED
FEB 10 2014
BY:_____

Ms. Nancy Colbert Puff, Town Manager
Town of Kittery
200 Rogers Road
Kittery, ME 03904-1458

Dear Ms. Puff:

SUBJECT: BRIDGE 1 STRUCTURAL REPAIRS
PORTSMOUTH NAVAL SHIPYARD KITTERY MAINE

The regulations implementing Section 106 of the National Historic Preservation Act require federal agencies to identify parties which may be potentially interested in an undertaking, notify them of the proposed project and solicit their input. Your organization has been selected as a potential interested party and is therefore receiving this letter.

The Department of the Navy, Portsmouth Naval Shipyard (Portsmouth) is proposing a project to demolish and replace the superstructure of Bridge 1 (deck and steel girders) and to reinforce the piers to provide a safe means of access to the Portsmouth Naval Shipyard as well as maintain mission-essential rail access for the facility.

A 2011 bridge inspection indicated that the condition of the Bridge 1 superstructure has deteriorated significantly resulting in substantial section loss, an abundance of pack rust, and coating failure. While the Bridge has been repaired many times over its 100 year life span, the Navy believes that the Bridge 1 superstructure has finally reached the point of being deteriorated beyond useful repair. If the Bridge 1 superstructure is not replaced, loading restrictions will preclude rail traffic within the next five years jeopardizing the Shipyard's mission.

Portsmouth has determined the Area of Potential Effect (APE) for this project includes Bridge 1 and its associated viewshed within the Portsmouth Naval Shipyard Historic District and the local Kittery Foreside District.

Background

Bridge 1, Vehicle and Railroad Bridge (1913), is a contributing resource to the Portsmouth Naval Shipyard Historic

District, and as such, is eligible for listing in the National Register of Historic Places (enclosure (1)). The bridge connects Seavey's Island to downtown Kittery and spans the Back Channel. The bridge is a four-span, riveted, through-girder structure with concrete and granite piers and granite abutments. Bridge 1 has two lanes; both are used for vehicular traffic, but one lane also has railroad capabilities. The bridge also has two cantilevered steel pedestrian walkways on the east and west sides. The deck is comprised of five inch thick open steel grating. Each span is seventy-five feet for a total bridge length of three hundred feet (enclosure (2)).

A history of repairs from the 1940s through 2009 includes repairs to nearly every piece of the bridge: piers, girders, deck, sidewalk, and guardrails. Experience from those repairs has informed the Navy that the steel used to construct Bridge 1 was high in sulfur content making it brittle and successful welding nearly impossible. Mechanical repairs of fastening plates to compromised sections have created areas of pack rust and resulted in fewer areas of sound steel upon which to fasten.

When evaluating the appropriate treatment for Bridge 1, the physical condition, structural configuration and the Shipyard's mission requirements were considered. As noted earlier, the condition of the bridge superstructure itself is poor and does not allow for successful or long-lasting repairs. The structural configuration is categorized as "fracture critical" which means that there is no structural redundancy. In the event of a single steel member's failure, there is no path for the transfer of the weight being supported by that member to hold up the bridge; therefore the entire structure would fail. Given our mission requirements, this is not an ideal situation. Furthermore, Bridge 1 is not wide enough to safely accommodate heavy truck traffic. At this time all trucks are inspected at Bridge 1 and oversized trucks are directed to Bridge 2, resulting in a loss of efficiency as Gate 2 is not continuously staffed and must be opened specifically for known truck traffic.

The project will include minimal ground disturbance within an area of potential historic archaeological sensitivity. Portsmouth conducted a Phase I archaeological survey and concluded that the area was primarily comprised of fill and no archaeological resources were encountered. The report also

recommended that if excavations are to extend below one meter archaeological monitoring may be required. Portsmouth believes that as the only excavation associated with the project in this area is within the footprint of previous ground disturbance associated with utility installations, no further archaeological investigations were required.

In addition to the terrestrial Phase I survey, an underwater archaeological survey was conducted. The survey identified seven potential "targets" within the Back Channel, five of which correspond directly to documented piles or shipways. Disturbance to the riverbed has been reduced in its entirety through the reuse of the existing pier and because the additional cladding will not impact the river bottom. The survey identified no potential submerged archaeological resources within the project area and concluded that no additional archaeological surveys were required as long as the project area avoids the targets identified.

Project Description

Portsmouth proposes to remove the entire bridge superstructure (deck and deck supports); reinforce the bridge foundations (abutments and piers) and construct a new superstructure with improved sight lines, approaches and safety features. The new bridge would be the same width and located within the same footprint of the existing bridge. However, there would be expanded lane widths on the bridge to allow for unrestricted, wide vehicular load access. The improved lane widths would be achieved by relocating existing utilities and replacing them with updated lines and conduits. Improvements to antiterrorism force protection (ATFP) would also be provided by replacing the existing lift gate with pop-up bollards.

The new bridge superstructure has been designed in accordance with the American Association of State Highway Transportation Officials Load and Resistance Factor Design Bridge Design Specifications of 2012 (AASHTO LRFD) and the American Railway Engineering and Maintenance-of-Way Association Manual for Railway Engineering of 2008 (AREMA). The new bridge deck will be reinforced concrete supported on longitudinal steel stringers with scuppers to assist in shedding water. A metal and concrete low vehicle rail on the east and west sides of the

deck will separate the slightly elevated sidewalks from the vehicle travel ways. The sidewalks will be flanked with pedestrian rails and six-foot-tall laminated glass windscreens. New railroad tracks aligned with the existing tracks on each side of the bridge will be installed to facilitate continued rail use. In total, the bridge will have the same width and nearly the same horizontal and vertical clearances as the existing structure (enclosure (3)).

Our current bridge terminates with massive round girders and the current configuration of the girders and guardrails do not meet the American Association of State Highway and Transportation Official (AASHTO) standards, which has been an audit finding in the past several bridge inspections. While the existing girders are character-defining features of 1913 Bridge 1, modern safety requirements dictate that the guardrail should end in an angled transition rather than an abrupt termination. The angled guardrail provided on the new bridge will redirect crash forces and better prevent crashing directly into the rail and bridge.

Eight new pole-mounted lights will be installed on the deck in accordance with the Illuminating Engineering Society Recommended Practice for Roadway Lighting. The new lights are shielded with hoods to control glare and light pollution. The aluminum hoods measure twenty-eight inches long by twenty inches wide by eight inches tall. The new LED lights will be twenty-five feet tall and will match the lights at Gate 1. The light fixtures are contemporary, yet compatible with the primary entrance to the Portsmouth Naval Shipyard Historic District.

The piers themselves are in fair condition and will be left in place but will be stabilized with the installation of micropiles drilled through the piers. In 1962 and 1967 all three piers were encased with concrete-filled steel sheet piles from just below the bearing seats down. Additionally, concrete filled steel sheet pile encasements have been added from just above the mean low waterline to the channel bottom. This project will provide additional steel cladding around the piers to provide long term corrosion resistance.

Based on the underwater inspection performed in support of this project, the existing granite abutments are in good

condition, but some of the granite blocks are missing below the mean water line. The missing blocks will be replaced. Portions of the top two courses of granite blocks in the abutments adjacent to the south end of the bridge will be removed and replaced with a concrete cap. The abutments will be solidified with the installation of micropiles.

The new bridge superstructure will meet current AT/FP requirements. Four of the six active wedge barricades at the north end of the bridge will be reset or reconfigured to include one additional active wedge barricade. This additional active wedge barricade will fill the gap left by the elimination of the center through-girder on the bridge. The movable barricades on the north end of the bridge will be replaced with high security fencing including a cantilever sliding gate for the railroad and a rolling gate for the easterly exit lane at the security checkpoint. On the south end of the bridge the vertical lift beam barricades will be replaced with a phalanx of seven new active wedge barricades. An option to add a new set of drop-down lift gates on the south approach is also being explored. Modifications to the fencing systems on the north and south approach will be matched in-kind with an architectural AT/FP fence and black-painted chain link on the north end and chain link on the south, Shipyard side. ADA compliant curb cuts and ramps will be installed to provide access to the sidewalk. Access turnstiles will be relocated to provide secure access closer to Gate 1.

To facilitate security needs during and post construction, swinging gates will be added to non-historic Building 385 at each of the traffic lanes at Gate 1. These gates will stop vehicular traffic from accessing the bridge, but will allow access to the Pass and ID office parking area which must remain open.

Determination of Effect

While the Navy recognizes the historical significance of Bridge 1, due to several factors including physical condition and mission needs, the Navy proposes to replace the majority of Bridge 1. The Navy has determined that the proposed undertaking would adversely effect both Bridge 1 and the Portsmouth Naval

Shipyard Historic District through demolition of the majority of a contributing resource.

Due to the limited ground disturbing activities and the archaeological surveys completed as part of this project, Portsmouth does not believe this project will have an adverse effect on archaeological resources.

Proposed Mitigation

The Navy proposes to record Bridge 1 via the preparation of a Level II Maine Historic Engineering Record (MHER). Large format black and white photographs shall be taken illustrating the context, overall form, structural system and details. The MHER narrative shall include information on the following:

1. An in-depth description of the Bridge 1 structural system;

2. Function and use of Bridge 1 from the time of its construction to the present including its relationship with the larger Portsmouth Naval Shipyard Historic District and its role in Shipyard operations throughout its history; and

3. A summary of the bridge's construction history including a discussion of changing transportation trends at the Shipyard; Context for the railroad connection from Kittery to the Shipyard.

Our proposed mitigation is outlined further in the draft Memorandum of Agreement (MOA) provided in enclosure (4). Portsmouth is simultaneously consulting with the Maine Historic Preservation Office, other federally recognized tribes in Maine and with interested parties. Once we receive comments from all stakeholders we shall invite the Advisory Council on Historic Preservation to participate in the consultation.

The National Historic Preservation Act encourages federal agencies to seek comment from the interested public on undertakings that affect historic properties. Accordingly, we invite your comments on the proposed design and draft MOA (enclosure (4)). In order to support our project timeline, the Navy would appreciate receiving your input within 30 calendar

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days of your receipt of this letter. If we have not received your response by that time, we will assume you have no comment.

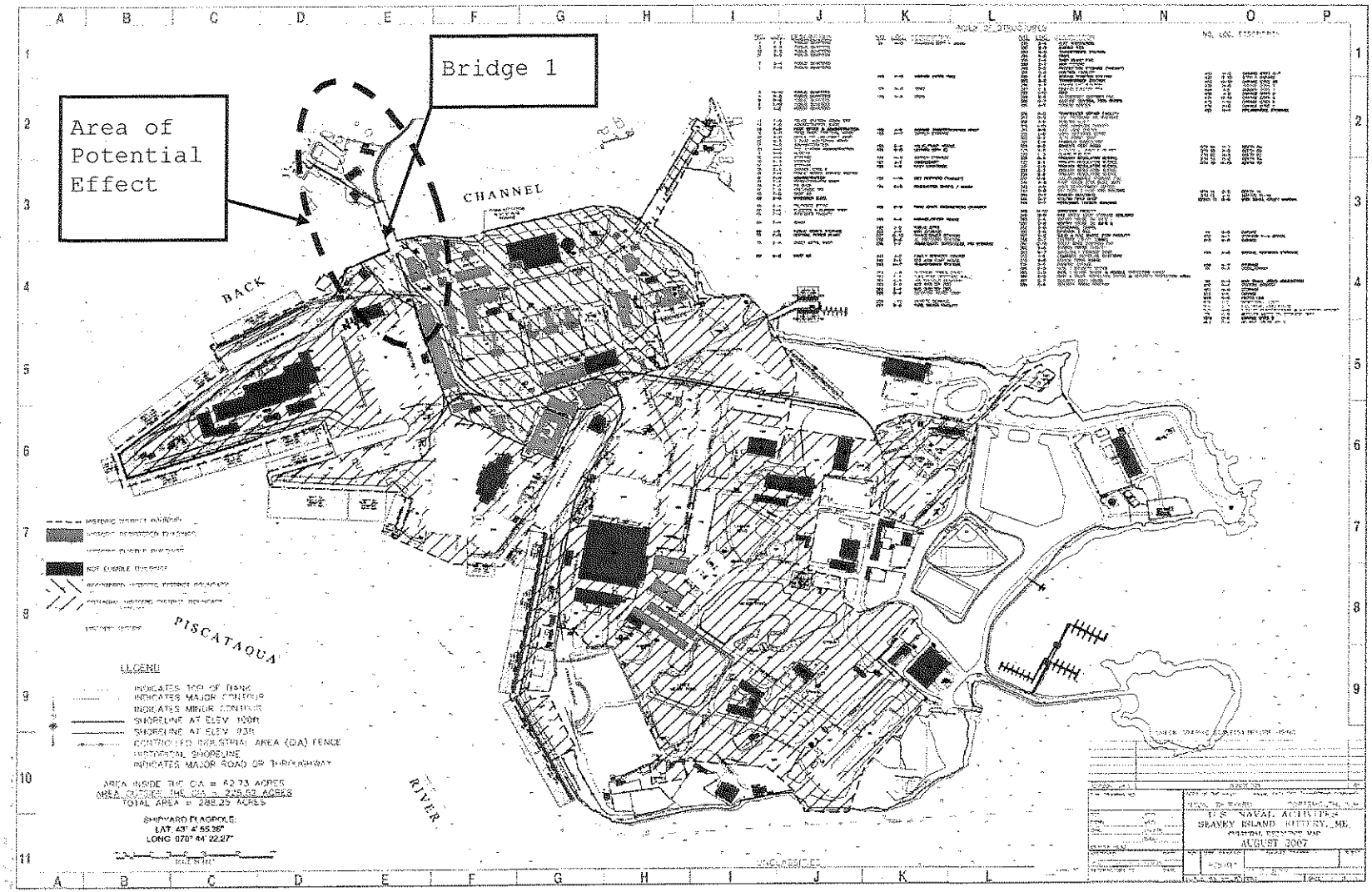
1,

Sincerely,

B. L. WEINSTEIN
Commander, CEC, USN
By direction of the
Commanding Officer

Enclosures:
1. Project Location Map
2. Photographs
3. Proposed Plans
4. Draft Memorandum of Agreement

Enclosure 1: Location Map


Bridge 1
Area of Potential Effect
CHANNEL
BACK
PISCATAQUA
RIVER
LEGEND
AREA INSIDE THE OA = 42.73 ACRES
AREA OUTSIDE THE OA = 225.62 ACRES
TOTAL AREA = 268.29 ACRES
SHIPYARD FLAGPOLE:
LAT. 43° 4' 55.35"
LONG 070° 44' 22.27"
U.S. NAVAL ACTIVITIES
SEAVEY ISLAND, KITTERY, ME.
AUGUST 2007

Enclosure 1

Enclosure 2: Photographs

Photographs: Bridge 1

Figure 1: Aerial View of Project Area

Figure 2: View of Bridge Looking North from Shipyard

Figure 3: Example of Pack Rust on Bridge

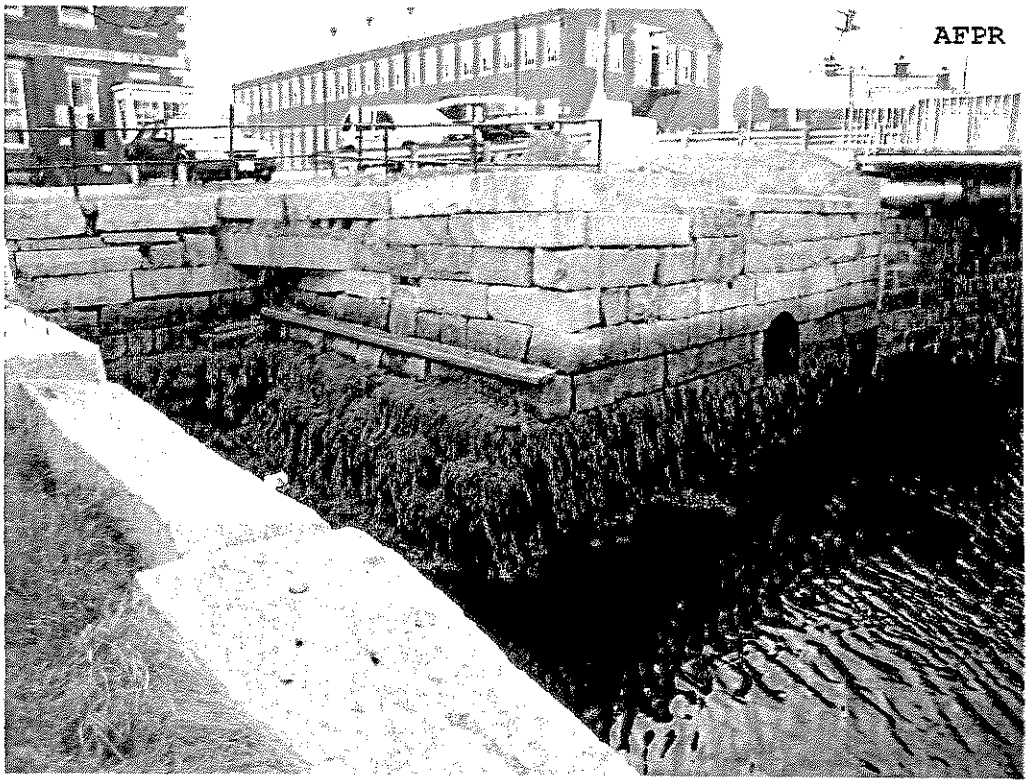


Figure 4: View of Granite Bridge Abutment

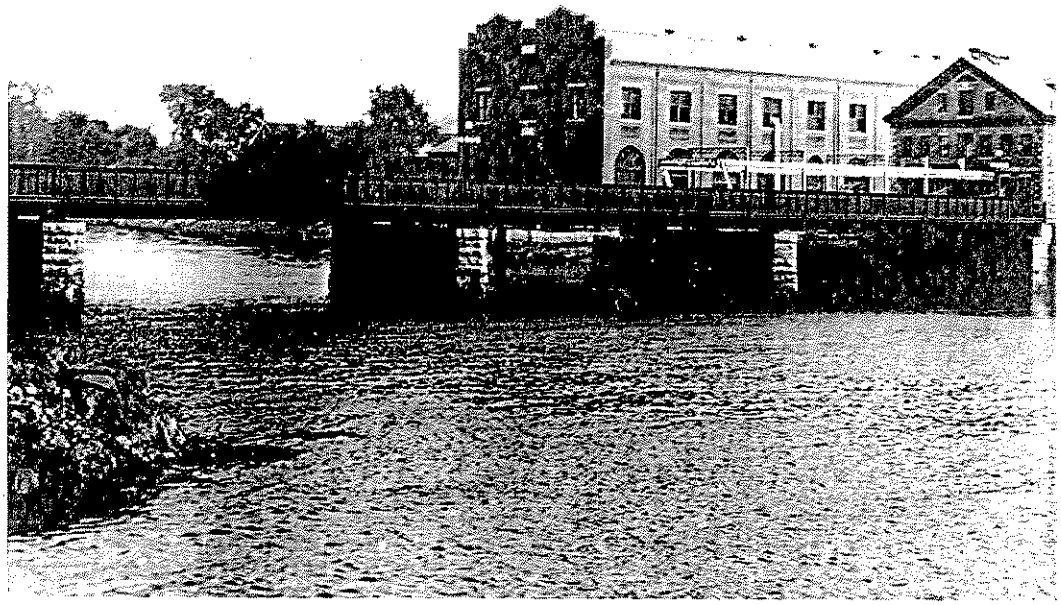


Figure 5: Historic Photo of Bridge c. 1915

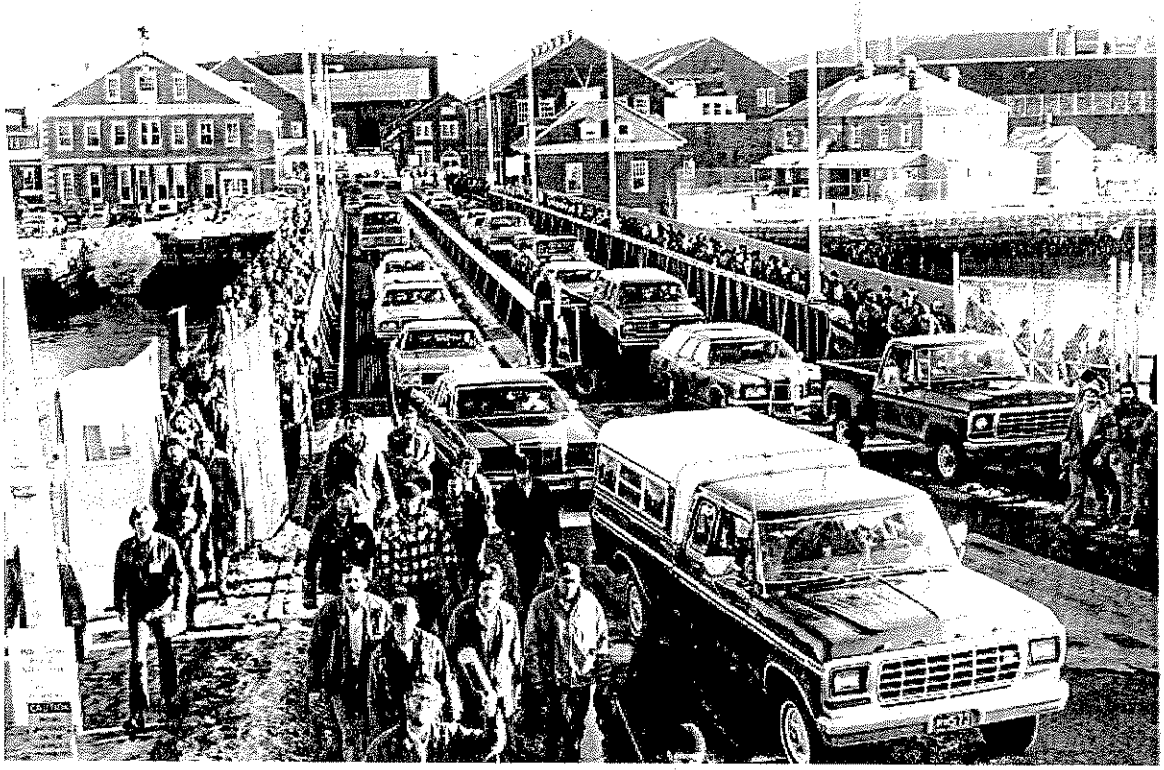


Figure 6: Bridge c. 1975

Enclosure 3: Proposed Plans